

**KAMPALA INTERNATIONAL UNIVERSITY**

**THE ADOPTION OF AUTOMATED TELLER MACHINE  
AND PROFITABILITY IN BAKING INSTITUTION**

**BY**

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**RESEARCH REPORT SUBMITTED IN FULFILLMENT  
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## DECLARATION

I Mwijukye Vicent B Hereby declare that "*The adoption of Automated Teller Machine and profitability in banking institution: a case study of Centenary Bank Arua Branch*" is my original work and it has never been submitted to any other academic institution for any similar award.

Signature.....

Date.....

## DEDICATION

This special work is dedicated to my late parents Constancy Bigyemano and Maria Venerand Kinkuhaire and to my dear wife Lois Kyobutungi children Arnold Nkwasiibwe, Noeline Kobusingye and Matthew Owomugisha. There is no doubt in my mind that without their continued support and encouragement, this book would have never been possible.

## APPROVAL

This dissertation has been submitted for examination with my approval as a university supervisor.

Signed..........Date 26/4/10.....

M/S Anita Among,  
Supervisor.

## ACKNOWLEDGEMENTS

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## **ABSTRACT**

The purpose of the study is to find out the impact of ATM and the profitability of the bank.

The desk research method was used to get data about the impact of adoption of Automated Teller machine on the profitability and performance of Centenary Bank Arua Branch.

The study revealed that the technology is still a new phenomenon in Uganda. Little has been done on the impact of ATM technology on the bank's bottom line-client service, sustainability and profitability. The study also revealed that the problems associated with disabilities which can hinder a client from access and usage of ATM technology should be taken into consideration when designing the ATM machine.

They found out that with trained employees and customers, ATMs save time, clients don't need to come to the bank and wait in the queue or fill paper work every time they want to withdraw cash, and clients can access their accounts at their convenience. In order to get the best of the technology, where the cost are higher than the benefits, the impact of the ATM technology is negative on the bank's financial services.

**CONCLUSION:** The question of the introduction of ATMs to improve on the profitability remains in balance because it is not only ATMs that bring in profitability in the bank but other factors also contribute to it.

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## CHAPTER ONE

### INTRODUCTION

#### 1.0 Background of the study

The advent of information Technology has had an implication on the business activities and organization performance especially in the areas that have been affected by technological changes. Banks worldwide including developing countries like Uganda use computers and computerized equipments (Kateeba, 2001) the Automated Teller Machine (herein after referred to as ATM) is an example of such equipment.

ATM technology was initially viewed by its pioneers as a competitive edge in the industry due to the fact that few institutions had used this technology. Today ATM is viewed in terms of the advantages it brings to the bank in terms of performance.

The introduction of the ATM technology was anticipated to make banks leaner, profitable and competitive due to the resultant convenience, reliability, suitability and accuracy (Philip, 1994) thereby aiding banks to retain and attract clients, provide additional innovative products/services to meet consumer oriented banking needs and solve the congestion in the banking halls.

However, the post ATM era has continually been characterized by client dissatisfaction, queues have continued to occur in banks and there still is a need for a customer service by the banking officer. currently, some clients have not embraced the ATM because of the costs associated with the acquisition,

installation, maintenance and upgrade the benefits of ATM technology should be isolated in order to determine its contribution.

### **1.1 Statement of the problem.**

Since its inception, centenary bank Arua Branch has experienced an increase in the number of customers hitting a total of 10,000 clients in and around Arua municipality by the end of July 2006. This number of clients has so increased by adoption of ATM which has also led congestion, long queues, big workloads and decreases in the level of liquidity at the expense of credit creation that stimulates profitability. Centenary Bank installed ATMs as a solution to these problems and enhancing profitability of the Branch. However, despite of the ATM installation and usage, the bank is still faced with the aforementioned problems.

### **1.2 Purpose of the study**

The purpose of the study is to determine the impact of ATMs on the profitability of Centenary Bank Arua Branch.

### **1.3 Objectives of the study**

#### **1.3.1 General Objective**

The broad objective of the study is to determine the impact of the ATMs to the profitability of centenary bank Arua Branch.

#### **1.3.2 Specific objectives**

The specific objectives of the study will be;

- i) To establish the extent to which ATM technology has improved the profitability of Centenary Bank Arua Branch.
- ii) To establish the extent to which ATM Technology has been adopted in Centenary Bank Arua branch.
- iii) To establish the impact of the ATM technology on customer care
- iv) To determine the problems associated with ATMs at centenary bank.

## **1.4 Research Questions**

To achieve the stated objectives, the following research questions will be asked.

- i) How has ATM technology changed the profitability of Arua Branch?
- ii) How has the ATM Technology been adopted in Arua Branch?
- iii) What is the impact of ATM Technology on customer care?
- iv) What problems have resulted in ATM usage at centenary bank?

