

Effect of Electronic Banking on Financial Performance of Commercial Banks in Rwanda, A Case of COGEBANQUE Plc

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ABSTRACT

According to the BNR (2020), information technology was expected to minimize time, distance, and space and expense thus expanding access to affordable financial services. It was found that, electronic banking is allowing banks to change from the traditional channels associated with human assistance to digital channels that operate on self-service basis reducing operational cost and improving efficiency and financial performance. However, some of the previous researchers give contradicting information on e-banking and the financial performance of commercial banks creating a need for sufficient research to be done on this topic. The general objective of this research is to examine the effect of E-banking on financial performance of commercial banks in Rwanda. Specific objectives were to analyze the use of e-banking in COGEBANQUE PLC from 2018 to 2021; to determine the level of financial performance of COGEBANQUE PLC from 2018 to 2021 and to assess whether there is any relationship between e-banking and financial performance of COGEBANQUE PLC from 2018 to 2021; It should be noted that electronic banking plays a great role in financial performance of banks in

Rwanda. Different electronic Banking System tools like ATM, air direct, mobile phone banking, debit/visa card payment and E electronic check payment has a great impact on bank performance because they increase profitability, return on equity and loans, improves bank management quality, increase bank asset and promotes bank growth and expansion. For the case of COGEBANQUE PLC, Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.625, an indication that there was variation of 62.5% on the performance of COGEBANQUE PLC due to changes in Mobile Banking, internet banking, telephone banking, electronic card banking. This shows that 62.5% changes in performance of COGEBANQUE PLC. As conclusion E banking contributes to the performance of COGEBANQUE PLC in spite of few challenges like network failures inadequate skills and security issues possess a great threat to the confidentiality and integrity of banks information.

Key words: Electronic banking, Financial performance,

Introduction

Banks are in the business of rendering services, which include services such as savings, cheque and investment accounts. Due to technological advancements and innovation, electronic banking has gained importance as an alternative means of providing services to customers. This chapter focuses on the background of the study, statement of the problem, objectives of the study, research questions, and significance of the study, scope of the study, conceptual framework and definition of key terms.

Electronic banking, or e-banking, is the term that describes all transactions that take place among companies, organizations, and individuals and their banking institutions. First conceptualized in the mid-1970s, some banks offered customers electronic banking in 1985. However, the lack of Internet users, and costs associated with using online banking, stunted growth. The Internet explosion in the late-1990s made people more comfortable with making transactions over the web. Despite the dot-com crash, e-banking grew alongside the Internet (Carlson & Lang, 2019).

Financial institutions took steps to implement e-banking services in the mid-1990s; many consumers were hesitant to conduct monetary transactions over the web. It took widespread adoption of electronic commerce, based on trailblazing companies such as America Online, Amazon.com and eBay, to make the idea of paying for items online widespread. By 2000, 80 percent of U.S. banks offered e-banking. Customer use grew slowly. At Bank of America, for example, it took 10 years to acquire 2 million e-banking customers. However, a significant cultural change took place after the scare ended. In 2001, Bank of America became the first bank to top 3 million online banking customers, more than

20 percent of its customer base. In comparison, larger national institutions, such as Citigroup claimed 2.2 million online relationships globally, while J.P. Morgan Chase estimated it had more than 750,000 online banking customers. Wells Fargo had 2.5 million online banking customers, including small businesses. Online customers proved more loyal and profitable than regular customers. In October 2001, Bank of America customers executed a record 3.1 million electronic bill payments, totaling more than \$1 billion. In 2009, a report by Gartner Group estimated that 47 percent of U.S. adults and 30 percent in the United Kingdom bank online (Girardone, 2019).

