# ICT SERVICES AND THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS: A CASE STUDY OF CENTENARY BANK MUKONO BRANCH

**DANIEL OKWIR**

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## DECLARATION

I, Okwir Daniel declare that this research report is my original work and has not been presented for any award at any University.

**Signature** ..... **Date**..15/10/2024.....

**OKWIR DANIEL**

## APPROVAL

This research report has been done under my supervision and is hereby submitted for examination with my approval.

**Signed** : ---------- **Date :** 16/09/24

MR. AGUME ANTHONY KABISYAKI

(SUPERVISOR)

## DEDICATION

I dedicate this research report to all those who have supported, encoraged, challenged and inspired me and especially to my beloved parents MR. RICHARD OUNI and MRS. LILLY AKELLO, all lecturers and friends for all their guidance, love and attention which has made it possible for me to make up to this point and as well as to my supervisor MR. AGUME ANTHONY who bestowed us with courage, committment and the awareness to follow the best possible route while writing my research report.

May God reward you abudantly.

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"Glory to the Almighty God"

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| | | |
|---|---|---|
| ICT | - | Information and Communication Technology |
| IT | - | Information Technology |
| PIN | - | Personal Identification Number |
| ATM | - | Automated Teller Machine |
| ROI | - | Return on Investment |
| ABM | - | Automated Banking Machine |
| MB | - | Mobile Banking |

## ABSTRACT

The sole purpose of this study was to assess ICT services and financial performance of commercial banks, a case study of Centenary bank, Mukono branch. The objectives of the study were to find out the effect of ATMs on performance of Centenary bank, Mukono branch, to find out the effect of online banking on performance of Centenary bank, Mukono branch, to analyze the challenges affecting ICT services at Centenary bank, Mukono branch.

A descriptive research design was used to obtain information and focused on a target population of 50 employees while using a selection of only 44 employees as the sample size. Data was collected from both primary and secondary sources with employment of questionnaires and interview guides as instruments to collect primary data. Secondary data like theoretical framework was compiled from existing scholarly work and others like definitions were compiled from google scholar search engine.

It was concluded that there is a positive significant relationship between; (1) automatic teller machine with a positive correlation coefficient of 0.426* and (2) online banking with a positive correlation coefficient of *0*.433* on the financial performance of Centenary bank, Mukono branch. The correlation of the different observations means any change in the usage of independent variables will cause a change in financial performance. For example, an increase/decrease in usage of online banking can lead to an increase/decrease in financial efficiency thus making overall the relationship to be predictive.

It was recommended to the management of Centenary bank, Mukono branch that;

i. A better system to monitor all ATM transactions should be developed.

ii. An effective mobile banking system should be redeveloped or advanced to minimize the level of fraud.

iii. Should promote e-banking workshops and training to their customers to make them user-friendly as it argued that it would encourage many clients to buy e-banking products and grow trust in e-banking.

# CHAPTER ONE

# INTRODUCTION

## 1.0 Introduction

This study aims at examining ICT services and the financial performance of commercial banks in Uganda: a case study of Centenary Bank, Mukono Branch. In brief, it has background of the study, statement of the problem, research objectives and hypothesis, scope of the study, justification, significance of the study and conceptual framework.

## 1.1 Background of the study

Globally, the value of information technology (IT) infrastructure in today's organizations is of growing importance. As the main component of the IT investment, the development of an effective IT infrastructure is placed among the top concerns of overall IT management. Firms spend a considerable amount of money and time to build IT infrastructure. The world has witnessed great development and rapid change in the global banking environment with ICT taking a centre stage in every aspect of human life (Riordan, 2012). Consequently, the banking industry has undergone drastic changes such as restructuring, ease of access to clients' information, lower costs of producing existing financial services, and use of ICT in the daily operations of banks that has changed the banking sector both domestically and internationally (LFB, 2010).

ICT is an umbrella term that covers computer hardware, software, communication and network systems (Andersen, 2011). Sajuyigbe and Alabi (2012) posited that ICTs encompass technologies that can process different kinds of information (audio, video, text, and data), and facilitate different forms of communications among human agents, and among information systems. ICT innovations consist of software developed to improve production processes and performance in firms (Lawrence, 2010). In the financial services industry, innovation is viewed as the act of creating and popularizing new financial instruments, technology and markets, which facilitate access to information, trading and means of payment (Solans, 2013).

Financial services refer to services provided by the finance industry. The finance industry encompasses a broad range of organizations that deal with the management of money. Among

these organizations are credit unions, banks, credit card companies, insurance companies, consumer finance companies, stock brokerages, investment funds and some government sponsored enterprises.

According to Scott (2019) financial services are the main output of a financial sector. The financial sector responds to the need for financial services that help with borrowing and funding, lending and investing, buying and selling securities, users of financial services are individuals, families, governmental authorities and non-financial business. The creators and producers of these services are financial institutions, like banks and security firms. Although financial services are not tangible goods like stereo systems, cars, and computer, they nevertheless have the attributes of "products". This is because financial services have utility by serving consumer's need for assistance in monetary affairs. Marketing professors refer to products as "anything offered to a market that is intended for use or consumption, or attention or experience, in order to meet needs" (Scott, 2019).

Before the introduction of ICT, business transactions especially among commercial banks were done manually in Uganda, but after the introduction of ICT the use of sophisticated technology based on automation and interconnection of computers and other electronic devices are becoming the norm rather than exception (Masinge, 2010). ICT has specifically resulted in a total alteration of the norms on the performance of commercial banks in Uganda and on the provision of client facilities in the banking sector (Leidner, 2014).

In Uganda, Centenary Bank has upgraded the capability of its IT infrastructure facilities with the establishment of a new banking system, internet banking, mobile banking and spread of the bank's service points across the country (Barclays Bank Annual Report, 2016). In Centenary Bank just like in other financial institutions the demand for e-banking services is growing and opportunities lie in IT infrastructure capabilities so as to meet the existing demand for the services. During the period 2011 to 2015, Centenary Bank undertook the implementation of performance improvement programs to obtain the required capacity. The programs included both strategic internal reforms and private sector participation in the operations of the bank (Centenary Bank Annual Report, 2012).

In addition to core banking, the new system includes modules for various other banking and financial needs including e-banking, mobile banking, treasury, wealth management, customer relationship management, business analytics, operational data store and specialized core banking solution for regional rural banks (The Economic Times, 2011).

Despite the existence of a robust ICT framework, Centenary Bank has recorded discrepancies in the dissemination of its financial services to its customers evidenced by growth in loan arrears, operational costs, bad loans against declining profitability and revenues. Most of these problems are linked to failure to realize projected profits which continues to affect the level of liquidity at the bank. According to the Bank of Uganda Financial Stability Report (2016), the total assets of the bank grew by 5.5% in 2016 which was lower than the growth rate of 15.9% in 2015. Customer deposits reduced to 7.5% in 2016, compared to 16.5% in 2015. The decline in deposits occurred amidst a rise in the cost of deposit funding which rose from 10.4% to 12.2% in 2016.

On the other hand, the 2016 financial stability report showed that total interbank values traded and bank credit during 2016 continued to decline at the bank which was blamed on the slowdown in economic activity coupled with the bank's reduction in lending in light of rising non-performing loans (BOU Financial Stability Report, 2016). It is however not empirically proven whether the ICT implementation challenges have been responsible for the poor performance of these financial services which forms the basis of this study.

### 1.2 Problem statement

Successful Information Technology Infrastructure utilization in the financial sector is increasingly becoming a central component for financial services performance globally. Like many other developing countries, financial institutions in Uganda are attaching at most significance to Information Technology Infrastructure capability as a strategy for enhancing effective and efficient financial services delivery and subsequent sustainability (Bank of Uganda Quarterly Report, 2015). The banking service industry in particular, has affected the use of ICT services such as; the internet as an option to offer remote services to its customers as opposed to using only the traditional face to face service delivery (Hernando & Nieto, 2007). ICT Banking services in form of Automated Teller Machines, mobile banking and internet banking are key to improving the quality of delivery of financial services of commercial banks (Mattila, 2016).

Unfortunately, the use of these ICT channels has been slow in Uganda (Woherem, 2021). Despite acknowledging the ICT benefits in commercial banking financial services, Uganda has been slow in usage of adequate modern innovation within its commercial banks (Abukhzam& Lee, 2020). This situation is still persistent (Joseph, 2020) where few Ugandans have the knowledge, skills, and behaviours to enable them effectively use digital devices such as smartphones, tablets, laptops and desktop Personal Computers (PCs) for purposes of communication, expression, bank services, collaboration, and advocacy. This scenario seems still evident in Mukono District especially, among clients of Centenary bank in Mukono.