## **1.5 Scope of the study**

### **1.5.1 Content scope**

The study will be focused on the adoption of Automated Teller Machines (ATMS) and its operation costs to profitability of banking institutions particularly Centenary Bank Arua Branch.

### **1.5.2 Geographical Scope**

The study will be conducted in Centenary Bank Arua Branch located at main Street, Arua Municipality.

## **1.6 Significance of the study**

Currently there is limited experience on the usage of information technology and how it impacts on the profitability of an organization.

Findings from this study will aid in the following ways:

Institutions especially banks, which are currently using or planning to the use of the ATM technology will understand the impact of this technology on their performance.

Vendors and manufacturers of ATM equipment will get the feedback in form of the impact and opportunities in their innovations. This can be a source of information for improvement of the ATM technology.

ATM users, both current and future will understand the effects of the ATM, the strengths and loopholes and the ways of effectively utilizing the technology.

Findings will contribute to the available literature on the ATM and technology usage especially in banks.

This study will contribute to the requirement of the award of a Bachelor's Degree in commerce.

### **1.7 Organization of the study**

The study is divided into three chapters. Chapter 3 will analyze the methodology adopted in identifying; capturing and recording the findings, chapter 2 will explore the theoretical and empirical literature on ATM technology and its impact on bank profitability.

### **1.8 Definition of terms**

#### **An automatic teller machine (ATM)**

This refers to computer-controlled terminals located on the premises of financial institutions or elsewhere, through which customers may make deposits, withdrawals, or other transactions as they would through a bank teller. Other terms sometimes used to describe such terminals are customer-bank communications terminal (CBC) and remote service unit (RSU).groups of banks sometimes share ATM networks located throughout a region of the country that may include portions of several states.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

A considerable amount of research has been done about the operation of IT in the bank and ATM technology in particular. Previous literature has concentrated on the functionality and usage of IT and ATM, its security, how to operate, installation and maintenance. Much of the studies have been conducted in the developed world. Technology is still a new phenomenon in Uganda. There are differences in the economic, social and other factors all of which affect the usage of ATM. Little has been done on the impact of ATM technology on the bank's bottom line-client service, sustainability and profitability.

Studies on the impact of ATM on the bank's performance in terms of profitability are not exhaustive. The study therefore is aimed at identifying the component of improved bank performance in terms of profitability that is attributed to the introduction of ATM in Centenary bank Arua Branch.

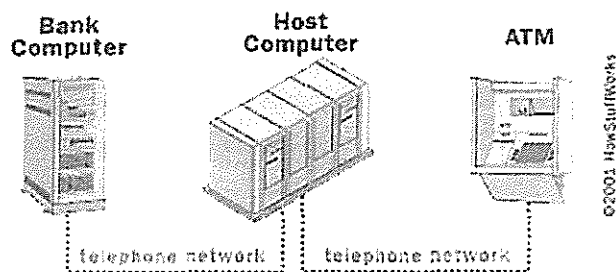
#### **2.1 Electronic Banking and the ATMs**

All banks worldwide including developing countries like Uganda use computers and computerized equipments (Kateeba 2001). ATMs are an example of such computerized equipment.

An ATM is simply a data terminal with two inputs and four outputs devices. Like any other data terminal, the ATM has to connect to, and

Communicate through a host processor. The host processor is analogous to an internet service provider (ISP) in that it is the gateway through which all the various ATM networks become available to the cardholder (the person wanting the cash)

Figure 1: Network Linkage of Bank Computer, Host Computer and ATM Machine (Automated Teller Machines).



Source: HowstuffWorks (2001)

According to Whelan (2003) ATMs conduct many transactions that would otherwise be performed and/or require staff attention: they furnish account information; accept deposits, drawn down on pre-approved loans, and transfer funds. Accordingly, the use of ATMs frees loan officers to focus on personalized services, and the machines can potentially deliver a broader range of services. This means that the Introduction and adoption of ATMs facilitates the bank to improve on its Products/services and the coverage of area and time.

However, Whelan (2003) notes that ATMs are most effective for financial institutions that accept savings and want to serve customers in multiple locations and/ or during non business hours. This implies that a variety of other products offered by banks may not be suited for ATMs for example loan and credit funding, foreign exchange transactions, and all

other transactions that may require human judgment. But since a single machine can cost about US\$ 35,000 and requires additional investment in reliable electric and communications connections, its costs and benefits should be tracked and ATM technology may not be the first choice for all financial institutions.

