



**MOBILE BANKING AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS  
IN UGANDA: A CASE STUDY OF CENTENARY BANK**

**BY**

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## DECLARATION

I, *Mathias Mickey Mwanje* hereby declare that, this is my original work and has not been presented to any university or institutions of higher learning for any academic award. Where secondary sources of information used in this work, have been acknowledged.

Date: November 2017

Signed

.....

**APPROVAL**

This dissertation has been written under our supervision and has been submitted for the award of the degree of Masters in Business Administration with our approval as Uganda Management Institute supervisors.

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## **DEDICATION**

This dissertation is dedicated to my family more especially my wife and my children, parents, brothers and dear friends for they tolerated me as “an absentee of the family” for the years I spent pursuing the course.

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## LIST OF ACRONYMS

<b>ATM</b>	Automatic Teller Machine
<b>BOU</b>	Bank of Uganda
<b>CERUB</b>	Centenary Rural Development Bank
<b>CVI</b>	Content Validity Index
<b>EFT</b>	Mobile Fund Transfer
<b>M-banking</b>	Mobile Banking
<b>PAR</b>	Portfolio At Risk
<b>PD</b>	Probability Default
<b>SPSS</b>	Statistical Package for Social Scientists

## ABSTRACT

The general objective of the study was to examine the relationship between mobile banking and financial performance of Centenary Bank. The study was guided by the following objectives: to establish the relationship between ICT infrastructure and the financial performance of Centenary Bank; to examine the relationship between telephone billing system and the financial performance of Centenary Bank and to assess the relationship between online banking and the financial performance of Centenary Bank. A case study research design was used. The study predominantly employed a quantitative approach but also used a qualitative approach. The study population consisted of 140 participants. A sample size of 109 respondents was selected using simple and purposive sampling techniques. Quantitative data analysis mainly consisted of descriptive statistics (percentages) and inferential statistics (Spearman correlation, coefficient of determination and regression). Content analysis was used to analyze qualitative data. Findings revealed that there is a significant relationship between ICT infrastructure and financial performance of Centenary bank. Secondly, there is a significant relationship between telephone billing system and financial performance of Centenary bank. Lastly, findings indicated that online banking has a positive relationship with financial performance of Centenary Bank. It was concluded that mobile banking variables (ICT infrastructure, telephone billing system and online banking) positively influenced financial performance of Centenary Bank but not online banking. Thus, it was recommended that for purposes of promoting ICT infrastructure towards financial performance, trust building among the customers should be a major concern for Centenary Bank while improving the usefulness of mobile banking. In order to achieve more with telephone billing system on financial performance, it is imperative that Centenary Bank ensures security and privacy are in place to monitor and evaluate the usage of the implemented technologies. Lastly, on online banking and the financial performance of Centenary Bank, the bank needs to make sure that awareness about online banking is created in the public through massive advertisement on radios, televisions and newspapers.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Introduction**

This study was done with an aim of assessing the relationship between mobile banking and financial performance of commercial banks in Uganda with specific reference to Centenary Bank. Mobile banking was initially predetermined to be used as the independent variable and financial performance was to be considered as the dependent variable as diagrammatically expressed in figure 1. This chapter majorly expounds on the background roots of the study, the problems which fostered the undertaking of the study, the study aim, the specific objectives which guided the development of the research questions and hypotheses. Further the conceptual framework is illustrated, along with the study scope, significance, justification and the operational definitions.

### **1.2 Background of the Study**

The background to the study is presented in four themes including historical, theoretical, conceptual, and contextual background.

#### **1.2.1 Historical Background**

This study arose as a consequence of historical poor performance of commercial banks which has been reported worldwide, in developed and developing countries and nationally. A number of studies have been done in relation to the causes of poor performance of commercial banks and most of them have been attributing this problem to a number of factors and one of them is underutilization of information technology. The advancement in technology spearheaded the invention of different ways of improving the operation of business and banking at large (Al-Jabri,

2012). In banking, the invention of mobile banking rose as a result of information technology since it meant that such technology would be integrated in the daily running of banking and reduces on the time spent in banking process. Bradley and Stewart (2003) indicated that in countries like Brazil, the invention of mobile banking saw the increased cost minimization in the running of banking facilities and this increased their level of profitability. It is from such grounds that the researcher picked interest to undertake this study to measure whether this has been possible in Uganda.

In developing countries particularly Africa, the invention of mobile banking majorly came as a result of a recommendation by IMF to ensure that Banks across the world can work in tandem to easy the transfer of money from one place to the other in early in 1990s. In Uganda, mobile banking was first reflected in form of electronic innovation in 1992 which was introduced by Standard Chartered Bank (Standard Chartered Bank Profile, 2004). In Uganda, the introduction of electronic banking started in 1993 when Bank of Uganda designed a website intended to disseminate banking information (Kasita, 2004). By 2001, there was continued progress being made in Uganda in the use of ATMs in Kampala City due to ATM establishments. It was hoped that the risk of money transfer from location to location would be reduced (Kanyegirire, 2004).

According to Mwebya, as reported by Ssettumba (2004), a payment system in which the transfer of funds is done electronically was introduced in Bank of Uganda in 2004. In Centenary Bank, Internet banking was introduced in 1998 and was restricted to people with basic knowledge of computers and the Internet, technical difficulties and connectivity problems, proxy websites, and security problems such as the problem of electronic bank fraud. It was from such basis that caused increase adoption of internet banking in Centenary Bank to go slowly since it is so much in ancient



customers. Basing on the above background, this study endeavored to assess whether the adoption of mobile banking had improved on financial performance of Centenary Bank Uganda.

### **1.2.2 Theoretical Background**

This study was guided by the theory of social construction of technology. This theory was advanced by Collins (1975); Pinch (1977, 1986); and Pickering (1984). This theory is based on four main assumptions. First, the theory assumes that any technological innovation must have an interpretive flexibility if customer satisfaction is to be achieved. Pickering (1984) postulates that the designing of technology in an organization has the potential to provide a number of outcomes depending on how the society being served perceives it. Therefore, he argues that there is a need for technologies to be rooted from intergroup negotiations over the interpretation of observations if future customer satisfaction is to be enhanced (Pinch 1996). The second assumption is that the any new technological innovation must be relevant to the targeted social group. This is because targeted or relevant social groups are the embodiments of particular interpretations, thus, multiple groups usually tend to possess differing definitions of any technology designed and introduced. Thus, the introduction of new technological development requires to be implemented until when all parties concerned have reached on a consensus (Bijker 1995).

The third assumption of theory is related to ‘closure’ and ‘stability’. Pinch and Bijker(1987) agitates that multiple groups of people must be involved in the continue designing new technology to avoid conflicting images and this needs to continue until when all conflicts are resolved and the differing definitions are conceded to avoid problems in perception. The last assumption under which this theory is built is wider context. According to Pinch and Bijker (1987), the new technological advancement must be welcomed and fully integrated in the comprehensive social,

cultural and political grounds in which artifacts are developed. This will completely make it a success and its goals will be realized widely.

In this study therefore, this theory presupposes that if mobile banking is to be adopted in commercial banks, there is a need to ensure that all customers have the same interpretive flexibility, relevant to all of them, all people targeted or customers are involved in designing the design and fully welcomed by the entire community, if financial performance is to be achieved. This thus form the research assumption that ICT infrastructure, telephone billing system and online banking can have an effect on financial performance if customers have the same interpretive flexibility, relevant to all of them, involved in designing the design and fully welcomed by the entire community.

### **1.2.3 Conceptual Background**

The study was oriented on two main variables that is; mobile banking and financial performance. In this study, mobile banking (m-banking) means the process of undertaking banking while using any mobile device and in most cases while using a mobile phone (Anyasi and Otubu, 2009). This study conceptualized mobile banking to mean the establishment of ICT infrastructure, telephone billing system and online banking in Centenary Bank.

On the other hand, financial performance means achievement of required profit, liquidity and increased asset building in an organization. This means that the absolute and relative measures are in support, the liquidity ratios, current ratios and acid test ratios are financially supportive in an organization (Panday, 1996). Stoner (2003) further looks at financial performance to mean the ability to perform profitably, efficiently and effectively. This study measured financial performance to mean liquidity, profitability and accountability.

#### **1.2.4 Contextual Background**

Mobile banking emerged in Uganda mostly in 2007 following the failure of many commercial banks. In guarding against such failures, a number of commercial banks started adopting mobile banking as a way of remaining competitive in banking environment in Uganda (Kakembo, 2005). Centenary Bank is reported as among the frontline banks in Uganda to introduce mobile banking in their service provision eyeing for improving financial performance. Centenary bank was among the first commercial bank to put in place ICT infrastructure like e-cheque services and smart card systems in 2008 as well as introducing debit and credit cards, cente-mobile, telephones, mobile phones and web sites (Nabayunga, 2006). All these were done to improve its financial performance while curbing bank fraud, making accounts secure and be accountable to people they serve. However, it is reported that the financial performance of the bank is still indulged in a number of problems and financial errors. It appears that the mobile banking used in form of ICT infrastructure, telephone billing system and online banking were still being queried.

#### **1.3 Statement of the problem**

The emergence of mobile banking had a significant influence on its adoption by Commercial Banks worldwide. Centenary Bank was among the first banks to adopt mobile banking in form of ATMs, telephones, mobile phones and websites (Dumba, 2014). These were adopted in the view of improving its financial performance that is in form of improving profitability, liquidity position and accountability. However, this has not been the case, in 2015; Centenary Bank was reported to have lost over UGX 4billion shillings from its very managers, who swindled customer money using ATMs (Centenary Bank annual report, 2016). In addition, UGX 800 million shillings were embezzled from the bank from outsiders who by all means acquired Pin codes and the bank was

made to pay for the losses (Centenary Bank Annual Report, 2014/2015). In 2012, criminals hacked into the bank's records and created records showing that sh10billion was transferred mob ally from several customers' accounts to a particular single account at the Jinja Centenary Bank Branch (New Vision, 28<sup>th</sup>, Jan 2015). This consequence of this problem lied in capital base depletion of the bank. This triggered this investigation to establish whether mobile banking in one way or the other is linked to financial performance of commercial banks in Uganda using Centenary bank.

#### **1.4 Purpose of the Study**

This study intended to explore the extent to which financial performance of Centenary Bank is affected by mobile banking.

#### **1.5 Objectives of the Study**

- i) To establish the relationship between ICT infrastructure and the financial performance of Centenary Bank.
- ii) To examine the relationship between telephone billing system and the financial performance of Centenary Bank.
- iii) To assess the relationship between online banking and the financial performance of Centenary Bank.

#### **1.6 Research Questions**

- i) What is the relationship between ICT infrastructure and financial performance of Centenary Bank?

- ii) What is the relationship between telephone billing system and financial performance of Centenary Bank?
- iii) What is the relationship between online banking and financial performance of Centenary Bank?

