

**SERVICE DELIVERY TECHNOLOGIES AND PERFORMANCE OF  
COMMERCIAL BANKS IN KENYA**

**BY**

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## DECLARATION

This project is my original work and it has not been presented for a degree course in any other university.

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**D61/72803/2012**

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**Date**

This project has been written under my supervision and submitted for examination with my approval as the University Supervisor.

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**Dr. Litondo**

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**Date**

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May God bless you all.

## **DEDICATION**

I dedicate this research project to my husband George, my daughter Ivana and my Son Ian for their love, support, patience and encouragement.

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## **ABSTRACT**

Despite the potential benefits of Service Delivery Technologies, there is debate about whether and how their adoption improves bank performance. This study used some relative measures such as return on assets, frequency of usage to uncover the impact of service delivery technologies on banking performance. This study addresses this gap. This study involved gathering data that described the events and then organized, tabulated, depicted and described the data collected. The research data was collected through use of questionnaires and only primary data was used. The respondents were employees of commercial banks in Kenya. Data was collected from all the 44 commercial banks in Kenya. From the analysis of data collected, it can be seen that investment on Service Delivery Technologies has been a key element in productivity and growth in the banking industry. This study indicates that Service Delivery Technologies enables banks to offer a broad variety of services to customers.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Today's business environment is very dynamic and undergoes rapid changes as a result of technological innovation, increased awareness and demands from customers. Business organizations, especially the banking industry of 21st century operates in a complex environment characterized by these changing conditions and highly unpredicted economic climate. Information and communication technology (ICT) is at the center of this global change. The adoption of ICT is defined as a collective term for a wide range of software, hardware, telecommunications and information management techniques, applications and devices, that are used to create, produce, analyze, process, package, distribute and transform information (Brady et al.,2002).

In essence the importance of ICT in banking is itemized through information technology industry. Effective service delivery in banking brings about reduced frustration and improves the level of awareness in an organization (Ato, 2004). Information technology has continued to change the way banks and their corporate relationship are organized worldwide and the variety of innovation device available to enhance the speed and quality of service delivery. ATM banking is one of the earliest and widely adopted retail e-banking services in Kenya (Nyangosi et al. 2009). However according to an annual report by Central Bank of Kenya its adoption and usage has been surpassed by mobile banking in the last few years (CBK 2008). The suggested reason for this is that many low income earners now have access to mobile phones. A positive aspect of mobile phones is that mobile networks are available in remote areas at a low cost.

What prompted this work were the various computerization activities going on in the banking industry which has been accredited to the use of ICT in running activities in the banks. The study has also been considered worthy among numerous research work due to the contribution to the banking institution and the economy at large. This study will look at the effects which Service Delivery Technologies has on banking sector productivity, how it affects profitability and also the threats created by use of such technology.

### **1.1.1 Service Delivery Technologies**

Service delivery is important and has a great influence on customer satisfaction, improving sales and market share (Joseph & Stone, 2003). Commercial banking is at a stage where customer perceptions and preferences have a very important impact on a bank's success. Customer satisfaction is a measure of how products and services supplied by a company meet or surpass customer expectation. The integration of world economies has opened an array of business opportunities as well as challenges for firms. Firms in service sectors such as banking are under constant pressure to perform better, cheaper and faster. The developments in information and communication technology (ICT) are radically changing the way business is done. Electronic commerce is now thought to hold the promise of a new commercial revolution by offering an inexpensive and direct way to exchange information and to sell or buy products and services. This revolution in the market place has set in motion a revolution in the banking sector for the provision of systems that are compatible with the demands of the electronic marketplace (Abor, 2005). The following are service delivery channels that banks have adopted to compete effectively in the market place.

Mobile banking commonly known as m-banking refers to provision and availment of banking and financial services through the help of mobile telecommunication devices. Mobile banking is a service provided by financial institutions in cooperation with mobile phone operators. It allows customers with busy lives to conveniently do their banking using their phones anytime. It is about getting banking services to the unbanked, those who do not have bank access or bank accounts, and those who are at the bottom of the economic pyramid, often living in remote areas. They receive the benefits of banking services such as being able to save and borrow in a cost-efficient and secure way. The services include opening bank accounts, viewing account balances, making cash transfers between accounts, or paying bills via a mobile device. In recent time Mobile banking is most often performed via SMS or the Mobile Internet but can also use special programs downloaded to the mobile device (Salzaman, Palen & Harper, 2001).

