Electronic Banking and Financial Performance of Commercial Banks Operating in Wajir County, Kenya

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Abstract

This research was a result of positive consequences of electronic banking on the financial performance of commercial banks in Wajir County, Kenya. The specific objectives included: the impact of risk management; electronic banking costs; the speed of electronic services and operational efficiency on commercial banks' financial performance. Theories like transaction costs, information asymmetry, technology acceptability, risk management, and decision making; guided this investigation. Descriptive research was employed. A total of 124 people from 180 participated in this research. The study employed multiple linear regression analysis to investigate the association between independent variables and a dependent one. The study findings show that the null hypothesis was rejected with an implication that an increase in operational efficiency, cost of electronic banking services, speed of electronic services and complexity of the system and risk management would have a corresponding increase in financial performance of commercial banks. The study recommends that investing in e-banking promoted financial performance of commercial banks as explained in terms of transaction cost and cost of technology. The study recommends that managers of commercial banks should increase investments in electronic banking services since an efficient e-banking system is cheaper in terms of maintenance than a fully operational office, should look for ways that increase speed in electronic services that are consistent and stable to save on time and its failure would result into banks incurring losses and that commercial banks should use transaction authorization methods to promote non-repudiation and establish accountability for e-banking transaction to improved financial performance.

1. Introduction

Over the course of time, companies who are looking to enhance their overall performance have turned to the implementation of new breakthroughs and various internet technologies. In past ten years, there has been an upsurge in the applications of of e-commerce among entreprises seeking to improve their performance (Mohajeranib, Mazaheri & Nourseresh 2016). Some of the benefits that accrue from the adaptation of e-commerce include, rise of opportunities for businesses, reduced costs of carrying business activities, customers getting the change in personalized services and lead time reductions (Venugopal, 2016). In the banking sector the most common e-commerce instrument used is the e-banking or online banking which involves performing banking activities using the internet.

E-banking has developed greatly over the years. According to Sarreal (2016), online banking was first used around 1980. Banks at the time began allowing customers to check their account balances through mobile device. However, internet banking was not widely used at the time, thus banks were unable to accomplish their goals. Services started being offered online in New York in the year 1981 by four main banks in the city thus Chemical and Manufacturers Hanover, Citibank and Chase Manhattan which provided home based banking services by the use of videotex system. Due to the failure of commercial videotext, their popularity was low in New York bar in France since the Telecom provider subsidized the use of videotex (Minitel) as well as in the United Kingdom where another system the Prestel was successfully used in the year 1994. Stanford Federal Credit Union is the first credit union to provide online banking to all of its members. The push for online banking was ultimately provided by the response of other institutions. More financial institutions have gone digital by the turn of the millennium (Sarreal, 2016).

In the recent years, Kenya has seen fast upsurge of mobile banking that has overtaken the use of ATMs. According to Ogutu (2018), this increase might be attributed to the increasing prevalence of mobile phone ownership among Kenyans. Suntu, Chege, and Wang came to the conclusion that the introduction of the World Wide Web and the internet in the 1990s compelled banks to gradually adopt e-banking systems in order to continue delivering the same high level of service and product to their customers while also effectively managing their day-to-day business operations. Some of the most commonly used platforms by banks include, electronic wallet, mail banking, self-service zone and payment cards. The reasons behind these developments were dictated by the banks need to improve their efficiency, customer satisfaction, increase their customer base, reduce administrative and operational costs. Observed evidence has indicated that the momentous driver for banks in delivering their banking services is the reduction of costs in their operations (Le & Ngo, 2020). Das, Islam, Tazim and Rahman (2020) established that banking institutions embracing e-banking in Kenya have benefitted greately by increasing their customer base and improving on performance.