## 2.2 How ATMs Work

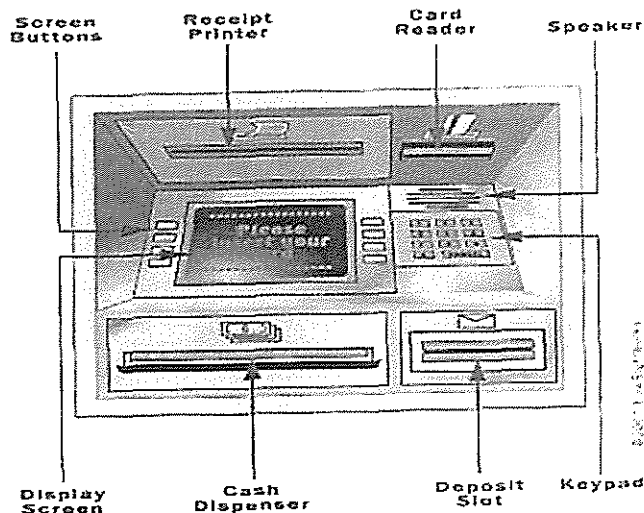
### 2.2.1 Devices of an ATM

According to Dorfman (2003) ATMs have two input devices (a card reader and keypad) and four output devices (display screen, cash dispenser, receipt printer, and speaker) also not visible to the client is a communications mechanism that links the ATM directly to an ATM host network. This makes the ATM to function like a Personal Computer because it has an operating system and specific application software for the user interface and communications. ATMs may use magnetic strip cards and personal identification numbers (PINs) or smart cards with finger – print validation to identify account holders.

### 2.2.2 Parts of the Machine

According to Whelan (2003) the ATM machine has the following parts as shown in the figure below:

**Figure 2: Main parts of an ATM machine**



Source: Howstuff Works (2001).

### 2.2.3 Input Devices

**Card reader-** The card reader captures the account information stored on the magnetic strip on the back of an ATM. The host processor uses the information to route the transaction to the cardholder's bank account.

**Keypad –** The keypad lets the cardholder tell the bank what kind of transaction is required (cash withdrawal or balance inquiry) and for what amount. Also, the bank requires the cardholder's personal identification number (PIN) for verification.

#### **And an ATM has four output devices**

**Speaker –** The speaker provides the cardholder with auditory feedback when a key is pressed.

**Display Screen-** The display screen prompts the cardholder through each step of the transaction process. Leased – line machines commonly use a monochrome or color CRT (cathode ray tube) display. Dial up machines commonly use a monochrome or color LCD.

**Receipt Printer –** The receipt printer provides cardholder with a paper receipt of the transaction.

**Cash Dispenser-** the heart of an ATM is the safe and cash dispensing Mechanism. The entire bottom portion of most small ATMs is a safe that contains the cash.

According to Whelan (2003), the ATM forwards information read from the client's card and the client's request to a host processor, which routes the request to the client's financial institution. If the cardholder is requesting cash, the host processor signals for electronic funds transfer (EFT) from the customer's bank account to the host processors account. Once the funds have been transferred the ATM receives an approval code authorizing it to dispense the cash.



When cardholders want to do an ATM transaction, he or she provides the necessary information by means of the card reader and keypad. The ATM forwards this information to the host processor, which routes the transaction request cash, the host processor causes an electronic funds transfer to take place from the customer's bank account to the host processor's account. Once the funds are transferred to the host processor's bank account, the processor sends an approval code to the ATM authorizing the machine to dispense the cash. The processor then ACHs the cardholder's funds into the merchants bank account, usually the next bank business day. In this way, the merchant is reimbursed for all funds dispensed by the ATM.

### **2.3 Requirements for ATMs**

For ATM to be used, the following should be put place:

Reliable electrical power and communications infrastructure.

Affordable dial-up or leased line rates for the ATM to send and receive data.

A central database where client data must be stored for balance Verification.

Reliable after- sales servicing and support from the vendor or third-party.

Solid operational procedures and resources to distribute cards and Control PINs.

Supply of correctly denominated currency.

Systems to securely transfer cash to ATMs.

Adaptation for effective usage such as building- in verbal instructions to guide illiterate users.

### **2.4 Benefits and Costs of ATMs**

It is important to keep track of the benefits and to offset them from the costs associated with the ATM in order to isolate its impact on the performance of the

bank. Where the costs are higher than the benefits, then the impact of the technology is negative. This may lead to a change in strategy or usage of the ATMs.

## **2.5 Benefits**

ATMs save time: clients do not need to come to the bank and wait in a queue or fill some paper work every time one wants to withdraw cash (Marsh 1993). This enables flexible account access by allowing clients to access their accounts at their convenience.