Long queues are still a common sight especially at the beginning of the school term in Mukono municipality when school fees have to be paid and at the end of the month when salaries are usually paid out (Ndyayambaje, 2021). This may be an indication of ICT and usage challenges in the banking sector in Mukono district which might have a significant negative effect on. It is therefore against this background that the researcher developed interest to assess the effects of ICT services on the performance of commercial banks in Uganda: a case study of Centenary Bank, Mukono Branch.

### 1.3 Purpose of the study

The purpose of the study was to examine the effect of ICT services on the performance of commercial banks in Uganda: a case study of Centenary Bank, Mukono Branch.

### 1.4 Objectives of the study

i. To find out the effect of Automated Teller Machines (ATMs) on the financial performance of Centenary bank, Mukono branch.
ii. To find out the effect of online banking on the financial performance of Centenary bank, Mukono branch.
iii. To analyze the challenges affecting the adoption of ICT services at centenary bank, Mukono branch.
iv. To suggest solutions to the problems facing adoption of ICT services at Centenary bank, Mukono branch.

## 1.5 Research questions

i. What is the effect of ATMs on the performance of centenary bank, Mukono branch?

ii. What is the effect of online banking on the performance of centenary bank, Mukono branch?

iii. What challenges are affecting centenary bank in adopting ICT services?

iv. What are the possible solutions to the challenges affecting adoption of ICT services at Centenary bank, Mukono branch

## 1.6 Scope of the study

### 1.6.1 Content scope

The study mainly focused on the effect of ICT services on performance of commercial banks in Uganda: a case study of Centenary Bank, Mukono branch. It specifically looked at; finding out the effect for the use of ATMs on performance of centenary bank, finding out the effect for the use of online banking and the determining the challenges faced by centenary bank in the adoption of these ICT financial services.

### 1.6.2 Geographical scope

This study was carried out in Centenary Bank, Mukono branch located along Kampala-Jinja highway, Mukono. It was chosen because it's one of the commercial banks in Uganda that was the first to introduce the use of ICT systems for better quality delivery of financial services in its operations.

## 1.7 Significance of the study

The findings and recommendations of this study can be useful to the executive members of Centenary bank and other commercial banks in Uganda as they may learn from this study and understand how best ICT as a financial innovation strategy can be replicated in their operations to improve their financial services.

The findings of the study may also be vital to policy makers as it clearly pointed out the effect of Information Technology Infrastructure on financial services in the financial sector as well as other factors which affect performance. The possible solutions to these causes may be used by policy makers since they are a point of reference while writing company and government policies.

This study can be of interest to academicians and future researchers as it can add value to the existing body of knowledge on ICT in banking in Uganda and the impact of these ICT banking services on the performance of financial services in commercial banks like Centenary bank.

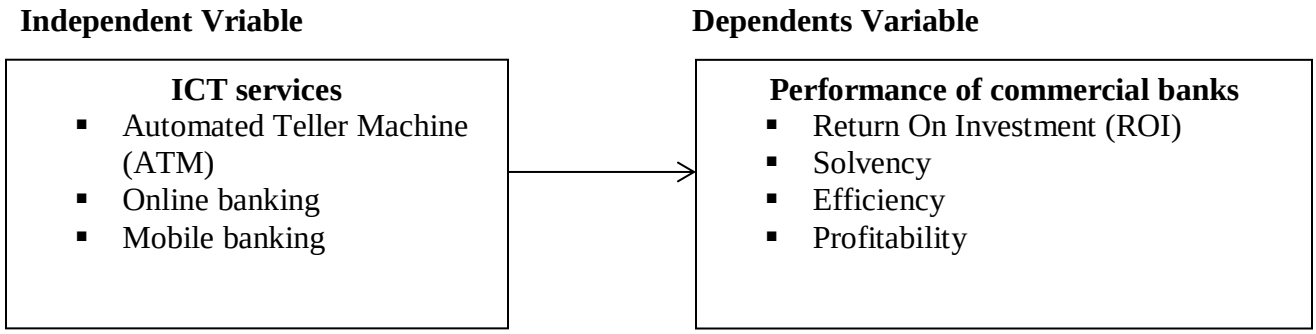
### 1.8 Conceptual framework

A conceptual framework is an analytical tool with several variations and contexts. It can be applied in different categories of work where an overall picture is neded (Colander & David, 2013). ICT services involve the automated delivery of new and traditional banking products provided directly to the customer through electronic, interactive communication channels. (Ravindra Kumar -2012). ICT services include the systems that enable financial institution customer individual or business to access accounts, transact business to access accounting transact business or obtain information on financial product through a public or individual network, including the internet.

ICT services constitute electronic alternative network of payments and benefit of services. The need of creation of electronic alternative channels has been distinguished well in advance by the foreign banking organizations, which relied mainly on the outburst that was observed in the use of internet. The benefits are many, both for the customers and for the banks. The banks that are activated in the Internet are susceptible mainly to the systematic, law part and to the reputational risk and the customers of the electronic banking channel are puzzled concerning the subject of safety of their transactions and personal data. Service sector witnessed a rapid change, primarily due to the pressure of forces affecting the context. The more force behind this inflation of technology, which has brought in a level playing field for businesses by eliminating geographical, regulatory, and industrial barriers. Also with the ongoing creation of new products and services, opportunities in the market are increasing, which further adds to the significance of developing more information and customer oriented business and management processes.

Electronic payment systems and transactions methods of ICT are opening doors of progression. As a result of the advancement in these technologies, a more effective banking system is expected. Technology enables institutions to respond effectively to the demand of its customers thereby leading to efficiency.

**Figure 1: Conceptual frame work**




Source: Adopted from Nelsen (2015) and modified by the researcher, 2024

# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 Introduction

The integration of Information and Communication Technology (ICT) in the banking sector has transformed the landscape of financial services globally. This literature review aimed at exploring the relationship between ICT services and the financial performance of commercial banks, examining various studies and perspectives to understand how ICT adoption impacts efficiency, profitability, and competitive advantage**.**

## 2.1 Evolution of ICT services.

ICT in banking has evolved significantly over the past few decades. Early implementations focused on basic automation of accounting and record-keeping processes. Over time, advancements in technology led to the development of sophisticated systems such as online banking platforms, mobile applications, and blockchain-based solutions. The widespread use of ICT services in banking is driven by the need for operational efficiency, improved customer experience, and regulatory compliance.

## 2.2 ICT Services in Banking

### Definition and Components

ICT services in banking encompass a wide range of technologies and applications, including Automated Teller Machines (ATMs), online banking, mobile banking. These technologies facilitate the efficient processing of transactions, enhance customer service, and support decision-making processes.

Automated Teller Machine (ATM), also known as Automated Banking Machine (ABM) is a computerized telecommunications device that provides the clients of a financial institution with access to financial transactions in a public space without the need for a cashier, human clerk or bank teller. On most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smart card with a chip that contains a unique card number and some security information such as an expiration date. Authentication is provided by the customer

entering a personal Identification Number (PIN). Using an ATM, customers can access their bank accounts in order to make cash withdrawals, credit card cash advances, and check their account balances as well as purchase prepaid cell phone credit. This improves convenience since customers can withdraw money from their point of reach without necessarily visiting the bank. This increases efficiency and mitigates the costs of transactions leading to improved performance. This is consistent with Fannie Mae Foundation report of that indicated that automated teller machine as used in banking sector serve approximately 420 million transactions annually for a total of $3.3 billion in gross annual revenues.

Rose (2009), describes ATMs as follows: "an ATM combines a computer terminal, record-keeping system and cash vault in one unit, permitting customers to enter the bank's book keeping system with a plastic card containing a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank's computerized records 24 hours a day". Once access is gained, it offers several retail banking services to customers. They are mostly located outside of banks, and are also found at airports, malls, and places far away from the home bank of customers. They were introduced first to function as cash dispensing machines. However, due to advancements in technology, ATMs are able to provide a wide range of services, such as making deposits, funds transfer between two or more accounts and bill payments.