1.1 Motivations for Research

Previous research has not paid enough attention to the potential link between commercial bank performance and e-banking adoption. This is because the connection between these elements has been overlooked in previous studies. Neither the risk nor the performance of an organization was shown to be significantly correlated with the usage of internet banking, according to research by Kamandea, Evusa, and Ariembac (2016). The implication of this being that the adoption of internet banking does not enhance or reduce risk profile. Muhamed *et al*., (2016) found out adoption of cashless banking, mobile, banking, point of sale positively impact on ROE. The study further established that call centre banking and ATM negatively related with the banking institutions` profitability. The study however, failed to show the empirical association if any between e-banking introduction and banks` earnings. This research, which is based on the backdrop of Kenya and tries to determine the link between financial performance and introduction of e-banking among commercial banks operating in Wajir County, is necessary as a result of these contradictory results, thus existence of knowledge gap. On the other hand, Mundhe (2016), Rahim and Seyal (2017), Worku, Tilahun and Tafa (2016) and Ali (2018) studied e-banking, but these studies did not emphasize on operational efficiency, customer service management, new products and market outreach and how they affects financial performance. At the same time there is no known study that has been carried out focusing on only the banks operating in Wajir County. Taking into mind the above factors, this research sought to address this knowledge gap by assessing the impacts of electronic banking on the financial standings of commercial banks in Wajir County.

2. Literature Review

2.1 Theoretical Review

Transaction cost theory, information asymmetry theory, the theory of technological acceptability, and risk management and decision theory served as the theoretical compass points for this investigation. This research was pertinent to the transaction cost theory since it examines the relationship between the financial outcomes of NSE-listed banks and their usage of electronic banking. Since lowering transaction costs was a fundamental motive for the adoption of technology in the banking business, this strategy was pertinent to the study. Customers and banks alike may reap the rewards of this development. Since businesses in the banking industry may boost their income by cutting transaction costs, this theory was related to the cost of electronic banking variable. The Information Asymmetry model was mostly developed by Spence, Akelof, and Stiglitz (1970). This model was pertinent to the current investigation because it had the potential to explain why and how much resources were invested in developing the skills required to manage an IT infrastructure. Therefore, the providers of the system must also offer maintenance services and training for the system's personnel. While large banks have reaped the benefits of adopting new technologies, smaller institutions have found the costs of doing so to be prohibitive. This hypothesis was useful for investigating the connection between business success and the objective on operational effectiveness.

Because of its potential to strengthen the connection between the financial performance of banks listed on the NSE and online banking, the TAT model is an important part of the present research. This is significant because it is not sufficient for banks just to incorporate technological breakthroughs; these innovations must also be user-friendly, acceptable, popular, and beneficial to clients (Scott & Davis, 2016). This notion was applicable to both the timely supply of electronic services variable and the success of businesses generally. According to DCU (2015), a risk is "anything that might happen in the future that, if it does, could make it difficult or impossible for an organization to achieve its goals." This theory merges decision theory with risk management to aid in determining an appropriate level of risk for a company. Based on my findings, this idea contributes to effective risk management in the realm of electronic banking. It may be used to assess risk and figure out how to deal with it in the best possible manner (Steele, Katie, & Stefansson, 2015). Therefore, this theory was linked to the financial and operational outcomes of risk management for electronic services.

2.2 Operational Efficiency and Financial Performance

The study conducted by Alber (2016) aimed to examine the correlation between financial stability and banking efficiency within the banking sector in the Middle East and North Africa (MENA) region. The researchers used data envelopment analysis (DEA) as a method to estimate the efficiency of financial institutions. Nonperforming loans were applied as a surrogate measure for assessing the level of financial stability. From 2004 to 2013, a survey was conducted by researchers in which 15 countries in the Middle East and North Africa were questioned. The examination of the relationship between the variables in the research was conducted using the generalized method of moments (GMM). In order to assess autocorrelation and heterogeneity, the research used a two-stage methodology that has been empirically shown to be completely impartial. The findings of the study demonstrate a robust and statistically significant correlation between efficiency and monetary stability in the Middle East and North Africa (MENA) countries. The researchers applied data envelopment analysis (DEA) as a method to approximately assess the efficiency of financial institutions. Nonperforming loans were utilized as a proxy indicator for measuring financial stability. Multiple regression analysis was used to demonstrate the interrelationships between the various elements under investigation. The business landscape in Kenya exhibits notable distinctions when compared to the MENA nations, which served as the focus of this research.