According to Ramsay (1999), in his *Managerial Auditing Journal*, ATMs are easy to use. This is because the machine (ATM) guides the customer through the necessary steps to accomplish a transaction with speed and accuracy by following the instructions on the ATM screen. Moreover, ATMs are important for their accuracy. Thornton et al (2001) argues that nobody likes to deal with an organization which cannot keep track of what is going on, particularly where money is concerned. Thornton et al (2001) view is supported by Lewis (1988) who agrees that ATMs have a well- deserved reputation in this aspect of their operation.

Goode (1995) says that, customer needs for convenience are increasingly catered for by ATMs. In addition to this, there is increased reliability and suitability which in effect also imply a measure of convenience, Rugimbana et al. (1994).

Whelan (2003) notes that personnel are not required to be present for transactions to be affected thereby saving more time to serve clients. Due to the current efforts by institutions to reduce the operating costs, this can lead to reduction in labour costs especially if the extra staffs are laid off.

Where the resultant is installation of ATMs in population centers, this can lead to more clients being reached beyond the branch network Whelan (2003). The additional clients served to improve the performance of the bank. He also notes that more lost cost funds are available because ATMs make it easier for clients to deposit savings. This would improve on the profitability of the bank.

## 2.6 Costs

Costs differ depending on the technology provider and how the ATM network is operated. If the bank can partner with an existing ATM network and/or network operating company, the bank's operating expenses will be less.

Initial costs are high, particularly if the institution is establishing a self supported network. Individual ATM purchase prices are US\$ 20,000 - \$ 35,000. Magnetic cards cost US\$ 0.25 to US \$ 0.50 each, and smart cards usually run US\$ 6 - \$ 10 each. ATMs that use smart cards do not require a real – time internet connection, since the ATM can obtain some client financial data from the microchip on the smart card. The microchip or wireless internet service may be required where

communications systems are expensive or unreliable. Other costs include;

Set up fee to install and network the ATMs.

Usage fee, either per transaction or on a monthly basis.

Monthly or annual service fee for support.

Communication charges for dial up, leased lines, or wireless data links.

ATMs usage is associated with the "phantom" withdrawals. That is, withdrawal which customers argue were not made by them whilst banks would never claim that these withdrawals are usually made by friends or relatives who have access to the card and PIN (Wally, 1989).

Sally et al (1993) argues that with the introduction of ATMs, some clients no longer visit their branches and so banks have lost personal contact with these customers and may find it harder to sell other bank services to them. This may call for another way of informing clients of the new products on offer.

Many banks charge fees for the use of their ATMs. In some cases, these fees are assessed solely for non bank members in other cases they apply to all users. Many oppose these fees because ATMs are usually less costly for banks than withdrawals from human tellers.

ATMs are currently not placed in most locations. This is because of the costs associated with their acquisition and operationalisation. Therefore not all clients are served by the ATMs.

Though ATMs are generally reliable, where they go wrong customers will not access their accounts until the problem is rectified. In ATMs not all errors are to the detriment of customers; there have been cases of machines giving out money without debiting the account, or giving out higher value notes as a result of incorrect denominations of banknotes being loaded in the money cassettes. Errors that can occur may be mechanical (such as card transport mechanisms; keypads; hard disk failures); software (such as operating system; device driver; application); communication; or purely down to operator error.

There have also been a number of incidents of fraud where criminals have used fake machines or have attached fake keypads or card readers to existing machines. These have then been used to record customers' PINs and bank account details in order to gain unauthorized access to their accounts.

A bank is always liable when a customer's money is stolen from an ATM, but there have been complaints that banks have made it difficult to recover money lost in this way. Therefore the bank can be liable and this can affect its performance in terms of lost client's trust and/or funds in form of penalties.

In some cases, bank fraud occurs at ATMs whereby the bank accidentally stocks the ATM with bills in the wrong denomination, therefore giving the customer more money than should be dispensed. Individuals who unknowingly use such ATMs are probably never tried, but those who withdraw a second time are usually prosecuted. Nevertheless all efforts should be directed to avoiding such scenarios from occurring since this has an effect on how the bank is perceived in the mind of the client.

## **2.7 The Impact of ATM on Bank Performance**

An organization is made up of various systems and components and for it to function; they should all be aimed at achieving the bottom line. It is difficult to isolate the contribution of one component. The performance of ATM technology in a bank may be viewed in terms of sustainability, outreach and profitability (financial intermediation, customer service, accounting, staff efficiency and other banking functions). Looking at the history of bank operations, there have been a relatively small number of technical innovations in the industry. For any impact on the operations an innovation should meet these criteria: Change the way services or products were delivered. Have a significant impact on revenue or cost. Its impact must be realized for 10 or less years.