ATMs are a computer controlled device that dispenses cash, and may provide other services to customers who identify themselves with a Personal Identification Number. ATM dispenses cash at any time of the day and night, unlike the traditional method where customers have to queue for a very long time in order to withdraw cash or transfer funds. Use of ATM has become extremely popular among customers as convenient mode of transactions. The technological innovation has transformed the banking business. Banks are aggressively adopting this mode. The advantages of using ATM have given new impetus in dimensions of service quality and banks are offering new choices to customers. Cabas (2001) noted investment opportunities, reduction in costs, satisfaction of customers and competitiveness as motives to install and add new ATM to the existing network. Moutinho (1992) established that ATM facility resulted in speed of transactions and saved time for customers.

Internet banking commonly known as e-banking is the use of internet and telecommunication networks to deliver a wide range of value added products and services to bank customers (Steven, 2002) through the use of a system that allows individuals to perform banking activities at home or from their offices or over the internet. Online banking through traditional banks enables customers to perform all routine transactions, such as account transfers, balance inquiries, bill payments, and stop-payment requests, and some even offer online loan applications. Customers can access account information at any time, day or night, and this can be done from anywhere. Internet banking has improved banking efficiency in rendering services to customers. Financial institutions in Kenya cannot ignore information systems since they play an important role in their operations because customers are conscious of technological advancements and demand higher quality services.

A banking agent is a retail or postal outlet contracted by a financial institution or a mobile network operator to process client's transactions. Rather than a branch teller, it is the owner or an employee of the retail outlet who conducts the transaction and lets clients deposit, withdraw, and transfer funds, pay their bills, inquire about an account balance, or receive government benefits or a direct deposit from their employer. Banking agents can be pharmacies, supermarkets, convenience stores, lottery outlets, post offices, and many more. The agency model is a cheaper and more cost effective way through which the banks may reach out to more customers .Actually the agents have been referred to as mini-branches and their convenience and reach is more than the historical brick and mortar branch network. At the onset, agencies only accepted deposits then withdrawals, some banks currently even allow for account opening, while some are eyeing even

application and disbursement of micro-loans through the agents, though pending approval from CBK. Since the launch of the agency banking model in 2010, more than 58.6 million transactions have facilitated the exchange of 310.5 billion, according to CBK. In the year to June 2013, the number of agents grew 62.8 percent to 19,649 operating through 13 banks. The use of the agency model by banks has continued to improve access to banking services, CBK notes in its 2013 annual report.

### **1.1.2 Performance Measures**

Financial performance measures are intended to evaluate the effectiveness and efficiency by which organizations use financial and physical capital to create value for shareholders. Some authors have suggested the balanced scorecard which provides a framework, which encourages the use of financial and non- financial measures of performance via balancing four perspectives - financial, customers, internal business processes, and learning and growth (Kaplan and Norton, 1992).

The key recommended measures for financial analysis include: profitability, liquidity and solvency (Zenios et al. 1999). Profitability measures the extent to which a business generates a profit from the factors of production: labor, management and capital.

To measure the profitability of commercial banks there are variety of ratios used of which Return on Asset, Return on Equity and Net Interest Margin are the major ones . Return on Equity (ROE) is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested or found on the balance sheet. ROE is what the shareholders look in return for their investment. A business that has a high return on equity is more likely to be one that is capable of generating cash

internally. Thus, the higher the ROE the better the company is in terms of profit generation. Return on Asset (ROA) is also another major ratio that indicates the profitability of a bank. It is a ratio of Income to its total asset (Khrawish, 2011). It measures the ability of the bank management to generate income by utilizing company assets at their disposal.