Miah and Helal (2017) looked at the banking sectors of the GCC countries to see whether there was a connection between financial stability and productivity. All of the GCC's conventional banks (48) and Islamic banks (38) have contributed to this study. Using an Ordinary Least Squares (OLS) regression model, we analyzed the information gathered from 2004 to 2014. Each bank's operating efficiency was analyzed using Stochastic Frontier Analysis (SFA). Analysis of a bank's liquid assets and deposit balances was part of the evaluation of its short-term viability. When a more nuanced evaluation of fiscal health was needed, the Z index was utilized as an

alternative. Compared to their conventional counterparts, Islamic banks in the GCC nations were found to be more secure in the study. The research also shows that Islamic financial institutions in the Gulf Cooperation Council (GCC) have a negative relationship between operational efficiency and financial soundness. Using an Ordinary Least Squares (OLS) regression model, we analyzed the information gathered from 2004 to 2014. Each bank's operating efficiency was analyzed using Stochastic Frontier Analysis (SFA). The qualitative data in this study was analyzed using content analysis, while the quantitative data was analyzed using descriptive and inferential statistics. While similar research had been conducted in the setting of Middle Eastern countries, businesses operating in Kenya were faced with problems that were specific to the country, thus a justification for the current study.

Specifically, Sporta's (2018) research focused on how maturity incongruities affect operational efficiency and other factors that contribute to financial hardship. The study surveyed 38 different commercial banks using secondary data collected between 2005 and 2015. Generalized Least Squares was the method of analysis used for this study. The findings point to a strong, statistically significant relationship between economic growth and productivity. This study's findings suggest that operational efficiency plays a crucial role in the prosperity of Kenya's financial institutions. The results of this study imply that the management of financial institutions may improve efficiency by paying more attention to and monitoring operational efficiency. While prior studies mostly focused on one facet of efficiency, the upcoming study broadened its focus by analyzing operational efficiency as a separate variable.

With the goal of determining what variables affected performance and operational efficiency, Lotto (2019) analyzed data collected from 36 commercial banks in Tanzania from 2000 to 2017. In the current study, the relationship between operational efficiency and its component aspects inside financial institutions was quantified using a random-effects regression model. Finally, we may draw the conclusion that...There is a positive relationship between production efficiency and the health of financial institutions in terms of their solvency and liquidity. Banks with more liquid assets and enough capital reduce moral hazard between loan holders and owners, which improves operational efficiency. Large capital infusions help banks become more financially stable, giving them breathing room to satisfy liquidity needs. This study's results link a bank's operational efficiency with its profitability, showing that improving the bank's income-generating potential is a top priority for any solvent financial institution. In the current study, the relationship between operational efficiency and its component aspects inside financial institutions was quantified using a random-effects regression model. To illustrate the connections between the various variables, they did a multiple regression analysis. It appears unlikely that drawing parallels between Kenya and Tanzania would provide useful results, since the next inquiry was done in Kenya rather than Tanzania.

