

**THE IMPACT OF ELETRONIC BANKING ON PERFORMANCE OF
COMMERCIAL BANKS IN JUBA, SOUTH SUDAN**


JOHN MAJOK KORDIT

**A RESEARCH PROJECT PROPOSAL PRESENTED IN PARTIAL
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DECLARATION

I hereby affirm that the work included in this research project is entirely my own and that it has not previously been submitted to any academic institution for the purpose of being evaluated.

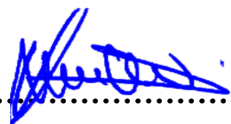
Signed 

Date 18/11/2022

John Majok Kordit

D61/84301/2015

This study proposal has been submitted, and in my capacity as a university supervisor, I have given it my permission.

Signed 

Date 19th November 2021

Dr. Kennedy Okiro

Senior Lecturer

Department of Finance and Accounting

University of Nairobi

DEDICATION

This project is dedicated to my parents and family for their continued support through our education journey. The journey was long but you made me make. Thanks a lot for the financial and spiritual support.

ACKNOWLEDGEMENT

Am inexpressibly thankful to God Almighty for the benefits he has bestowed upon me during my academic path, and my appreciation also extends to our supervisor, Dr. Kennedy Okiro, for his expert direction and help throughout the whole of the project's work. The feedback that he provided helped me enhance the overall quality of my project. Our appreciation is also extended to all of the people who took part in the research and took the time to fill out the questionnaires and contribute to the final products of the projects. Additionally, we would like to express our profound appreciation to the University of Nairobi's Faculty of Business and Management Studies for providing us with this opportunity.

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TABLE OF CONTENTS

| | |
|---|-------------|
| DECLARATION..... | ii |
| DEDICATION..... | iii |
| ACKNOWLEDGEMENT..... | iv |
| TABLE OF CONTENTS | v |
| LIST OF TABLES | viii |
| LIST OF ABBREVIATIONS | ix |
| ABSTRACT..... | x |
| | |
| CHAPTER ONE: INTRODUCTION..... | 1 |
| 1.1 Background of the Study | 1 |
| 1.1.1 Electronic Banking..... | 2 |
| 1.1.2 Banks Performance | 3 |
| 1.1.3 Commercial Banks in South Sudan..... | 4 |
| 1.2 Research Problem | 5 |
| 1.3 General Objective of the Study..... | 7 |
| 1.4 Value of the Study | 7 |
| | |
| CHAPTER TWO: LITERATURE REVIEW..... | 8 |
| 2.1 Introduction..... | 8 |
| 2.2 Theoretical Review | 8 |
| 2.2.1 The Technology Acceptance Model..... | 8 |
| 2.2.2 Diffusion of Innovations Theory | 9 |
| 2.2.3 Theory of Information Asymmetry..... | 10 |
| 2.3 Determinants of Performance | 11 |
| 2.3.1 Customer satisfaction..... | 11 |
| 2.3.2 Customer loyalty..... | 11 |
| 2.3.3 Trust | 12 |
| 2.3.4 Risk..... | 13 |
| 2.3.5 Security | 13 |
| 2.4 Empirical Literature Review..... | 14 |

| | |
|--|-----------|
| 2.4.1 Global Studies | 14 |
| 2.4.2 Local studies..... | 15 |
| 2.5 Conceptual framework..... | 17 |
| 2.6 Summary of the Literature review and Research Gap | 18 |
| CHAPTER THREE: RESEARCH METHODOLOGY | 19 |
| 3.1 Introduction..... | 19 |
| 3.2 Research Design..... | 19 |
| 3.3 Population of the Study..... | 20 |
| 3.4 Data Collection Procedures..... | 20 |
| 3.5 Data analysis | 20 |
| 3.5.1 Diagnostic Tests..... | 21 |
| 3.5.2 Analytical Model | 21 |
| 3.6 Tests of Significance..... | 23 |
| CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION | 24 |
| 4.1 Introduction..... | 24 |
| 4.2 Response rate | 24 |
| 4.3 Reliability Test..... | 24 |
| 4.4 Descriptive Statistics..... | 25 |
| 4.4.1 The Demographic Information..... | 25 |
| 4.4.2 Types of Accounts..... | 27 |
| 4.4.3 Electronic Banking..... | 28 |
| 4.4.4 Banks Performance | 30 |
| 4.5 Correlation Analysis | 31 |
| 4.6 Regression Analysis..... | 32 |
| 4.6.1 Model Summary..... | 33 |
| 4.6.2 Analysis of Variance | 34 |
| 4.7 Discussion of Research findings..... | 36 |

| | |
|---|-----------|
| CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS..... | 37 |
| 5.1 Introduction..... | 37 |
| 5.2 Summary..... | 37 |
| 5.3 Conclusion..... | 38 |
| 5.4 Recommendations for Policy..... | 39 |
| 5.5 Limitations of the Study..... | 40 |
| 5.6 Areas for Further Research..... | 40 |
| | |
| REFERENCES..... | 41 |
| APPENDICES..... | 50 |
| APPENDIX I: QUESTIONNAIRE..... | 50 |
| APPENDIX II: INTERVIEW QUESTIONS..... | 55 |
| APPENDIX III: DATA..... | 56 |

LIST OF TABLES

| | |
|---|----|
| Table 3.1: The Variables of Study | 23 |
| Table 4.1: Reliability Test Cronbach's Alpha | 24 |
| Table 4.2: Gender..... | 25 |
| Table 4.3: Age of Respondents | 25 |
| Table 4.4: Electronic Banking | 28 |
| Table 4.5: Electronic Banking Challenges..... | 29 |
| Table 4.6: Effectiveness of Electronic Banking | 29 |
| Table 4.7: Banks Performance Descriptive Statistics | 30 |
| Table 4.8 Pearson Product Correlation Coefficients..... | 31 |
| Table 4.9: Regression results | 33 |
| Table 4.10: Regression results | 33 |
| Table 4.11: Analysis of Variance..... | 34 |

LIST OF ABBREVIATIONS

| | |
|-----------|--|
| ANOVA | Analysis Of Variance |
| ATM | Automated Teller Machine |
| ADF | Augmented Dickey-Fuller |
| CHQ | Checks Cashed |
| EFT | Electronic Funds Transfer |
| EFTPOS | Electronic Funds Transfer and Point of Sale |
| ICT | Information and communication technology |
| IS | Information Systems |
| IDT | Innovation Diffusion Theory |
| IT | Information Technology |
| OLS model | Ordinary Least Squares |
| ROA | Return on Assets |
| ROE | Return on Equity |
| SERVQUAL | Service Quality |
| SMS | Short Message Service |
| TAM | Technology Acceptance Model |
| USA | United States of America |
| UTAUT | Unified Theory of Acceptance and Use of Technology |

ABSTRACT

Innovations in information technology are the driving force behind the tremendous transformation that commercial banks have been through recently; this change in the nature of these financial institutions is a direct result of these innovations. Recent technological progress in banking has been led by the widespread use of internet banking and electronic banking. In light of the international trend towards mobile and online banking in Kenya. Banking operations are now more efficient and cheaper than ever thanks to the fast development of information technology. This study set out to determine how much of an impact electronic banking has had on the bottom lines of Juba, South Sudan's commercial banks. The research set out to do one thing, and one thing only: assess how much of an effect electronic banking, mobile banking, ATMs, and credit cards have had on the productivity of banks. This performance was evaluated by looking at increased profits, reduced costs, improved customer satisfaction, improved management, and increased bank assets. The descriptive research method used in this inquiry was the most suitable method since it allowed us to evaluate the means, standard deviations, maximums, and minimums of the study's variables. During the course of the investigation, 31 commercial banks in Juba, South Sudan, were under scrutiny. The primary data for the study came from a self-administered questionnaire created by the study's authors. Tables and figures were used to display the results of the SPSS analysis of the acquired data. From the data, it seems that commercial banks that implement electronic banking services have a greater chance of succeeding. The findings of the research demonstrate the many advantages of transitioning to electronic banking, such as higher revenues, cheaper expenses, more effective management, more satisfied consumers, and greater capital outlays. The efficiency of the electronic banking system was evaluated by analyzing data on mobile banking, automated teller machine use, and credit card transactions. The research found that commercial banks in Juba, South Sudan were much less profitable after implementing electronic banking compared to before. Credit Card, Mobile Banking, ATM, and Electronic Banking were used as independent variables; their value of R Squared was 0.194, indicating that they accounted for 19.3% of the total variance in the dependent variable, Performance. According to the findings of the research, commercial banks should prioritize the expansion of internet infrastructures throughout the country so that a greater number of individuals may have access to financial services regardless of where they happen to be located. The research also suggests that commercial banks should develop new online banking services to cater to the requirements of customers, such as financial planning, mortgage finance, and instruction on how to make the most of the available internet banking services.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

When compared to the existing standard of banking services, electronic banking represents a quantum leap forward because of the remarkable ease with which clients may handle their financial activities. Over the course of the last several decades, each and every bank, and notably the larger banks and credit unions, has progressively extended the amount of online banking services that are offered to their respective consumers (Momeni, 2013). Technology advancements in electronic banking, especially the online banking channel, have led to the emergence of new ways of handling monetary transactions. An increase in internationalization, mergers, acquisitions, and consolidation within the banking sector has contributed to a more unstable and competitive global financial environment. The growing internationalization of this sector is one of its distinguishing features (Muhammad, Akin & Abdul, 2015). That's why it stands to reason that banks can run more smoothly when more customers utilize online banking. ICT usage has significantly altered company processes and worker activities. In today's banking system, customers have access to a variety of non-traditional and electronic banking tools, including ATMs, telephone banking, PC banking, and internet banking; all of these services go under the umbrella term "virtual banking" (Narteh, 2014). Importing data into personal accounting software is another capability that is typically exclusive to electronic banking and is considered to be one of its defining characteristics. Some online banking systems provide account aggregation, which enables clients to keep track of all of their financial holdings in an one location, regardless of whether the accounts are held with the customer's primary bank or with other financial institutions.