Net Interest Margin (NIM) is a measure of the difference between the interest income generated by banks and the amount of interest paid out to their lenders for example deposits, relative to the amount of their interest earning assets. It is usually expressed as a percentage of what the financial institution earns on loans in a specific time period and other assets minus the interest paid on borrowed funds divided by the average amount of the assets on which it earned income in that time period. The NIM variable is defined as the net interest income divided by total earnings assets (Gul et al., 2011).

### **1.1.3 Commercial Banks in Kenya**

The origin of commercial banking in Kenya related to commercial connections in East Africa, which existed towards the end of the 19th Century. According to Kenya Bankers Association the National Bank of India was established in Kenya in 1896 after the establishment of the British colonialism in the region. It was followed by Standard Bank of South Africa in 1910. In 1916, the National Bank of South Africa merged with Anglo-Egyptian Bank Ltd to form Barclays Bank (dominion colonial). The Standard Bank of South Africa and Barclays Bank were just branches of British banks based in London. Their establishment in Kenya was just in line with the practice of British banks to follow the development of trade in their colonies and concentrate on finance of international trade.



National Bank of India operated mainly in India while the Standard Bank of South Africa had its main business in South Africa. Since the banks had links with Europe, South Africa and India their businesses affected their operations, because they were mainly dealing with customers from their respective areas. Open opportunities for traders and settlers who had come to Kenya and the growing community provided initial sources of deposits in excess; and the surplus, which remained unutilized in Kenya were invested in London. Deposits were also made locally. This situation prevailed mainly because there was a gap between bankers and prospective borrowers.

In the long run this bank was in the process of exporting capital from Kenya, a country which is under-developed, to a developed country. After half a century the Barclays Bank and Standard Bank had a monopoly in the system. But the developing economy with excellent opportunities for further expansion attracted an influx of new banks especially in urban areas. The General Bank of Netherlands was set up in 1951. Bank of India and Bank of Baroda were established in 1953 while Habib Bank (overseas) Ltd was set up in 1956. The Ottoman Bank and the Commercial Bank of Africa were established in 1955. During the 1960s, the banking sector in Kenya experienced a new surge of energy change and in 1968, the Cooperative Bank of Kenya opened its doors. In 1968 again, the business of Ottoman was taken over by the National Bank of Kenya. In 1971 the National and Grindlays Bank, that operated as a retail commercial bank until 7th December 1971, was nationalized and formed Kenya Commercial Bank - the government owning 60% of the bank's share capital. The Merchant Bank division was incorporated into a new bank, Grindlays Bank International Ltd, which has changed to Stanbic Bank. In 1971, Barclays Bank (DC) changed its name to Barclays Bank International Ltd and became a wholly

owned subsidiary of Barclays Bank Ltd based in Britain. In 1974, the American Banks were established in Kenya i.e. first National Bank of Chicago and first National City Bank of New York.

Currently Kenya has 43 licensed commercial banks of these, 31 are locally owned and 12 are foreign owned. Citibank, Habib Bank, Standard chartered and Barclays Bank are among the foreign-owned financial institutions in Kenya. The government of Kenya has a substantial stake in three of Kenya's commercial banks. The remaining local commercial banks are largely family owned. Commercial banks in Kenya accept deposits from individuals and make a profit by using the deposits to offer loans to businesses at high interest rates. These banks are regulated by the Central Bank Act and the Companies' Act, which stipulates the activities they should be engaged in, the rules on publishing of financial statements, minimum capital requirements as well as reserve requirements. Examples of new innovations in the Kenyan banks include adoption of ATMs, smart cards, internet and mobile banking.

## **1.2 Statement of the Problem**

In the past, customers demand for banking services was driven basically by safety of their monies as well as interest accruing from such savings. However, the present day customers' demand has shifted from just safety of money to how banks deliver their services. The reason is that the present day customer requires efficient, fast and convenient services. Only financial institutions that are able to adapt to their changing environment and adopt new ideas and business methods have guaranteed survival. Some of the forces of change which have impacted the performance of financial institutions mainly include technological advancements such as use of mobile phones and the internet which greatly impact service delivery.