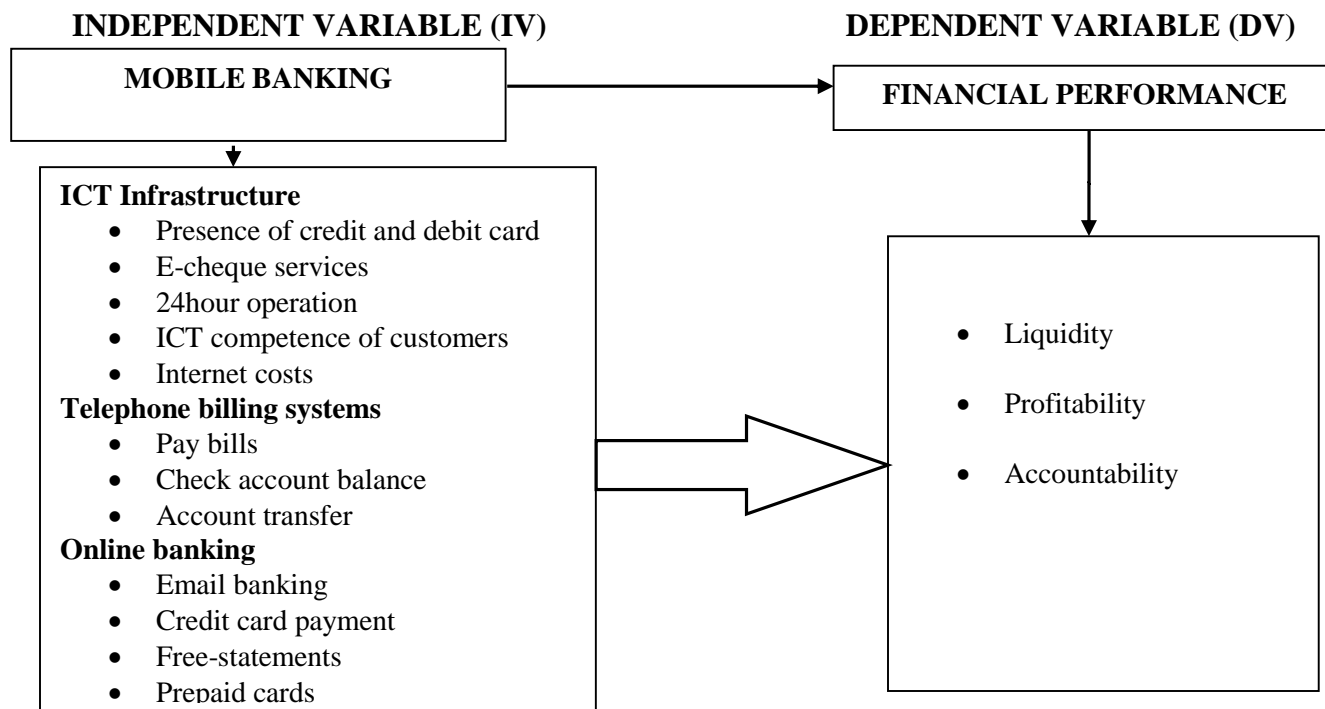
### **1.7 Hypotheses**

- i) There is a significant relationship between ICT infrastructure and financial performance of Centenary Bank
- ii) There is a significant relationship between Telephone billing system and financial performance of Centenary Bank.
- iii) There is a significant relationship between Online banking and financial performance of Centenary Bank Uganda

### **1.8 Conceptual Framework**

This is a diagrammatic representation of the linkages among the variables of study. It shows the conceptualized relationship between the independent variable. The conceptual linkages for this study are illustrated by using the diagram below:

**Figure 1: Conceptual Framework**



*Source: Adapted from Malden and Jayasena (2009)*

Basing on the diagrammatic representation of study concepts above, it is clear that the assumption that mobile banking has a relationship with financial performance of centenary bank is well demonstrated. It is assumed that online banking, ICT infrastructure and telephone billing systems have a directional relationship with financial performance of a bank in terms of it liquidity, profitability and accountability.

### **1.9 Significance of the study**

The study is expected to benefit readers as far as the relationship between mobile banking and the financial performance of Centenary Bank is concerned;

- i) To Centenary Bank, the study may help in solving risks associated with mobile banking in centenary bank since the sources of risks are exposed.

- ii) To the central Bank, the study may help in modernizing its operations as far as integrating mobile banking in financial institutions in Uganda is concerned.
- iii) To the central Bank of Uganda, the study will help it to form a “Center for Online Banking Technology and Management”
- iv) To other Scholars, the study will help other researchers to gain more knowledge of the area they are researching about and point out what has been about the problem and what was probably left out.

### **1.10 Justification of the study**

Prior studies (including Anguelovet.al, (2004) and Rogers (2009) had been done on mobile banking and financial performance of commercial banks in Uganda. However, no study has been done on the aforementioned topic in Centenary Bank considering the same dimensions of mobile banking like ICT infrastructure, telephone billing system and online banking. Centenary Bank was reported to have lost over UGX 4billion shillings from its very managers, who swindled customer money using ATMs (Centenary Bank annual report, 2016). In addition, UGX 800 million shillings were embezzled from the bank from outsiders who by all means acquired Pin codes and the bank was made to pay for the losses (Centenary Bank Annual Report, 2014/2015). In 2012, criminals hacked into the bank’s records and created records showing that sh10billion was transferred from several customers’ accounts to a particular single account at the Jinja Centenary Bank Branch (New Vision, 28<sup>th</sup>, Jan 2015). This gave a rightful rationale to act as a basis for undertaking this study in Centenary bank Uganda.

## **1.11 Scope of the Study**

### **1.11.1 Content Scope**

This study delimited itself to examining the relationship between mobile banking and financial performance. Mobile banking in this study had the dimensions of ICT infrastructure, telephone billing system and online banking whilst; financial performance was limited on liquidity, profitability and accountability.

### **1.11.2 Geographical Scope**

The study was conducted in Centenary Bank using the main branch (Mapeera House) in Kampala, Kampala central region in Uganda.

### **1.11.3 Time Scope**

The study focused on the time framed 2011-2016 because this is the period when the financial performance of Centenary Bank has been characterized by massive inefficiencies (Centenary Bank annual report and financial statement, 2015).

## **1.12 Operational Definitions of Terms**

- **ICT infrastructure:** in this study, this referred to the presence of infrastructures in centenary bank that can stimulate the usage of mobile banking and among these included; cheaper online services, smart card systems, credit and debit card systems and e-cheques services
- **Telephone billing system:** this referred to the adoption of telephones services in paying, checking accounting and transferring money from one account or bank to the other in Centenary bank



- **Online banking:** this meant the extent to which Centenary Bank had adopted website services, email banking services and prepaid cards in its service delivery.
- **Liquidity:** this meant the current ratio of current assets divided by current liabilities in an organization
- **Profitability:** this meant the rate at which the organization income exceeds its expenses in the process of rendering its services
- **Accountability:** this meant the extent to which mobile banking can make the organization accountable in its reports and service delivery

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter reviews the literature related to establishing the relationship between mobile banking on financial performance of commercial banks. The review was conceptualized under the objectives of the study and focuses primarily on ICT infrastructure, telephone billing system, and online banking and their relationship with financial performance. These are considered the pillars of the study.

#### **2.2 ICT infrastructure and financial performance**

Morris-Cotterill (2002) indicated that ATMs. Cracknell (2004), in further support, opinioned that Malawi Central Bank indicated that using smart cards which enables a biometric system in form of ATM had increased on the security in accessing finances across commercial banks and this increased the level of trusting smart card structure in withdrawing funds. This not only improved on the convenience and accountability on the side of customers but also improved on financial performance of commercial banks. The researcher was interested to establish what was particularly happening in Uganda Commercial Bank Sector while using Centenary bank. It appeared that most of the literatures reviewed were limited to outside countries and outside the scope of this study.

Further, study findings indicated that centenary Bank has e-cheque services. This implied that centenary bank has endeavored to put in place e-cheque services which have added on the convenience of banking; immediate access anywhere with an online connection; no need to physically pickup or deposit; no cheque book required. Further key informants from Bank of Uganda indicated that this had increased on security in terms of uniquely identifiable and protected

with digital signing technology that prevents data from being altered. This was supported by George et al (2008) who had earlier indicated that e-Cheque details are captured digitally for complete accuracy and use of PIN-protected Security Device / Mobile Security Key and SMS transaction alerts to provide safe and secure service. Further, IT staffs added that this had increased on the flexibility in the bank in terms of extended cheque deposit cut-off time, issuance, deposit and status enquiry can be performed anytime online and festive themed e-Cheque background designs available for selection (George et al, 2008). The researcher was interested to establish what was particularly happening in Uganda Commercial Bank Sector while using Centenary bank. It appeared that most of the literatures reviewed were limited to outside countries and outside the scope of this study.

Further, the study findings indicated that centenary bank has credit card system for its clients. This implied that Centenary Bank has adopted debit cards in its daily business operations which are too essential in easy international business transaction. Since the mean was above 3.5, this indicates that Centenary Bank had in place debit cards for its clients. Gourlay and Pentecost (2005) in support of the findings still, explain that funds are usually sent using an ICT procedural system which allows banking or retail banking for 24hours a day. The coming of credit card was indicated by a number of scholars as having improved on the performance of commercial banks since a number of transactions done by client a day increases. The researcher thus felt a need to undertake this study to establish whether Centenary bank had installed the required ICT infrastructures and whether these had improved on its financial performance.

Jumbo et al (2008) in conclusion indicates that ICT infrastructures are structured and put in place to offers the required level of convenience to users and they are flexible to a number of clients since they have absolute advantage and control to access their accounts without wasting time in long queues. This ICT infrastructure has been credited in reducing barriers or eliminating barrier or distance to people who want to access banks in wherever they are. This makes banking a 24-hr activity for clients. The researcher thus felt a need to undertake this study to establish whether Centenary bank had installed the required ICT infrastructures and whether these had improved on its financial performance.

### **2.3 Telephone billing system and financial performance**

Ovia (2001) who had earlier indicated that telephone billing system is a system which can ably help clients to access their finances using their own phones in any location by simply dialing. Amedu (2005) indicates that because of improving financial performance, worldwide, banks have started to adopt telephone banking. The study findings indicated that a customer can easily check his/her account balance using my phone in centenary bank. This means that a customer can easily know every kind of information he/she needs by merely calling in the bank especially if he/she has the bank codes. Since the mean is above 3.5, this therefore meant there is no much variation in the mean score obtained from different respondents. This was congruent with what Emmanuel (2006) had found out that financial performance of commercial banks improve as long as customers at any time can access their bank information using their phones. This makes it easy for people to use bank services. The researcher thus felt a need to undertake this study to establish whether Centenary bank had a believable telephone billing system to improve its financial performance.

The study findings further indicated that a customer can now withdraw his/her/finances using his/her/phone from the bank. This implied that the bank has in place computer information system that can rapidly feed information to clients whenever they need. According to Johnson (2005), he supported the above finding while saying that this means that at any time, customers can access their money and bank information using their phones. This makes it easy for people to use bank services. Al Ashban and Burney (2001) studied technology that had been adopted in Arab Emirates by a number of commercial banks and indicated that a number of customers had joined telephone banking systems since it allowed and that education played a vital role in the adoption and usage of tele-banking technology. The researcher thus felt a need to undertake this study to establish whether Centenary bank had a believable telephone billing system to improve its financial performance.