This research will draw support from three theories namely technological acceptance model, diffusion innovation theory and theory of information asymmetry: The technological acceptance model is the first hypothesis that is taken into consideration. This model describes an organization's purpose to embrace a technology as a modality to carry out an activity that has traditionally been done in a different way. Rogers is the one who conceived up the hypothesis (1983). The term "diffusion of innovations" refers to the process through which new ideas and products gradually spread across a market over time. In 1962, Everett Rogers established this

idea to highlight the process that inventions go through before they achieve their optimum usage in their particular markets and then begin to decrease when other innovations become competitive in the market. The theory believes that the elements that affect the dissemination of innovations include communication channels, the kind of invention, early adopters, the social system, and time (Akca & Ozer, 2014). Akelof, Spence, and Stiglitz are credited with the development of the information asymmetry hypothesis (1970). If one participant in a transaction has more and better knowledge than the others put together, there is an information imbalance, as suggested by this theory. An examination of how business decisions are made is at the heart of this approach. It is claimed that inefficient market functioning and even market failure may occur when buyers and sellers have different levels of knowledge about a transaction.

To determine how widespread an effect electronic banking's advent has had on bank efficiency in South Sudan, researchers will collect data from 31 separate banks around the country. It takes less time to conduct transactions, allows activities to be finished more rapidly, and provides access to financial services around the clock, as stated by Bander and Charles (2006), two of the many advantages of utilizing online banking. Customers in South Sudan, for example, were had to travel extensive distances and spend time and energy lining up at the bank in order to withdraw amounts of 500 or 1000 SSP between the years 2006 and 2010 (South Sudanese Pounds). Customers appreciate online banking because it saves them time and effort by allowing them to manage their finances without making a trip to the branch. Internet banking is only one example of how ICT has revolutionized the way financial institutions operate over the last two decades. The introduction of online banking was another factor that contributed to the quick expansion and development of the financial industry, which helped propel it to become one of the most successful industries in the world (Kumar, 2012).

1.1.1 Electronic Banking

Mohammed (2019) coined the phrase "electronic banking" to describe the use of technology like computers and telephones to conduct financial transactions that would otherwise need human intervention. Yaseen and El item (2018) claim that it serves several purposes, such as facilitating the acquisition of retail finance and the introduction of an automated payroll system. The umbrella term "Electronic Financial" now encompasses a wide variety of banking options,

including mobile banking, internet banking, electronic notifications, and text message banking (The 2020). It is possible to undertake time-saving customized transactions using electronic banking; nevertheless, the security risks associated with doing so have been recognized for clients (Khatoon, Zhengliang & Hussain 2020). The definition proposed by Mohammed (2019) is used in the present investigation. This definition places an emphasis on face-to-face communication and bank efficiency.

Since customers can now monitor their accounts and make payments online, cash is becoming more unnecessary in our increasingly cashless environment. Basic forms of electronic banking include the use of ATMs, deposit machines, and the internet (Aduda & Kingoo, 2012). In 1918, the Fedwire payment system enabled the transmission of funds electronically through telegraph between banks, marking the beginning of the widespread usage of electronic funds transfer (EFT). This is now the standard procedure, since more and more financial dealings are made electronically between institutions. Franklin and Philip Johnson were the first people to coin the term "electronic funds transfer" (2002). Consumers in many affluent nations are increasingly adopting electronic payment systems, although the majority of people in less developed countries continue to rely on paper-based check clearing procedures.

1.1.2 Banks Performance

Effectiveness, as defined by Fitzgerald (1991), is a company's capacity to meet the needs of its target market at a given time, while efficiency is defined as the extent to which it does so while incurring the fewest costs possible and realizing the greatest possible gain. Therefore, financial institutions will undoubtedly have an impact on performance if they adopt electronic banking and in the long run to achieve sustainable long-term improvements.

The term "bank performance" is often used to describe a financial institution's success or failure over a certain trading period. The public financial accounts are likely the sole source of information on this matter. In order to fairly evaluate a bank's performance, it must first be determined whether or not it has achieved the objectives established by its management and shareholders, as stated by Mazana et al. (2016). Many different financial institutions all work toward different ends. Some choose a more sedate existence, reducing risks and giving the

impression of a stable bank while reaping small benefits for their shareholders, while others seek rapid expansion and a substantial growth target. Reference: (Akhisar et al., 2015). Therefore, this study will measure organizational performance using metrics such as inventory turns, leverage ratios, sales, and normal accumulation periods.

It is usually assumed that stock prices and their behavior reflect a company's performance. This is only an indication of the market and its accuracy cannot be guaranteed. Possibly more telling indicators of success are the bank's size, the quantity of deposits it has received, and its profitability. A bank's efficiency may be measured by financial indicators like ROE and ROA. The effectiveness and achievement of a company's management may be measured by these metrics. According to research done in Africa, the use of electronic banking has increased bank efficiency and production. These studies were conducted in Nigeria (Oyewole et al., 2013) and Kenya (Okiro et., 2013). In light of this background, this research proposal seeks to assess how electronic banking has influenced commercial banks in South Sudan.

1.1.3 Commercial Banks in South Sudan

The Bank of South Sudan, founded in 2011 under the interim constitution of the Republic of South Sudan, is responsible for supervising the country's financial system (Bank of South Sudan Act, 2011). A meager 2.22 percent of South Sudanese citizens use formal banking services in 2015, demonstrating that the country's financial infrastructure is still developing (Ajack, 2015). There are 30 commercial banks with 42 branches in the country. The banking business is concentrated in the capital Juba. International banks dominate 80% of the market and enjoy a regional network that allows them to conveniently move money within the East African region and beyond.

In 2016, a new regulation on minimum capital requirements, tightened banking regulations and compliance, inaccessibility of foreign currency deposits at the Bank of South Sudan, intensification of civil war, devaluation and liberalized exchange rate regime, and hyperinflation contributed to the rapid and significant downturn in the banking sector (Laddu , 2016). The pre-existing weak legal framework and framework, the culture of savings, increasing poverty among the population and the erosion of investment confidence continued to pose challenges to banking, limiting banking services to deposits and withdrawals, short-term lending, foreign exchange and remittance services (World Bank, S, Sudan, 2020). Financial institutions in South Sudan confront

a number of obstacles, such as fraud, theft, severe rivalry, changing client expectations, and innovative technologies (Ajacki, 2015). Because of these threats, commercial banks have researched, adapted, and implemented new technologies and managerial methods to save costs and improve quality (Hammoud et al., 2018). Therefore, the purpose of this research is to try to put a number on the significance of electronic banking as described by the Return on Equity.

1.2 Research Problem

Due in large part to the proliferation of online banking, the way financial transactions are conducted have evolved dramatically (Black et al, 2001). The various online banking options now available to users are a huge time-saver. Since the introduction of ATMs in the late 1960s, consumers have had the option of conducting financial transactions electronically (Akindele and Rotimi, 2014). With the advent of internet banking, users and banks may conduct transactions from any location. In turn, this broadens the pool of people who could use the bank's services. The globalization of banking made possible by electronic banking, however, presents substantial challenges for authorities tasked with ensuring compliance with financial regulations (Abraham, 2012).

The financial sector in South Sudan plays a crucial role in economic growth and especially towards achievement of Vision 2030. In South Sudan, financial institutions, and particularly banks, have increased their digitization efforts, with the goal of improving their network base, increasing their customer base, competing favorably with their peers, and improving their organization performance. Despite all of this increased digitization, some banks have shown a drop in organization performance, while others are under statutory management, which is why the government of South Sudan has taken steps to improve the financial sector. In addition to the ongoing struggle amongst commercial banks in South Sudan for customers, they also have to contend with a growing number of digital borrowers in the country's market (Koki, 2018). Therefore, South Sudan is a perfect scenario in which to assess whether or not the adoption of electronic banking has an impact on the overall performance of banks.

Although there have been international studies in this field, they have mostly focused on certain elements of electronic banking and how they correlate to other variables. According to Jagathi's (2021) research of the effect of ATMs on Indian banks' bottom lines, the introduction of these machines had a positive effect. Hossain (2021) examines how the use of electronic banking

technology by state-owned commercial banks in Bangladesh has affected the financial success of these establishments. He concludes that the convenience of online banking has helped boost the financial institutions' bottom lines. Technology-based financial services in Nigeria were studied by Okoye, Omankhanlen, Okoh, and Isibor (2018) to see how they affected consumer satisfaction. According to the findings of the research, the use of online banking seems to have contributed to an increase in consumer satisfaction in Nigeria. Different social and economic conditions meant that each study had to be designed and implemented differently, making it impossible to generalize results to the current situation.

The volatile political climate in South Sudan is a significant obstacle for the nation's banking industry, which is the primary reason for this. The banks in South Sudan are taking a significant stride forward by investing in the development of cutting-edge technology with the intention of enhancing the concept of electronic banking in order to guarantee a high level of operational efficiency. There is also established competition, which allows financial institutions the chance to enhance the delivery of their services, produce the highest possible level of service, and increase their overall efficacy. However, civil conflict and instability have consistently slowed the development of vital infrastructure such as the internet. As a result, the capacity of South Sudan's banks to embrace and execute electronic banking has been hindered. Because of its emphasis on online banking rather than traditional banking, this research leaves a vacuum in our understanding of bank efficiency.

This study is motivated by the increased adoption of electronic banking. Electronic banking is expected to enhance bank's performance. There have been earlier studies done in this field, however there are still some holes in the study. To begin, the bulk of the studies that have been carried out in this region have operationalized financial technology in a variety of different ways, with the majority opting for a limited definition. This presents conceptual gaps that the current study intends to fill. There are also methodological gaps that arise from previous studies conducted locally; most of them were conducted for a short period of time (mostly five years) which might not be adequate to capture the impact of electronic banking on bank performance. The current study will consider a 6 year period with data collected quarterly. Additionally, the majority of local research have used primary data, but the present study will utilize secondary

data, which is more objective. This research intends to address these gaps by analyzing the effects of electronic banking on the efficiency of banks in South Sudan.

1.3 General Objective of the Study

The general aim of the study will be to investigate the impact of electronic banking on performance of Commercial Banks in Juba.

1.4 Value of the Study

Management in Commercial Banks and other interested parties will benefit from this study since it will shed light on the potential of Electronic Banking Services to both meet consumer needs and improve the efficiency of financial institutions.

The survey's findings will help us learn more about customers' attitudes on online banking, as well as what financial institutions can do to capitalize on opportunities and overcome challenges.