## **2.8 ATM Sustainability**

Since heavy investment in ATM technology is required for banks to take advantage of ATM, it is important to understand whether the net contribution of ATM can cater for the future investment requirements for the ATM to remain operational. According to the New Vision, the average ATM bank charge per transaction is UG X 200. Given the initial cost of the ATM of UShs 60,000,000 an average ATM machine should serve 30,000 items before paying back. Centenary bank has 340,000 clients and if 10% of these clients embrace ATM technology, the bank can operate about 10ATM machines.

## **2.9 Outreach**

The bank should endeavor to extend its products to all its clients. For the bank to achieve the benefits of outreach. It can use the ATM to locate in populous areas where the bank has no branches. This would require additional staff and costs. An ATM machine will minimize the casts and ensure the bank's presence in such a location. Clients require money for spending; an innovative bank will strive to locate in areas where its clients require money for example near shopping malls and trading centers. This can easily be by installing ATM machines in these areas.

## **2.10 Profitability**

Initially ATM was viewed as a competitive edge by institutions which used it. Currently, most institutions have installed it as a necessity and it has to generate some profit for the bank.

### **2.10.1 Financial Intermediation and Bank Performance**

The desire to improve on bank performance would to a large extent depend on the demand and supply of financial instruments offered by the bank in question. In order to improve bank performance, the bank should supply those instruments that bank users require. Increasing the bank branches would ease the problem of accessibility. This however, needs qualification as indiscriminate branching is not a universal solution to the desire to increase bank service usage but rather, the impact of accessibility would depend on profitability. The population and the per capita incomes in the catchments area determine profitability. Viability will also be determined to a larger extent by bank branch attributes such as convenient opening hours and appropriate instruments that is instruments that are consistent with preferences of the savers. Bhatt (1986) argues that savers in developing countries are likely to choose financial instruments that are economically appropriate, that is, simple, convenient, easily convertible into money and without loss, and easily intelligible (that is, involves low or no transaction costs) In addition to economic appropriateness, the

financial instruments offered by financial institutions should fit into the cultural norms and values of the savers. Fernando (1991), for example notes that when people are used to saving secretly, the use of facilities provided by banks may not be considered appropriate as they effectively expose savers. Included among the bank's branch attributes are ease of depositing and withdrawing and use of familiar language. The extent to which a bank would succeed will depend on the cost of mobilizing saving in relation to the return that this bank can expect from the on lending of funds mobilized.

### **3.11 ATM Technology and Customer Service**

ATM technology has ensured that clients who use ATM machines do not interact with the bank teller or staff thus reducing the personal touch by bank personnel. That notwithstanding, though, customer service has been at the center of all banks operations and all successful banks have been characterized by excellent customer service people.

In fact, Customer Service has been expounded by nearly all retail –customer-focused business, including banks and other financial service providers, as the single most important areas for developing a long-term sustainable competitive advantage (MC Goldrick, 1994).

With customer services, a bank attempts to satisfy its customers' needs and wants by not only giving but also being seen to give the customer first priority and making the customer to feel that they are the reason for the existence of the business. They should therefore be treated with respect and there are no "ifs" and "but" about it.

According to Mahatatan Ghandi, the customer is "the most important visitor in our premises". He/she is not an interruption to our work, but is the purpose of it for he/she is not dependent on us; we are the dependants. But the proponents of the ATM technology aim to reduce the queues from the banking hall and locate the queues out of the bank hall.

Therefore, the main justification of ATMs, which is eliminating some customers (by reducing their queues) in the banking hall, is seen as an attempt to deny them customer service which affects their status thereby changing their perception about the bank which can lead to the demise of the bank.

For the bank to carry out what they would term as customer service, Hee-Wong Kim et al. (2001) suggests that a way should be found through which customer requirements can be satisfied. This should however be with a personal touch which is lacking with the ATM technology. This is even worse for ATM machines located away from the Bank branch where a dissatisfied customer can walk in for help from the customer service staff.

Kotler (1993) argues that customer service involves more than simply opening a complaint department. Smiling a lot and being nice to customers. It requires hard-headed analysis and an intense commitment helping customers.

This therefore means that, there is need to actually know what the customer's perceptions of customer service are, so as to effectively carry it out. With this in mind, the Bank Marketing Association carried out a research and found the elements of good customer service to be (Mayall, 1993):

### **2.11.1 Elements of Customer Service in Commercial Banking**

#### **Reliable Services**

Customers expect the bank, its products and staff to perform as promised, when promised and in the manner promised. Malcom et al (1995) supports this by suggesting that this is quite important towards maintaining customer loyalty and should not be ignored.

#### **Responsible Service**



Pezullo (1993) argues that customers want to be ready and willing to take care of their needs. They expect prompt and accurate resolution of any errors that might occur. This adds confidence to the customer, who will be assured to have his/her needs appropriately attended to and thus the urge to return.