The study also concurred with Bohm et. al. (2000), when it indicated that with Centenary Bank, a customer can now bank his/her money using a cell-phone at home. This thus implied that in Centenary Bank, customers who are busy and a bit distant can easily access their account information. This act is very much important in attracting new customers to use bank services. Telephone billing system contributes adequately to financial performance of Centenary Bank. It should be noted that Telephone billing system is a system which has enabled clients to use a facility or phone to enable clients to only make a call in the bank or text and the money is transferred or transmitted to another person account. The bank provides numbers to clients and they simply make transactions using such phone calls or passwords. This makes it easy to make convenience transfer of money and reduces chances of non-authenticity (Kigen, 2010).The researcher thus felt a need to undertake this study to establish whether Centenary bank had a believable telephone billing system to improve its financial performance.

Wambari (2009) further ascertained that telephone billing systems has not been widely spread in many developing countries since it works well with people who have access to mobile phones. Since a big number of people lack mobile phones in developing countries, it becomes not easy to make this reality achieved. This system works with a computer aided telephone technology which makes it easy to reduce on the level of perceived risks. This is because all sim cards and phones are clearly recorded and within the system of national registration bureau which makes it easy to follow up in case of any errors or evidences of impersonation. Ovia (2001) further indicates that this telephone billing system reduces chances of reducing complaints. It reduces chances of transaction errors since the system is automatically managed and oriented. The researcher thus felt a need to undertake this study to establish whether Centenary bank had a believable telephone billing system to improve its financial performance.

## **2.4 Online banking and financial performance**

Ahmed et. al., (2001) further had ascertained that instant cash transfer provides a much more good level of convenience when undertaking the management of personal funds even when you are in bedroom, banking can take place and this makes the bank working 24hrs and hence improvement in financial performance. Though, it is challenged by level of insecurity and threatened privacy. Literature established that there are no cases of account compromised in Centenary Bank through online and online banking is free from security risks. These tell us that the bank has done a lot to away with phishing and cybercrimes that are involved in mobile money transfer. This makes the system attractive to a big number of people. Further, Mattilla (2002) did a research on factors affecting adoption of online banking services and applied the innovation diffusions theory. In her study, she asserts that demanding and knowledgeable customers assume that providers of banking service acting in an environment that is technologically driven will continue keeping up with

development, apply further technological innovation in service offerings and ease up lives of customers. Online Banking offers a higher level of convenience for managing one's finances even from one's bedroom (Nath et. al., 2001). However, it continues to present challenges to the financial security and personal privacy. This study was undertaken to assess whether online banking as used in centenary bank has reduced on congestions involved in banking and whether this has had an effect on financial performance of centenary bank.

Ayadi (2003) incongruently believed that access to mobile means of payment and the high number of customers connected to the online has changed the perception of banks toward market and increased the development of online Banking. Hutchinson and Warren (2003) argue that online banking requires a policy of security that is sounding and propounded on effectiveness on the side of users. Online banking technology has made remarkable changes in the banking industry, which include: cost reduction due to mobile processing carried out on the Online. This study was conducted to establish whether online banking has provided convenience to bankers and how this has turned into improved financial performance of Centenary Bank.

Donner and Tellez (2008) in the study they did in Indian commercial banking, they aimed at establishing the rate of adopting, usage and impact of online banking on financial performance. it was established that on-line banking offers a chance and best way of lowering costs of transferring money from one user to another at any time and this promotes the financial performance of a commercial bank since transactions means income on the side of the bank. Further, online banking came with increased usage of mobile payments which innovation is very important is providing account details on spot and avoid compromising the security. Many people have had their account details compromised, as a result of online banking. However, Aniston (2008) argues that the risks

involved in mobile payments which tend to consist of impersonation. Commercial banks according to Aniston (2008) have a duty to keep clients alert about the risks involved since the higher the risk, the lower the rate of adoption and the lower the risk, the higher the rate of adoption and the higher the improvement in financial performance of commercial banks. This study was conducted to establish whether online banking has provided convenience to bankers and how this has turned into improved financial performance of Centenary Bank.

## **2.5 Summary of Literature Review**

Some of these studies were conducted in different arenas which lack the empirical truth of what is happening in Uganda. Relatively little scholarly research explored the relationship between mobile banking systems and financial performance of commercial banks in a developing country like Uganda. This study therefore sought to fill some knowledge gap in the research literature. This chapter explained the theoretical underpinning which was the innovation diffusions theory. This theory fell short of explaining what is exactly happening in Centenary Bank, this study endeavored to establish its applicability in the study findings. It further provided literature on the three objectives which also were also the components of mobile banking transactions. The literature on these study objectives lacked contextual relationship with what is happening in Centenary Bank in Uganda. Most of these literatures seemed general in scope. This study therefore, established that the prevalence of mobile banking had improved on financial performance of Centenary Bank.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**



This chapter consists of the design required to undertake this research, sampling respondents, collecting data, establish validity and reliability of the tools and analyzing of data to be collected.

### **3.2 Research Design**

The study adopted a case study survey design. A case study was used to ensure that Centenary Bank can be used to represent other commercial banks in Uganda (Barratt and Kirwan, 2009). Quantitative methods were used to quantify data for purposes of describing current conditions while investigating the relationship between the two study variables. The study also adopted a qualitative approach to ascertain the in-depth information for the study variables while balancing opinions from a number of respondents (Amin, 2005).

### **3.3 Study Population**

The study population consisted of 140 respondents (Centenary Bank Main Branch human resource Records, 2017). These consisted of 10 administrative bank managers, 92 lower bank officials, 23 Customers (Victims of mobile banking fraud); 7 IT staffs and 8 Central bank officials. All these were chosen because of their relevancy with the study objectives.

### **3.4 Determination of the Sample Size**

Determination of the sample size is said to be a plan of obtaining a representative sample from the population of study (Kothari, 2004). Morgan and Krejcie indicated in Amin (2005) was employed in determining the sample size and the table of Morgan and Krejcie (1970) is indicated in appendix III. Therefore, using that formula, 109 of respondents were considered for this study as indicated in Table.1 below.

**Table 1: Sample Size of Respondents and Sampling Technique**

<b>Category of Population</b>	<b>Population Size</b>	<b>Sample Size</b>	<b>Sampling Technique</b>
Administrative staffs	10	5	Purposive sampling
Central Bank Management officials	8	5	Purposive sampling
IT staff	7	7	Purposive sampling
Customers (Victims of mobile banking fraud)	23	19	Simple random sampling
Bank lower officials	92	73	Simple Random sampling
<b>Total</b>	<b>140</b>	<b>109</b>	

*Source: primary data ((2014)*

### **3.5 Sampling Techniques**

This study employed simple random sampling technique representing probabilistic sampling design and purposive sampling representing non-probability sampling. Simple random sampling was taken as appropriate for choosing bank lower officials in centenary bank. According to Mugenda & Mugenda (2003), this technique is preferred because it reduces bias. For purposive sampling, this was used in choosing administrative staff, Central Bank Management officials, IT staff and customers (Victims of mobile banking fraud). This technique was used because it was important in choosing people who are knowledgeable about mobile banking and financial performance of Centenary bank (Sekaran, 2003).

### **3.6 Data Collection Methods**

Data gathered from both primary and secondary sources. Qualitative and quantitative methods were used in the collection of data. Original data was gathered using self- administered

questionnaires and interviews. While secondary data was obtained from review of documents such as journals, reports, planning documents, memos, and files. The data was collected from Centenary Bank by the researcher and assisted by research assistants for convenience and speed.

### **3.6.1 Questionnaire Survey**

A questionnaire survey refers to a method of data collection that is designed with a series of short questions using both open and close ended questions to allow prompt answers from respondents (Amin, 2005). This was employed to collect original data from bank lower officials in centenary bank. This involved use of close ended questionnaire which allowed easy correlation and regression of the respondent's attitudinal disposition on the independent and dependent variables (Amin, 2005). Secondly the use of questionnaire allowed busy respondents to adequately reserve time to answer the questions in their convenient hours (Oso and Onen 2008).

### **3.6.2 Interview**

The study employed interview method. Interview method means collecting data while asking differing questions that allow probing and prompting of respondent's answers (Ruane, 2015). The researcher obtained more information on mobile banking and financial performance of Centenary bank. This method helped the researcher to clearly obtain in-depth answers or information from key informants and allowed clarification on anything that may arise than a survey method. The interview method was best used on administrative staff, Central Bank Management officials, IT staff and customers (Victims of mobile banking fraud).

### **3.6.3 Documentary Review**

The study here collected secondary data guided by the documentary review checklist. Researcher reviewed documents in order to obtain information that was related to the study. This method was

used because it enabled the researcher to find data at his appropriate time. Gather data that was thoughtful in that informants give attention in obtaining them and enable the researcher obtain data in the language of the respondent (Oso & Onen, 2008).

### **3.7 Data Collection Instruments**

#### **3.7.1 Questionnaire**

A questionnaire refers to a tool of data collection that is designed with a series of short questions using both open and close ended questions to allow prompt answers from respondents (Amin, 2005). This was employed to collect original data from bank lower officials in centenary bank. This involved use of close ended questionnaire which allowed easy correlation and regression of the respondent's attitudinal disposition on the independent and dependent variables (Amin, 2005). Secondly the use of questionnaire allowed busy respondents to adequately reserve time to answer the questions in their convenient hours (Oso and Onen 2008).

#### **3.7.2 Interview Guide**

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#### **3.7.3 Documentary Review**

The study here collected secondary data guided by the documentary review checklist. Researcher reviewed documents in order to obtain information that was related to the study. This method was used because it enabled the researcher to find data at his appropriate time. Gather data that was thoughtful in that informants give attention in obtaining them and enable the researcher obtain data in the language of the respondent (Oso & Onen, 2008).

### **3.8 Quality control**

#### **3.8.1 Validity**

Validity refers to what an instrument is supposed or meant to measure (Mugenda & Mugenda, 2003). Similarly according to Amin (2005), it is the extent to which a scale measures the concept that it is intended to measure; determined using various methods but the most crucial being via the content validity method (CVI). Content Validity Index (CVI) reveals the potential of the constructed instrument to remain right and true for the intended study. The researcher determined CVI, when after giving the Self-Administered Questionnaire (SAQ)/ instrument to two management and research professionals for rating/ judgment and scoring. They found out that, respectively 14 and 15 out of 16 SAQ items were really true and correct. Using the following mathematical model,  $CVI = [(IR_1 + IR_2) \div 2] \div \text{No of items in questionnaire}$ , the content validity index was accordingly the calculated:

$IR_1$  referred to inter – rater/ judge one;  $IR_2$  meant inter rater/ judge two.

By substitution,  $CVI = [(IR_1 + IR_2) \div 2] \div \text{No of items in questionnaire} = [(14+15) \div 2] \div 16 =$

**0.9063**

According to (Amin, 2005), CVI of 0.9063 was presumed a very high one, thus valid since it was far above 0.7. In ultimate  $CVI = 0.9063$  assured the researcher that the instrument that was to be

used in the study was sufficient as it was far above the conventional 0.7 (Opolot, 1992; Amin, 2005).

### 3.8.2 Reliability of Instrument

Reliability is a measure of the degree to which an instrument yields consistent results or data every time it is used to measure trait or concept from the same respondents (Mugenda & Mugenda, 2003). Internal consistency technique was used where a fraction of respondents (10 respondents) not part of the study were requested to answer a pre - test questionnaire and thereafter data that was obtained was used to calculate Cronbach alpha (Appendix C). Respective *alphas* obtained are shown in Table.2.