Our current understanding of electronic banking and bank performance in financial institutions will be expanded thanks to this study, and future research into similar issues will be sparked by it.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section of the study is devoted to a review of the relevant theoretical frameworks and empirical investigations that have been undertaken in the same or related domain. In addition, a theoretical structure is presented in this chapter to help readers visualize the expected connections between variables. When everything is said and done, this chapter will have provided a synopsis of prior studies.

2.2 Theoretical Review

Globalization is the trend that will define the 21st century, which will be shaped by the technology revolution. The internet has revolutionized many sectors of the business world. Organizations in the modern day are not given the choice to do transactions online; rather, they must (George, 2011). The usage of internet-based systems for promoting and purchasing products is only one example of how electronic banking has been integrated into many types of business activities in recent years. Given that the majority of commercial activity now takes place online, the phenomenal expansion of the internet is causing a sea change in the manner in which companies interact with their clientele. Internet banking, also known as electronic banking, is a service that is heavily leveraged through the medium of the internet and is known as internet banking. This adoption of e-commerce as a method of making payments is what has driven banks to make the leap away from traditional banking services and offer internet banking. Because of this, banks now have the opportunity to encourage clients, who in turn encourage other customers to continue banking with them (George, 2011).

2.2.1 The Technology Acceptance Model

This hypothesis sheds light on the degree to which businesses and their clients are willing to integrate information technology into their daily operations. This idea was established and put into practice by the theorists Fred Davis and Richard Bagozzi, who were interested in determining the degree to which consumers perceive the usability and utility of technology (Taherdoostab, 2018). When we speak about the perceived utility of a piece of technology, we're referring to the ease with which individuals or groups may improve their efficiency by using it.

On the other side, the perceived ease of use is a metric for gauging how quickly and easily individuals or groups can adopt new technology systems. Because banks employ information technology systems known as electronic banking techniques to provide services to their customers, TAM may find usage in the banking industry. All modern banks now provide some kind of agency banking, mobile banking, ATM banking, and online banking; nevertheless, the adoption rates of these advances vary widely amongst financial institutions (Johnstone, 2010). In addition, consumers have access to a variety of financial service techniques at their preferred consumption levels via the use of electronic banking. Mobile banking, banking via agencies, and automated teller machines (ATMs) are major drivers of performance and profitability in the banking business in South Sudan (Furst et al., 2015; Jegede, 2014). As a result, the theory contributes to the estimation, prediction, and justification of the acceptance or non-acceptance of new information and communication technology platforms like online banking. For instance, this hypothesis contributes to an explanation of the difficulties caused by decreased financing for online media. In point of fact, it provides manufacturers of electronic banking products with a measure of both the product's level of client acceptability and the product's ease of use.

2.2.2 Diffusion of Innovations Theory

This theory attempts to explain how new inventions gradually diffuse across the market over the course of time. In 1962, Everett Rogers established this idea to highlight the process that inventions go through before they achieve their optimum usage in their particular markets and then begin to decrease when other innovations become competitive in the market. According to the author of the theory, the elements that affect the spread of innovations include communication routes, the kind of invention, early adopters, the social structure, and the passage of time (Akca & Ozer, 2014). It is essential for new ideas to be easily transferable to the target market that they are intended for. Adoption requires a large amount of time, there should be a reliable communication channel, there should be a significant number of consumers who adopt them in order to make their usage successful, and the social structure should support adoption. In addition, the process of adopting innovations is a five-step procedure that includes educating, convincing, evaluating, putting the plan into action, and confirming the results.

Banks in every region have employed e-banking strategies, but to varied degrees due to differences in technology, economic development, regulatory frameworks, and social structures.

Al-Jabri and Sohail (2012) argues that the perception of these characteristics by an organization affects the degree of breakthrough technology adoption. If an organization realizes the benefits arising from innovation, these innovations will be taken into account when additional technologies are available. Innovation is quicker adopted in companies having internet access as well as information technology than in those lacking. The hypothesis is based on the present research, which shows how innovations are taken up by financial institutions. This theory is appropriate to the research as it aids in comprehending how adoption of electronic banking is taken up by financial firms and how this influences performance of banks.

2.2.3 Theory of Information Asymmetry

Akelof, Spence, and Stiglitz (1970) are credited with the development of the theory of information asymmetry. According to this hypothesis, there is an inequitable distribution of both the quantity and the quality of the information that is possessed by the parties involved in a transaction when one of the parties has more than the other parties. The process of decision-making inside businesses is investigated by this idea. It is claimed that market inefficiencies and even market failure may result from information asymmetry, which occurs when buyers and sellers have different levels of knowledge about a given transaction.

Problems with adverse selection and moral hazard might arise when there is asymmetry in the information. Since the borrower does not have any idea of the lender's character traits, negative selection develops as an asymmetric information problem before the deal ever takes place. It is due to a lack of knowledge that this issue has arisen. The event known as moral hazard takes occur after the transaction has already taken place, and it is connected to the incentives that are placed on the side of lenders to act in an opportunistic manner. One potential use of the theory in this investigation is to explain the elements, such as complexity and operator training, that drive up the price of the technology and the electronic system. The supplier of the system is responsible for providing services related to system maintenance as well as training for personnel who will be operating the system. The use of this technology has shown to be very beneficial for large financial institutions, but it is proving to be prohibitively costly for smaller financial institutions, making it difficult for such institutions to achieve profitability. This theory is appropriate to the research as it aids in comprehending how the adoption of electronic banking is taken up by financial firms and how this influences bank performance.

2.3 Determinants of Performance

As the need for electronic banking grows and more people start to use it, more and more financial institutions are coming to realize the numerous advantages it provides, including relatively low risk, high returns, and low cost.

2.3.1 Customer satisfaction

According to Turunen (2011), consumers are considered satisfied with a company's products and services if they perceive that the company's offerings meet or surpass their expectations. However, the customer's impression is the starting point of the real service experience, and the customer's expectations are utilized to set the performance that the service is measured against. The customer gap is the disjuncture between what customers think they want and what they actually get. In addition, because of this distinction, the client was unhappy with the service. Companies must need to make it a priority to concentrate on the contentment of their consumers, since this fosters a healthy connection between the company and its clients.

Customer satisfaction with online banking in Ghana's banking industry was explored and analyzed by Nimako et al. (2013). The authors handed out a survey questionnaire to 200 customers and users at two separate banks, and their responses formed the backbone of the research (Merchant Bank and Ghana Commercial Bank). Customers were unhappy with both banks because of factors such as the amount of time it took for them to react to their enquiries, the high charges of utilizing the banks' online banking services, and the overall lack of response from the banks themselves, according to the stud.

2.3.2 Customer loyalty

A customer's loyalty may be gauged by how often they purchase a company's products or utilize its services over time, as stated by Irfan et al. (2016). And financial institutions have a responsibility to actively seek out new clients and maintain ongoing relationships with those clients. A number of alternative definitions of customer loyalty were proposed by Ticharwa (2017). One of the most potent long-term levers financial organizations have over their consumers is customer loyalty, or the likelihood that a customer would continue to use the

institution's services. According to Ahmed, Hamid, Mohamed, Alabsy and Mukhtar (2018), focusing on fostering customer loyalty in the context of competition means giving customers joy.

According to Bezhovski (2016), argues that two concepts determine customer loyalty. First is action. The customer's response to repeatedly buying products or services from a certain bank is referred to as the customer's behavior. On the other hand, conduct refers to the client in the context of their real actions. Money influences transactions because it may be used as a proxy for the loyalty of the buyer or seller, but mood has no effect on either. Behavior is not related to the state of mind. Second, the mentality connected with the consumer's conviction that they are unable to acquire goods or services from a variety of providers. Attitude loyalty is when you tell others that your customers have a positive feeling about the company's brand. Customer loyalty is driven by customer retention.

2.3.3 Trust

Yu et al. (2015) gives a definition of trust as the desire to see others based on their beliefs, expectations, feelings, and perceptions that they play a role in the interests of those they trust. Another definition of trust in internet banking is customer demand. Because the customer is confident, he trades on the bank's website. When seen from an economic standpoint, trust may be viewed as a means of lowering transaction costs and lowering consumer risk expectations. The electronic environment contains some ambiguity, say Chiou and Shen (2012). Because of this, computerized trading has become more synonymous with trust than its more conventional counterpart. The research found, trust has an impact on Internet banking services and should be taken into account about risk and uncertainties.

According to Ibrahimi et al. (2016), understanding consumer behavior in relation to online banking transactions is significantly aided by having an adequate level of trust. Since trust has such a direct and lasting effect on the success of online banking, it is among the most crucial variables to examine. The degree of service satisfaction and customer happiness is most impacted by the usability and simplicity of online banking, a kind of e-commerce offered by banks to their customers. Customers are more likely to put their faith in a business if they have a history of positive interactions with that business, as reported by Ahmed, Hamid, Mohamed, Alabsy, and Mukhtar (2018). Research shows there is a solid link between reliability and high

standards. Furthermore, there is a strong and meaningful connection between trust and devoted customer base.

2.3.4 Risk

According to Wu et al. (2014), when classifying the lack of knowledge and danger associated with online banking, a key issue that discourages consumers of Singapore banks from utilizing internet banking is the absence of information technology and resources. Intensifying rivalry, danger of technological obsolescence, electronic financial portals, security and trust difficulties, usage and learning of new technologies, and website upgrades are the hazards of online banking that are described based on Anesti (2004). The study's results show that most financial institutions face many obstacles that may eventually cause a decline in the number of clients who utilize online banking. These challenges include concerns over confidentiality and the possibility of being targeted by criminals.

However, reputational risk is a major loss that occurs from a bank's poor reputation. This loss has the impact of diminishing the bank's bottom line, which may raise reputation risk since systems and products do not work as planned. There is a potential for disaster to occur as a result of human mistake, fraudulent activity, and hacking from both within and outside the company. This kind of danger has nothing to do with the reputation of the bank and is instead something that affects all systems that have secure connections. The possibility of legal repercussions is another risk that might affect banks' profitability. When financial institutions break the law, they put themselves in legal jeopardy, which might have an adverse effect on their bottom line. The provision of Internet banking services is fraught with legal dangers, including risks to customers' privacy and the disclosure of sensitive information.