State of electronic payment in Europe displays the online banking penetration in European countries in 2014. That year, it was found that 92 percent of the Norwegian population access online banking sites, making Norway the country with the strongest internet banking penetration in Europe, followed by Denmark and Netherlands. Online banking is becoming one of the most popular payment methods in Europe, allowing customers of a bank or other financial institution to develop a wide range of financial transactions through their websites. Over time, Europeans' confidence in this electronic payment system has increased. Meanwhile, the use of physical cash is experiencing a significant reduction in some countries, such as Germany or Austria (Gerlach, 2019).

In Africa electronic banking (EB) is a typical banking innovation that potentially can transform the financial services landscape in developing nations such as South Africa. However, due to the associated low adoption rate, its full potential in deepening and extending banking services is yet to be realized, as a critical mass of consumers is yet to be accessed. Thus, a better understanding of why some banking customers adopts EB

and others do not, alongside an identification of the factors influencing this decision is likely to be of considerable practical as well as academic value. For this reason, the purpose of this study was to investigate the factors influencing the adoption and usage patterns of EB among South African consumers. Using Rogers's framework, data was collected using a self-completion questionnaire, in which some 249 banking customers participated. Results suggest perceptions of risk, lack of adequate support and training from banking institutions are some of the causes of non-usage. The implications of these findings are that banks could focus more attention on cross-selling EB together with other financial products, as IB is rarely used in isolation. Installing personal computers inside branches in conjunction with campaigns and demonstrations may also improve rates of adoption (Fassnacht, M. & Koese, I, 201/).

Investigation done by Maiyo (2013) showed that, the use of electronic banking resulted to reduced costs due to reduced number of bank staff and increased profitability. Banks now operate on self-service basis as opposed to the traditional channels defined on the basis of human assistance, teller or corporate management (Pourkiael and Ardestani, 2014). Electronic payments have resulted to less cheque processing costs, online presentation of bank statements reduced paper and mail distribution costs and less data entry as customers complete most of their transactions online (Njuguna, 2019).

According to Isack (2019), digital channels are encouraging customers to practice home banking without any need to visit the bank branch. These channels include automated teller machine, mobile banking, credit cards, smart cards and internet banking. Digital banking allows 24 hours service to the bank customers, saves time because the service is offered anytime and anywhere, convenient and environmentally friendly because

customers do not need to visit the bank physically. Improved customer satisfaction has led to a wider market reach and new market opportunities resulting to increased bank revenue

In Rwanda like other developing countries ICT is being used as one tools to accelerate their economic development and banks adopt different strategies to deliver efficient services to customers by implementing electronic banking in form of internet banking, telephone banking, mobile banking and electronic card banking, easy transfer money and so on. COGEBANQUE PLC which is one of big banks in Rwanda has popularized this form of technology and this study aims to investigate the extent by which providing services through electronic means have influenced its financial performance.

Statement of the Problem

According to Kinoti (2020), the dynamic business environment has been associated with changes such as: globalization, personalization and customization of consumer services, changes in technology and competition. Investigation by Rono (2020) showed that, these changes forced commercial banks to innovate in e-banking in order to gain a competitive advantage by: making bank transactions easier, avoiding congestion caused by long queues as bank customers wait to be served, bringing services closer to the customers in order to attract and retain customers in hope of reducing cost of service delivery and improving the financial performance.

According to Ngango et al (2019), before the introduction of e-banking, bank customers complained of wastage of allot of time queuing waiting to be served and delay in payment of cheques as representatives of different banks waited in the clearing house for the settlement of their dues. In the study by Njogu (2018) it was found that, bank managers are celebrating after the

introduction of e-banking as it results to new market opportunities, increased account sales, wider market reach and increased efficiency.