**Table 2: Reliability Cronbach alpha coefficients of mobile banking and financial performance**

Variable	Alpha coefficients	
ICT infrastructure	.885	
Telephone billing system	.816	
Online Banking	.814	
Financial performance	.901	

*\*Source: Primary data 2017*

Table.2 shows reliability *alpha* coefficients for the questionnaire items used in the study; 0.885, 0.816, 0.814 & 0.901 for autocratic leadership style; democratic leadership style; laissez-faire leadership style & staff performance, respectively. According to Amin (2005) an *alpha* above 0.5 indicates credible reliability of an instrument. These enabled the used instrument to be assumed reliable to produce consistent results when the tool is applied variously.

### **3.9 Data Collection Procedures**

The researcher obtained a letter from Uganda Management Institute introducing him to Centenary Bank and specifying that the data collected was solely for study purposes. Upon obtaining the requisite permission, the researcher proceeded with data collection starting with giving out questionnaires to the Centenary Bank lower bank officials. After that, interviews were conducted with administrative bank staffs, BOU staff and IT staff at Centenary Bank.

#### **3.9.1 Data Analysis**

#### **3.9.2 Quantitative data analysis**

The researcher presented data using descriptive and inferential statistics where frequency tabulations were used to present the data on sample characteristics whereas for the research objectives, spearman correlation matrix and linear regression analysis was used. The researcher used correlation analysis to test the relationship between mobile banking and performance of centenary bank whereas regression analysis was used in examining the extent of influence of mobile banking and financial performance of centenary bank.

#### **3.9.3 Qualitative data analysis**

Qualitative research is subjective, rich and in-depth description of information presented in form of words that were derived from the respondent's open-ended questions and interviews. The quantitative data was analyzed for content and language used through reviews of scripts looking for similarities and differences to identify themes and develop categories accordingly to the study objectives

### **3.10 Ethical considerations**

Privacy was safeguarded by informing the participants in advance that their names were required and therefore the information they give remained anonymous, and if the participants felt uncomfortable to answer certain questions, they had a right to leave them out and were not coerced (Mugenda & Mugenda, 2003).

To safeguard confidentiality, the participants were told early enough that the information they give was for only academic use and that any information obtained on private matters were preserved in confidence (Amin, 2005).

To ensure that there was no plagiarism in this study, all work used in this book was cited for and referenced. The researcher also went ahead to ensure that originality was ensured while using other people's work by testing this work using Turnitin Software from UMI website (Kothari, 2004). Further, voluntary participation was observed where by respondents were not forced to participate in the study without their will. They were persuaded through rapport.



## CHAPTER FOUR

### PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

#### 4.1 Introduction

This chapter presents an analysis and interpretation of study findings. This chapter provides information on the population demographics in terms of respondent characteristics, response rates, data screening, test results, measurement differences, testing of the hypotheses and measurement model estimation. In general, the analyses were conducted using a two-phase process consisting of confirmatory structural model and confirmatory measurement model. The findings are presented based on the study objectives and their respective hypotheses tested.

HO<sub>1</sub>: There is a significant relationship between ICT infrastructure and financial performance of Centenary Bank

HO<sub>2</sub>: There is a significant relationship between Telephone billing system and financial performance of Centenary Bank.

HO<sub>3</sub>: There is a significant relationship between online banking and financial performance of Centenary Bank Uganda

#### 4.2 Response rate

**Table 3: Showing the response rate**

<b>Respondents</b>	<b>Sample size</b>	<b>Frequency</b>	<b>Percentage</b>
Administrative staffs	5	5	100%
Central Bank Management officials	5	5	100%
IT staff	7	7	100%
Customers (Victims of mobile banking fraud)	19	15	78.9%
Bank lower officials	73	72	98.6%
<b>Total</b>	<b>109</b>	<b>104</b>	<b>95.4</b>

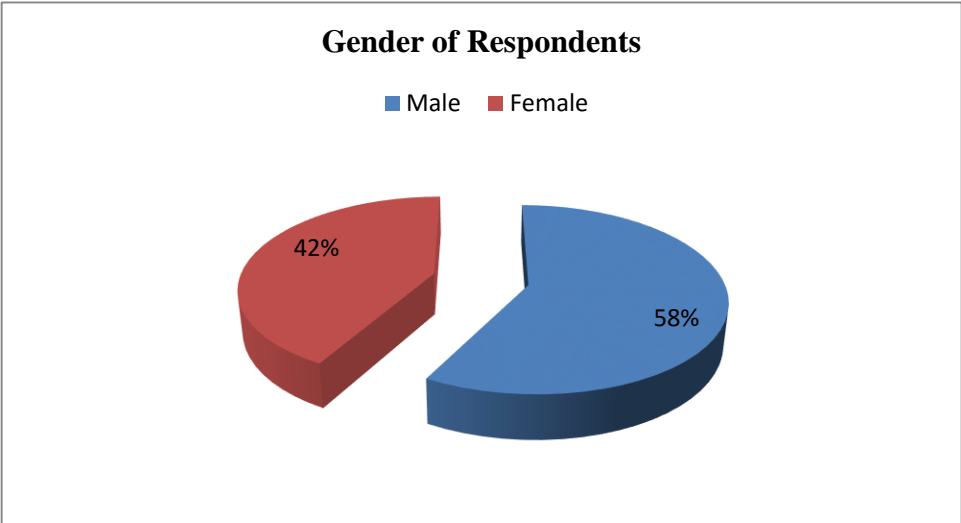
*Source: Primary data, 2017*

It is evident that the study was done basing on a response of above 70% which is recommended by Amin (2005). In this study, the response rate was measured at 95.4%. This means that on the 109 respondents, 104% of the respondents managed to attend to the study.

**4.3 Background of the Respondents**

**4.3.1 Gender of the respondents**

**Figure 2: Gender of the respondents**

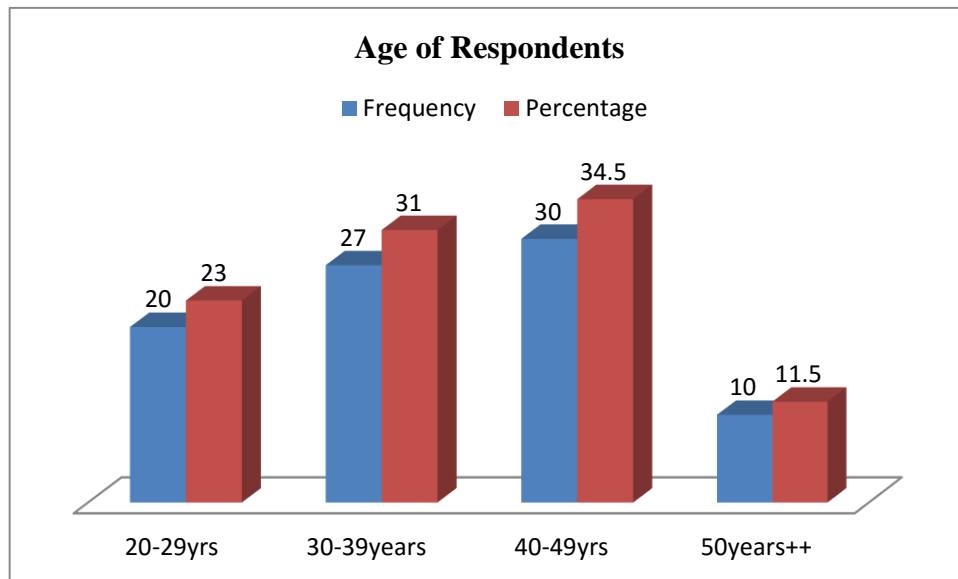


*Source: primary data 2017*

Figure 2 above shows that, many of the respondents as investigated in Centenary Bank were males taking over 58% of the respondents. Females were 42%. This means that the study was done among both males and females.

### 4.3.2 Age of the Respondents

Figure 3: Age of the respondents

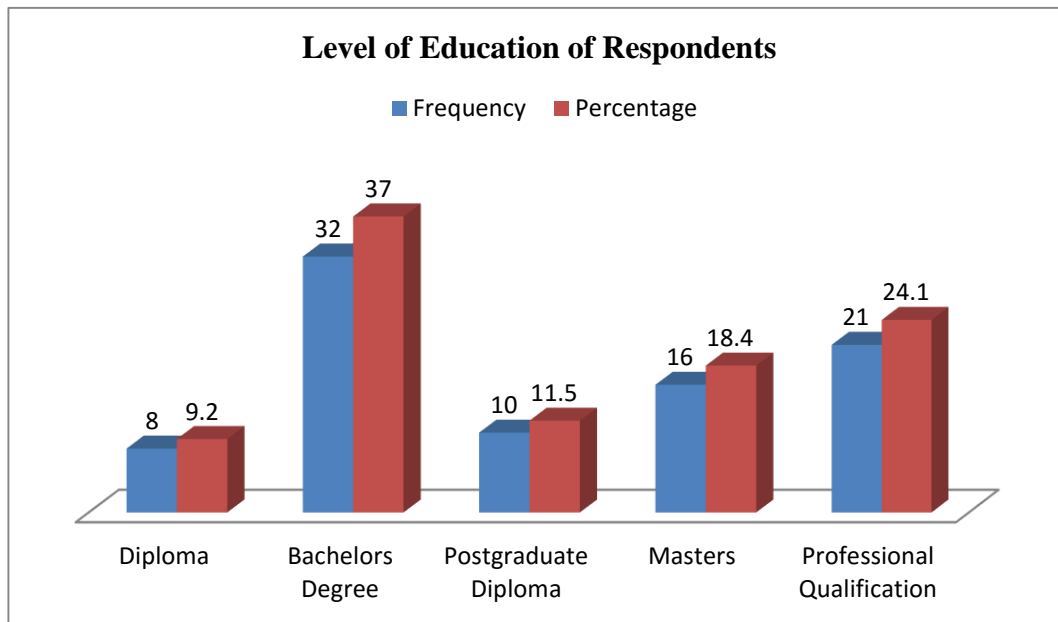


*Source: primary data 2017*

On age groups, majority of them were 40-49years and these were calculated with 34.5%. those who took 30-39years had a representation of 31%. The next age group was those of 20-29years and this had a percentage of 23% and those of years of above 50years were represented by 11.5%. This means that the study was done majorly in mature people who would be relied when collecting data.

### 4.3.3 Level of Education of the Respondents

Figure 4: Level of education of the respondents

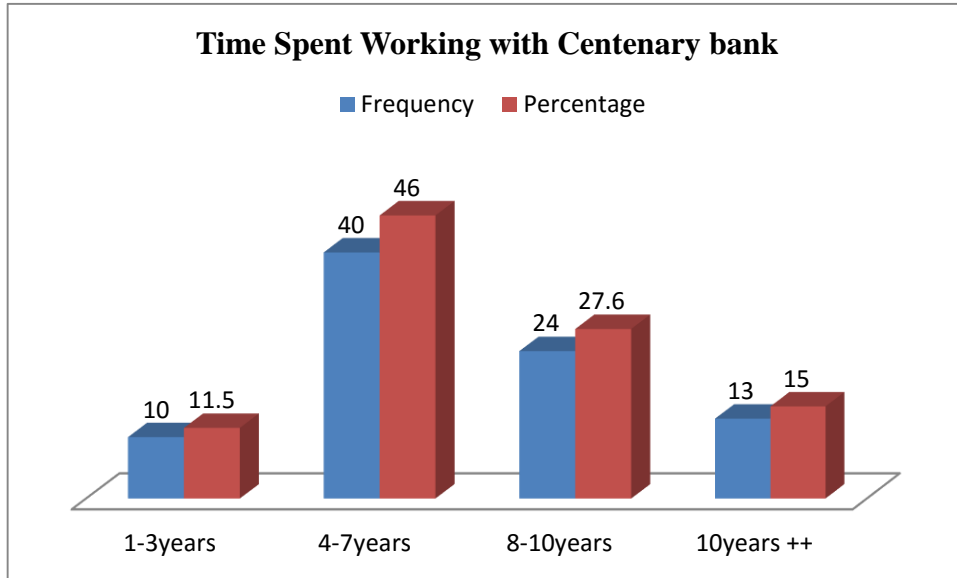


Source: primary data 2017

Majority of respondents in Centenary Bank officials had attained professional qualification of CPA with (24.1%) of the respondents. 37% had a bachelor's degree, 9.2% had achieved a diploma level of education. 11.5% of the respondents represented post-graduate diploma holders and 18.4% represented those with a master's degree. Basing on the above findings, given the fact that the study was conducted in both much educated and less educated fellow, this completely provides balanced pictures required by the study as per the mental and cognitive capacity of the respondents.