2.3.5 Security

Internet banking users place a high value on security, accuracy, speed of transaction processing, user-friendliness, participation, and overall happiness with the service, according to research by Agarwal et al. (2009). Research by Marakarkandy (2017) informs the TAM model, which prioritizes security and privacy when it comes to online banking data with five other factors: perceived pleasure, quality of service, perceived utility, learning ease of use, and perceived difficulty.

Hoelhe et al. (2012) found many correlations between consumer expectations and their likelihood to buy a bank's product or service. Customers' expectations of the bank are influenced greatly by a number of variables, and safety is often a major one. The Internet has an impact on the economy. This is true even in circumstances in which individuals believe the electronic system provided by the bank to be safe and secure; in such circumstances, individuals will find it convenient and satisfying to use internet banking provided by secure banks. Customers' worries about the safety of their financial transactions and their faith in mobile banking are exacerbated by the fact that they must utilize a network server, which is vulnerable to hackers and other cybercriminals and may be infected with malicious software like trojan horses. According to Zhou (2012), offering consumers Internet banking was extremely easy and comfortable, and incorporating mobile banking into Internet banking services was difficult because of the unsecured and dubiously monitored network server that would be a target for hackers and others.

2.4 Empirical Literature Review

Studies conducted on a regional as well as a worldwide scale have shown a correlation between the use of electronic banking and the profitability of banks; the aims, methodologies, and results of these studies are examined.

2.4.1 Global Studies

In his article, Shrimali (2015) compared and contrasted traditional brick-and-mortar banking with online banking in terms of client satisfaction. Saeidipour et al., (2013) The worth of a bank may be increased in a number of different ways by its online division, and these methods vary depending on whether or not the bank chooses to establish traditional branches (banks with brick and mortar sites) or exclusively internet banks. Bill payments, account transfers, credit card lending, and balance enquiries are all examples of minimal value-added business activity that may be completed via the more cost-effective online channel. This is the essential perspective of internet banks exclusively. Nevertheless, there are important value-added activities that may be accessed via the branch channel. Some examples of these activities are client loans for small enterprises, personal trust services, and investment banking. A quiz concerning bank websites was created by May, Stella and Trey (2017) to better identify web model types. In the United States, banking is permitted. In his investigation, he zeroes in on the fact that the vast majority of

banks in the United States provide their clients transactions that fall somewhere between the most fundamental and the most intermediate levels of service. According to the findings of the survey, however, banks in the United States utilize online banking to acquire information from three distinct categories: marketing information; the transfer of goods and services by banks; and the improvement of client relationships. This research was carried out in the USA, which has a distinct cultural and economic environment in comparison to South Sudan.

Customer happiness may be affected by a number of different variables, as Choudary (2013) explains in his study of the Internet banking system's influence on customer satisfaction. The author uses quantitative data to gather clients and explain these variables. He conducted a study with a sample size of 250, and his findings point to four main contributors to excellent service. The following is what happy customers stated when asked a question about their online banking experience: Five hundred and fifty of them reported being most pleased with mobile banking, whereas only 28% reported being most satisfied with branches and 13% with ATMs, 2% with internet banking, and 2% with customer service. The data show a favorable relationship between service quality and customer and financial institution outcomes. The research was place in India, which provided a cultural and economic setting that was different from that of South Sudan.

2.4.2 Local studies

There is a favorable correlation between bank performance and demographic traits, and c, according to the data received from consumers. Gondar uses the same questionnaire design to gather data from 402 answers given by customers at 12 commercial banks and 20 locations to examine the effects of electronic banking on bank performance and conduct a case study of Ethiopia. A total of 264 surveys were sent out to those who frequently use online banking, and the results are heavily weighted toward quantitative data. The creators of SERVQUAL, however, identified five key characteristics: dependability, responsiveness, security, empathy, and tangibility. This research neglected other aspects of online banking and hence has a theoretical void.

Juma (2013) conducted research on how electronic banking services affected customer service in Bungoma County. Aduda and Kingoo also looked at how using the internet to bank affected the profits of commercial banks in Kenya (2012). Ngigi (2012) looked into the barriers that prevented electronic banking from being implemented by Kenyan commercial banks, and

Kaburu (2010) studied the current state of electronic banking in Kenya. Similarly, Maitha (2010) evaluated the function of Kenyan commercial banks in promoting international trade. In his 2001 research, Mustafa analyzed the state of the emerging banking sector in Sudan and broader trends in electronic banking. The study presents a conceptual gap as bank performance was not taken into account.

Online banking and financial institution efficiency in Kenya was the subject of a study by Okiro and Ndungu (2013). The findings of the study indicate that banks in Kenya that have abandoned the use of e-banking have improved their overall performance by means of increasing levels of both efficiency and productivity. Research by Machogu and Okiko (2015) revealed that e-banking is about consumer engagement. The results show that there are factors that promote customer loyalty, especially in electronic banking, resulting in banking performance, which is one of the most important and rapidly developing methods of banking. Kingoo (2011) examined the connection between these three factors and the dependent variable of ROI. The three independent variables were consumer debit card issuance, ATM density, and electronic banking spending. Twenty-six distinct Kenyan commercial banks were analyzed in this study. Given that the main concern of this investigation was the efficiency of banks, a theoretical void.

The impact of electronic banking on Kenya's commercial banks was analyzed by Ogare (2013). The research's specific goal was to ascertain whether or not profit after tax is correlated with factors such as the availability of automated teller machines, the distribution of debit and credit cards, the density of retail outlets accepting these cards, and the prevalence of mobile and online banking and payment methods. Not all elements of electronic banking were covered in the research, and this leaves a hole in our conceptual understanding, especially with card and electronic payment at the point of sale.

Internet banking, according to a poll of 31 Kenya Commercial Bank staff, boosts bank performance by shortening transaction times and bettering service quality (Kombo & Wafula, 2015). Systemic effectiveness of the financial sector (Furst et al., 2015). Having access to the internet, say Furst et al. (2015), has had a significant impact on the Kenyan economy's financial sector. This is due to the fact that clients no longer need to physically visit banking rooms in order to complete foreign financial transactions thanks to the internet. Njoroge and Mugambi (2018) also found that online banking is a strategic instrument that helps financial institutions

save time and money by streamlining processes and reducing the need for paper. As a result, there is an increasing adoption of internet banking, which enables businesses to manage and reduce costs. This research concentrated on strategic tools and therefore need for a study focusing on the bank performance as a whole.

2.5 Conceptual framework

The anticipated connection between the components is shown in Figure 2.1. The frequency with which financial institutions engage in electronic transactions such those made by ATM, mobile banking, internet banking, telephone banking, and electronic card banking is predictive of these beneficial outcomes when other factors are kept constant. A number of interrelated elements contribute to the success of an information technology infrastructure, such as access to a sufficient network, a stable internet service provider, competent users, supportive policymakers, and an adequate supply of energy. The efficiency of financial institutions is the criterion variable.

Independent Variables

Dependent Variables

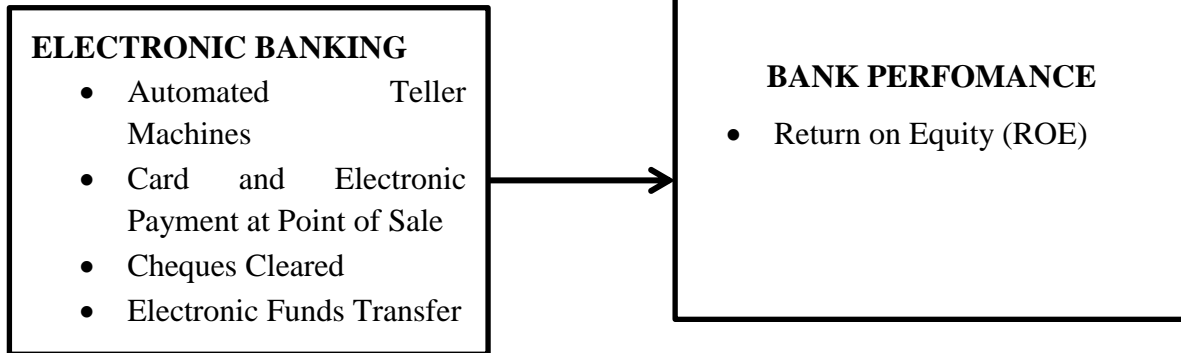


Figure 2.1: Conceptual framework

Source: Researcher's own model (2022)

2.6 Summary of the Literature review and Research Gap

According to the theoretical research, the use of electronic banking has been linked to higher levels of efficiency inside financial organizations. Considerable effort has been put into identifying and analyzing factors that might make or break a bank. It is clear from the papers that were examined that further research is required. The examined research draw different results on whether or not electronic banking improves bank performance. Conceptual, contextual, and methodological limitations account for the discrepancies across research.

In terms of theory, most regional studies have used various operational definitions of electronic banking, with the vast majority opting for a narrow one. This presents conceptual gaps that the current study intends to fill. There are also methodological gaps that arise from previous studies conducted locally; most of them were conducted for a short period of time (mostly 2 years) which might not be adequate to capture the effect of electronic banking on bank performance. The current study will consider a 5 year period with data collected quarterly. In addition, the majority of previous regional research have used primary data, while the present investigation will make use of secondary data, which is more neutral.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section details the methodology used throughout the study. Firstly, the research strategy is outlined; this is crucial because, as stated by Sekaran and Bougie (2016), a well-thought-out research design is one of the most crucial parts of any study..

3.2 Research Design

According to Creswell and Crewsell (2018), the research design is the most important tool for outlining the procedures necessary to finish the research. This hub gives you a quick rundown of what's going on. According to Kothari (2014), a research design is a comprehensive plan for carrying out the study. The research design is the overall strategy for a study that details the methods of data collection, measurement, and analysis (Cooper & Schindler, 2010). It's important to note that a research design is a well thought out and organized strategy for conducting a study (Sekaran and Bougie, 2016).