Imhanzenobe (2019) did a research to determine the longevity and effectiveness of publicly traded Nigerian industrial enterprises. Asset turnover, employee growth, inventory turnover, accounts receivable, and operating expenses were all measured as indications of productivity. From 2009 through 2016, Bloomberg provided access to secondary panel data for 16 publicly traded industrial companies. Using the ordinary least square method, the researchers set out to disprove five presumptions with hard evidence. Return on assets (ROA) was shown to have a positive link with asset turnover, whereas ROA had a negative correlation with operating expenses. Inventory turnover, employee growth, and days in receivable are all considered meaningless efficiency measures. Tobin's q is strongly correlated with the rate of asset turnover as well as the size of stockpiles. While increases in both personnel and AR turnover were found to be statistically insignificant, a negative correlation between AR turnover and operational expenses was shown to be substantive. Secondary panel datasets from 16 manufacturing companies were procured from Bloomberg and utilized in the study. Between 2009 and 2016, users of the site may view the aforementioned datasets. In this study, the researcher utilized a multiple regression to investigate the connection. While most prior studies had concentrated on large, publicly listed manufacturing companies, this one instead examined commercial banks in Wajir County.

3.0 Research Methodology

The objective of this research was to investigate the correlation between the financial performance of commercial banks and the use of electronic banking services by clients in Wajir County, Kenya. The researcher opted for this method because of the interest in gathering up-to-date information. The target demographic includes a total of 180 persons from three prominent financial organizations in Kenya, namely Kenya Commercial Bank, Equity Bank and National Bank. This study used a formula employed by Yamane's in determining size of the population that was sampled sample size as follows assuming confidence level is 95%. According to the research population consisting of 180 respondents, the sample size, as determined by the algorithm, amounted to 124. The study included a mix of primary and secondary data sources. The findings were presented by means of dispersion shown in the form of tables, percentages, mean and frequencies. In the context of inferential statistics, many statistical techniques such as multiple regressions, coefficient of determination, analysis of variance (ANOVA), and Pearson correlation were used.

4.0 Research Findings, Analysis and Presentation

4.1 Inferential Statistics

Pearson's Correlation Coefficient was used to test for linearity between financial performance e and operational efficiency, cost of electronic banking, speed of electronic banking and risk management. The results are shown in Table 1.

Table 1 Linearity Test

		Performance
Operational Efficiency	Pearson Correlation	0.310
	Sig. (2-tailed)	.000
	N	97
Cost of Electronic banking	Pearson Correlation	0.213
	Sig. (2-tailed)	.000
	N	97
Speed of Electronic banking	Pearson Correlation	0.271
	Sig. (2-tailed)	.000
	N	97
Risk Management	Pearson Correlation	0.202
	Sig. (2-tailed)	.000
	N	97

The study results show that there is a significant positive linear relationship between financial performance and operational efficiency, cost of electronic banking, speed of electronic banking and risk management at 5%. The results indicate that there is co-movement in the variables and in the same direction.

Variation Inflation Factor (VIF) was used to test for multicollinearity. The study results are as presented in Table 2.

Table 2 Multicollinearity Test Results

Variable	Multicollinearity
	Mean VIF
Operational Efficiency	1.46
Cost of electronic banking	1.73
Speed of electronic banking	1.62
Risk management	1.39

The operational efficiency mean VIF for the regression was 1.46, cost of electronic banking mean VIF was 1.73, and speed of electronic banking mean VIF was 1.62, while risk management mean VIF was 1.39 which is less than 2. This means that the level of multicollinearity can be tolerated and does not have influence on the validity of the results.

The results of the regression model summary are presented on the combined electronic banking adoption factors versus financial performance of commercial banks operating in Wajir County, Kenya. It was established that the value of R square was 0.734, which can interpreted to suppose that 73.4% change in financial performance of commercial banks operating in Wajir County is explained by the combined electronic banking adoption factors of operational efficiency, cost of electronic banking, speed of electronic banking, and risk management. This implies that there exists a significant relationship between operational efficiency, cost of electronic banking, speed of electronic banking, and risk management and financial performance of commercial banks operating in Wajir County. This is as shown in Table 3.