Bahia (2007), defines online banking as the provision of financial services and markets using online communication and computation and today retail banks are switching to multi-channel distribution of financial services in hybrid platforms where the traditional services of banks are provided through both "bricks and mortar" branches and Internet. Online banking technologies have proliferated in recent years, and the availability of a wide range of products has led to increasing use among consumers. These technologies include direct deposit, computer banking, stored value cards, and debit cards. Banks and other financial institutions have worked hard to develop and deploy these technologies because of their potential to increase efficiency, cut costs, and attract new customers. Consumers are attracted to these technologies because of convenience, increasing ease of use, and, in some instances, cost savings (Egland et al. 2008).

## 2.3 The effect of Automated teller machines (ATMs) on the financial performance of commercial banks.

Banks tend to utilize this electronic banking device, as all others for competitive advantage. The combined services of both the Automated and human tellers imply more productivity for the bank during banking hours. Also, as it saves customers time in service delivery as alternative to queuing in bank halls, customers can invest such time saved into other productive activities. ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period of time than human tellers (an average of about 6,400 transactions per month for ATMs compared to 4,300 for human tellers (Rose, 2009). Furthermore, as the ATMs continue when human tellers stop, there is continual productivity for the banks even after banking hours.

Ogbuji et al. (2012) observed the Automated Teller Machines (ATMs) is one of existing replacements of the cascading labor intensive transaction system effected through what is popularly referred to as paper-based payment instruments. An automatic teller machine allows a bank customer to conduct his/her banking transactions from almost every other ATM machine in the world. The ATM, therefore, performs the traditional functions of bank cashiers and other counter staff. It is electronically operated and as such response to a request by a customer is done instantly.

The combined services of both the Automated and human tellers imply more productivity for the bank during banking hours. Also, as it saves customers time in service delivery as alternative to queuing in bank halls, customers can invest such time saved into other productive activities. ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period of time than human tellers (an average of about 6,400 transactions per month for ATMs compared to 4,300 for human tellers Rose (2001). Furthermore, as the ATMs continue when human tellers stop, there is continual productivity for the banks even after banking hours.

According to a study by Tiwari, Buse, and Herstatt (2006), the use of ICT in risk management reduces the likelihood of financial losses due to fraud and improves the overall stability of the banking system. The integration of ICT in banking also enhances risk management practices.

Advanced ICT systems facilitate real-time monitoring of transactions, fraud detection, and compliance with regulatory requirements. This is 24/7 monitoring of ATMs remotely by banks allowing them to quickly identify and respond to any potential security threats or technical issues. Also ATMS can be configured to limit the amount of cash that can be withdrawn or transferred, reducing the risk of large scale fraud or theft.

### 2.4 The effect of online banking on the financial performance of commercial banks

Malhotra and Singh (2009) argue that through the use of a system that allows individuals to perform banking activities at home or from their offices or over the internet. Some online banks are traditional banks which also offer online banking, while others are online only and have no physical presence (Bradley and Stewart, 2003). Online banking through traditional banks enables customers to perform all routine transactions, such as account transfers, balance inquiries, bill payments, and stop-payment requests, and some even offer online loan applications (Kannabira and Narayan, 2005).

The transition to online banking, as opined in Chemtai (2016) offers major opportunities in terms of competitive advantage. Specifically, it provides banks with the opportunity to develop a stronger and more durable business relationship with their customers. For instance, it makes access to finance from banks attractive with funds appearing to be much more available (Salehi and Alipour, 2010), and customers are given the opportunity to conduct banking transactions with great peace of mind and at their convenience (Offei and Nuamah-Gyambrah, 2016). Before the introduction of electronic banking, transactions took a lot of time to execute and this was tiring. Now, services are rendered quicker with transactions much more accurate hereby saving time, as well as reducing human errors and clerical overhead cost.

Internet as a tool can cross the traditional boundaries to define customer, market, and product. Banks act vital roles in financial intermediation, because banks need to undertake the risk of finding ways to leverage customer deposits and banks' liabilities, and the internet has opened new ways of exerting this function. Much research has addressed the potential impact of the internet on many different industries including the banking industry. However, earlier studies did not clearly show the relationship between internet banking and bank performance (Callaway, 2011). According to Malhotra and Singh (2009), Egland, Furst, Nolle and Robertson (1998) did

the first study in 1998 which investigated 8,983 banks in US in order to analyse the performance and structure of banks, but they failed to show the relationship between internet banking and bank performance.

According to Nathan (2009), online banking services have provided numerous benefits for both banks and customers. The first benefit for the banks offering electronic banking service is better branding and better response to the market. Those banks that would offer such service would be perceived as leaders in technology implementation. As a result, they would enjoy a better brand image. The other benefits are possible to measure in monetary terms. The main goal of every company is to maximise profits for its owner and other stakeholders (Pyun, Scruggs and Nam, 2012).

Online Banking provides clear advantages to both the financial institutions and the customers. From the banks' perspective, Internet Banking has very low cost transactions, compared to human teller banking. According to The Fourth International Conference on Electronic Business (ICEB2004) / Beijing, e-banking reduces the following expenses (Wright & Ralson, 2002): (1) Banks can reduce customer service staff as customers use more self-service functions; (2) There is less cheque processing costs due to an increase in electronic payments.; (3) Costs of paper and mail distribution are reduced as bank statements and disclosures are presented online; (4) There is less data entry as applications are completed and processed online by customers. On the other hand, according to KPMG 6 (1998), bank's revenue increases from Internet Banking due to: (1) Increased account sales; (2) Wider market reach; (3) New fee-based income; (4) New market opportunities; (5) Improved customer satisfaction.

Bahia (2007) and Vila et al (2013) also provide evidence respectively for cost reduction and productivity gains as a result of technological change for European Union banks. Carlson and Lang (2001) showed that E-banking lowers operational costs while increasing customer satisfaction and retention in the Turkish retail banking sector. Meuter (2010) suggests that e-banking is driven largely by the prospects of operating costs minimization and operating revenues maximization. According to Ombati et al (2011), Technology (IT) offers banks the potential to dramatically reduce operating costs and improves the quality of management information hence making banking more profitable.

The study by Iacono and Orlikowski (2004) has found that trust significantly affects attitude towards e-banking acceptance. To encourage e-banking adoption, banks need to develop strategies that improve the customer's trust in the underlying technology. The other factors include quick response, assurance, follow-up and empathy. Security, correct transaction, customer control on transaction (personalization), order tracking facilities and privacy are other important factors in the online service that affect the customer satisfaction. Akerlof and Girardone (2011), show that E- banking results in cost and efficiency gains for banks yet very few banks are using it.

**2.5 Challenges affecting ICT services.**

Adesina & Ayo (2010) point out that lack of top management commitment to use of ICT services is a major challenge faced by commercial banks. They note that for a successful implementation of e-banking the top management must be committed both in word and in execution. Turban et al., (2000) cited that it is important for the management to be involved in the financing and participate in the day to day running of the e-banking operations. Management may commit resources to information systems for various reasons including cost cutting, new revenue potential, improved competitiveness and quality of products and services because of perceived benefits of e-banking.

Among the various reasons, cost effectiveness stands out as the most significant factor influencing management adoption and implementation of e-banking services (Sayar and Wolfe, 2007). On the other hand, some organizations are faced with having top managers and employees who are resistance to change and this may cause an organization to lag behind in this competitive world.

Aliyu & Tasmin (2012) assert that most banks face challenges of operational risks and reputational risks in ICT services. Operational risk of ICT services is the central of system availability and security to the dependability on new technology which provides services. Security threats can be internal or external to the system such as system hacking, viruses and due to this, banking regulators and supervisors must check that banks have the right measures in place to secure data integrity and confidentiality for the institution and customers (Sayar and Wolfe, 2007). ICT services carry legal risks for both the banks and customers. Banks have grown

geographically faster in terms of services which they render through e-banking compared to the traditional banking method (Mols, 2008).

Ceylan & Emre (2011) argue that a low qualification of IT personnel to handle ICT financial services has been a major challenge for bank's ICT services. Shah and Siddiqui (2006) found in their study on e-banking at the Woolwich bank in UK, that the availability of highly skilled human resources is critical in implementing e-banking products and services. The greatest challenge facing developing countries is the development of the qualified human capital needed to operate a modern economy and society effectively and especially in firms like the banks which need more qualified technical experts of the Information Technology because of sensitivity of transactions involved. Exploiting the human potential is a major means to meeting the developmental needs of organizations and countries in general and which also enhance competitiveness in the global economy at large (Milek et al., 2011).