#### 4.3.4 Time spent working with Centenary Bank

Figure 5: Time spent working with Centenary Bank



Source: primary data 2017

Here, majority of the respondents were in Centenary Bank for over 4-7 years and these were measured with 46%. 27.6% of them had spent over 8-10 years, 1-3 years had been working with Centenary Bank for 1-3 years and the last category of 10 years and above had spent 15%. This means that most of the respondents used in the study had the required internal memory of what had been happening as far as mobile banking and financial performance of Centenary Bank is concerned.

#### 4.4 Empirical findings on mobile banking and financial performance of Centenary Bank

The findings in relation to the performance of Centenary Bank have presented objective by objective.

#### 4.4.1 Findings on the financial performance of Centenary Bank

**Table 4: Descriptive Statistics on financial performance of Centenary Bank**

	Percentage responses (%)					Mean
	SD	D	N	A	SA	
Our bank has enough cash to meet its obligations effectively (as and when they fall due)	3.9%	3.9%	7.8%	39.4%	44.7%	3.50
All our loans are paid in time	3.9%	2.6%	6.5%	53.9%	34.2%	3.54
The Default level in our bank has reduced for the past three years	5.2%	11.8%	5.2%	87%	35.5%	3.73
Our Return on Equity has increased for the past three years	2.6%	3.9%	7.8%	59%	26.3%	4.00
Every year increases shareholder's equity	1.3%	1.3%	31.5%	61.8%	3.9%	4.02
Our net income supersedes our operating costs for the last 3years	1.3%	1.3%	3.9%	71.8%	21.5%	4.07
All bank loans are dully collected	0%	0%	17.8%	50%	87.2%	4.11
The bank 's asset base has greatly increased over time	0%	0%	2.6%	50%	47.3%	4.37
The bank's income increases every year	0%	0%	21.5%	37%	41.3%	4.43
The percentage of non-performing loans in our bank has been reducing consistently	14.4%	9.2%	36.8%	28.9%	7.8%	4.44

*Source: primary data 2017*

The responses in relation to whether centenary bank had enough cash to meet its obligations effectively. The study established that 44.7% strongly agreed, 33.9% agreed, 7.8% were not sure, 3.9% disagreed and 3.9% strongly disagreed. The study generally established that 78.6% of the respondents generally agreed that centenary bank had enough cash to meet obligations effectively. One of managers during an interview also agreed that centenary bank has sufficient funds to the obligations. He said “*our bank has sufficient funds to effectively meet our obligations. The time when the bank was started we used to experience such problems.* ”

On whether all loans are paid in time. The study established that 53.9% agreed, 34.2% strongly agreed, 6.5% were not sure, 2.6% disagreed and 3.9% strongly disagreed. The study generally established that 88.2% of the respondents generally agreed that all our loans are paid in time. This was contrary to what one of the managers said, *“We still have some issues with some of our customers...we always endeavor to understand when they explain but it is not true that all our loans are paid in time.”*

The responses in relation to whether the Default level in our bank has reduced for the past three years. The study established that 47% agreed, 35.5% strongly agreed, 5.2% were not sure, 11.8% disagreed and 5.2% strongly disagreed. The study generally established that 82.5% of the respondents generally agreed that the Default level in centenary bank has reduced for the past three years. One of managers during an interview also agreed that the bank has had its default level reducing. He said *“one of the reasons why centenary bank has been growing and growing...it is that most of our clients have been compliant.”*

Further, to establish whether centenary bank’s Return on Equity has increased for the past three years. The study established that 59% agreed, 26.3% strongly agreed, 7.8% were not sure, 3.9 % disagreed and 2.6% strongly disagreed. The study generally established that 85.3% of the respondents generally agreed that the centenary bank’s Return on Equity has increased for the past three years. Findings from key informants were also supportive to this statement. One of them was quoted saying *“Our bank so far one of the highest return on equity in Uganda and I think it is the underlying reason why we are voted the best bank of the year 2016. ”*

On whether every year Centenary Bank increases shareholder's equity, the study established that 61.8% agreed, 3.9% strongly agreed, 31.5% were not sure, 1.3% disagreed and 1.3 % strongly disagreed. The study generally established that 65.2% of the respondents generally agreed that the every year the bank increases shareholder's equity. Findings from key informants were also supportive to this statement. A manager said *"as earlier informed you, our progress is measured on what external and internal reports released every year and I am sure all such reports have been too positive as far as shareholder equity."*

To further ascertain whether Centenary Bank's net income supersedes our operating costs for the last 3years. The study established that 71.8% agreed, 21.5% strongly agreed, 3.9% were not sure, 1.3% disagreed and 1.3 % strongly disagreed. The study generally established that 93.3% of the respondents generally agreed that the bank's net income supersedes our operating costs for the last 3years. Findings from key informants were also supportive to this statement. A manager said *"In the first place it hard to operate when the net incomes does not supersede operating costs...so it is very true that we are operating financially fine. "*

To further ascertain whether all bank loans are dully collected. The study established that 50% agreed, 37.2% strongly agreed, 7.8.9% were not sure. The study generally established that 93.3% of the respondents generally agreed that centenary bank loans are dully collected. This is a true measure of improved financial performance. Findings from key informants did not exactly concur with what was found out from questionnaires. They seemed to indicate that the bank some outstanding bad loans. This threatens the financial performance of the bank.

The responses on whether the bank's asset base has greatly increased over time. The study established that 50% agreed, 47.3% strongly agreed, 2.6% were not sure. The study generally



established that 97.3% of the respondents generally agreed that the bank's asset base has greatly increased over time. Findings from key informants were also supportive to this statement. A manager said *"This is very tangible to all people...on the first place it hard to operate when the net incomes does not supersede operating costs...so it is very true that we are operating financially fine."*

On the last responses, it was established that the percentage of non-performing loans in our bank has been reducing consistently. The study established that 7.8% strongly agreed, 28.9% agreed, 36.8% were not sure, 9.2% disagreed and 14.4% strongly disagreed. The study generally established that 35.8% of the respondents generally agreed that the percentage of non-performing loans in our bank has been reducing consistently. This was contrary to what one of the managers said, *"The problem of non-performing loans is not a done deal here, we are still solving it."*

These thus mean that Centenary Bank has enough liquidity, low non-performing loans, increased on its assets and profitability is perceived as increasing. These are indicators of prevailing good financial performance in Centenary Bank.

#### **4.4.2 Findings on presence of ICT infrastructure for mobile banking services in Centenary Bank**

To understand whether Centenary Bank had enough ICT infrastructures for mobile banking services, Table 5 has more details.

**Table 5: Descriptive Statistics on prevalence of ICT infrastructure in Centenary Bank**

Items	1	2	3	4	5	Mean
Customers have competence to use ICT	7.8%	22.3%	2.6%	47%	25%	3.55
Online costs to access our banking system is affordable	15.7%	10.5%	0%	51.3%	22.3%	3.55
Cases of bank fraud have reduced as a result of ATM	5.2%	21%	3.9%	35.5%	26.3%	3.58
There is a 24hour mobile banking in centenary banking	14.4%	6.5%	11.8%	34.2%	30.2%	3.64
Centenary Bank has credit card system for its clients	7.8%	14.4%	28.9%	36.8%	9.2%	3.78
Centenary Bank has e-cheque services	3.9%	5.2%	0%	50%	40.7%	4.18

*Source: primary data 2017*

The responses in relation to whether customers have competence to use ICT. The study established that 47% agreed, 25% strongly agreed, 2.6% were not sure, 22.3% disagreed and 7.8% strongly disagreed. The study generally established that 72% of the respondents generally agreed that customers have competence to use ICT. One of managers during an interview also agreed that the customers have competence to use ICT. He said *“The biggest numbers of our customers have been advancing rapidly and they can ably use ICT or can have next of kin to help them our especially in rural areas.”*

On whether online costs to access our banking system is affordable. The study established that 51.3% agreed, 22.3% strongly agreed, 2.6% were not sure, 22.3% disagreed and 7.8% strongly disagreed. The study generally established that 72% of the respondents generally agreed that online costs to access our banking system is affordable. One of managers during an interview also agreed

that online costs to access our banking system is affordable. He said *“These days internet people use it for entertainment...this makes it cheaper to use even in banking services.”*

The responses on whether cases of bank fraud have reduced as a result of ATM. The study established that 35.5% agreed, 26.3% strongly agreed, 3.9% were not sure, 21% disagreed and 5.2% strongly disagreed. The study generally established that 72% of the respondents generally agreed that cases of bank fraud have reduced as a result of ATM. One of managers during an interview did not fully believe this statement. One of them said *“Our system is not yet totally free from fraud we still register some cases but these have been reducing tremendously. ”*

The responses on whether there is a 24hour mobile banking in centenary banking. The study established that 34.2% agreed, 30.2% strongly agreed, 11.2% were not sure, 6.5% disagreed and 14.4% strongly disagreed. The study generally established that 64.2% of the respondents generally agreed that there is a 24hour mobile banking in centenary banking. Managers during an interview agree that there is a 24hour mobile banking in centenary banking. One of them said, *“Our mobile banking is operational 24hours... ”*

To further establish whether Centenary Bank has credit card system for its clients, the study established that 36.8% agreed, 28.9% remained neutral, 14.4% disagreed, 9.2% strongly agreed and 7.8% strongly agreed. The study generally established that 51.1% of the respondents generally disagreed that Centenary Bank has credit card system for its clients. Managers during an interview also disagree that Centenary Bank has credit card system for its clients. One of them said, *“We are still in the process of putting place a good operating credit card system though we have few operating... ”*

The responses in relation to whether Centenary Bank has e-cheque services. The study established that 50% agreed, 40.7% strongly agreed, 5.2% disagreed and 3.9% strongly disagreed. The study

generally established that 90.7% of the respondents generally agreed that Centenary Bank has e-cheque services. Findings from key informants were also supportive of the above statement.

The above statements implied that Centenary Bank has credit card system for its clients which has made it easy for a person to borrow and return money in time. The Bank mobile banking operates 24hrs and these have made it easy for the bank to increase on deposits made in the bank; Centenary Bank has an arrangement of swapping money from one account to the other which has increased on cash available in the bank and this is financially called liquidity. Issues to do with bank fraud were reported to have reduced as a result of ATM; and by adopting the ICT infrastructure, the security of the bank is not compromised but has increased on number of clients. Still, it was found out that by adopting e-cheque services, the bank has increased on its liquidity levels and Centenary Bank has debit cards for its clients which have increased on the number of clients joining Centenary Bank.