IT has become a potential tool in the hands of banks for sustainable growth. It has revolutionized the banking industry and its advent has enormously increased the capabilities of banks as they are now able to offer wider range of services to their customers by use of technologies such as internet banking, mobile banking and ATMs .Mobile money has emerged as a strong competition to financial institutions in Kenya. Initially cellular phones were developed to improve communication from the earlier primitive forms of communications such as smoke and drums. Financial institutions introduced ICT as an improvement to the banking channels. This has thus enabled bank customer's access information relating to their accounts, (Tiwari, Buse and Herstatt, 2007.). In this regard mobile phone service providers have taken mobile money services deeper into the financial sector by offering a range of financial services through their networks. On the other hand, Malhotra and Singh (2009) examined the impact of internet banking on performance and found that that the profitability and offering of internet banking does not have any significant association. In addition, electronic banking presents threats and challenges. Security concerns are also on the rise and according to Soludo, (2005) one security challenge results from "cutting out the middleman," that too often cuts out the information security the middleman provides.

Harold and Jeff (1995) (what did they find out) contend that financial service providers should modify their traditional operating practices to remain viable. They claim that the most significant shortcoming in the banking industry today is a wide spread failure on the part of senior management in banks to grasp the importance of technology and incorporate it into their strategic plans accordingly. Woherem (2000) claimed that only banks that overhaul the whole of their payment and delivery systems and apply ICT to

their operations are likely to survive and prosper in the new millennium. He advises banks to re-examine their service and delivery systems in order to properly position themselves within the framework of the dictates of the dynamism of information and communication technology.

In Kenya, several studies have been conducted on mobile banking. Koivu (2002) investigated the uptake of mobile phone in Kenya and found that mobile banking affects performance of organizations, behavior and decision making of the entire economy. The trend of continued reliance on mobile devices to execute monetary transaction is steadily gaining momentum. Mobile banking is one innovation which has progressively rendered itself in pervasive ways of cutting across numerous sectors of economy and industry. Merwe's (2001) study looked specifically at the security risks exposed to users of mobile banking as well as the technical aspects, while Ndege (2006) researched on how customers in Kenya adopted to the use of mobile banking.

Despite the potential benefits of mobile banking and internet banking, there is debate about whether and how their adoption improves bank performance (Aduda & Kingoo, 2012) there is mixed evidence for the same in the empirical studies reviewed. This study will add to the existing literature by investigating the effect of ATMs, internet, mobile and agency banking on financial performance of commercial banks in Kenya. In addition, chunks of empirical studies exist on the performance of banks adopting each technology in isolation leaving behind the impact of investigating the impact of service delivery technologies together. No sufficient exploitation study had been done specifically on the effect of service delivery channels on commercial bank's financial performance. This study therefore sought to fill in this gap by looking at Service Delivery Technologies together, establish the extent to which they are used in service delivery and determine the challenges of adopting the service delivery channels in the banks.

### **1.3 Objectives of the Study**

The general objective is to investigate the influence of service delivery technologies on the performance of commercial banks in Kenya.

Specifically aims to:

- a) Establish the extent to which Service Delivery Technologies are used in Service Delivery.
- b) Determine the challenges of using Service Delivery Technologies in the bank.
- c) The relationship between Service Delivery Technologies and Performance of the commercial banks in Kenya.

### **1.4 Value of the Study**

This study will help to evaluate the different platforms adopted by Kenyan banks and how their impact on banks efficiency and bank-customer relationship. It would also justify the application of information technology in banking service delivery. This could be used as yardstick by banks that are yet to adopt information technology in their operations. It would also contribute to existing literature by identifying the major barriers and threats to the adoption of the information technology in banking operations in Kenya and suggest how to address them. This study will also be an invaluable tool for the government, academic institutions and individuals that want to know more about the impact and relevance of Service Delivery Technologies in Kenyan banking sector.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter reviews literature from different Authors who have researched in their opinions and debates on how information and communication technology (ICT) has affected banks service delivery and profitability. If ICT collapses so will the economy. The areas covered include the theoretical foundation, the service delivery technologies, the empirical studies on the service delivery channels and the challenges of using the technologies.