According to Chang & Dutta (2012), most banks especially in developing countries suffer a challenge of limited customer awareness about e-banking services offered since most of these people are illiterate and given that there is a low level of usage of banks in these countries by the people. Awareness among consumers about the e-banking facilities and procedures is still at lower side in Indian scenario. Banks are not able to disseminate proper information about the use, benefits and facility of internet banking. Less awareness of new technologies and their benefits is among one of the most ranked barrier in the development of e-banking (Dube et al., 2009).

Ferreira, Manso & Silva (2010) assert that the increased competition in the banking sector has made very many banks conscious about their operations which have greatly slowed down the whole process of ICT services. The nationalized banks and commercial banks have the competition from foreign and new private sector banks. Competition in banking sector brings various challenges before the banks such as product positioning, innovative ideas and channels, new market trends, cross selling ad at managerial and organizational part this system needs to be manage, assets and contain risk. Banks are restricting their administrative folio by converting manpower into machine power i.e. banks are decreasing manual powers and getting maximum work done through machine power. Skilled and specialized man power is to be utilized and result oriented targeted staff will be appointed (Alawneh and Hattab, 2009).

In conclusion, from the above reviews of literature by different scholars on the challenges hindering ICT services, it can be noted that most banks have faced many challenges ranging from limited capacity in terms of skilled human resources and capital, risks involved in e-banking and low levels of awareness from the masses about the electronic banking services. However, the literature does not clear spell out whether every bank faces such challenges in the implementation of ICT services which creates a gap where the researcher intends to establish whether Centenary bank, Mukono also faces the same challenges in the implementation of ICT services.

**2.6 Solutions to the challenges affecting ICT services.**

Alshahrani, A. A., & Alghamdi, H. S (2018) assert that banks can empower their customers by providing them with the necessary tools, training and, support to effectively use and manage ICT services. This can improve offering regular training sessions, providing access to online resources, and fostering a culture of innovation and collaboration.

According to Yusuf, M. O & Yusuf, M. O, (2017) banks can invest in robust cyber security measures to protect sensitive customer data and ensure compliance with regulatory requirements. This can include implementing encryption technologies, conducting regular security audits, and providing employee training on cyber security best practices. Thus, this can help to curb down operational and reputational risks associated with the adoption of ICT services.

Yiu, C.S., & Grant, K., & Edgar, D., (2017) assert that banks can explore cost-effectiveness ICT solutions that offer good return on investment. This can involve negotiating better deals with suppliers, adopting open-source software, or leveraging cloud computing to reduce infrastructure costs.

Monitor and evaluate ICT services. According to Moyo, S., & Moyo, S. (2018) monitoring ICT services ensures that they are meeting customer needs and improving financial performance. Evaluation of ICT enables banks to get feedback from its customers basing on how they feel about nature of services offered by the banks. This ensures timely rectification of challenges by commercial banks.

# CHAPTER THREE

# METHODOLOGY

## 3.0 Introduction

This chapter discusses, the methods that were used to conduct the study research design, study population, sample size and selection sampling techniques and procedure, data collection methods and instruments, validity and reliability of instruments procedure of data collection and data analysis, limitations of the study and ethical consideration,

## 3.1 Research design

This study used a cross-sectional survey research design, where data from respondents was collected at a single point in time without repetition from representative population. It was also used because it helped the researcher to capture information based on data gathered for a specific point in time. The data gathered was from a pool of participants with varied characteristics and demographics known as variables. More so, through the use of the cross-sectional research design, the research findings helped in removing assumptions and replaced them with actual data on the specific variables studied during the time period accounted for.

## 3.2 Study area and study population

The study was carried out in Centenary Bank, Mukono branch located along Kampala-Jinja highway, Mukono. It was chosen because it is one of the commercial banks in Uganda that was the first to introduce the use of ICT systems for better quality delivery of financial services in its operations.

The study targeted a population of 50 respondents from different departments like the credit department, loans department, operations department and administration.

## 3.3 Sample size determination

According to Katamba & Nsubuga (2014) sample size is the portion or subset of the total population. The sample size was determined using the calculation formula of Yamane's (1970) formula as follows;

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

"n" is sample size, "N" is population, "e" is error (0.05) or level of confidence 95%

"N" (population) = 50 employees of Centenary Bank, Mukono branch

$$n = \frac{50}{1 + 50(0.05)^2}$$

$$n = \frac{50}{1 + 50(0.0025)}$$

$$n = \frac{50}{1 + 0.15}$$

$$n = \frac{50}{1.15}$$

**n = 44** employees

Therefore, from the calculation above, the sample size was 44 respondents who were employees of Centenary Bank, Mukono branch from the different departments.

**Selection of Participants for qualitative data collection.**

A total of 3 key informants who were the bank branch manager and there assistants were purposively selected since they were the ones tasked with strategizing and implementing ICT services in the bank in order to improve service delivery and profitability in the bank.

### 3.4 Sampling techniques

A total of 44 employees from the different departments in Centenary bank, Mukono branch were selected using simple random sampling technique where samples will be randomly selected from the employees in these departments in the bank.

These were determined and selected randomly by use of the records from the human resource manager of the bank and later contacted for their consent.

### 3.5 Sources of data collection

The study considered two data sources, primary and secondary data.

#### 3.5.1 Primary sources

The study employed primary sources of data which was obtained from the personnel working in the organization and the departmental heads with the help of closed questionnaire and statements to capture their opinion. This is because primary sources enable the researcher to get first-hand information from the respondents.

#### 3.5.2 Secondary sources

Secondary sources of data were used to gather information from already existing materials like authentic books, journals, reports and internet and for this case secondary data was mainly obtained from the records kept so as not to alter facts. This was be supplemented by data extracted from text books, organizational documents, newspapers, internet and other sources available in libraries. Secondary data was considered because it provides analysis, commentary, evaluation, context, and interpretation but also supplements the primary data sources.

### 3.6 Data collection instruments

Bryman (2006) defines the data collection methods as the act of collecting data for purposes of making decisions about the study problem. The researcher used quantitative and qualitative data collection methods including questionnaires, key informant interviews, document review and observation.

#### 3.6.1 Questionnaires

According to Katamba & Nsubuga (2014) a questionnaire survey is a set of questions designed by the researcher for purpose of collecting data. The questionnaire included open ended questions which require the respondent to give more details about the subject matter and because they give the respondents opportunity to express their opinion in free-flowing manner giving them time to think before answering questions since it avoids personal contact.

Semi structured or closed ended questions where answers are provided was also be used and the respondents were only required to tick the best suitable answer about the subject matter. Since the researcher used questionnaires, he was be involved in the process of guiding the respondents in ensuring that the right information was collected from the bank employees.

### 3.6.2 Key Informant Interviews

Key informant interviews were used to conduct face to face interviews with key informants who are the bank branch manager and his assistants. An unstructured informant interview guide was used as a tool for collecting in depth information from the key informants. The interview guide had a list of topical issues and questions which were explored in the course of conducting the interviews. The guide was drawn with the questions soliciting for the perception on the effects ATMS and Online banking on the performance of centenary bank. The key informant interviews were used because they provide in-depth data which may not have been possible to obtain when using a questionnaire.

### 3.6.3 Observations

Observation is a method of data collection where researchers use their eyes to observe specific concerns within a specific research area. Therefore, the researcher used observation to identify ICT services offered by Centenary bank hence was able to see what people actually did rather than what they said.

## 3.7 Data collection tools

These refer to tools used to collect data questionnaires or computer assisted interviewing system (Canals, 2017). The researcher gathered data through interviewing, questionnaire, observation and organizational reports and manuals.

### 3.7.1 Questionnaire guide

The data collection tool here was a questionnaire guide. Questionnaire guides were used to collect quantitative data from the selected employees from the selected departments in Centenary Bank, Mukono branch. Questionnaire guides were used for this category of respondents to save time because their number was big to interview.

The standard questionnaire contained a list of possible alternatives from which respondents selected the answer that best suited the situation.

The questionnaire included closed-ended questions for each of the four objectives where the answers were provided and the respondents were requested to tick their preferred option.

### 3.7.2 Key informant interview guide

This tool was used to collect information that cannot be directly observed and that was good for the research problem which depended on respondents' opinions. It was also good because it gave the researcher control over the line of questioning hence saving time. Data obtained during the interview supplemented that obtained through the questionnaire. Interviews were conducted with 3 key informants who were the bank branch manager and his assistants since they are the ones tasked with strategizing and implementing ICT services in the bank in order to improve service delivery and profitability in the bank.