The above findings seemed to tally exactly with the documents reviewed, for instance, Bank of Uganda annual report (2013) reports that E-fund money transfer services have changed business environment and banking industry in Uganda. It urged commercial banks to ensure that it is propagated very well since it is a form of advancement but also improves financial performance of a financial institution.

#### **4.4.2.1. Correlation results for ICT infrastructure and financial performance**

The first null hypothesis stated, “There is a significant relationship between ICT infrastructure and financial performance of Centenary Bank”. Spearman correlation coefficient ( $r$ ) was used to test the hypothesis. Table 6 presents the test results.

#### **Table 6: Correlation results**

			ICT infrastructure	Financial performance
Spearman' s rho	ICT infrastructure	Correlation Coefficient	1.000	.754**
		Sig. (2-tailed)	.	.000
		N	87	87
	Financial performance	Correlation Coefficient	.754**	1.000
		Sig. (2-tailed)	.000	.
		N	87	87

\*\* . Correlation is significant at the 0.05 level (2-tailed).

*Source: primary data 2017*

Findings showed a positive relationship ( $\rho = .754$ ) between ICT infrastructure and financial performance. The relationship was also significant at  $P=0.00$  since it was less than 0.05. This meant that the hypothesis was tested that “*There is a significant relationship between ICT infrastructure and financial performance of Centenary Bank*” and accepted. Thus, the implication of the findings was that ICT infrastructure banking has a positive relationship with financial performance of Centenary Bank. The positive influence implies that a change in ICT infrastructure banking relates to a significant change in financial performance of Centenary Bank. The positive nature of the correlation implied that ICT infrastructure banking must be ensured if financial performance of Centenary Bank is to be achieved.

#### 4.4.2.2. Regression results for ICT infrastructure and financial performance

**Table 7: Model summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.754 <sup>a</sup>	.569	.567	2.297

a. Predictors: (Constant), ICT infrastructure

*Source: primary data, 2017*

The study findings established that ICT infrastructure had a strong relationship with financial performance of Centenary Bank. Going by adjusted R Square, it is clear that ICT infrastructure contributed 56.7% change in financial performance of Centenary Bank.

#### 4.4.3.2 Findings on adoption of telephone billing system in Centenary Bank

To understand whether Centenary Bank adopted telephone banking, Table 8 has more details.

**Table 8: Descriptive Statistics on telephone billing system in Centenary Bank**

Items	1	2	3	4	5	Mean
I can now pay bills using my cell phone in centenary bank	13%	7.8%	13%	38%	27.6%	3.55
A customer can now easily transfer money from his/her/ her bank account to another using his/her/ her phone	7.8%	22.3%	2.6%	87%	25%	3.75
Centenary Bank has smart card systems in place	15.7%	10.5%	0%	51.3%	22.3%	4.05
With Centenary Bank, a customer can now bank his/her money using a cell-phone at home	5.2%	21%	3.9%	35.5%	26.3%	3.58
A customer can now withdraw his/her/ her finances using his/her/ her phone from the bank	14.4%	6.5%	11.8%	34.2%	30.2%	3.64
A customer can easily check his/her account balance using my phone in centenary bank	7.8%	14.4%	9.2%	28.9%	36.8%	4.58

*Source: primary data 2017*

The responses on whether customers can now pay bills using my cell phone in centenary bank. The study established that 38% agreed, 27.6% strongly agreed, 13% were not sure, 7.8% disagreed and 13% strongly disagreed. The study generally established that 65.2% of the respondents agreed that customers can now pay bills using my cell phone in centenary bank. One of managers during an interview did not fully believe this statement. One of them said *“This is now a reality...people can pay most of the bills using their phones starting from school fees, water bills, electricity bills and TV bills.”*

The responses on whether customers can now easily transfer money from his/her/her bank account to another using his/her/her phone. The study established that 57% agreed, 25% strongly agreed, 2.6% were not sure, 22.3% disagreed and 7.8% strongly disagreed. The study generally established that 82% of the respondents agreed that customers can now easily transfer money from his/her/her bank account to another using his/her/her phone. Managers were supportive of this claim

To establish whether a customer can now bank his/her money using a cell-phone at home, the study established that 35.5% agreed, 26.3% strongly agreed, 3.9% were not sure, 21% disagreed and 5.2% strongly disagreed. The study generally established that 61.9% of the respondents agreed that a customer can now bank his/her money using a cell-phone at home. One of managers during an interview did not fully believe this statement. One of them said *“We are still propagating how best everything will work...we have some arrangements by now like CenteApp which is used in depositing or banking using a phone.”*

The responses on whether a customer can now withdraw his/her/her finances using his/her/her phone from the bank. The study established that 34.2% agreed, 30.2 strongly agreed, 11.8% were

not sure, 14.4% strongly disagreed and 6.5% disagreed. The study generally established that 64.4% of the respondents agreed that a customer can now withdraw his/her/ her finances using his/her/ her phone from the bank. This was supported by key informants while agreeing that a customer can now withdraw his/her/ her finances using his/her/ her phone from the bank. One of them said *“It is now the order of the day in centenary bank...in fact over 30% of most withdrawal transactions done in centenary bank are done using a phone...people transfer money from their account to their phones and they can always withdraw.”*

The responses on whether a customer can easily check his/her account balance using my phone in centenary bank. The study established that 36.8% strongly agreed, 28.9% strongly agreed, 9.2% were not sure, 14.4% disagreed and 7.8% strongly disagreed. The study generally established that 74.6% of the respondents agreed that a customer can easily check his/her account balance using my phone in centenary bank. This was supported by key informants while agreeing that a customer can now withdraw his/her/ her finances using his/her/ her phone from the bank. One of them said *“It is now the order of the day in centenary bank...in fact over 30% of most withdrawal, deposit or check their accounts in centenary bank are done using a phone...people transfer money from their account to their phones...”*

The above responses thus means that Centenary Bank has adopted mobile banking for distant and busy customers; the bank has introduced Tele-banking in Centenary Bank which allows customers to pay all their monthly bills using a phone; Centenary Bank installed on with a computers information system that help the tellers in their work; With Centenary Bank, there is less adoption of customers banking money using a cell-phone at home which has impacted on the bank’s liquidity in one way or another; Centenary Bank has smart card systems in place which has expanded the bank’s assets. Add on the reportage that; A customer can now withdraw his/her



finances using his/her phone from the bank and this has increased on bank's net interest margin; A customer can easily know every kind of information he/she needs by merely calling in the bank especially if he/she has the bank codes; The bank provides information update about the bank through SMS and this has stimulated more savings and a customer can now easily check his/her bank account using his/her phone which has increased on bank safety. These are all indicators of prevalence of telephone billing system in Centenary Bank.

The above views from the both questionnaires and interviewees seemed incongruent with what had been indicated in Documents reviewed. For instance, ADB Report (2010) indicated that most of commercial banks in Uganda lack advanced and string network to sustain telephone banking, add on the fact that even the customers seem to not readily adopt this kind of banking. This has affected on the financial performance of Centenary Bank since it has to put in a lot without getting much more in turn.

#### **4.4.3.1 Correlation results on telephone billing system and the financial performance**

To test if online banking had an influence the financial performance of Centenary Bank, a spearman rho was employed. A null hypothesis stated, *“There is no significant relationship between telephone billing system and financial performance of Centenary Bank”*

**Table 9: Correlation results**

			Telephone billing system	Financial performance
Spearman's rho	Telephone billing system	Correlation Coefficient	1.000	.599**
		Sig. (2-tailed)	.	.000
		N	87	87
	Financial performance	Correlation Coefficient	.599**	1.000
		Sig. (2-tailed)	.000	.
		N	87	87

\*\* . Correlation is significant at the 0.05 level (2-tailed).

*Source: primary data 2017*

Findings showed a positive relationship ( $\rho = .599$ ) between telephone billing system and financial performance. The relationship was also significant at  $P=0.00$  since it was less than 0.05. This meant that the hypothesis was tested that “*There is a significant relationship between telephone billing system and financial performance of Centenary Bank*” and accepted. The implication of these findings is that there exists a positive influence between telephone billing system and financial performance of Centenary Bank. The significant influence implied that a change in telephone billing system contributed to a significant change in financial performance of Centenary Bank. The positive nature of the influence implied that the change in telephone billing system was in the opposite direction with financial performance whereby addressing telephone billing system can contribute to high financial performance and vice versa.

#### 4.4.3.2 Regression results for telephone billing system and the financial performance

**Table 10: Model summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.599 <sup>a</sup>	.359	.348	1.157

a. Predictors: (Constant), telephone billing system

*Source: primary data, 2017*

The study findings established that telephone billing system had a strong relationship with financial performance of Centenary Bank. Going by adjusted R Square, it is clear that telephone billing system contributed 36% change in financial performance of Centenary Bank.

#### 4.4.4 Findings on adoption of online banking services in Centenary Bank

To understand whether Centenary Bank had adopted online banking services, Table 11 has more details.

**Table 11: Descriptive Statistics on adoption of online banking services in Centenary Bank**

Items	1	2	3	4	5	mean
Our credit card services are free from security risks	22.3%	22.3%	31.5%	10.5%	13%	3.47
The bank's website is operational 24hrs a day	13%	15.7%	3.9%	39.4%	19.7%	3.54
Prepaid card services are secure in centenary bank	9.2%	10.5%	11.8%	43.4%	25%	3.57
I have heard no account compromised in Centenary Bank through online	21%	13%	6.5%	38%	21%	3.70
Centenary Bank also allows to download account transactions using your email	6.5%	6.5%	7.8%	50%	28.9%	4.01
There are no problems in networks regarding online banking	3.9%	3.9%	7.8%	52.6%	31.5%	4.12
The bank provides information update about the bank through email alerts to its customers	2.6%	2.6%	6.5%	53.9%	34.2%	4.14
Customer can now print their account statement online	0%	3.9%	5.2%	40.7%	50%	4.59

*Source: primary data 2017*

The responses on whether credit card services are free from security risks. The study established that majority of the respondents were not sure 31.5% agreed, 22.3% disagreed and strongly disagreed respectively, whilst 13% strongly agreed and 10.5% agreed. The study generally established that 44.6% of the respondents disagreed that credit card services are free from security risks. The responses from quantitative data were synonymous with what was reported by qualitative data. One Manager said *“I admit we still have problem with our credit card system because fraudsters are still many and operate on a global level...”*

Further, the responses on whether the bank’s website is operational 24hrs a day. The study established that majority of the respondents agreed 39.4%; 19.7% strongly agreed, 3.9% were not sure, 15.7% agreed and 13% strongly disagreed. The study generally established that 69.1% of the respondents agreed that the bank’s website is operational 24hrs a day. The responses from quantitative data were synonymous with what was reported by qualitative data. One Manager said *“It is very true our website is always operational and up-to-date...”*

Further, the responses on whether prepaid card services are secure in centenary bank. The study established that majority of the respondents agreed 43.4%; 25% strongly agreed, 11.8% were not sure, 10.5% agreed and 9.2% strongly disagreed. The study generally established that 68.4% of the respondents agreed that prepaid card services are secure in centenary bank. The responses from quantitative data were synonymous with what was reported by qualitative data. A manager said *“Prepaid cards are secure only that few people have learnt to utilize them...”*

To further ascertain whether customers have heard no account compromised in Centenary Bank through online. The study established that majority of the respondents agreed 38%; 21% strongly

agreed, 6.5% were not sure, 13% disagreed and 21% strongly disagreed. The study generally established that 59% of the respondents agreed that customers have heard no account compromised in Centenary Bank through online. The responses from quantitative data did not directly concur with what managers said. He said *“Online makes life easy but it is curtailed by fraudsters. Cases of compromising customer accounts has ever been heard in our bank as it can be found in any bank in Uganda.”*

On whether Centenary Bank also allows downloading account transactions using your email, the study established that majority of the respondents agreed 50%; 28.9% strongly agreed, 7.8% were not sure, 6.5% disagreed and strongly disagreed. The study generally established that 78.9% of the respondents agreed that Centenary Bank also allows downloading account transactions using your email. This was highly supported by managers in the bank.