#### **2.2 Theoretical Foundation**

This section reviews the theories that guided the study. It consists of the theories governing innovations such as mobile and internet banking. In particular, the section looks at diffusion of innovation theory which explains how over time, an idea or product gains momentum, diffuses and is adopted by a specific population or social system. It also reviews the technology acceptance theory, which holds that perceived usefulness and perceived ease of use of innovation play an important role from the perspective of innovation acceptance behavior.

##### **2.2.1 Innovation Diffusion Theory**

Innovation Diffusion is a theory that seeks to explain how, why, and at what rate new ideas and technology spread through cultures. Everett Rogers, a professor of communication studies, popularized the theory in his book Diffusion of Innovations; the book was first published in 1962. Rogers argues that diffusion is the process by which an

innovation is communicated through certain channels over time among the participants in a social system. The origins of the diffusion of innovations theory are varied and span multiple disciplines. Rogers proposes that four main elements influence the spread of a new idea: the innovation itself, communication channels, time, and a social system. This process relies heavily on human capital. The innovation must be widely adopted in order to self-sustain. Within the rate of adoption, there is a point at which an innovation reaches critical mass. The categories of adopters are: innovators, early adopters, early majority, late majority, and laggards.

Diffusion manifests itself in different ways in various cultures and fields and is highly subject to the type of adopters and innovation decision process. Diffusion of innovation theory attempts to explain and describe the mechanisms of how new inventions in this case internet, mobile and agency banking are adopted and becomes successful Clarke (1995). Sevcik (2004) stated that not all innovations are adopted even if they are good since it may take a long time for an innovation to be adopted if it does not diffuse properly. He further stated that resistance to change may be a hindrance to diffusion of innovation although it might not stop the innovation but it will slow it down.

According to Shy (1997), diffusion theory posits five characteristics of innovations that affect their diffusion: relative advantage (the extent to which a technology offers improvements over currently available tools), compatibility (its consistency with social practices and norms among its users), complexity (its ease of use or learning), trial ability (the opportunity to try an innovation before committing to use it), and observability (the extent to which the technology's outputs and its gains are clear to see). Diffusion studies have demonstrated that innovations affording advantages, compatibility with existing

practices and beliefs, low complexity, potential trial ability, and observability, will be more extensively and rapidly diffused than an innovation with the cluster of opposite characteristics (Shy, 1997). If an organization in Kenya observes the benefits of mobile and internet banking they will adopt these innovations given other factors such as the availability of the required tools. Adoption of such innovations will be faster in organizations that have internet access and information technology departments than in organizations without.

### **2.2.2 Technological Acceptance Theories**

Of these models, the most widely cited is DAVIS' (1989) Technology Acceptance Model (TAM). The goal of TAM is to predict information system acceptance and diagnose design problems before users have experience with a system. TAM predicts user acceptance of any technology is determined by two factors: perceived usefulness and perceived ease of use. Within TAM, perceived usefulness (U) is defined as the degree to which a user believes that using the system will enhance his or her performance. Perceived ease of use (EOU) is defined as the degree to which the user believes that using the system will be free from effort. Both U and EOU are specific perceptions and are anchored to specific beliefs users hold about the system. According to TAM, U and EOU have a significant impact on a user's attitude toward using the system (A), defined as feelings of favorableness or unfavorableness toward the system. Thus, attitude is a general construct not tied to any specific beliefs about the technology. Behavioral intentions to use the system (BI) are modeled as a function of A and U. BI then determines actual use. Research has consistently shown that BI is the strongest predictor of actual use (Davis et al., Taylor Todd). In their application of TAM to study adoption of



M-Banking in Kenya, Lun et.al., (2012) revealed that perceived ease of use, perceived usefulness, perceived self-efficacy, and perceived credibility significantly influenced customers' attitude towards usage of M-banking.

### **2.2.3 Socio-Technical Systems Theory of Information Technology Acceptance**

The socio-technical systems perspective has become influential in the analysis of the organizational impact of information technology. The theory views any organization as an open system of interdependent sub-units transforming inputs to desired outputs. The gainful employment of any technology hinges on the ability and willingness of users to employ it for worthwhile tasks (i.e., those deemed central to the organization's goals). Socio-technical systems theory has given birth to a framework for technology design that emphasizes holistic job satisfaction rather than just task performance and user participation throughout the development process.