### **Clear and Understandable Communications**

Customers should be communicated to in clear, concise languages that reflect the customer's perspective. Given the fact that customer' queries or complaints need to be understood; this element should not be taken lightly. In Africa however, ATMs cannot easily communicate to the customer. Pezzullo (1993) contends that some experimental ATMs now scan pictures of deposited cheques, while others offer two-way video communications or touch- sensitive displays.

### **Courteous treatment**

This is inevitable especially where it may have to do with money issues and keeping correct figures in the bank statement. According to Greenland et al (1994), the real goal that still remains elusive is simply that of providing a good quality basic free banking service. ATMs on the other hand are less prone to presenting inaccurate data or wrong amounts of money as may be compared to cash tellers.

## **.12 Limitations of ATM Technology**

### **Disability Gaps**

A proportion of Uganda's population can be categorized as having a disability. An even larger proportion is older and, while not defined as disabled, may have general reduced ability associated with age. These disabilities lead to problems mainly concerned with getting about, gaining access to buildings and transport, using products and equipment and carrying out the activities of daily life. According to Bell (2000), if ATM solutions are not designed and deployed in a way that addresses their characteristics and capabilities they are disadvantaged. The disability problems that can hinder a client from access and usage of

ATM technology includes the following;

Sensory for example impaired vision making it difficult to notice color, signage and light changes, hearing impairment, mobility, dexterity, cognitive impairment and age-related impairments.

All these impairments should be taken into consideration when designing the ATM machines.

## CHAPTER THREE

### METHODOLOGY

#### 3.1 Introduction

The researcher used desk research method to get the data about the impact of adoption of Automated Teller Machine on the Profitability of performance of Centenary bank, AruaBranch. The researcher studied the bank's performance reports, review key industry performance indicators and refer to existing literature on the impact of ATM technology on the bank's profitability.

#### 3.2 Research Design

The study employed mainly exploratory research design that is qualitative research methods and secondary sources from previous studies in the same area, journals and Bank of Uganda and other commercial libraries was used in this study.

#### 3.3 Area of Study

The area of study was Centenary Bank Arua Branch because it's convenient and it has got the intended study elements (Centenary bank employees and Bank Customers). The study will cover all the Arua branch staff and customers due to the need to get sufficient data.

#### 3.4 Sample Framework

##### NUMBER CATEGORY OF PARTICIPANTS NUMBER

1. Branch Managers 1
2. Bankers and Accountants 2
3. Banking Assistants 7
4. Customers 25
5. TOTAL 35

##### 3.4.1 Sample Size

The sampling population will comprise of Managers, Bankers and Accountants, Banking assistants and customers in banks under the study. A total of 35(thirty five) participants will be selected and used during the study as shown in the table.

### **3.5 Sources of Information**

The information for this research secondary information both theoretical literature and empirical evidence on theoretical literature this tells us

About electronic banking, functions of ATMs, Importance of ATMs, bank branching and performance in terms of profitability and customer care whereas the empirical tells us the secondary sources from previous studies in the same area, journals and BOU and other commercial banks' libraries.

### **3.6 How the Information will be obtained**

This information was obtained by accessing, reading and analyzing the Previous studies in the same area. It was also being obtained through interviews with respondents where respondents filled questionnaires and the data analyzed thereafter.

### **3.7 Data Processing**

Information was sought and analyzed to ensure its impact on the Performance of ATM or the bank. The processing of the information was based on qualitative analysis.

### **3.8 Data Presentation and Analysis**

This will be done in line with the set objectives.

## CHAPTER FOUR

### PRESENTATION, INTERPRETATION AND DISCUSSION OF FINDINGS

#### 4.0 introduction

The prime focus of the critical review of the theoretical and empirical literature was to help achieve the objectives stated in chapter one.

**Objective 1** To establish the extent to which ATM technology has improved the profitability of Centenary Bank Arua Branch

#### 4.1 Business implications of ATM on banking.

Several authors like Kuteeba (2001), Goode (1995), and Ransay (1999) all agree that ATM improves customer service and in addition brings the following benefits to clients.

Due to the ease of access of ATM machines, clients no longer have to stay with unnecessary sums of money which make the client prone to theft. This is because of the ease in accessing the ATM both for deposits and withdrawals. Related to this is the reliability suitability of the ATM Rugimbana (1994). However, this may not be realized for some clients since ATM machines are located in big centres. This is because of the desire to locate machines in an already developed locality with infrastructure, security and a sizeable number of clients. Centenary bank has twenty five (25) ATM machines, seven (7) are within a radius of Kampala town and the rest are in the main towns like Masaka, Kabale town and Entebbe. However, most of Uganda's population and economic activity is in the rural areas.

The introduction of ATM technology has led to real-time (online) banking in which all transactions are captured as and when they occur (Thornton, 2001).