According to the BNR (2020), information technology was expected to minimize time, distance, and space and expense thus expanding access to affordable financial services. it was found that, electronic banking is allowing banks to change from the traditional channels associated with human assistance to digital channels that operate on self- service basis reducing operational cost and improving efficiency and financial performance. However, some of the previous researchers give contradicting information on e-banking and the financial performance of commercial banks creating a need for sufficient research to be done on this topic. In their study Aduda and Kingoo (2018) found that, there is a debate among researchers on whether adoption of electronic banking improved bank performance because it required a complementary investment in skills leading to costs that would reduce the bank performance in the short-run. Commercial bank management therefore needs sound analysis in order to understand all kind of risks to be able to find a balance between costs, risks and the bank financial performance. None of the previous researchers has come up with a clear report on the relationship between e-banking and the financial performance of commercial banks in Rwanda. Therefore, this research is to fill the gap by evaluating the effect of electronic banking on the financial performance of COGEBANQUE PLC.

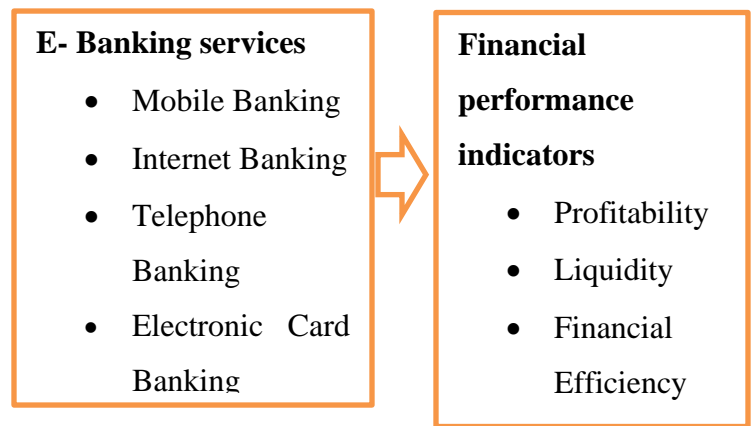
General Objectives

The general objective of this research is to examine the effect of E-banking on financial performance of commercial banks in Rwanda.

Specific objectives

- i. To analyze the use of e-banking in COGEBANQUE PLC from 2018 to 2021;
- ii. To determine the level of financial performance of COGEBANQUE PLC from 2018 to 2021
- iii. To assess whether there is any relationship between e-banking and financial performance of COGEBANQUE PLC from 2018 to 2021;

Conceptual Framework



Garry et al (2018), in their study on internet banking and performance of community banks examined the impact of online banking applications on community banks performance in America. The study used a structural equation model to create an online banking index and an econometric model to evaluate bank performance. A survey of ten community banks was conducted. Once the pilot study was considered acceptable, all community banks with total assets less than One billion United States Dollars operating in Iowa, Minnesota, Montana, North Dakota and South Dakota were identified and using the structural equation model to evaluate the various variables identified and used to examine whether the index explains differences in community bank performance. The results indicated that banks that provide extensive online banking services tend to perform better than those who lag behind. In addition, online banking helps community

banks improve their earnings ability as measured by return on equity and improve asset quality. Since the study was conducted in a highly technologically advanced economy this study sought to find out how the counterparts in developing countries like Kenya do perform.

According to Munyocho (2019) study on relationship between banking technologies and financial performance of commercial banks in Kenya, commercial banks should continue investing in ICT because of its positive influence on their performance. He identified credit cards to have a major impact on profitability of commercial banks in Kenya. In their research Ngango, Mbabazize and Shukla (2019) analyzed electronic banking and financial performance of commercial banks in Rwanda and found that, e-banking has a great impact on performance.

This is because it increased the profitability, return on assets, return on investment, return on equity and loans, improves bank management quality, increase bank assets and promotes bank growth and expansion. However, a few challenges were identified in the study that limited the use of e-banking such as; network failures, inadequate skills and security issues which posed a great threat to confidentiality and integrity of bank information.

In their research Kingoo and Aduda (2020) analyzed on the effect of electronic banking on the financial performance of commercial banks in Kenya and discovered that there is a strong positive relationship. They drew the following conclusion in their findings: electronic banking has made the banking industry to be more productive and effective: adoption of e-banking has enhanced the fortune of the Kenyan commercial banks that is achieved from the charges obtained on the use of credit cards and ATMs: e-banking gives a 24 hours service to the bank clients improving the customer relationship:

Customers accessibility to their accounts is no longer limited to the working hours.