This is a descriptive research that makes use of secondary sources of information. Information that has previously been collated and is accessible from other persons or sources with no or little limitations is known as secondary data (Gupta, 2018). Secondary research is done for the purposes of prospecting or sourcing; specifying needed data, facts, and correlations between variables; and, ultimately, employing information technology to determine patterns based on the data acquired (Gupta, 2018). Therefore, secondary information is less expensive, takes less time to get, and involves fewer tasks. In order to give insightful commentary on the material, it was necessary to make use of statistical analysis due to the fact that the data were provided in numerical form. Inferential statistics like t-tests, ANOVA, and regression analysis might also be included here. The mean, the median, and the standard deviation are all examples of descriptive statistics that fall under this heading. This plan is appropriate because it will help the researcher make fair comparisons between the study's findings and provide light on the who, what, where, and how questions.

3.3 Population of the Study

A population is everything that is examined in order to generalize the findings, as described by Saunders, Lewis, and Thornhill (2019), who write that a well-defined collection of people, services, objects and events, groupings of things or houses constitutes a population. A population, according to Lumley's (2014) definition, is a bigger collection of all participants from whom a sample is obtained. Use it to refer to a large collection of people, events, or items that share some characteristic. The present research considered all commercial banks to be part of its population. This is made up of 31 Commercial Banks in South Sudan and each bank will received a total of 5 questionnaires which will give us a sum total of 155 sample questionnaires distributed.

3.4 Data Collection Procedures

Both secondary and primary sources were used in the investigation. The bank's annual reports served as a secondary source of information (2017 to 2022). These reports are meant to provide supplementary information for assessing the impact of electronic banking channels on the bank's performance. Quantitative data on the effect of banks' use of electronic banking channels on their bottom lines may be extracted by poring into their financial reports from the past. The return on equity is a useful metric for approximating a bank's performance; it may be calculated with access to the institution's financial statements and annual reports. Additional financial data on various e-banking proxies is also obtained from commercial banks around the country. These include costs and commissions associated with ATMs and cards (including debit and credit), fees and commissions associated with mobile banking, and fees and commissions associated with internet banking. Additional secondary material pertinent to the investigation will be gleaned from previously released papers and articles found online. The main data will be obtained from the respondents via the use of a structured questionnaire which will contain both closed and open questions.

3.5 Data analysis

Analyzing the results of a survey or experiment, together with the observations and hypotheses that might be drawn from them, is what is meant by the term "data analysis" (Kombo & Tromp, 2016). According to Mugenda & Mugenda (2014), quantitative analysis comprises the presentation and interpretation of numerical data, including descriptive and inferential statistics.

Instead of only concentrating on the "what," "where," and "when" of a scenario, qualitative analysis seeks to get a thorough understanding of the research study and its explanation, as well as to delve into the motivations and processes that underlie decision-making (Mugenda and Mugenda, 2014).

Mean and standard deviation were calculated using descriptive statistics for each independent variable. Inferential statistics were used in both the correlative and predictive analyses. The correlation and regression coefficients and their corresponding etiologies were utilized to quantify the degree of link between the variables of the research and identify the causes of that association. The degree of dependency between the dependent and independent variables was explored via the use of multiple linear regressions.

3.5.1 Diagnostic Tests

In order to guarantee that multiple regression models are accurate, it is common practice to include a number of assumptions. For the purpose of analyzing this research, the multiple regression approach, which was also used by Aduda and Kingoo (2012) to investigate electronic banking and bank performance in Kenya, has been applied. The Augmented Dickey-Fuller (ADF) unit root test is initially used in order to determine whether or not the variables are stationary. The ADF test is carried out on the presumption that the error terms are associated with one another (Gujarati, 2009).

Relevant diagnostic test for this study will include; Durbin-Watson test, descriptive statistics, stationary tests, and autocorrelation and regression analysis.

3.5.2 Analytical Model

$$Y = \alpha + \beta_1 X_{it1} + \beta_2 X_{it2} + \beta_3 X_{it3} + \beta_4 X_{it4} + \epsilon \dots\dots\dots$$

Where:

- Y = Performance of commercial banks on ROE
- α = Constant
- $\beta_1 - \beta_4$ = Beta coefficients
- X_1 = Automated Teller Machine
- X_2 = Card and Electronic Payment at Point of Sale
- X_3 = Cheques Cleared

X_4 = Electronic Fund Transfer

ε = error term

The return on equity (ROE) at the conclusion of each Y-quarter will serve as the dependent variable in this analysis of the bank's performance. Below, Table 3.1 summarizes the variable measures and the signs to which they are predicted.

Table 3.1: The Variables of Study

| Types of variables | Variables | Measurements | Expected Sign |
|--------------------|-----------|--|---------------|
| Dependent | ROE | Net income/Equity Capital | |
| Independent | ATMs | Number of ATM outlets installed by commercial banks in South Sudan | + |
| | EFTPOS | Number of cards and EFTPOS outlets in South Sudan | + |
| | CHQ | Volume of cheques cleared from commercial banks in South Sudan | - |
| | EFT | Volume of EFT transactions made in South Sudan | + |

3.6 Tests of Significance

The relevance of the overall model as well as the variable will be determined via the use of parametric tests. The F-test and the ANOVA will be used to discover whether or not the model is relevant; on the other hand, the t-test will be used to determine whether or not each variable is relevant.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The study's primary goal was to determine whether or not electronic banking has improved productivity at Commercial Banks in Juba. The research summary includes the following parts detailing the study's findings: Data analysis, statistical description, correlation, regression, outcomes, and commentary. When presenting the results, we made use of things like percentages, frequency distributions, mean values, standard deviations, and correlation values.

4.2 Response rate

As presented in figure 4:1 below, the study targeted 31 commercial banks in Juba South Sudan. Data was obtained and analyzed from 150 respondents of the target population. From the analysis more than 50% of the respondents were able to complete the data collection form as required, therefore adequate for reporting (Mugenda & Mugenda, 1999). The percentage of respondents that provided all required information for analysis might be thought of as the data completeness rate. Based on the results of the study, which showed that 150 (97%) of 155 questionnaires given were completed and returned, it was judged that this return rate was sufficient for the research.

4.3 Reliability Test

In order to carry out the reliability analysis for the study, Cronbach's statistics were applied. If an alpha score in Cronbach is more than 0.7, this suggests that the data were reliable. The findings are shown in the table 4.1 that can be found further down on this page.

Table 4.1: Reliability Test Cronbach's Alpha

| Cronbach's Alpha | N of items |
|------------------|------------|
| 0.915 | 150 |

The results reveal that the data was credible, as shown by the Cronbach alpha value of 0.915, which is more than 0.7.

4.4 Descriptive Statistics

In the course of the research that was conducted for the years 2017-2021, both primary and secondary data pertaining to commercial banks were taken into consideration. The descriptive techniques included maximum, minimum, mean, skewness, and kurtosis. The standard error of estimation was also included. The term "mean" refers to an extent of central tendency that is used to describe the value that occurs the most often within a given set of values. The term "standard error" comes from the field of statistics and is used to describe a method for measuring the degree of accuracy in a set of numbers. The skewness of a distribution may be used to assess whether or not it is even, or whether or not it is not even. When seen from the middle, a distribution or data set is said to have a balanced appearance when it seems about the same on both the left and right extremities. Values of the kurtosis parameter for normal distributions reveal whether or not the data are skewed toward peaks (Cooper and Schindler 2008).

4.4.1 The Demographic Information

Table 4.2: Gender

| FACTOR | FREQUENCY | PERCENTAGE |
|---------------|------------------|-------------------|
| Male | 100 | 67 |
| Female | 50 | 3 |
| TOTAL | 150 | 100 |

Source: Research Findings (2022)

The figure 4.2 points out the highest number of respondents were male with 100(67%) while 50(33%) were female respondents. The results pointed out that bulk of the respondents constituted male respondents.

Table 4.3: Age of Respondents

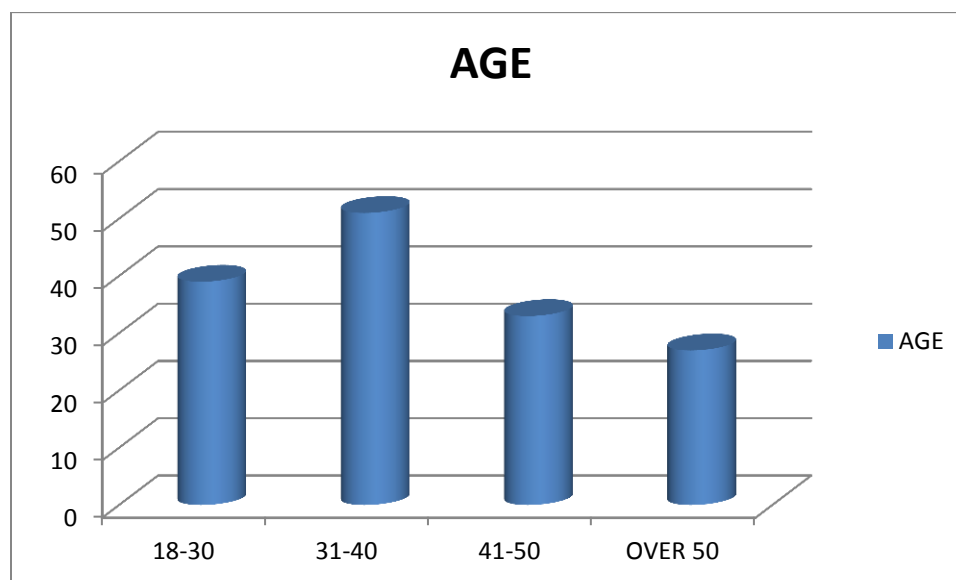
| FACTOR | FREQUENCY | PERCENTAGE |
|---------------|------------------|-------------------|
| 18-30years | 8 | 7% |
| 31-50 years | 12 | 11% |
| 51-35years | 25 | 23% |

| | | |
|---------------|------------|-------------|
| 36-40 years | 35 | 32% |
| Over 40 years | 30 | 27% |
| TOTAL | 110 | 100% |

Source: Research Findings (2022)

According to Table 4.2, 7% of the population was between the ages of 18 and 25, 11% of the population was between the ages of 26 and 30, 23% of the population was between the ages of 31 and 35, 32% of the population was between the ages of 36 and 40, and 27% of the population was aged 41 or over. These results indicate that the great majority of respondents were between the ages of 36 and 40.