### 3.7.3 Observation checklist

An observation guide was an important tool that helped to maintain the observer's focus while it also gave the observer scope to reflect on the particular context associated with each site (Davies & Spencer, 2010. It reminded the observer of the key points of observation.

## 3.8 Data Quality checks

### 3.8.1 Validity

Validity was done in order to find out whether the questions were capable of capturing the intended data. The researcher's supervisor reviewed the questions to see whether they were capable of capturing the intended response. Validity was an indication of how sound research was. The researcher gave the supervisor the research instruments to rate the items that were valid to collect data using content validity.

The research instruments were pre-tested to ensure the right skips, correct spelling errors and ensure that the questions asked were clear thus minimizing errors in the final data collection instruments enhancing validity of results. Therefore, validity was measured by addressing how accurate the instruments measured the outcomes or how they constructed an intervention that it

attempted to affect. In context, an instrument is valid if it happens to measure what the researcher intends to measure. The standard measurements were used in analyzing data at univariate, bivariate and multivariate levels.

### 3.8.2 Reliability

Reliability is the degree to which an assessment tool produces stable and consistent results Riordan (2012).

The researcher pre-tested the research instruments before they were distributed to the respondents for reliability. The pre-test was done from ten customers of other commercial banks of Mukono branch which enabled the researcher to have reliable tools for the study.

The study was carried out on some of the few respondents on this research topic before the questionnaires were sent to different respondents. Therefore, reliability was ensured by first conducting a pre-test and followed by a post-test of the research. Reliability of the empirical measurements was done by using the retest method in which the same test was given to some of the people after a period of time. The reliability of the test was therefore estimated by examining the consistency of the responses between the two variables/sets.

### 3.8.3 Sustainability

The data that was suitable for one enquiry was not necessarily found suitable in another enquiry. Hence, if the available data was found to be unsuitable, they would not be used by the researcher. In this context, the researcher carefully scrutinized the definition of various terms and units of collection used at the time of collecting the data from the primary source originally.

Similarly, the object, scope and nature of the original enquiry were also studied. When the researcher found differences in these, the data remained unsuitable for the present enquiry and were not used.

## 3.9 Data analysis techniques

Data analysis involved sorting, inspecting, cleaning and coding of the data ready for presentation (Babbie, 2011).

### 3.9.1 Analysis of quantitative data

The data collected was coded, keyed into SPSS (a computer software database), organized, and cleaned for any errors that might occur during data collection. The data was then analyzed using statistics with aid of the SPSS and Microsoft Excel (computer software). Qualitative statistical technique was used to describe and summarize data. The results were then interpreted in the form of descriptive statistics the frequencies and percentages. Descriptive statistics was used to analyze respondents'' demographics such as age, gender among others. Inferential statistics such as correlations and regressions were used to analyze relationship between ICT services and performance of Centenary bank, Mukono branch. The findings were presented in form of tables and figures.

### 3.9.2 Analysis of qualitative data

Qualitative data was edited and reorganized into meaningful phrases. In other words, a thematic approach was used to analyze qualitative data where themes, categories and patterns were identified. The recurrent themes, which emerged in relation to each guiding question from the interviews, will be presented in the results, with selected direct quotations from participants presented as illustrations.

## 3.10 Ethical considerations

Ethics are the norms or standards for conduct that distinguish between right and wrong. They help to determine the difference between acceptable and unacceptable behaviors (Devlin, 2006). Ethical standards prevent against the fabrication or falsifying of data and therefore, promote the pursuit of knowledge and truth which is the primary goal of research (May, 2011).

Ethical behavior is also critical for collaborative work because it encourages an environment of trust, accountability, and mutual respect among researchers. The handling of these ethical issues greatly affects the integrity of the research results.

### 3.10.1 Anticipated limitations and delimitations of the study

Some respondents were not willing to provide information because of being suspicious of where the information would be taken. This was solved through the nice remarkable reputation in the

study context as a learning institution and also obtaining an introductory letter from the university.

The researcher was limited by funds that were needed to facilitate the research such as motivating the respondents, printing fees and even daily transport to the organization to collect data. However, the researcher used self-initiatives and strategies to mobilize financial assistance from family.

Some people delayed to bring back the questionnaires which affected the researchers target time planned to analyze his study. This was solved by issuing more questionnaires beyond the target and this helped me to cover up the gaps for those who had failed to return the questionnaires.

# CHAPTER FOUR

# DATA PRESENTATION AND INTERPRETATION

## 4.0 Introduction

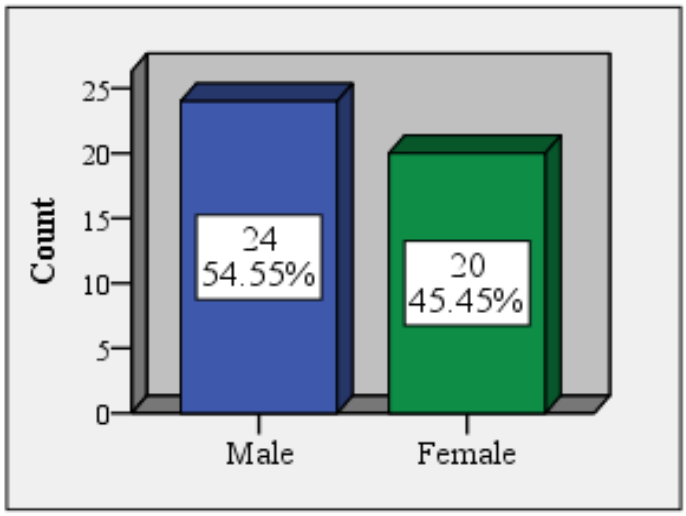
This chapter comprises of a presentation of results and their interpretation. The presentation in this chapter shows the results according to the objectives of the study. The chapter begins with the demographic characteristics of the respondents such as age, gender and educational level among others which were all presented using illustrations.

## 4.1 Findings on demographic characteristics of respondents

### 4.1.2. Gender of the respondents

The figure below summarizes the gender of the responds that are staff of Centenary bank-Mukono branch and the data in the figure was interpreted below.

**Figure 2: Gender**




**Source**: *Primary data, 2024.*

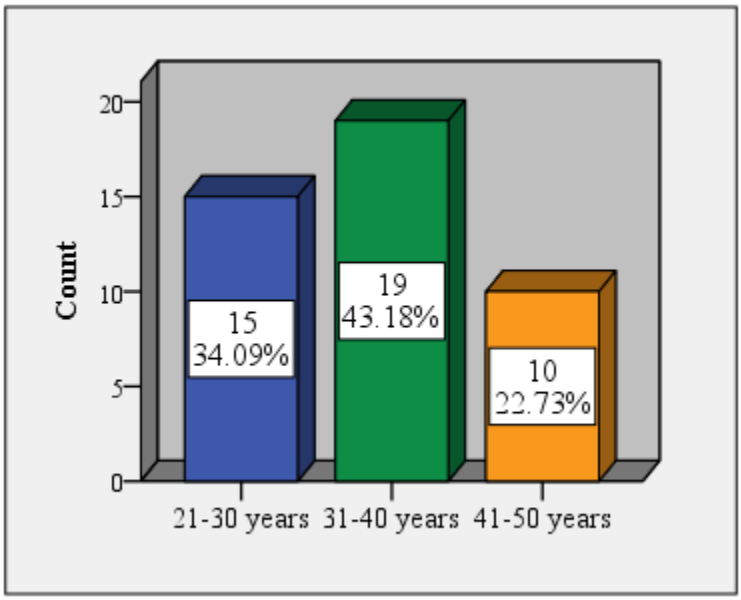
Findings in the figure 2 above show that the majority of the questionnaires were filled by males represented by 54.5% and the rest were females represented by 45.5% and therefore, there were more male respondents than female respondents in this survey. However, the inclusion of both

male and female in the survey was to get a balance view of responses from different people in the banking institution.

### 4.1.2. Age of the respondents

The figure below summarizes the gender of the responds that are staff of Centenary bank Mukono branch and the data in the figure is interpreted below.