On whether there are no problems in networks regarding online banking. The study established that majority of the respondents agreed 52.6%; and strongly agreed by 31.5% agreed, 7.8% were not sure, 3.9% disagreed and strongly disagreed each. The study generally established that 84.1% of the respondents agreed that there are no problems in networks regarding online banking. This was highly supported by managers in the bank.

This implied that Centenary Bank does not provide enough information update about the bank through email alerts to its customers and this is an indication of less utilization of online banking that is presumed to have a negative effect on its financial performance. This thus implies that Centenary Bank has an active website operating 24hrs a day which has reduced on default levels in Centenary Bank; The bank provides information update about the bank through email alerts to

its customers and this has stimulated a lot of trust people have in Centenary Bank; Customer can now print their account statement online which has improved on bank efficiency; I have heard no account compromised in Centenary Bank through online; Our online banking is free from security risks and this reduces on fraud involved in banking services; Centenary Bank Allows intra-Banks Account to Account Transfer using online and this has increased on bank cash and Centenary Bank also allows to download account transactions using your email. All these signify a positive relationship between online banking and financial performance.

The views from the interviewees seemed to tally with what the documents reviewed indicated. They showed that online banking is still a new thing in less developed countries including Uganda and its commercial banks and has not had so much improvement on financial performance. New Vision (2011) shows that the need to understand how and why technology has or has not been adopted for knowledge work in less-developed countries is important for managers/service providers and customers alike.

#### **4.4.4.1 Correlation results on online banking and the financial performance of Centenary Bank**

To test if online banking had an influence the financial performance of Centenary Bank, a spearman rho was employed. A null hypothesis stated, *“There is no significant relationship between online banking and financial performance of Centenary Bank”*

**Table 12: Correlation results**

			Online banking	Financial performance
Spearman's rho	Online banking	Correlation Coefficient	1.000	.576
		Sig. (2-tailed)	.	.000
		N	87	87
	Financial performance	Correlation Coefficient	.576	1.000
		Sig. (2-tailed)	.000	.
		N	87	87

\*\*. Correlation is significant at the 0.05 level (2-tailed).

*Source: primary data 2017*

Findings showed a positive relationship ( $\rho = .576$ ) between online banking and financial performance. The relationship was also significant at 0.00 since it was less than 0.05. This meant that the hypothesis was tested that “*There is a significant relationship between online banking and financial performance of Centenary Bank*” and accepted. The implication of these findings is that online banking has a positive relationship on the financial performance of Centenary Bank. The positive relationship implied that a change in online banking can contribute to financial performance of Centenary Bank. The positive nature of the relationship implied that managers in Centenary Bank needs to ensure that online banking is fully installed and implemented if financial performance of Centenary Bank is to improve and vice versa.

#### **4.4.4.2 Regression results for online banking and the financial performance of Centenary**

#### **Bank**

**Table 13: Model summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.576 <sup>a</sup>	.332	.328	1.107

a. Predictors: (Constant), online banking

*Source: primary data, 2017*

The study findings established that online banking had a strong relationship with financial performance of Centenary Bank. Going by adjusted R Square, it is clear that online banking contributed 33.2% change in financial performance of Centenary Bank.



## **CHAPTER FIVE**

### **SUMMARY, DISCUSSION, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summaries of the findings, discussions of objectives set for the study, conclusions derived from the findings, and the recommendations that will help in improving financial performance of Centenary Bank based on the findings of the study. Limitations, contributions of the study and areas of further study are also suggested.

#### **5.2 Summary**

##### **5.2.1 ICT infrastructure and the financial performance of Centenary Bank**

The study results indicated that there is a significant relationship between ICT infrastructure and financial performance of Centenary Bank. However, ICT infrastructure contributes 56.9% change in financial performance of Centenary Bank. It was thus established that ICT infrastructure influenced financial performance. This is because it was found out that the a number of people had been attracted to start using Centenary bank due to ICT infrastructure and this had imperatively improved on the level at which centenary bank was performing

##### **5.2.2 Telephone billing system and the financial performance of Centenary Bank**

The study results indicated that there is a significant relationship between telephone billing system and financial performance of Centenary Bank. However, telephone billing system contributes 36% change in financial performance of Centenary Bank. It was thus established that telephone billing system influenced financial performance. This is because it was found out that the a number of

people had been attracted to start using Centenary bank due to telephone billing system and this had imperatively improved on the level at which centenary bank was performing

### **5.2.3 Online banking and the financial performance of Centenary Bank**

The study results indicated that there is a significant relationship between online banking and financial performance of Centenary Bank. However, online banking contributes 33.2% change in financial performance of Centenary Bank. It was thus established that online banking influenced financial performance. This is because it was found out that the a number of people had been attracted to start using Centenary bank due to online banking and this had imperatively improved on the level at which centenary bank was performing

## **5.3 Discussion of the study findings**

The discussion of the study findings has been made as per the study objectives below;

### **5.3.1 ICT infrastructure and the financial performance of Centenary Bank**

The first hypothesis aimed at finding out whether there is a significant relationship between ICT infrastructure banking and financial performance of Centenary Bank. The inferential statistics indicated that ICT infrastructure banking has a strong positive relationship on financial performance of Centenary Bank. This means that financial performance of centenary bank is highly related to ICT infrastructure banking and its absence may negatively affect the performance of the bank. This finding is in line with the literature of Morris-Cotterill (2002) which indicated that ATMs. Cracknell (2004), in further support, opinioned that Malawi Central Bank indicated that using smart cards which enables a biometric system in form of ATM had increased on the security in accessing finances across commercial banks and this increased the level of trusting

smart card structure in withdrawing funds. This not only improved on the convenience and accountability on the side of customers but also improved on financial performance of commercial banks.

Further, study findings indicated that centenary Bank has e-cheque services. This implied that centenary bank has endeavored to put in place e-cheque services which have added on the convenience of banking; immediate access anywhere with an online connection; no need to physically pickup or deposit; no cheque book required. Further key informants from Bank of Uganda indicated that this had increased on security in terms of uniquely identifiable and protected with digital signing technology that prevents data from being altered. This was supported by George et al (2008) who had earlier indicated that e-Cheque details are captured digitally for complete accuracy and use of PIN-protected Security Device / Mobile Security Key and SMS transaction alerts to provide safe and secure service. Further, IT staffs added that this had increased on the flexibility in the bank in terms of extended cheque deposit cut-off time, issuance, deposit and status enquiry can be performed anytime online and festive themed e-Cheque background designs available for selection (George et al, 2008)

Further, the study findings indicated that centenary bank has credit card system for its clients. This implied that Centenary Bank has adopted debit cards in its daily business operations which are too essential in easy international business transaction. Since the mean was above 3.5, this indicates that Centenary Bank had in place debit cards for its clients. Gourlay and Pentecost (2005) in support of the findings still, explain that funds are usually sent using an ICT procedural system which allows banking or retail banking for 24hours a day. The coming of credit card was indicated

by a number of scholars as having improved on the performance of commercial banks since a number of transactions done by client a day increases.

Jumbo et al (2008) in conclusion indicates that ICT infrastructures are structured and put in place to offers the required level of convenience to users and they are flexible to a number of clients since they have absolute advantage and control to access their accounts without wasting time in long queues. This ICT infrastructure has been credited in reducing barriers or eliminating barrier or distance to people who want to access banks in wherever they are. This makes banking a 24-hr activity for clients. The researcher thus felt a need to undertake this study to establish whether Centenary bank had installed the required ICT infrastructures and whether these had improved on its financial performance.

### **5.3.2 Telephone billing system and the financial performance of Centenary Bank**

The second hypothesis assumed that there is a significant relationship between banking and financial performance of Centenary Bank. The inferential statistics indicated that telephone billing system has a strong positive relationship on the financial performance of Centenary Bank Uganda. This means that financial performance of centenary bank is highly related to telephone billing system and its absence may negatively affect the performance of the bank. These findings confirmed the works of Ovia (2001) who had earlier indicated that telephone billing system is a system which can ably help clients to access their finances using their own phones in any location by simply dialing. Amedu (2005) indicates that because of improving financial performance, worldwide, banks have started to adopt telephone banking.

The study findings indicated that a customer can easily check his/her account balance using my phone in Centenary bank. This means that a customer can easily know every kind of information he/she needs by merely calling in the bank especially if he/she has the bank codes. Since the mean is above 3.5, this therefore meant there is no much variation in the mean score obtained from different respondents. This was congruent with what Emmanuel (2006) had found out that financial performance of commercial banks improve as long as customers at any time can access their bank information using their phones. This makes it easy for people to use bank services.

The study findings further indicated that a customer can now withdraw his/her/her finances using his/her/her phone from the bank. This implied that the bank has in place computer information system that can rapidly feed information to clients whenever they need. According to Johnson (2005), he supported the above finding while saying that this means that at any time, customers can access their money and bank information using their phones. This makes it easy for people to use bank services. Al Ashban and Burney (2001) studied technology that had been adopted in Arab Emirates by a number of commercial banks and indicated that a number of customers had joined telephone banking systems since it allowed and that education played a vital role in the adoption and usage of tele-banking technology.

The study also concurred with established that with Bohm et. al., (2000) when it indicated that Centenary Bank, a customer can now bank his/her money using a cell-phone at home. This thus implied that in Centenary Bank, customers who are busy and a bit distant can easily access their account information. This act is very much important in attracting new customers to use bank services. Telephone billing system contributes adequately to financial performance of Centenary Bank.

The study also concurred with established that with Bohm et. al., (2000) when it indicated that Centenary Bank, a customer can now bank his/her money using a cell-phone at home. This thus implied that in Centenary Bank, customers who are busy and a bit distant can easily access their account information. This act is very much important in attracting new customers to use bank services. Telephone billing system contributes adequately to financial performance of Centenary Bank. It should be noted that Telephone billing system is a system which has enabled clients to use a facility or phone to enable clients to only make a call in the bank or text and the money is transferred or transmitted to another person account. The bank provides numbers to clients and they simply make transactions using such phone calls or passwords. This makes it easy to make convenience transfer of money and reduces chances of non-authenticity (Kigen, 2010).