This helps the client to track their accounts from locations away from their bank premises.

ATM Technology has been appreciated by customers because it has led to convenient banking. With ATM card, clients no longer talk about banking hours especially in case of deposits and withdrawals. However, most ATMs still limit the frequency and amounts withdrawn. Other transactions can only be handled by human beings hence ensuring that clients still enter banking halls to queue for the same

Clients have been saved the unnecessary paperwork because for any transaction with ATM, the requirement is an ATM Card, which is designed to be conveniently kept and is very portable.

For the clients who do not miss the human touch naturally or due to the commitments, this remains the best option as they deal with the machine to execute their transactions fast.

## **.2 Outreach**

Banks look at ATMs as a channel to appeal to their customers, maintain their loyalty and keep the banks' branding and services in front of them (Rikiroy, 1999).

In Uganda, the introduction and consequent adoption of ATMs was hoped to allow the customer have access to cash facilities and account information, 24 hours a day and 7 days a week (Lubega 1999). Moreover, the use of ATMs is a strategy by banks to provide convenient and efficient banking services to customers through better, reliable and efficient technology (Byaruhanga 2002)

The banking industry has tried to take advantage of the productivity and customers service gains associated with technology by the provision of ATMs, which customers can use to carry out day to day banking transactions (Goode 1995)

### **4.3 Sustainability/ Profitability.**

Centenary Bank charges UGX 200 per ATM transaction. Each time an ATM machine is used, the bank makes money which is used to cater for the initial purchase cost, servicing and to generate a return on investment in ATM technology. This has in part led to the distribution of ATM machine in locations where sizeable number of clients can access the machine so as to earn a return.

As the number of transactions increase, the bank earns profits. This further realizes the contribution of the ATM technology to the bank.

Objective 2: To establish the extent to which ATM Technology has been adopted in Centenary Bank Arua branch.

### **4.4 ATMs and Client's service**

Customers are given the first priority in all services offered by the bank, MC Goldrick (1994); even the increased modernization of the banking services in customer oriented technology is aimed at enhancing customer satisfaction. However, this cannot be substituted for the human touch by staff and since customers care is best achieved through person to person contact, and not machine and customer contact, ATM being a mere technology does not give the best customer care, attributes like smiling, courtesy are lacking in the ATM.

It should be noted that since not all humans do show the above attributes, the machine becomes better than those who are not good at customer service.

### **The sensitivity of use of ATMs on Centenary Bank Performance.**

The increased number was not attributed to the introduction of ATMs, but ATM was introduced as a competitive strategy because several banks had introduced it.

Before the problem of increased lending of the branch, as the literature did not match with any theory neither empirical nor theoretical literature, indicating that there was no relationship between ATM technology and the bank's branch excessive lending, this implies that further studies need to be carried out to investigate the causes of excessive lending at Centenary Bank branches.

The desire to respond on increased demand and supply led to the introduction of ATM Technology this was to improve the efficiency as noted before, hence the performance of Centenary bank did not remain the same also there was increased usage of banks services as a result of ATM introduction.

It was further found that its profitability depends on the accessibility this is because the volume of sales/revenue brings about increased profits.

The viability of the technology depends on whether the viability of the technology depends on whether the customers are willing to use that technology and the competitive strategy of availing the customer the convenient services.

#### **Requirements of the customers from the bank**

Empirical evidence shows that customers require reliable services (Malcolm et al, 1995) responsive services (Pezulo, 1993), clear understandable communication incase of any unusual occurrence which still lacks on the ATM technology.

Clients require a responsive and it is essential to ensure that delivery of services by ATMs does not negatively affect the loyalty of the clients. Clients should access all the company products which are accessible using the ATM without delay or inconvenience in order to accept the technology as a substitute for the customer service staff.

ATMs sometimes experience errors often falling to serve the client needs. This impact on the clients` perception of the technology and the services offered by the bank. It is essential that flexible strategy be put in place to resolve issues as



and when they occur. If done on a timely basis and to the satisfaction of the client, it will popularize the ATM technology and reduce its negative client effects.

Courteous treatment according to Greenland Etal, 1994 says that the real goal that still remains elusive is simply that of providing a good quality basic free banking services but with ATM the services are not free.

It was found out that though clients do not like the long queues, they still want customer service since some of the problems encountered in operating the ATM like retained ATM card and un available funds still require some expert knowledge and explanation from the staff. Therefore, for banks to keep customers satisfied, they ought to maintain a customer service staff at each ATM machine. Since every ATM is currently guarded, the bank should explore the possibility of training the guards in basic customer service to reduce the void.