Figure 4.1: Age of Respondents



Source: Research Findings (2022)

Figure 4.2: Work Experience

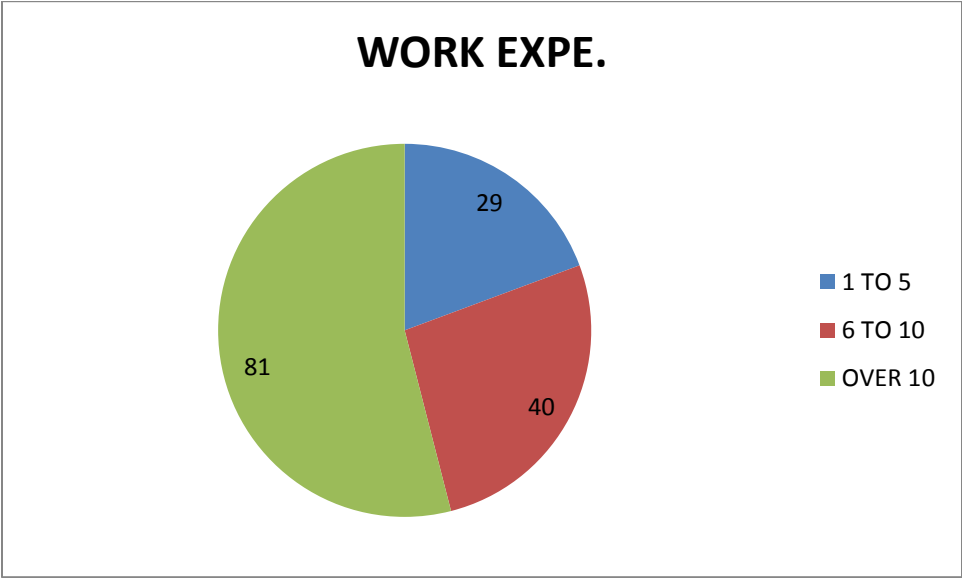


Figure 4.2 indicates that majority of the workers in the commercial banks in Juba have over 10 years work experience while 41 employees have worked for between 6 and 10 year. Employees who had worked for between 1 and 5 years were 29.

4.4.2 Types of Accounts

The accounts maintained by various customers of commercial banks in south Sudan are the fixed accounts, savings accounts and the current accounts. The accounts are held in the various branches of these banks. Majority of the banks are concentrated in Juba the capital city of South Sudan.

Figure 4.3: Accounts Operated

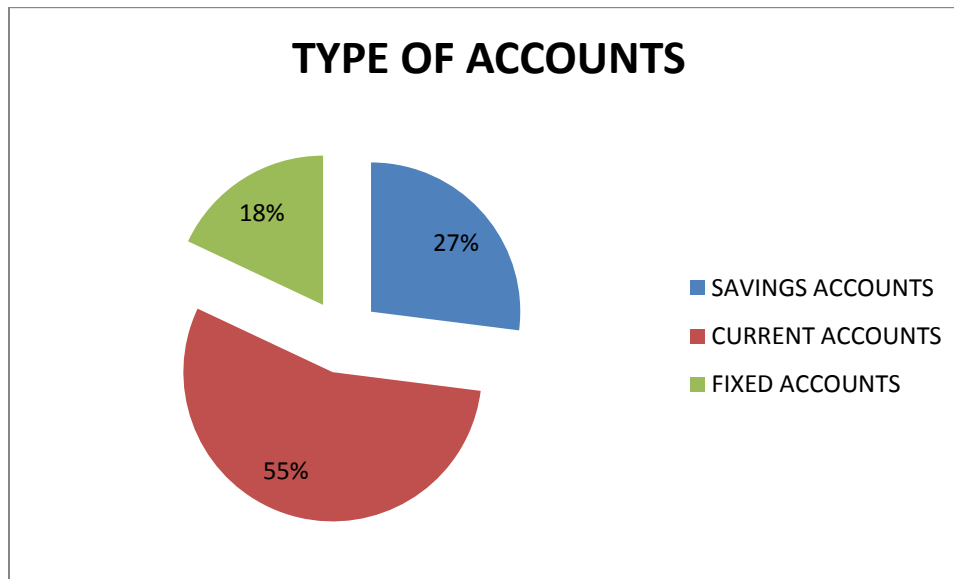


Figure 4.3 indicates that majority of the accounts operated were current accounts at 55% while 27% operated savings accounts and 18% operated fixed deposit accounts.

4.4.3 Electronic Banking

The term "electronic banking" refers to a methodical procedure that is carried out with the assistance of computers and telecommunications. As a result of this method, the banking process may be carried out without the involvement of direct human connection. It offers a variety of services, such as a financing procedure for retail purchases and an automated payroll system that has been included. The term "Electronic Banking" refers to a broad category that encompasses many different kinds of financial services, including mobile banking, internet banking, text message banking, and electronic alerts.

Table 4.4: Electronic Banking

| Item | Mean | Std. Deviation |
|--------------------------------|------|----------------|
| Electronic banking | 3.41 | 1.004 |
| Mobile banking | 3.68 | 1.338 |
| Automated Teller Machine (ATM) | 3.45 | 1.066 |
| Credit card | 2.85 | 1.167 |

From the above table 4.4 the mean of electronic banking was 3.41 with a S.D of 1.004. The mean for the mobile banking was 3.68 with a S.D of 1.338, while the mean of ATM was 3.45 and a S.D of 1.066. The mean of credit card usage was 2.85 and a S.D was 1.167. Mobile banking had the highest mean of 3.68 while electronic banking had the lowest standard deviation. Credit card had the least mean of 2.85 and mobile banking had the highest S.D of 1.338.

Table 4.5: Electronic Banking Challenges

| Challenges | N | Mean | Std. Deviation |
|-------------------------|----------|-------------|-----------------------|
| Data security | 150 | 1.95 | .965 |
| Quality of Data | 150 | 2.03 | .811 |
| Failure to Adapt | 150 | 3.12 | .962 |
| Regulatory requirements | 150 | 2.90 | .918 |
| Data silos | 150 | 1.93 | .692 |
| Valid N (listwise) | 150 | | |

The challenges affecting electronic banking had very low means which indicates that the challenges were minimal. While data silos had the lowest mean with 1.93 and a S.D of 0.692, data security had the highest mean with 1.95 and a S.D of 0.965. A data silo is a storehouse of data that is managed by one department or business unit and is separated from the rest of an organization. This is analogous to the way that grass and grain stored in a field silo are protected from outside factors. Data that is housed in silos often utilizes isolated systems and, as a result, is frequently incompatible with other data sets. Because of this, it is difficult for users located in different sections of the company to access and make use of the data. In terms of data quality, the means were 2.03 with a S.D of 0.811, and in terms of failure to adapt, the means were 3.12 with a S.D of 0.962. A mean of 2.90 was assigned to the regulatory criteria, and there was a S.D of 0.918.

Table 4.6: Effectiveness of Electronic Banking

| Roles of electronic banking | N | Mean | Std. Deviation |
|------------------------------------|----------|-------------|-----------------------|
| Depositing | 150 | 1.78 | .589 |
| Checking account | 150 | 1.67 | .711 |

| | | | |
|--------------------|-----|------|------|
| Withdrawals | 150 | 1.40 | .579 |
| Making payments | 150 | 1.52 | .540 |
| Others | 150 | 1.04 | .257 |
| Valid N (listwise) | 150 | | |

From table 4.7 the mean of the effectiveness of electronic banking deposits was 1.78 with a S.D of 0.589. The effectiveness of checking accounts was 1.67 with a S.D of 0.711. Withdrawals and making payments had mean of 1.40 and 1.52 respectively with a S.D of 0.579 and 0.540.

4.4.4 Banks Performance

A company's performance is measured by its effectiveness and efficiency. When a company is efficient, it is able to fulfill its goals while incurring the least amount of expenditure and reaping the most possible benefit. When a company is effective, it is able to satisfy the requirements of the market at any given time. The success of a bank over a certain time frame in accomplishing its objectives is what is meant by the phrase bank performance. When evaluating performance, factors such as higher earnings, decreased expenses, greater assets, enhanced management, and pleased customers are taken into consideration.

Table 4.7: Banks Performance Descriptive Statistics

| | N | Mean | Std. Deviation |
|-------------------------|-----|------|----------------|
| Performance (2017-2022) | 150 | 2.45 | .917 |
| Increased Profit | 150 | 3.68 | 1.353 |
| Reduced Cost | 150 | 3.41 | 1.004 |
| Customer Satisfaction | 150 | 3.68 | 1.338 |
| Improved Management | 150 | 3.25 | .964 |
| Increased Bank's Assets | 150 | 3.73 | .866 |
| Valid N (list wise) | 150 | | |

According to the table that was just shown, the means of performance were typically on an average trend, with the majority of the indicators being higher than the mean average of 2.5. The following are some of the key performance metrics that were examined for the above table: performance trend, increased profit, decreased expenses, higher customer happiness, enhanced management, and increased bank assets. The highest mean was 3.73, with a S.D of 0.866 for increased in bank assets. This indicates that in order for banks to carry out the procedures of banking, they will need to make investments in the necessary assets as they move toward

embracing electronic banking. These factors also contributed to an increase in overall customer satisfaction, which was measured at 6.38 out of 10 with a S.D of 1.338. Additionally, there was a rise in earnings, which came in at a mean of 3.68 and with a S.D of 1.353.

4.5 Correlation Analysis

A linear relationship between the two variables under study may be described by their Pearson product-moment correlation coefficient, sometimes abbreviated as r . The Pearson correlation coefficient, denoted by r , has a range of figures that goes from plus one to minus one. A figure of 0 indicates that there is no connection between the two variables and draws attention to this fact. If the number is greater than zero, the correlation is positive; in other words, if the value of one variable rises, the value of the other variable will rise as well. When one variable increases in value while the other decreases, a negative correlation exists between them, and the resulting number is less than zero.

An individual's Pearson correlation coefficient may be interpreted as a measure of the linear association between the two variables. This idea is often referred to by its formal term, Pearson's correlation, or the correlation coefficient.