They concluded in their study that, e-banking has made banking transactions easier by bringing services closer to its customers improving the banking industry performance. According to a study by Fridah (2019), although electronic banking has enhanced banking efficiency, it is limited to the downlink and uplink speed of the ICT infrastructure in the country and banks can only get the best of e-banking should IT network and infrastructure be improved.

She suggested that: banks should focus in terms of their needs and use the right technology to achieve goals other than acquire technology for the sake of it: in order to remove avoidable costs of implementing electronic banking there is need for the government participation in ensuring focused telecommunication industry. Other suggestions: the Central Bank of Kenya should set the required standards to be followed by the commercial Banks in Kenya in order to avoid making Kenya a dumping ground for the outdated technological infrastructure: both the government and the banking sector should invest on education of Kenyans on the uses and benefits of IT. This would encourage the society to accept and adopt new technology: there is customer literacy of electronic banking in the country as infrastructure information technology in not satisfactory: people make regular use of other electronic banking services but are not much informed about how to get advantage from internet and mobile banking: the government should formulate and enforce policies in order to control and limit the fraud and security risks associated with e-banking which will enhance the growth of e-banking and performance.

In the study by Wesutsa (2020) it was discovered that, adoption of ICT by the commercial banks in Kenya improved the liquidity and the asset quality of commercial

banks, led to reduced costs, increased efficiency and improved performance. He discovered ICT had not improved the capital adequacy of the organizations to a great extent but commercial banks are adopting ICT to improve their operations and market coverage in order to remain competitive. He suggested for banks to successfully cope with challenges of ICT, they should have the knowledge of the types of changes expected in ICT and the demography. Banks that are well informed make maximum benefits from the opportunity in electronic banking by making sound decisions on how they can use the ICT.

According to the study by Rothare (2021), on impact of information technology on the performance of Tunisian banks it was found that, information technology led to reduced costs and improved performance of commercial banks. According to the study by Kariuki (201*) on the relationship between the level of technological innovation and financial performance of commercial banks in Kenya, ATM technology is the most available technology when online account opening is rarely used. This revealed that Kenyan banks are at initial stages of adopting technological innovations. The study recommends that for banks to be highly competitive, they need to employ modern technological innovations such as internet based banking and online account opening to a great extent.

According to the study by Rono (2019), on determinants of electronic banking and performance of commercial banks in Kenya it was discovered that, most of the commercial banks in Kenya have invested on e-banking applications with a positive impact of improved efficiency and performance. He discovered that e-banking has improved the financial performance in the banking industry and customers convenience by allowing customers to carry out banking transactions anytime and anywhere.

In their research Kadzo and Wafula (2019), analyzed on the effect of internet banking on financial performance of commercial banks in Kenya and came up with the following findings: internet reduce transaction costs and attracts customers to the bank: cheaper transaction costs can lead to extend client base because many potential customers seek value of their money: e-banking enhances customer royalty and sense of security as opposed to over the counter banking because customers are able to access banks' services round the clock which creates a strategic advantage against competitors: Internet banking saves time leading to increased efficiency.

According to the study by Njogu (2021), it was discovered that there is a strong positive relationship between electronic banking and the financial performance of commercial banks in Kenya. Electronic banking minimized operation costs of the commercial banks, improved their speed in service provision, enhanced accessibility to a wider market and is convenient to customers. In the findings of the study, commercial banks were encouraged to adopt to e-banking as this would influence their financial performance. According to Diergaardt (2020) study on effect of e-banking on commercial banking sector performance a case study of Namibia, some challenges were identified that need to be overcome by the developing countries in order to achieve the advantages of e-banking. For the developing countries to adopt global technology for their local requirements, they first need to develop an adequate level of infrastructure and human capacity building, the ability to strengthen public support for e-finance, ability to create necessary level of regulatory and institutional framework due to lack of security, trust and privacy and develop the ability to mainstream small and medium scale enterprises towards e-banking. Critical review concerned with reading critically the literature of other authors and