**Figure 3: Age**



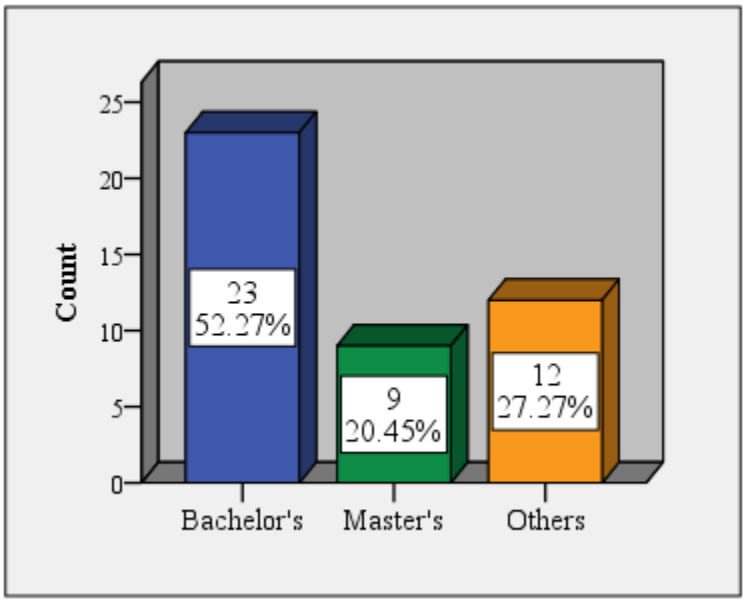

**Source:** *Primary data, 2024.*

Findings in the figure 3 above show that the vast majority of the respondents fell between the age group of 31-40 years represented by 43.2%, followed by the respondents who fell between the age group of 21-30 years represented by 34.1%, whereas 22.7% of the respondents fell in the age group of 41-50 years. This therefore implies that there was no age discrimination since information was obtained from people with different age groups. It also shows that there is a mixture of experience and new employees that have come on board which is good for the sustainability of the banking institution.

### 4.1.3. Education level of the respondents

The figure below summarizes the education level of the respondents that are staff of Centenary bank Mukono branch and the data in the figure was interpreted below.

**Figure 4: Level of education**



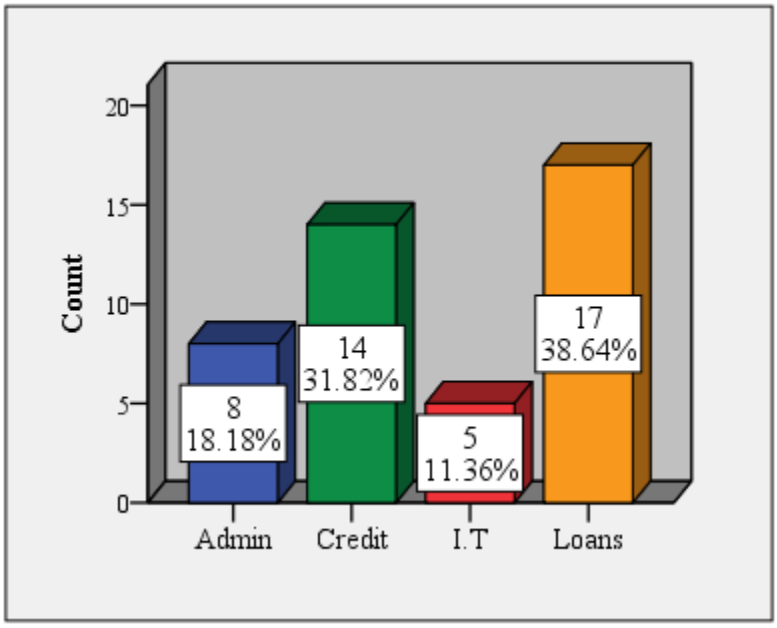

**Source:** *Primary data, 2024.*

Findings in the figure 4 above revealed that employees of Centenary bank Mukono are well educated since majority of the respondents represented by 52.3% hold bachelors' degrees, followed by 27.3% of the respondents who have attained other qualifications like ACCA, CPA, and Post Graduate Diplomas, whereas 20.4% of the respondents noted that they hold master's degrees. This implies that Centenary bank Mukono branch employs well qualified employees due to the nature of work employees are expected to perform. The education level of respondents was very necessary in this study in order to get views and opinions from people with different levels of education.

### 4.1.4. Department respondents belong to

The figure below summarizes the departments the respondents that are staff of Centenary bank Mukono branch belong to and the data in the figure was interpreted below.

**Figure 5: Department**



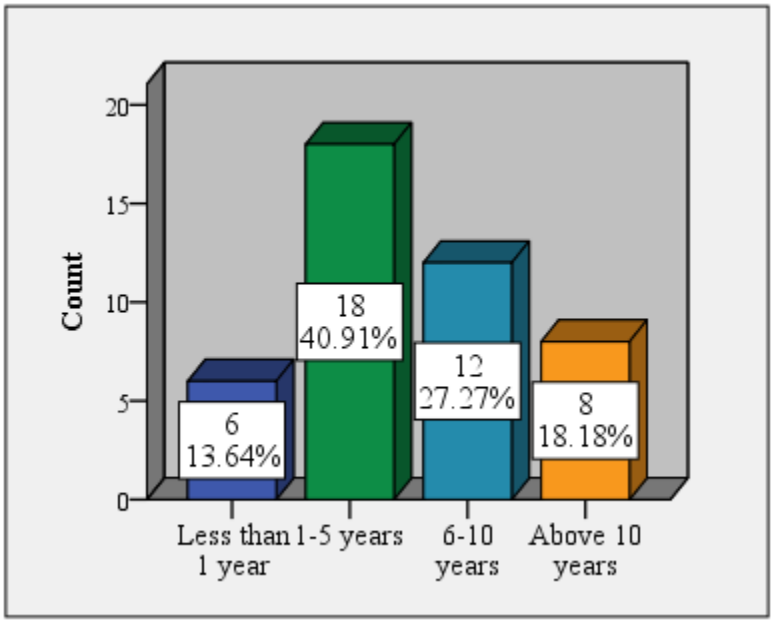

**Source:** *Primary data, 2024.*

Findings in the figure 5 above revealed that majority of respondents represented by 38.6% are from the loans department in Centenary bank Mukono, followed by those who are from the credit department in Centenary bank Mukono represented by 31.8%, followed by those who are from the administration department in Centenary bank Mukono represented by 18.2%, whereas those who are from the Information Technology (I.T) department in Centenary bank Mukono constituted the minority represented by 11.4% each of the total population. This implies that information was gotten from different departments in the banking institution which helped in gathering of information and different views of people about the topic in particular.

### 4.1.5. Period spent serving in Centenary bank- Mukono branch

The figure below summarizes the period respondents that are staff of Centenary bank Mukono branch have spent serving there and the data in the figure was interpreted below.

**Figure 6: Period spent serving in Centenary bank- Mukono**




**Source:** *Primary data, 2024.*

Findings from the figure 6 above show that majority of respondents represented by 40.9% have spent between 1-5 years serving in Centenary bank Mukono branch, followed by those who have spent 6-10 years serving in Centenary bank Mukono branch represented by 27.3%, followed by those who have spent more than 10 years serving in Centenary bank Mukono branch represented by 18.2%, where those who have spent less than 1 year serving in Centenary bank Mukono branch represented the minority 13.6% of the total population. The findings imply that the respondents have the necessary and efficient knowledge about the topic under study since majority of the respondents have spent reasonable time serving in Centenary bank Mukono branch.

### 4.2. Correlation analysis on ICT services and financial performance of Centenary bank, Mukono branch.

This study was set to investigate the relationship between ICT services and financial performance of commercial banks, a case of Centenary bank Mukono branch. This was done by running a correlation analysis using Pearson Product Moment Correlation coefficient between the composite score of ICT services and financial performance of Centenary bank Mukono

branch and the two components of ICT services which included; ATMs and online banking in relation to financial performance of Centenary bank, Mukono branch as indicated in the conceptual framework. A correlation to be considered significant, the P-value (Sig. (2.tailed) values must be less than 0.05 (for 95% confidence level) or less than 0.01 (for 99% confidence level) and the findings are shown in Table 1 below.