The correlation matrix is broken out in Table 4.8, which can be seen below.

| | | Electronic Banking | Mobile Banking | Automated Teller Machine | Credit Card | Performance |
|--------------------------|---------------------|--------------------|----------------|--------------------------|-------------|-------------|
| Electronic Banking | Pearson Correlation | 1 | | | | |
| | Sig. (2-tailed) | | | | | |
| | N | 150 | | | | |
| Mobile Banking | Pearson Correlation | -.032 | 1 | | | |
| | Sig. (2-tailed) | .694 | | | | |
| | N | 150 | 150 | | | |
| Automated Teller Machine | Pearson Correlation | .692** | -.062 | 1 | | |
| | Sig. (2-tailed) | .000 | .049 | | | |

| | | | | | | |
|--|---------------------|--------|-------|--------|------|------|
| | N | 150 | 150 | 150 | | |
| Credit Card | Pearson Correlation | .492** | -.151 | .356** | 1 | .119 |
| | Sig. (2-tailed) | .000 | .066 | .000 | | .147 |
| | N | 150 | 150 | 150 | 150 | |
| Performance | Pearson Correlation | .360** | .032 | .420** | .119 | 1 |
| | Sig. (2-tailed) | .000 | .002 | .000 | .047 | |
| | N | 150 | 150 | 150 | 150 | |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | | | |

The results of the research are summarized in Table 4.8, which demonstrates that commercial banks in Juba, South Sudan, that have embraced electronic banking have fared better than their counterparts that have not. Pearson correlation analysis was used to determine the strength of the relationship between the study's variables. According to the study's authors, Juba's commercial banks benefited greatly from the widespread use of electronic banking, mobile banking, automated teller machine (ATM) and credit card transactions. This was discovered via research of the connection between online banking and the growth of Juba's commercial banks. It similarly determined a positive association between electronic banking and performance with a correlation coefficient of 0.360 (P-value < 0.05). Also a positive link existed between mobile banking and performance by correlation coefficient of 0.032 (P-value < 0.05). The correlation between ATM was also positive at 0.10 (P-value < 0.05). There was also positive collection between credit card and performance at 0.119 (P-value < 0.005). As indicated in Wong & Hiew (2005) the correlation coefficient estimate (r) variation between 0.10 and 0.29 is deemed weak, between 0.30 and 0.49 is deemed average and between 0.50 and 1.0 is powerful.

4.6 Regression Analysis

The goal of this research was to establish if and how electronic banking is related to the success of Juba's commercial banks. As a means of quantifying the breadths of the research's numerous regressions, the investigation made use of the SPSS. Through the use of a data collecting form, the researchers were able to assess both the independent factors and the dependent variable. The results are detailed below:

4.6.1 Model Summary

The model summary indicates the summary of the regression analysis as pointed out in the regression model. The outcomes are in the table 4.9 below;

Table 4.9: Regression results

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .440 ^a | .193 | .171 | .835 |

Predictors: (Constant), Credit Card, Mobile Banking, Automated Teller Machine, Electronic Banking

Table 4.8, which summarizes the model, shows that electronic banking is significantly correlated with the success of commercial banks in Juba, South Sudan. R Square = 0.194, therefore the study's independent variables i.e., the variables chosen to measure change in performance explain 19.3% of the total. Payment Methods: Credit Cards, Mobile Banking, ATMs, and Online.

Table 4.10: Regression results

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|--------------------------|-----------------------------|------------|---------------------------|-------|------|
| | B | Std. Error | Beta | | |
| 1 (Constant) | .992 | .338 | | 2.937 | .004 |
| Electronic Banking | .152 | .102 | .167 | 1.499 | .036 |
| Mobile Banking | .032 | .052 | .046 | .614 | .040 |
| Automated Teller Machine | .288 | .089 | .335 | 3.231 | .002 |
| Credit Card | -.059 | .068 | -.075 | -.867 | .007 |

a. Dependent Variable: Performance

Input to the model is set by the Beta coefficients. When the value is high, it indicates that a single unit change in the predictor variable has a large impact on the outcome variable. The

Regression coefficient value of electronic banking was 0.152, mobile banking was 0.032, ATM was 0.288 and credit card was -0.059. The p-values were less than .05.

Regression analysis is performed using of an econometric model below.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y= Bank Performance (Dependent variable)

α = Constant Term Y-intercept

$\beta_1, \beta_2, \beta_3, \beta_4$ = Beta coefficients

ε = Error term.

X₁= Electronic Banking (Likert Scale)

X₂= Mobile Banking (Likert Scale)

X₃= Automated Teller Machine (Likert Scale)

X₄= Credit Card (Likert Scale)

Therefore:

$$Y = 0.992 + 0.152X_1 + 0.032X_2 + 0.288X_3 - 0.059X_4 + \varepsilon$$

4.6.2 Analysis of Variance

An analysis of variance was conducted to determine the impact of electronic banking on the efficiency of Juba's commercial banks:

Table 4.11: Analysis of Variance

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|-------|-------------------|
| 1 | Regression | 24.183 | 4 | 6.046 | 8.681 | .000 ^a |
| | Residual | 100.990 | 145 | .696 | | |
| | Total | 125.173 | 149 | | | |

a. Predictors: (Constant), Credit Card, Mobile Banking, Automated Teller Machine, Electronic Banking

b. Dependent Variable: Performance

The Analysis of Variance (ANOVA) reveals the influence of electronic banking on performance of commercial banks in Juba. The level of significant as pointed out by the P values (0.000) i.e. below 0.05 and F value (8.681).

4.7 Discussion of Research findings

The coefficients of all independent variables are positive in the final models of multiple linear regression analyses. Results from the regression analysis point to a positive correlation between the independent variables and the dependent variable (performance) (Electronic banking). The results suggest a robust relationship between the many facets of the study that were being examined individually. The coefficient of determination (R) for the independent variables of the study (electronic banking, mobile banking, ATMs, and credit cards) was 0.194, indicating that these factors explain 19.4% of the observed variation in performance.

Using t-statistics, we may assess how significantly different variables impact the examined models. We search for t values that are considerably below -0.5 or above +0.5 to identify valuable predictors when building a model. Juba's commercial banks' success and the prevalence of electronic banking were the most important factors in this analysis.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study, the discussion, conclusions, and recommendations. The study summary is presented first, then the discussion of the findings for each research question, conclusions and recommendations.

5.2 Summary

The purpose of this study was to ascertain whether electronic banking had any effect on the general efficiency of South Sudanese commercial banks. This study set out to determine whether or not using an online bank decreased productivity. Methods from the realm of descriptive research were used here. For this study, we used data from all 31 commercial banks in South Sudan as our sample. A census survey was used, with the primary means of data gathering being the completion of a standardized questionnaire. SPSS was used for data analysis, and both tabular and graphical representations of the findings were made.

According to the study's results, commercial banks' success is significantly correlated with their use of electronic banking. Electronic banking was shown to have this effect on productivity. Research shows that banks' bottom lines, customer satisfaction levels, managerial efficacy, and total assets all improved as a result of e-banking.

The study's results suggest a robust correlation between commercial banks' success and the prevalence of mobile banking. This was shown to be the case when looking at the influence that mobile banking has on performance. According to the results, commercial banks may improve their customers' happiness, as well as their market accessibility, profitability, and efficiency by offering online banking. Furthermore, the data showed a strong correlation between commercial bank performance and the use of electronic banking. This was shown while taking into account the effect that online banking has on a company's bottom line. Findings suggest that electronic banking has a major impact on broadening market access, optimizing resources, and cutting

costs, while also simplifying banking processes, protecting customers, and identifying fraudulent activity.

5.3 Conclusion

Conclusions point to a correlation between the prevalence of electronic banking services including mobile banking, ATMs, and credit cards and the success of commercial banks. Profitability, efficiency, contentment of clients, effectiveness of management, and quantity of assets are all indicators of success. There is a favorable relationship between performance and each of the several forms of finance that are being investigated. According to the regression equation, it was determined that, taking into account all of the relevant factors, including the various approaches of financing, it was found that. The significance of each model variable is measured by its standardized beta coefficient. A large value shows that the reference variable responds strongly to even a small change in the predictor variable.

Each predictor variable's impact on the standard variable is roughly shown by its t and Sig (p) values. A substantial influence of a predictor variable on the standard variable is indicated by a modest P value and a big total t value for the predictor variable. Most of the Islamic financial strategies in Table 4.5 have a P value lower than 0.05, indicating a statistically significant link between Islamic finance and financial gain. The findings of this research indicate, in general, that businesses that successfully use Islamic finance methods are likely to have greater levels of performance. The study's results suggested a strong correlation between commercial banks' bottom lines and their use of internet banking. This was shown to be true in terms of the effects of online banking on productivity. According to the findings of the research, online banking made a contribution to the operations of banks, the loyalty of their customers, the production of revenues, and the profitability of banks. The study's results indicate a strong correlation between commercial banks' success and the availability of mobile banking services. As such, this result is pertinent to the debate over whether or not mobile banking affects a bank's bottom line. According to the findings, commercial banks may increase customer satisfaction, market share, profits, and efficiencies by providing online banking services. Further, the data demonstrated a significant link between commercial bank success and the use of online banking services. This was shown when considering the impact of internet banking on profits. The study's results show that e-banking has a major impact on broadening access to financial services, optimizing use of

scarce resources, decreasing transaction costs, enhancing customer satisfaction with banking procedures, detecting fraud, and safeguarding the interests of customers.

Another finding was that a rise in the volume of electronic banking transactions was associated with improved productivity. Any growth in the usage of mobile banking apps, ATMs, or credit cards could be expected to lead to a similar boost in productivity. Based on the findings of this study, it can be concluded that commercial banks have benefited from the widespread availability of electronic banking technology because of the ease with which customers in any location can gain access to banking services. Additionally, the research concludes that commercial banks may boost their profitability via the use of electronic banking. Customers' increased comfort with doing financial transactions through electronic banking rather than in-person banking has contributed to the company's improved bottom line.

5.4 Recommendations for Policy

This research suggests that commercial banks should prioritize building out internet infrastructures across the country so that more individuals may receive financial services from the comfort of their location. Internet banking plays a significant role in commercial banks' success, therefore this is not surprising. In addition, the study supports the idea that commercial banks should provide clients with more options for banking online to better meet their needs. Help with budgeting and finding a mortgage are two examples of the kind of financial advice that might fall under this category.