Thus, socio-technical theorists recommend the analysis of all stakeholders, not just the direct users of a technology, the formation of planning groups to oversee the design, the performance of prototyping exercises, and the analysis of likely impact the technology will have on the organization. In studying technology acceptance, socio-technical theorists conceptualize acceptance in terms of two competing forces: control and enhancement. Control factors are those that impose rules or structures upon the users, thereby removing autonomy (control over their own actions) from them. Among the control issues raised with respect to technology design are: access, reliability, confidentiality, monitoring, pacing, stress, social contact. Low or high presence of certain factors (e.g., low reliability, high pacing) with the introduction of a new technology is likely to reduce the user's perception of control and thus increase the risk of resistance

(Connor, 1997). Enhancement factors include sense of mastery, growth of knowledge, discretion, ability to act informally, requirement for certain skills, and enabling worker cooperation. A technology that is designed to support such factors is likely to increase user acceptance in an organization.

## **2.3 Information Technology and Service Delivery Technologies**

The following are the studies that the study will investigate:

### **2.3.1 Mobile Banking**

According to Koivu (2002), uptake of mobile phone in Kenya has been unprecedented. Mobile banking in Kenya affects performance of organization, behavior and decision making of the entire economy. The trend of continued reliance on mobile devices to execute monetary transaction is steadily gaining momentum. Mobile banking is one innovation which has progressively rendered itself in pervasive ways of cutting across numerous sectors of economy and industry. Kigen (2010) studied the impact of mobile banking on transaction costs of microfinance institutions where he found out that mobile banking had reduced transaction costs considerably though they were not directly felt by the banks because of the then small mobile banking customer base.

### **2.3.2 Internet Banking**

Today, the logic of the Internet has started shaping markets and financial Institutions. (Norgen, 2001:21). Its emergence has brought unimaginable possibilities in the areas of reduction, creation of new services and personalization of customer relationship. It has challenged bank marketing myopia as banks have been forced by market discipline to shift to spectacular enhancement in their banking practice. Internet Banking is a system

of banking whereby customers do their banking through the net without going to the banking halls. The most common form of communication on the Internet is the electronic mail. Mail is the basic features of the Internet, and it is also very easy to use. Dozens of mail can be used by client about his account and other transactions to a bank and will receive instantly and replies can also be made instantly too. It is very fast in banking transaction. Advantage of Internet mailing include the following, instant delivery, easy delivery, intelligent replies, group letters to customers can be dispatched at once. According to Kerem (2003) Internet Banking has led to incorporation of new features for security transactions. Example, it has enabled incorporation of new security features for secured transactions, international payments, viewing credit card settlements, and deposit and account history. This initiated a radical change in the latest style of banking business in a way that is threatening the traditional form of banks (Twati and Gammack, 2006).

### **2.3.3 Agency Banking**

Agency Bank is a retail or postal outlet contracted by financial institution or mobile network operator to process client's transactions rather than a branch teller. It is the owner or an employee of the retail outlet who conducts the transaction and lets its client deposit, withdraw and transfer funds, pay their bills, inquire about an account balance, or receive government benefits or a direct deposit from their employer. Banking agents can be pharmacies, super markets, conveniences stores, lottery outlets, post offices etc. (Ivatury & Layman, 2006)

The Agency Banking model was rolled out in Kenya in May 2010, through the amendment of the Banking Act Chapter 488 Laws of Kenya by The Finance Act 2009, and publication of Central Bank of Kenya (CBK) Prudential Guideline (PG 15). The

instruction of agent banking was intended to enable institutions to provide banking services cost effectively to customers. It is expected that the initiative will enhance financial access for those people who are currently unbanked or under banked. (Central Bank of Kenya, 2011).