Wambari (2009) further ascertained that telephone billing systems has not been widely spread in many developing countries since it works well with people who have access to mobile phones. Since a big number of people lack mobile phones in developing countries, it becomes not easy to make this reality achieved. This system works with a computer aided telephone technology which makes it easy to reduce on the level of perceived risks. This is because all sim cards and phones are clearly recorded and within the system of national registration bureau which makes it easy to follow up in case of any errors or evidences of impersonation. Ovia (2001) further indicates that this telephone billing system reduces chances of reducing complaints. It reduces chances of transaction errors since the system is automatically managed and oriented.

### **5.3.3 Online banking and the financial performance of Centenary Bank**

The third hypothesis stated, “There is a significant relationship between online banking and financial performance of Centenary Bank.” The inferential statistics indicated that online banking

has a weak positive relationship on the financial performance of Centenary Bank. This means that financial performance of centenary bank is highly related to online banking and its absence may negatively affect the performance of the bank. The study findings were contrary to what earlier scholars had indicated that there are no problems in networks regarding online banking. This therefore meant there is no much variation in the mean score obtained from different respondents. This thus tells us that with online banking in Centenary Bank, clients can viably access their bank information without fail and this is enough to conclude that it makes it easy and convenient. Ahmed et. al., (2001) further had ascertained that instant cash transfer provides a much more good level of convenience when undertaking the management of personal funds even when you are in bedroom, banking can take place and this makes the bank working 24hrs and hence improvement in financial performance. Though, it is challenged by level of insecurity and threatened privacy.

Lastly, the study established that there are no cases of account compromised in Centenary Bank through online and online banking is free from security risks. These tell us that the bank has done a lot to away with phishing and cybercrimes that are involved in mobile money transfer. This makes the system attractive to a big number of people. Ayadi (2003) incongruently believed that access to mobile means of payment and the high number of customers connected to the online has changed the perception of banks toward market and increased the development of online Banking. Hutchinson and Warren (2003) argue that online banking requires a policy of security that is sounding and propounded on effectiveness on the side of users. Online banking technology has made remarkable changes in the banking industry, which include: cost reduction due to mobile processing carried out on the Online.

Donner and Tellez (2008) in the study they did in Indian commercial banking, they aimed at establishing the rate of adopting, usage and impact of online banking on financial performance. it

was established that on-line banking offers a chance and best way of lowering costs of transferring money from one user to another at any time and this promotes the financial performance of a commercial bank since transactions means income on the side of the bank. Further, online banking came with increased usage of mobile payments which innovation is very important is providing account details on spot and avoid compromising the security. Many people have had their account details compromised, as a result of online banking. However, Aniston (2008) argues that the risks involved in mobile payments which tend to consist of impersonation. Commercial banks according to Aniston (2008) have a duty to keep clients alert about the risks involved since the higher the risk, the lower the rate of adoption and the lower the risk, the higher the rate of adoption and the higher the improvement in financial performance of commercial banks.

## **5.4 Conclusions**

Depending on the study findings, it can be concluded that all dimensions used including ICT infrastructure, telephone billing system and online banking had a positive relationship with the performance of Centenary Bank. However, comparing the strength of the relationship, E-fund transfer had a strong positive relationship, telephone billing system had a strong moderate positive relationship and online banking had a positive relationship. This meant that much improvement needs to be vested in improving online banking if the performance of Centenary Bank is to further improve.

### **5.4.1 ICT infrastructure and the financial performance of Centenary Bank**

The first objective was “To establish the relationship between ICT infrastructure and the financial performance of Centenary Bank.” The research question was “What is the relationship between ICT infrastructure and financial performance of Centenary Bank?” The researcher had



hypothesized that, “There is a significant relationship between ICT infrastructure and financial performance of Centenary Bank”. The findings of this study showed that ICT infrastructure had strongly and positively related to financial performance of Centenary Bank. Centering on collected data, the higher the installation of ICT infrastructure, the higher the financial performance of Centenary Bank

#### **5.4.2 Telephone billing system and the financial performance of Centenary Bank**

The second objective was “To establish the relationship between telephone billing system and the financial performance of Centenary Bank.” The research question was “What is the relationship between telephone billing system on financial performance of Centenary Bank?” The researcher had hypothesized that, “There is a significant relationship between telephone billing system and financial performance of Centenary Bank”. The findings of this study showed that telephone billing system has a moderate positive relationship on financial performance of Centenary Bank. Centering on collected data, Centenary Bank needs to ensure that telephone billing system is totally implemented in the bank services if its financial performance is to improve.

#### **5.4.3 Online banking and the financial performance of Centenary Bank**

The third objective was “To establish the relationship between online banking and the financial performance of Centenary Bank.” The research question was “What is the relationship between online banking on financial performance of Centenary Bank?” The researcher had hypothesized that, “there is a significant relationship between online banking and financial performance of Centenary Bank”. The findings of this study showed that online banking was weakly and positively

related to financial performance of Centenary Bank. Centering on collected data, Centenary Bank needs to take up mechanisms to see that online banking is implemented among its clients if its financial performance is to improve.

## **5.5 Recommendations**

In light of the above conclusions, below are the suggested recommendations as each study objective;

### **5.5.1 ICT infrastructure and the financial performance of Centenary Bank**

- Basing on the study findings, trust building in ICT infrastructures with clients need to be put on a primary concern by most of commercial banks that want their performance to improve under mobile banking. This can be done by ensuring that the system installed can ably provide updated information frequently to both the bank and the customers

### **5.5.2 Telephone billing system and the financial performance of Centenary Bank**

- Basing on the study findings, centenary bank should ensure security and privacy on telephone services to avoid impersonation and fraud involved. This can be done by ensuing that telephone billing systems are made so personal and less entrenched. This can be enriched through a fingerprint technology system.

### **5.5.3 Online banking and the financial performance of Centenary Bank**

- Basing on the study findings, creating awareness of online banking to the public through massive advertisement on radios, televisions and newspapers. This can be done by making sure that customers both in urban and rural areas are called upon in different workshops

and taught the importance of online banking. This improves the convenience of online banking and its high adoption and hence improved financial performance of a commercial bank.

### **5.6 Areas recommended for further study**

Future studies need to be conducted using a longitudinal approach to ensure that a more deeper and critical investigations are done to ably assess the extent to which mobile banking affects the financial performance of commercial banks.

A further study still should focus on measuring whether the issues of culture, trust, and consumer's attitude have an impact on online banking adoption in Uganda and whether this can reflected in the financial performance of a commercial bank.

Expanding the study population to include other banks.

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## APPENDICES

### Appendix I: Questionnaire for Respondents

#### **INTRODUCTION**

Dear Respondent,

The researcher is a student of Masters of Business Administration (MBA) at Uganda Management Institute (UMI), Kampala, Uganda. He is undertaking a research to generate data and information on “*Mobile Banking and Financial Performance of Commercial Banks: a case study of Centenary Bank*”. You have been selected to participate in this study because the contribution you make to your organization is central to the kind of information required. The information you provide is solely for academic purposes and will be treated with utmost confidentiality. Kindly spare some of your valuable time to answer these questions by giving your views where necessary or ticking one of the alternatives given. Indeed, your name may not be required. Thank you for your time and cooperation.

#### **SECTION A: BACKGROUND DATA**

*Please circle the numbers representing the most appropriate responses for you in respect of the following items:*

1. Gender :      a) Male       A) Female
  
2. Age Bracket In Years: A) 20-29  B) 30-39  C) 40-49  D) 50+
  
3. Level Of Education: A) Diploma  B) Bachelor’s Degree  C) Post Graduate   
Diploma       D) Master’s Degree       e) Professional Qualification
  
4. Duration At Centenary Bank    A) < 1 Year      b) Between 1-2 Years        
c) Between 2-3 Years       d) > 4 Years



5. What is your current position: a) Branch Manager  b) Operations Manager   
 c) Supervisor  d) Credit Officer  e) Banking Officer

**SECTION B: INDEPENDENT VARIABLE: MOBILE BANKING**

**i) ICT Infrastructure**

**In this section please tick in the box that corresponds to your opinion/view according to a scale of 1 = Strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, 5 = Strongly Agree**

No	Statement	1	2	3	4	5
1	Centenary Bank has e-cheque services					
2	Online costs to access our banking system is affordable					
3	There is a 24hour mobile banking in centenary banking					
4	Cases of bank fraud have reduced as a result of ATM					
5	Customers have competence to use ICT					
6	Centenary Bank has credit card system for its clients					

**ii) Telephone Billing System**

**In this section please tick in the box that corresponds to your opinion/view according to a scale of 1 = Strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, 5 = Strongly Agree**

No.	Statement	1	2	3	4	5
1	With Centenary Bank, a customer can now bank his/her money using a cell-phone at home					
2	I can now pay bills using my cell phone in centenary bank					
3	A customer can easily check his/her account balance using my phone in centenary bank					

No.	Statement	1	2	3	4	5
4	A customer can now easily transfer money from his/her/er bank account to another using his/her/er phone					
5	A customer can now withdraw his/her/er finances using his/her/er phone from the bank					
6	Centenary Bank has smart card systems in place					

**iii) Online banking**

**In this section please tick in the box that corresponds to your opinion/view according to a scale of 1 = Strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, 5 = Strongly Agree**

No.	Statement	1	2	3	4	5
1	The bank provides information update about the bank through email alerts to its customers					
2	The bank's website is operational 24hrs a day					
3	Customer can now print their account statement online					
4	Centenary Bank also allows to download account transactions using your email					
5	Our credit card services are free from security risks					
6	I have heard no account compromised in Centenary Bank through online					
7	Prepaid card services are secure in centenary bank					
8	There are no problems in networks regarding online banking					

### **SECTION C: DEPENDENT VARIABLE – FINANCIAL PERFORMANCE**

**In this section please tick in the box that corresponds to your opinion/view according to a scale of 1 = Strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, 5 = Strongly Agree**

<b>No.</b>	<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Our bank has enough cash to meet its obligations effectively (as and when they fall due)					
2	All our loans are paid in time					
3	The Default level in our bank has reduced for the past three years					
4	The percentage of non-performing loans in our bank has been reducing consistently					
5	Our Return on Equity has increased for the past three years					
6	The bank's income increases every year					
7	Our net income supersedes our operating costs for the last 3years					
8	All bank loans are dully corrected					
9	The bank 's asset base has greatly increased over time					
10	Every year increases shareholder's equity					

**THANK YOU FOR YOUR PARTICIPATION!**

**Appendix II: Interview Schedule for Administration Staff**

- 1. Position in the Centenary Bank.....
- 2. Department .....
- 1a). Does Centenary Bank has required ICT infrastructure?
  - b) If yes, what forms of ICT infrastructure installed in Centenary Bank?
  - c) Have ICT infrastructures improved financial performance in Centenary Bank?
- 2a). Does Centenary Bank have telephone billing systems?
  - b) If yes, how is telephone billing system operates in Centenary Bank?
  - c) Has telephone billing system improved on financial performance in Centenary Bank?
- 3a). Does Centenary Bank have online banking?
  - b) If yes, how is online banking used in Centenary Bank?
  - c) Has online banking improved on financial performance in Centenary Bank?

**THANK YOU SO MUCH**

**Appendix III: Table for Determining Sample Size from a given Population**

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	870	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	287	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

*Source: Krejcie & Morgan (1970, as cited by Amin, 2005)*

Note.—*N* is population size.

*S* is sample size.

## **Appendix IV: Field Letter**

## **Appendix V: Introductory Letter**