Table 3 Regression Results

Regression Statistics	
Multiple R	0.856
R Square	0.734
Adjusted R Square	0.683
Standard Error	0.502
Observations	97

Table 4 ANOVA

	df	SS	MS	F	Significance F
Regression	4	14.558	3.639	14.451	0.000
Residual	21	5.289	0.252		
Total	25	19.847			

	Coefficients	Standard Error	t Stat	P-Value	Lower 95%
Intercept	-0.069	0.562	0.124	0.903	-1.237
Operational efficiency	0.465	0.141	3.300	0.003	0.172
Cost of electronic banking	0.261	0.177	1.477	0.015	-0.107
Speed of electronic banking	0.134	0.155	0.860	0.039	-0.189
Risk management	0.121	0.152	0.796	0.043	-0.195

As shown in Table 4 the F statistic is 15, with a P-value of 0.000, which implies that the independent variables are jointly significant in explaining variations on the effect of electronic banking adoption on financial performance of commercial banks operating in Wajir County.

4.2 Testing of Hypotheses

Operational efficiency coefficient is positive and significant at 0.465 and P value = 0.003 < 0.05. At five percent level of significance, the study rejected the null hypothesis. The regression results further indicated that increase of operational efficiency by one unit would have a corresponding increase in financial performance of commercial banks by 0.465 units.   The cost of electronic banking coefficient is positive and significant at 0.261 and P value = 0.015 < 0.05 therefore at five percent level of significance, the study rejected the null hypothesis. The regression results also indicated that increase in cost of electronic banking services by one unit would have a corresponding increase in financial performance of commercial banks by 0.261 units.

The speed of electronic banking coefficient is positive and significant at 0.134 and P value = 0.039 < 0.05, then at five percent level of significance, the null hypothesis is rejected. This means an increase in speed of electronic banking required and complexity of the system by one unit would have a corresponding increase in financial performance of commercial banks by 0.134 units. Risk management coefficient is positive and significant at 0.121 and P value = 0.043< 0.05 thus at five percent significance level, the study rejected the null hypothesis. The regression results further indicates that an increase in risk management by 1 unit would have a corresponding increase in financial performance of commercial banks by 0.121 units.

5. Policy Implication

The findings showed that the greater operational efficiency, the more profitable a firm or investment is. This is because the entity is able to generate greater income or returns for the same or lower cost than an alternative. In financial markets, operational efficiency occurs when transaction costs and fees are reduced. Also results showed that e-banking saves on time and its failure would result into banks incurring losses. The study therefore concludes that increasing investments in electronic banking services would have a corresponding increase in financial performance of commercial banks. Speed in terms of time taken for service delivery and reliability was found to be statistically significant in influencing financial performance of commercial banks operating in Wajir County. Risk management had a positive and significant effect on financial performance of commercial banks.

From the findings, the study makes the following recommendations for policy and practice: First, the findings indicated that, the greater the operational efficiency, the more profitable a firm or investment is. This is because the entity is able to generate greater income or returns for the same or lower cost than an alternative. In financial markets, operational efficiency occurs when transaction costs and fees are reduced. Secondly; the study findings showed that electronic banking makes it easier for customers to compare banks' services and products, can increase competition among banks, and allows banks to penetrate new markets and thus expand their geographical reach. Also the study recommends that investing in e-banking promoted financial performance of commercial banks as explained in terms of transaction cost and cost of technology. The study therefore recommends that managers of commercial banks should increase investments in electronic banking services since an efficient e-banking system is cheaper in terms of maintenance than a fully operational office. Thirdly; the findings indicated that speed in terms of time taken for service delivery and reliability had a significant influence on financial performance of commercial banks. The study therefore recommends that managers of commercial banks should look for ways that increase speed in electronic services that are consistent and stable since results showed that e-banking saves on time and its failure would result into banks incurring losses. Fourthly; the study found that managing risks associated with e-banking had a positive effect on the banks financial performance. The study therefore recommends that commercial banks should use transaction authorization methods that promote non-repudiation and establish accountability for e-banking transaction, a clear audit trails for all e-banking transaction, appropriate techniques to mitigate external threats to e-banking system will result to improved financial performance.

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