#### **4.5 objective 3: To determine the problems associated with ATMs at Centenary Bank.**

The study identified the problems that have been associated with the ATM technology thereby hindering the clients and the bank from achieving full benefits from their investment in ATMs

The design of ATM machines and cards does not cater for the clients who may have disabilities. People with visual, mobility and other impairments are not adequately considered during the design and installation of ATMs.

Although ATMs are recommended for their advantages, Wall (1989) and Sally (1993), advances the following critique on the use of ATM.

The customers continuously complain of phantom withdrawals, these are withdrawals; these are withdrawals that were not there before the introduction of

the ATMs. However, this has mainly been caused by clients who share their PINs and ATM cards with their relatives or friends.

Loss of personal touch because of introduction of ATM technology in the banking industry, the clients have lost contact with the banking officials instead the clients now communicate with the machines thus killing of the moral fiber in society.

Safety of customers money; because of lack of proper sensitization on the clients of how to safe guard their ATM cards and PIN codes, the customers have ignorantly kept the two together thus leading to other unauthorized persons accessing the money. With regular sensitization this will be reduced.

Insecurity; since ATM is 24 hour service, the users of ATMs have complained of their safety especially if the deposit/ withdraw is made in the night.

ATM charge have in most cases left ATM clients complained of the charge levied on them for use of the ATM yet the imagined that could be for free. However, most banks are young and cannot afford the cost of ATMs without recouping part of the outlay.

In some few cases the bank ATM operators have abused the clients` deposits. In this case the bank has taken immediate action against the culprits and ensured that such loopholes do not occur again.

## CHAPTER FIVE

### CONCLUSIONS AND RECOMMENDATIONS.

#### 5.0 Introduction

The conclusion and recommendations are based on the discussion of the findings from the literature.

#### 1 Conclusions

The banks question of long queues is not a resultant of introduction of ATM but inefficient utilization of this technology.

The question of decreasing of the banks liquidity is also a symptom of lack of lending limits but not the improper utilization of the ATM services.

Through the ATM has not yet been fully utilized, it's increased the performance Of the bank by providing convenient, safe banking services, clients who have exercised precaution in their ATM transactions have benefited from this centenary bank innovation.

The prolonged customer queues are a symptom of poor customer care and services delivery. Though ATMs, its expected to get rid of such poor customer care and service delivery though to a certain extent the personal contact is lost meaning that selling of other banking services that require personal contact with the client may turn to difficult.

## **1.1 Recommendations.**

### **For the bank.**

The bank should train its customers and employees on the use and security conscious when using ATM so as to get the best out of the ATM technology.

The bank should put lending limits within the system to avoid over lending thus compromising liquidity vs. profitability in the bank.

The bank should also invest in research and development in order to improve further on the available technology service so as to gain more and more sustainable competitive advantage over other banks.

Introduce other online banking services like internet banking, PC banking, SMS banking so as to reduce the long queues.

Increasing the capacity by decentralizing of the ATMs and increasing their number such that the least most busy suburbs especially in Kampala have fully pledged ATMs

Make it compulsory for every personal account holder to have an ATM facility so as to reduce the congestion in the banking halls that especially discourages the corporate clients and thus will improve further on their convenience.

The bank should waive of the charge on use of ATM since it discourages, the charge can instead be called ledger fees that can be charged on the customer on monthly basis depending on the number of transaction carried out in a given month

## **2 The Clients**

The client should:

Not write down the PIN if they must write it down, they should not store it in the wallet or purse

Make the PIN a series of letters or numbers that can easily be remembered but that cannot easily be associated with them personally.

Avoid using dates, initials, house numbers or their phone numbers. Store their ATM card in their purse or wallet in an area where it will not get scratched or bent.

Get their card out before they approach the ATM. They will be more vulnerable to attack if they were standing in front of the ATM, fumbling through their wallet for the card.

Standing directly in front of the ATM keypad when typing in the PIN. This presents anyone waiting to use the machine from seeing their personal information.

After their transaction, take a receipt and money away. Do not stand in front of the machine and count the money.

If someone or something makes you uncomfortable, cancel your transaction and leave the machine immediately. Follow up with your bank to make sure the transaction was cancelled and alert the bank to any suspicious people.

## **2 Areas for further research.**

As seen from the study findings, there is a lot to be desired in the ATM technology and its effects on the banking industry in the following areas.

The impact of ATM technology on the profitability of the bank. The institutions currently using or planning to use the ATMs should be able to determine when the ATM technology will payback and the extra costs associated with the technology.

Since the ATMs cannot cater for some people with different impairment, the design should be modified to cater for all the possible bank clients whether with impairments or not. A study of the nature and extent of impairments should be conducted by the customer service department so that the research and development of the technology incorporates the requirement of the impairments for improvement in the technology.

Further studies should be done on how to enhance safety and effective usage of the ATM technology so as to make it more beneficial to clients.

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