#### **2.3.4 Automated Teller Machines (ATM)**

Use of ATM has become extremely popular among customers as convenient mode of transactions. The technological innovation has transformed the banking business. Banks are aggressively adopting this mode. The advantages of using ATM have given new impetus in dimensions of service quality and banks are offering new choices to customers. Cabas (2001) noted investment opportunities, reduction in costs, satisfaction of customers and competitiveness as motives to install and add new ATM to the existing network. Moutinho (1992) established that ATM facility resulted in speed of transactions and saved time for customers.

### **2.4 Challenges of the Service Delivery Technologies**

The following are the challenges encountered by banks as they try use technology for efficient service delivery:

#### **2.4.1 Data Security**

With the advent of Information Technology security of information has assumed a greater risk. Banks are susceptible to internal and external attacks. This may come in the form of data loss either intentionally or unintentionally. It costs a huge sum of money in trying to keep its data secure. The use of accounting and or Information Technology has to some extent reduced the level of internal fraud. However the level of external fraud has increased, most especially through ATM and Internet Banking.

### **2.4.2 Lack of Internal Skills or Culture**

Perhaps one of the most surprising barriers to ICT adoption is the lack of knowledge of ICT solutions, of how they work, how they should be implemented and how they can benefit the banking sector (Arendt 2008; Asharfi and Murtaza 2008). Studies have shown that most managers and some of the employees, could not select an ICT solution that would be appropriate for a given type of organizational problem (Apulu and Latham 2009; Abor and Quartey 2010). Hence, there is a need for both the managers and the employees to undergo some form of training in order to be aware of the vast changing nature of ICT and to find the most suitable solutions for the organization (Golding et al. 2008). However, many managers' fear that they will lose their employees to other organizations after investing in training (Arendt 2008).

### **2.4.3 Inadequate ICT Management Knowledge**

Just like most other companies or organization in African, many Kenyan banks introduce ICT without proper feasibility studies which will specify requirement before embarking on design. Codes are quickly bashed out and the completed system is introduced without any systematic unit or Integration testing of the code or system. Also, off-the shelf ICT systems are purchased without prior specification of the requirements of the specific banks where they will be used, and usually without a documented systems development life-Cycle Model (SDLM). It is an acknowledged fact that most Kenyan banks have ad hoc processes. In other words, their processes are neither repeatable nor documented. They do not understand what is meant by metrics and how to design and collect metrics for management effectiveness. They also operate without knowledge or use of any in-house, national or international quality standards such as ISO900-3 (Webb, 1993) and SEI's capability maturity Model (paulk et al, 1993). Much therefore needs to be done in order to streamline the ICT sector of virtually all banks in Kenya.

## **2.5 Empirical Studies on Service Delivery Technologies and Performance**

A number of empirical studies exist in the literature, which have examined the relative performance of banks offering internet and mobile banking services. Furst et al. (2002) found that banks in all size categories offering e-banking were generally more profitable and tended to rely less heavily on traditional banking activities in comparison to traditional banks. Similarly, Hasan et al. (2002) found that the e-banking institutions were performing significantly better than the traditional banking groups. DeYoung et al. (2006) observed the change in financial performance of Internet community banks in U.S. during 1999-2001. The results found that electronic adoption improved community bank's profitability, particularly through increased revenues from deposit service charges. Internet adoption was also associated with movements of deposits from checking accounts to money market deposit accounts, increased use of brokered deposits and higher average wage rates for bank employees. It found little evidence of changes in loan portfolio mix. The findings suggested that internet adoption was associated with an economically and statistically significant improvement in bank profitability.

Tchouassi (2012) sought to find out whether mobile phones really work to extend banking services using empirical lessons from selected Sub-Saharan Africa (SSA) countries. This study sought to discuss how mobile phones could be used to extend banking services to the unbanked, poor and vulnerable population. The study noted that 18 poor, vulnerable and low-income households in SSA countries often lacked access to bank accounts and faced high costs for conducting basic financial transactions. The mobile phone presented a great opportunity for the provision of financial services to the unbanked. In addition to technological and economic innovation, policy and regulatory innovation was needed to make these services a reality.