The study's results suggest that commercial banks should do more to encourage clients' use of mobile banking by ensuring that their services are compatible with a wide range of wireless providers. South Sudan's commercial banks should create partnerships with a variety of the country's telecommunications firms in order to provide customers with mobile banking services by using mobile-enabled platforms. This study's results suggest that in order to meet customers' expectations for convenience, commercial banks should implement an integrated electronic platform that allows for both online and mobile banking. According to the results of this study, if we want to see broad adoption of electronic banking services, we need to ensure that its users are free to participate in a variety of commercial activities without interference.

5.5 Limitations of the Study

In the process of carrying out this research, a number of obstacles were encountered. There was a significant amount of red tape involved in the process of obtaining permission to answer to surveys, with the majority of institutions asking that permission be obtained from the Chief Executive Officer or Human Resource Manager. Because of this, getting the necessary replies in time for the data analysis was made more difficult. A few of the clients we surveyed were reluctant to provide any information and said they lacked the time to complete the surveys.

The scope of the analysis was limited to the years 2017 - 2022; however, had it been conducted over a longer time period, it would have taken into account a wider range of economic phenomena, such as expansions and contractions. This could have perhaps provided an extended period of investigation hence providing an extensive aspect to the problem.

5.6 Areas for Further Research

Consequently, this study set out to assess the effects of electronic banking on the efficiency of commercial banks in Juba, South Sudan. Similar studies are needed in other countries, including those in Africa, such as Uganda, Malawi, the Democratic Republic of the Congo, Rwanda, Burundi, and Ethiopia, to learn how electronic banking impacts the overall performance of commercial banks.

The study was carried out using questionnaire in form of likert scale. Other studies should also be carried by using secondary data .Future studies should also consider studying all the commercial banks in South Sudan. Other studies can also look at other financial institutions offering internet and electronic financial services.

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APPENDICES

APPENDIX I: QUESTIONNAIRE

The researcher is a graduate student at the University of Nairobi in Kenya, studying for a Master of Business Administration in Finance. He is looking at how electronic banking has affected the efficiency of commercial banks in South Sudan. Your familiarity with online banking played a role in your selection for this research. You may be certain that the data you provide will be used only for research purposes. Take a moment out of your day to respond to these questions by writing in your thoughts where applicable or selecting a predetermined response. Your very own name could even be unnecessary. Our sincere gratitude for your help and patience.

Section I: Demographic

1. Kindly state your age bracket

18-30 years []

31- 40 years []

41-50 years []

Above 50 years []

2. Gender

Male []

Female []

3. Level of Education

Primary []

Secondary []

Tertiary []

4. Marital Status

Single []

Married []

Divorced []

5. How often do you use electronic banking?

Less frequently [] Infrequently [] Frequently [] Most frequently []

5. How many years have you been an employee at your Bank?

1- 5 years [] 6- 10 years [] 11 years and above []

6. Which type of account do you hold with your bank?

Savings accounts [] Current account [] Fixed Account []

Other (please specify).....

Section II: The usage level of electronic banking services at the bank

7. The usage level of electronic banking services at the bank

Kindly tick the appropriate box

1= Very Low extent 2= Low extent 3= Average extent 4= High extent 5= Very high extent

| Item | 1 | 2 | 3 | 4 | 5 |
|--------------------------------|---|---|---|---|---|
| Electronic banking | | | | | |
| Mobile banking | | | | | |
| Automated Teller Machine (ATM) | | | | | |
| Credit card | | | | | |

8. Challenges faced by banks during data collection

| Challenges | Strongly Agree | Agree | Disagree | Strongly Disagree |
|-------------------------|----------------|-------|----------|-------------------|
| Data security | | | | |
| Quality of Data | | | | |
| Failure to Adapt | | | | |
| Regulatory requirements | | | | |
| Data silos | | | | |

9. What are types of electronic banking in Commercial Banks in South Sudan are aware off?

- a. ATM []
- b. Pay Direct []
- c. Telephone banking []
- d. Visa Solution []
- e. Electronic check payments []
- f. Others specify.....

10. To what extent do you agree or disagree that electronic banking promotes banking performance in Commercial banks in South Sudan.

- a. Strongly agree []
- b. Agree []
- c. Neither agree nor disagree []
- d. Disagree []
- e. Strongly disagree []

11. What role does the bank play in promoting banking performance in South Sudan?

- a. Depositing []
- a. Depositing []
- b. Check account balances []
- c. Withdrawals []
- d. Making payments []
- e. Others specify.....

12. How effective are the above roles in promoting banking efficiency in Commercial banks in South Sudan?

| Roles of electronic banking | Strongly Agree | Agree | Disagree | Strongly Disagree |
|-----------------------------|----------------|-------|----------|-------------------|
| Depositing | | | | |
| Checking account | | | | |
| Withdrawals | | | | |
| Making payments | | | | |
| Others | | | | |

Section III: Bank's performance

13. How has the bank been doing over the past five years? (2017 to 2022)?

- a. Excellent []
- b. Very good []
- c. Good []
- d. Fair []
- e. Bad []

14. How much do you think electronic banking has helped the bank's performance in the following ways?

Kindly tick appropriate box. (1 = strongly disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5=strongly agree

| Performance Measurements | 1 | 2 | 3 | 4 | 5 |
|---------------------------------|----------|----------|----------|----------|----------|
| Increased Profit | | | | | |
| Reduced Cost | | | | | |
| Customer Satisfaction | | | | | |
| Improved Management Quality | | | | | |
| Increased Bank's Assets | | | | | |

15. Do you think electronic banking has helped the performance of commercial banks in South Sudan?

(1 = strongly disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5=strongly agree)

| Performance measures | 1 | 2 | 3 | 4 | 5 |
|-----------------------------|---|---|---|---|---|
| Increased Profit | | | | | |
| Reduced Cost | | | | | |
| Customer Satisfaction | | | | | |
| Improved Management Quality | | | | | |
| Increased Banks Assets | | | | | |

Section IV: Challenges faced by banks while using electronic banking

16. What are the factors that affect how well electronic banking works?

- a. Availability of internet []
- b. Reliability of network []
- c. Availability and reliability of ATM []
- d. Security problems []
- e. Power failure []
- f. Lack of knowhow by customers []

g. Others, specify []

17. How do you think these problems could be fixed?

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APPENDIX II: INTERVIEW QUESTIONS

For South Sudan Banks Employees

1. Do you know what are the electronic banking services offered by Banks in South Sudan?
2. How did you know about electronic banking services?
3. What is your overall opinion of electronic banking services?
4. Do you think electronic banking services are a means for banks to improve on their performance?
5. Do you think banks should use electronic banking services?
6. If you want the customers to know more about the bank's electronic banking services, what do you do?
7. Do you only carry out bank's advertisements when you need or want them, or do you prefer to keep the customers up to date about bank?
8. What makes the bank continue to use electronic banking services?
9. How would you rate these electronic banking services provided by your bank as compared to other banks?
10. What do you think of the electronic banking services offered by this bank? Are you satisfied with the services you provide to your customers?

Thank you for your time.

APPENDIX III: DATA

| Electronic banking | Mobile banking | ATM | Credit card | Increased Profit | Reduced Costs | Customer Satisfaction | Improved Management | Increased Assets |
|--------------------|----------------|-----|-------------|------------------|---------------|-----------------------|---------------------|------------------|
| 3 | 5 | 1 | 1 | 2 | 5 | 3 | 5 | 4 |
| 4 | 4 | 1 | 2 | 2 | 4 | 4 | 4 | 4 |
| 5 | 4 | 5 | 1 | 3 | 4 | 5 | 4 | 3 |
| 5 | 4 | 4 | 1 | 3 | 4 | 5 | 4 | 4 |
| 4 | 4 | 4 | 1 | 3 | 4 | 4 | 4 | 3 |
| 3 | 4 | 5 | 1 | 3 | 5 | 3 | 4 | 4 |
| 2 | 5 | 2 | 2 | 1 | 5 | 2 | 5 | 4 |
| 1 | 5 | 5 | 3 | 3 | 5 | 1 | 5 | 3 |
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| 4 | 5 | 5 | 5 | 3 | 5 | 4 | 5 | 4 |
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| 4 | 5 | 4 | 4 | 3 | 4 | 4 | 5 | 4 |
| 4 | 5 | 4 | 2 | 3 | 4 | 4 | 5 | 3 |
| 4 | 5 | 3 | 4 | 3 | 2 | 4 | 5 | 4 |
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| 4 | 4 | 4 | 4 | 2 | 5 | 4 | 4 | 4 |
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| 4 | 3 | 4 | 4 | 2 | 4 | 4 | 3 | 4 |
| 3 | 3 | 3 | 3 | 3 | 1 | 3 | 3 | 3 |
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| 3 | 2 | 3 | 3 | 3 | 4 | 3 | 2 | 3 |
| 4 | 1 | 4 | 4 | 2 | 5 | 4 | 1 | 4 |

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| 4 | 4 | 4 | 4 | 2 | 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 | 3 | 1 | 5 | 5 | 4 |
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| 3 | 5 | 5 | 3 | 3 | 3 | 3 | 5 | 3 |
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| 3 | 5 | 5 | 3 | 3 | 1 | 3 | 5 | 3 |
| 4 | 3 | 4 | 4 | 1 | 4 | 4 | 3 | 4 |
| 3 | 2 | 5 | 3 | 3 | 5 | 3 | 2 | 3 |
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| 2 | 5 | 2 | 2 | 2 | 4 | 2 | 5 | 2 |
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| 5 | 5 | 5 | 5 | 3 | 5 | 5 | 5 | 4 |
| 4 | 4 | 4 | 4 | 2 | 4 | 4 | 4 | 4 |
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| 4 | 4 | 4 | 4 | 1 | 4 | 4 | 4 | 4 |

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| 3 | 4 | 3 | 3 | 3 | 5 | 3 | 4 | 3 |
| 3 | 5 | 4 | 2 | 4 | 2 | 3 | 5 | 2 |
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| 3 | 5 | 3 | 3 | 2 | 4 | 3 | 5 | 3 |
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| 4 | 3 | 3 | 4 | 3 | 4 | 4 | 3 | 4 |
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| 3 | 1 | 3 | 3 | 2 | 4 | 3 | 1 | 3 |
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