you come up with some criticism. This refers to identification of the gaps of existing literature that a researcher is going to fill. In empirical review the six different researchers who conducted their researches in the field of e-banking and e-banking management and their impacts on performance of commercial bank were referred, and their findings revealed that the well managed e-banking can in any case contribute to the performance of commercial banks. For gaps, both researchers did not put much emphasis on impact of management of the e-banking delivered by commercial banks to customers and performance of institutions which is our accent in this research. The empirical review shows the practicability of theoretical review as the researchers have to be guided by theories on the field of which they are conducting their research but did not show the relationship between e-banking and performance of commercial banks. The gap in this literature review turns around the effect of E-banking on financial performance in COGEBANQUE PLC. To the above-mentioned constraints, threats and opportunities of using E-banking in commercial banks transactions and on the premises that E-bank is newly adopted by commercial banks in Rwanda; this study attempts to examine the effect of E-banking on financial performance in COGEBANQUE PLC.

Population of Study

Population refers to a set of people or items with similar characteristics that a researcher intends to study and to draw statistical inferences or conclusions (Gall et al., 2006). In the context of this study, population to be considered includes 65 staff works in different department COGEBANQUE PLC.

Sample Size

A universal sampling technique was used because the sample size is too small in this

study sample size was not calculated because the targeted population is small

Sampling Techniques

A sampling technique is the name or other identification of the specific process by which the entities of the sample have been selected. This study use purposive sampling strategy to select respondents (65 staff of COGEBANQUE PLC).

Data Collection techniques

Data collection techniques was used questionnaire, interview and documentary as methods to obtain information from respondents.

Data Analysis Methods

According to Bailey (2014) not all data can be presented in their entirety. The variables to be presented are those most central to the goals of the study, generally variables include specifically in the research questions. Variables are generally analyzed in some fashion and the results presented in tables. The contents of these tables are usually percentages, frequencies or some summary statistical measures. This is reduction of data gathered to some torn suitable for analysis and was done by the help of data processing that uses editing and tabulation. The data was generated, calculated and converted into frequency table tables and bars using SPSS. Data were analyzed after editing, coding and tabulation. This analysis was based on percentages that were obtained to show the relationship between the study variables. As a descriptive study, mean and standard deviation was used to analyze the views of respondents. Furthermore, regression analysis was used to analyze the relationship between electronic banking and financial performance of COGEBANQUE PLC.

Interpretation of the mean and standard deviation

1.00 ≤ μ ≤ 1.74: Very low mean which indicate the fact does not appear.

2.50 μ ≤ 2.49 : Low mean which indicate the fact appears less

2.50 ≤ μ ≤ 3.24: High mean which indicate the fact appears more

3.25 ≤ μ ≤ 4.00: Very high mean which indicate strong evidence of the existence of the fact

σ ≤ 0.5: Homogeneity of responses

σ > 0.5: Heterogeneity of responses

Description of Regression Analysis

To measure the relationship between electronic banking and performance of banks, regression analysis was used to determine this relationship.

Regression analysis was used to establish the relationship between the variables of the

study. In doing so, the following regression model was used: $y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \varepsilon$. where y represents the dependent variable means performance of banks such as profitability, liquidity and financial efficiency; and β_0 = Constant term $\beta_{(1-4)}$ = represent the model parameters or coefficients; x_1 = internet banking, x_2 = mobile banking, x_3 = telephone banking, x_4 =electronic card banking and ε = error terms

Analysis and Interpretation of Data

This section deals with profile of respondents, perception of respondents relating to electronic banking found in COGEBANQUE PLC, assessment the perception of respondents on financial performance and the relationship between electronic banking and financial performance of COGEBANQUE PLC also ratios of COGEBANQUE PLC were presented.