**Table 1: Correlation Matrix**

| Variables | Mean | St. Dev. | 1 | 2 |
|---|---|---|---|---|
| 1. Automatic teller machine | 4.26 | .635 | 1 | |
| 2. On line banking | 4.45 | .369 | .381* | .380* |
| 3.Financial performance of Centenary bank, Mukono branch | 3.99 | .752 | **.426*** | **.433*** |

***Note:***

a) 1= Automatic teller machine; 2= On line banking; and 3= Financial performance of Centenary bank, Mukono branch.

b) *$P < .05$, ** $p < .01$ level of Significance

**Source:** *Primary data, 2024.*

In relation to ICT services and financial performance of Centenary bank, Mukono branch results as in Table 1 revealed that there is a positive significant relationship between automatic teller machine and financial performance of Centenary bank, Mukono branch ($r = .426$*, $p < .05$). This implies that the existence of a working automatic teller machine has enabled Centenary bank Mukono branch to improve its financial performance since the ATM machine works 24 hours a day and given that customers of the bank use the ATM when depositing and withdrawing money since they have the knowledge and skills of using ATM machines and because it saves customers' time spent in queues.

The findings relate with the literature by Ogbuji et al. (2012) who observed that ATM is one of existing replacements of the cascading labor-intensive transaction system effected through what is popularly referred to as paper-based payment instruments. An automatic teller machine allows

a bank customer to conduct his/her banking transactions from almost every other ATM machine in the world. The ATM, therefore, performs the traditional functions of bank cashiers and other counter staff. It is electronically operated and as such response to a request by a customer is done instantly.

Furthermore, the results as in Table 1 revealed that there is a positive significant relationship between online banking and financial performance of Centenary bank, Mukono branch ($r$ = .433*, $p$ < .05). This implies that the use of online banking has enabled Centenary bank, Mukono branch to improve its financial performance since online banking saves time of the customers spent in queues and given that making transactions online by customers improves management quality by reducing transaction processing time, ease in auditing, risk management and loan administration in the banking institution. The findings are in line with the literature by Babbel & Santomero, (2017) who argued that online banking provides higher degree of convenience that enables customers to access internet banking services at all times and places. Apart from that, the ease of access of computers is perceived as a measure of relative advantage

### 4.3. Regression analysis on online banking and financial performance of Centenary bank, Mukono branch.

The overall model made a significant contribution, accounting for 58.8% of the variability in employee performance (Total $\Delta R^2$ = .588, p = .000). Table 2 below importantly shows the R-Square (R2) and R-Square Change ($\Delta R^2$) for each model, showing its contribution to the overall model. These values are interpreted alongside the ANOVA Table 3 providing the F values for each model together with the levels of significance.

**Table 2: Model Summary results**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .654[a] | .597 | .588 | .736 |
| **a. Predictors:** (Constant), Automatic teller machine, Online banking | | | | |
| **b. Dependent Variable:** Financial performance of Centenary bank, Mukono branch. | | | | |

**Source:** *Primary data, 2024.*

According to the results in the table 2 above, it is revealed that the combined effect of the predictor variables of Automatic teller machine online banking) explains 59.7% of the variations in financial performance of Centenary bank, Mukono branch. This implies that the model is satisfactory as much of the variation is accounted for by the dependent variables identified in the model.

**Table 3: Goodness of Fit of Regression (ANOVA[a])**

| Model | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 50.193 | 3 | 25.097 | 80.829 | .000[b] |
| Residual | 3.087 | 113 | .016 | | |
| Total | 53.280 | 116 | | | |

**a. Dependent Variable:** Financial performance of Centenary bank, Mukono branch

**b. Predictors:** (Constant), Automatic teller machine, online banking

**Source:** *Primary data, 2024.*

As shown in table 3 above, it is revealed that the model fit tested in the table 2 (model summary) is significant at 95% confidence level ($p \leq 0.05$). This implies that all the two predictor variables that is to say online banking and Automatic teller machine were statistically significant in explaining changes in financial performance of Centenary bank, Mukono branch as demonstrated by a p-value of 0.000 which is less than the acceptance critical value of 0.05. This is further proved by the regression coefficients in table 4 below;

**Table 4: Regression Coefficients[a]**

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. (p-value) |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | .217 | .077 | | 2.802 | .006 |
| Automatic teller machine | .721 | .088 | .665 | 8.798 | .000 |
| Online banking | .982 | .171 | .855 | 9.530 | .000 |
| **a. Dependent Variable:** Financial performance of Centenary bank, Mukono branch | | | | | |

**Source:** *Primary data, 2024.*

Table 4 above displays the regression coefficients of the independent variables. The results show that Automatic teller machine and online banking affect the financial performance of Centenary bank, Mukono branch positively and significantly. Regression results indicate that automatic teller machine and financial performance of Centenary bank, Mukono branch had a positive and significant relationship (beta=.665, $p<0.05$). The findings imply that any change or improvement in automatic teller machine by one unit leads to change in the financial performance of Centenary bank, Mukono branch by .665 units.

Finally, results indicate that online banking and the financial performance of Centenary bank, Mukon branch had a positive and significant relationship (beta=.855, $p<0.05$). The findings imply that any change or improvement in online banking by one unit leads to change in the financial performance of Centenary bank, Mukono branch by .855 units and the reverse is true.

From the above results, the researcher therefore extracts the regression equation (line of best fit) Y on X as shown below;

The researcher adopted the following regression equation:

$Y= \beta_0+\beta x_1+\beta x_2+\varepsilon$

Where; **Y** = Financial performance of Centenary bank, Mukono branch.

**β** = Beta

$\beta_0$ = Constant

$x_1$ = Automatic teller machine

$x_2$ = Online banking

$\varepsilon$ = The standard error

$Y = \beta_0 + \beta x_1 + \beta x_2 + \varepsilon$

**By substituting from the above equation**

$Y = .217 + .665x_1 + .855x_2 + .077$

These results imply that if 0.217 is held constant, a unit consideration of automatic teller machine results a 0.665 increase in financial performance of Centenary bank, Mukono branch. Finally, it was established by the study that a unit consideration of online banking increased financial performance of Centenary bank, Mukono branch by 0.855.

# CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

## 5.0 Introduction

The chapter presents discussions of the results that were presented in chapter four. It also relates these results to similar studies which were carried out elsewhere as revealed by different scholars. This chapter also provides conclusions and recommendations basing on the findings of the study and suggests areas for further research.

## 5.1 Summary of the findings

From the study findings, it can be concluded that there is a positive significant relationship between automatic teller machine and financial performance of Centenary bank, Mukono branch ($r$ = .426*, $p$ < .05). This is because the existence of a working automatic teller machine enables the Centenary bank, Mukono branch to improve its financial performance since the ATM machine works 24 hours a day and given that customers of the bank use the ATM when depositing and withdrawing money since they have the knowledge and skills of using ATM machines and because it saves customers' time spent in queues. Further findings from the regression model indicate that if other factors are held constant, automatic teller machine explains 66.5% of the variations in financial performance of Centenary bank, Mukono branch.

Finally, the study concluded that there is a positive significant relationship between mobile banking and performance of the financial sector of Uganda ($r$ = .433*, $p$ < .05). This is because the use of online banking enables Centenary bank, Mukono branch to improve its financial performance since online banking system provides high degree of convenience to the bank customers and given that the online banking service helps to reduce transaction costs for customers of the bank. Further findings from the regression model indicate that if other factors are held constant, online banking explains 85.5% of the variations in financial performance of Centenary bank, Mukono branch.

## 5.2 Conclusion

From the study findings, it can be concluded that there is a positive significant relationship between automatic teller machine and financial performance of Centenary bank, Mukono branch ($r$ = .426*, $p$ < .05) since the existence of a working automatic teller machine enables Centenary bank, Mukono branch to improve its financial performance. This is simply because the ATM machine works 24 hours a day. Finally, it can be concluded that there is a positive significant relationship between online banking and financial performance of Centenary bank, Mukono branch ($r$ = .433*, $p$ < .05) since the use of online banking enables Centenary bank, Mukono branch to improve its financial performance. This is because online banking system provides high degree of convenience to the bank customers.

## 5.3 Recommendations

From the above discussions of findings and conclusion, the following measures are recommended in response to ICT services and financial performance of commercial banks; a case of Centenary bank, Mukono Branch.

From the study findings, it can therefore be recommended that the management of Centenary bank, Mukono branch should develop a better system to monitor all ATM transactions so that there is effectiveness in online banking and to ensure that the loopholes in the system are covered. This can help to enhance financial performance of Centenary bank, Mukono branch.

Furthermore, the study recommends that management of Centenary bank, Mukono branch should develop an effective mobile banking system and make sure they always have a mobile banking plan that enables them have minimum fraud at all times, this helps them to control credit and hence enhances the financial performance of commercial banks.