Regression Analysis

Table 4. 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.656	.625	.579	.1254

- Predictors: (Constant), Mobile Banking, internet banking, telephone banking, electronic card banking.

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.625, an indication that there was variation of 62.5% on the performance of COGEBANQUE PLC due to changes in Mobile Banking, internet banking, telephone banking, electronic card banking. This shows that 62.5% changes in performance of COGEBANQUE PLC. A positive relationship between the study variables marked by R=0.656 is shown in table 4.15.

Table 4. 2: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.406	5	0.601	11.418	.000
	Residual	0.526	60	0.526		
	Total	2.93	65			

a. Dependent Variable: Performance

b. Predictors: (Constant), Mobile Banking, internet banking, telephone banking, electronic card banking.

The significance value is 0.000 which is less than 5% thus the model is statistically significant in predicting how the independent variables (E-banking) affect the organizational performance with reference to COGEBANQUE PLC. Decision may be based on the comparison of F-calculated (Fisher value) and F-tabulated. The calculated value

was greater than the F- tabulated value (11.418>3.48) an indication that Mobile Banking, internet banking, telephone banking, electronic card banking. Significantly affect financial performance of COGEBANQUE PLC. The significance value was less than 0.05(0.000<0.05), an indication that the model was statistically significant.

Table 4. 3: Coefficients

Model	Coefficients		
	B	Std. Error	
1	(Constant)	.327	.568
	Mobile Banking	.436	.352
	Internet banking	.754	.322
	Telephone banking	.231	.524
	Electronic card banking	.589	.258

From the data in table 4.17, the established regression equation was:

$$Y = 0.327 + 0.436X_1 + 0.754X_2 + 0.231X_3 + 0.589X_4$$

From the above regression equation, it was revealed that at the zero of Mobile Banking, internet banking, telephone banking and electronic card banking, financial performance of COGEBANQUE PLC would be 0.327. Indeed, this constant called y-intercept is not realistic but it is a needed parameter in the model, this means that even when there is no E-banking in COGEBANQUE PLC will still having performance at that level. Also, a unit

increase in mobile banking would lead to increase in performance of COGEBANQUE PLC by a factor of 0.436, a unit increase in internet banking would lead to increase in performance of COGEBANQUE PLC by a factor of 0.754, a unit increase in telephone banking would lead to increase in performance of COGEBANQUE PLC by a factor of 0.231, and a unit increase in electronic card banking would lead to increase in performance of COGEBANQUE PLC by a factor of 0.589. The study also found that all the p-values were less than 0.05, this indication that all the variables were statistically significant in affecting financial performance of COGEBANQUE PLC.

General conclusion

It should be noted that electronic banking plays a great role in financial performance of banks in

Rwanda. Different electronic Banking System tools like ATM, pay direct, mobile phone banking, debit/visa card payment and E electronic check payment has a great impact on bank performance because they increase profitability, return on equity and loans, improves bank management quality, increase bank asset and promotes bank growth and expansion. For the case of COGEBANQUE PLC, Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.625, an indication that there was variation of 62.5% on the performance of COGEBANQUE PLC due to changes in Mobile Banking, internet banking, telephone banking, electronic card banking. This shows that 62.5% changes in performance of COGEBANQUE PLC. As conclusion E banking contributes to the performance of COGEBANQUE PLC in spite of few challenges like network failures inadequate skills and security issues possess a great threat to the confidentiality and integrity of banks information.

Suggestions

The bank should subscribe to reliable internet providers for effective and efficient service delivery by ATM services because it still appears long queues and system failures and these remain major issues to be resolved, in fact they are using LIQUID TELECOM as internet provider they should improve their activities or they can change shift to axicom networks Rwanda and MTN Rwanda headquarters

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