Finally, the study recommends that the management Centenary bank and other financial institutions should promote e-banking workshops and training of their customers to make them user-friendly.

## 5.4 Area for Further Research

Since this study investigated ICT services and financial performance of commercial banks; a case of Centenary bank, Mukono branch, the study recommends that; similar study should be done for comparison purposes and to allow for generalization since it only focused on Centenary bank, Mukono branch in particular and areas for further studies include:

The researcher recommends that more research should be done on the factors influencing the adoption of online banking in financial institutions in Uganda.

The researcher also recommends that more research should be done on the technological challenges and scaling of online banking especially in other banks.

Finally, the researcher recommends that more research should be done on the marketing strategies and adoption of online banking services among bank customers in Uganda.

## REFERENCES


Luarn, P., Lin, H.-H. (2005).Toward an understanding of the behavioral intention to use mobile banking. *Computers in Human Behavior,* 21, pp. 873–891.

Malhorta, R. (2011). Factors Affecting the Adoption of Mobile Banking in New Zealand, 1–172.

Martins Bhusan, Kanta, H. & Suryakanta, T. (2014). Effects of internet banking on financial performance of listed commercial banks in Kenya. American Journal of Finance, Vol.1, Issue No.2, pp. 53-71.

Martins, C., Oliveira, T., &Popovič, A. (2014).Understanding the Internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application.

*International Journal of Information Management*, 34, pp. 1–13.

Masinge, B. (2010). The Developing Economies' Banks Branches Operational Strategy in the Era of E-Banking: The Case of Jordan. *Journal of Emerging Technologies in Web Intelligence* 4(2), 189-196.

Mastoori, D. (2009). Effect of automation of bond trading on bond market performance: The case of Nairobi Securities Exchange.

Mattila, M. (2016). An Exploratory Study of Mobile Banking Services Resistance.

Modell, C. (2004), Moynihan (2005), Vakkuri and Meklin. (2006). *Research in Education: A Conceptual Introduction*. New York: Longman.

Moore, G.C. &Benbasat, I. (1991). Development of an instrument to measure perceptions of adopting an information technology innovation. *Information Systems Research*, vol 6, no 2 pp. 144-176.

Mwania, M. &Muganda, N. (2012).An investigation on the relationship between information technology (IT) conceptualization and bank performance. School of Computer Science &Information Technology, Kimathi University College of Technology, Kenya, AIBUMA Conference paper, 2011 Nader.

Mwega, F. M. (2014). Financial regulation in Kenya : Balancing inclusive growth with financial stability. (November).

Hernado, J. & Nieto, F. (2007). Is the Internet Delivery Channel Changing Banks' Performance? The Case of Spanish Banks. *Journal of Banking & Finance*, 31(17), 1083-1099.

Lawrence, J. W. (2010). *Technological Change, Financial innovation and Financial Regulation in the US, the Challenges for Public Policy*. New York Academy of Sciences: New York, USA.

LFB. (2010). Impact of IT on Indian Commercial Banking Industry: DEA Analysis. *Global Journal of Enterprise Information System*, 3 (1), 17-31.

Masinge, B. (2010). The Developing Economies' Banks Branches Operational Strategy in the Era of E-Banking: The Case of Jordan. *Journal of Emerging Technologies in Web Intelligence* 4(2), 189-196.

**QUESTIONNAIRE ON ICT SERVICES AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS**

My name is Okwir Daniel registration no J23B05/038**.** I am a student of Uganda Christian University pursuing a Bachelor's Degree of Business Administration. I am carrying out my research on ICT services and the financial performance of commercial banks in Uganda, a case of Centenary bank, Mukono branch.

I kindly request you to provide the necessary information having chosen you to be one of the respondents to enable me complete my research successfully. The study is strictly for academic purposes only and will be treated with utmost confidentiality.

**Thank you in advance.**

**SECTION A: BACKGROUND DATA**

***Please tick the box representing the most appropriate responses for you in respect of the following items:***

**SECTION A: BACKGROUND INFORMATION (please tick appropriately)**

1. Gender

Male ☐

Female ☐

2. In what age bracket do you belong?

21-30 years ☐

31-40 years ☐

41-50 years ☐

Above 50 years ☐

3. What is your highest level of education?

Certificate/Diploma ☐

Bachelors' Degree ☐

Masters ☐

PhD ☐

Others (Specify)……..

4. Which department do you belong to?

Administration department ☐

Credit department ☐

I.T department ☐

Loans department ☐

Other (Specify)……...

5. For how long have you served in the financial institution?

Less than 1 year ☐

1-5 years ☐

6-10 years ☐

Above 10 years ☐

**Note:** *In these subsequent sections, use the scale provided to tick in the box of the relevant answer that describes your opinion.* ***NB: 5=Strongly Agree, 4=Agree, 3= Not Sure, 2= Disagree and 1=Strongly disagree.***

**Section B:The effect for the use of automated teller machines (ATMs) and online banking on the performance of Centenary bank.**

| | **Questions** | **Responses** | | | | |
|---|---|---|---|---|---|---|
| **PART 1** | **Automatic Teller Machine** | **5** | **4** | **3** | **2** | **1** |
| **ATM1** | The bank's ATM machine located in Mukono works 24 hours a day | | | | | |
| **ATM2** | The ATM machines of Centenary Bank are also located in remote areas | | | | | |
| **ATM3** | Our customers have the knowledge and skills of using ATM machines | | | | | |
| **ATM4** | The ATM machine saves customers' time spent in queues | | | | | |
| **ATM5** | Centnary Bank's customers use the ATM machine to pay their bills | | | | | |
| **PART 2** | **Online bankimg** | **5** | **4** | **3** | **2** | **1** |
| **MB1** | Many customers of Centenary bank have always managed to check their latest transactions | | | | | |
| **MB2** | The online banking of Centenary bank is always error free | | | | | |
| **MB3** | Our customers are always able to transfer money between their bank accounts | | | | | |
| **MB4** | The Online banking system provides high degree of convenience to the bank customers | | | | | |
| **MB5** | Mobile banking always helps our customers pay their bank card bills | | | | | |
| **MB6** | Online banking service helps to reduce transaction costs | | | | | |

Suggest any other effect for the use of automated teller machines (ATMS) on the performance of Centenary bank, Mukono branch other than the ones mentioned above

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Suggest any other effect for the use of online banking on the performance of Centenary bank, Mukono branch other than the ones mentioned above

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**SECTION C: Challenges affecting the adoption of ICT services in Centenary bank**

| | **Questions** | **Responses** | | | | |
|---|---|---|---|---|---|---|
| **PART 4** | **CHALLEGES** | **5** | **4** | **3** | **2** | **1** |
| **F1** | Network errors | | | | | |
| **F2** | Slowing down of ICT systems and equipment | | | | | |
| **F3** | Ignorance by majority of the customers about ICT usage especially online services | | | | | |
| **F4** | Failure of the bank customers to own gadgets which can enable them access online financial services | | | | | |
| **F5** | Lack of information on available ICT services in centenary bank | | | | | |

**Section D: Level of performance of Centenary bank**

| s. no | Level of performance of Centenary bank | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|
| 1 | Shareholders of this bank receive relatively high returns | | | | | |
| 2 | Centenary bank is able to meet its current liabilities on timely and effective manner | | | | | |
| 3 | The bank uses its assets to generate gross revenues and the effectiveness of pricing, financing and marketing decisions | | | | | |
| 4 | Centenary bank expects its profits to remain high in future | | | | | |
| 5 | The bank management assesses the potential growth rate and uncertainty environment. e.g. economic boom, high inflation and recession | | | | | |
| 6 | Centenary bank has enough assets to cover its liabilities | | | | | |

**Thank you very much for your cooperation**

UGANDA CHRISTIAN UNIVERSITY
A Centre of Excellence in the Heart of Africa

**SCHOOL OF BUSINESS**

12th Aug, 2024

**TO WHOM IT MAY CONCERN**

Name: **OKWIR DANIEL** Reg. No **J23B05/038**

A bachelor's student who is seeking permission from your office to collect data for his dissertation titled

**ICT Services and the Financial Performance of Commercial Banks: A Case Study of Centenary Bank, Mukono Branch**

We shall be grateful if you could render assistance to him in collecting the necessary data for his dissertation

The Uganda Christian University School of Business thanks you in advance

……..
Mukisa Simon Peter
Research coordinator