Tiwari, Buse and Herstatt (2006) studied mobile banking as business strategy, more specifically, the impact of mobile technologies on customer behavior and its implications for banks. The study sought to examine the opportunities for banks to generate revenues by offering value added innovative mobile financial services while retaining and even extending their base of technology-savvy customers and found a positive correlation. Kigen (2010) studied the impact of mobile banking on transaction costs of microfinance institutions where he found out that mobile banking had reduced transaction costs considerably though they were not directly felt by the banks because of the then small mobile banking customer base.

Various scholars have conducted research in areas of Agency Banking. Wairi (2011) in her study factors influencing adoption of agency banking innovation among commercial banks in Kenya, revealed that the main factors influencing the adoption of agency banking among commercial banks in Kenya are Cost reduction, Enhancement of customer service and expanded presence by banks particularly in remote areas. The most important factor was cost reduction in the provision of banking services. Another key factor was the prospect of customer service enhancement owing to a greater level of convenience that comes with the presence of retail agent outlets. The study found out that the introduction of third party retail agents presents several risk factors with regard to the effective regulation and supervision of banks, and therefore recommended that regulator closely monitors the banking sector and strictly enforces compliance with the agent banking guidelines, while the banks continuously ensure careful vetting of agents.

Wambugu, (2011), in the study factors influencing Adoption of Agency Banking by Commercial Banks in Kenya, found out that innovation was introduced in the period between 2006 and 2010. These included ATMs, Credit cards, women oriented banking, internet banking, and now most recently introduced within the Kenyan banking sector Agency Banking. The study revealed that 76.74 percent of the Commercial banks surveyed are locally owned thereby 51% or more of the shareholdings are domestic public owned. This was inferred by the researcher to mean that locally owned institutions are out to support local entrepreneurships hence a good enabling environment for adoption of Agency banking.

The study further revealed that 69.77 percent of the commercial banks surveyed have operated Agency Banking for a period between 9-12 months. The research indicated that factors that influenced the adoption of Agency Banking included, increasing customer coverage, enhancing revenue, expanding customer base outside the existing branch network, high penetration of the of the unbanked and diverting customers from the crowded banking halls. This was inferred by the researcher to mean that, the major driving force for commercial banks while adopting Agency Banking is increasing revenues but at the same time reducing the operation cost. The challenges that the researcher indicated to be affecting the adoption of Agency Banking included fraud, money laundering, and fear of break into the premises of the agents. The researcher inferred that these findings to mean that the government regulation on fraud and money laundering ought to be more stringent to deter such vices and that the regulation on vetting of bank agent have worked positively thus making lack of trust with the bank agents the least of the challenges.



Researchers have divergent views about the use and effectiveness of ATMs. Stemper (1990) stressed the positive dimension of ATMs based on freedom of transaction. Effective service delivery in ATM system guarantees quality excellence and superior performance and provide autonomy to the customers (Lovelock, 2000). Yavas et al., (2004) argued that customer's focused ATM delivery systems that fulfills their needs and maximize operational performance are essential dimensions for bank to achieve and sustain competitive advantage.

Dilijonas et al., (2009) examined the essential aspects of ATM service quality in Baltic States. They identified essential resources (adequate number of ATMs, convenient and secure location and user-friendly system); important dimensions of operation of ATM (maximum speed, minimum errors, high uptime, cash backup); and value-based aspects (quality service at reasonable cost, and maximum offering to cover maximum needs of customers as vital facets). Based on the prior studies, Al-Hawari et al. (2006) compiled a list of five major items about ATM service quality that include convenient and secured locations, functions of ATM, adequate number of machines and user-friendliness of the systems and procedures. An empirical study found that these items constitute important aspects of ATM service quality.

Islam et al., (2005) examined the satisfaction level of ATM card holders of a leading bank (HBSC) in Bangladesh. The study found significant relationship of ATM service quality with customers' satisfaction. The study identified that location, personnel response, quality of currency notes, promptness of card delivery and performance of ATM were positively and significantly related to customer' satisfaction. The security, frequent breakdown of machine, and insufficient number of ATM were major contributors of customers' dissatisfaction.

## **2.6 Summary of the Literature Review**

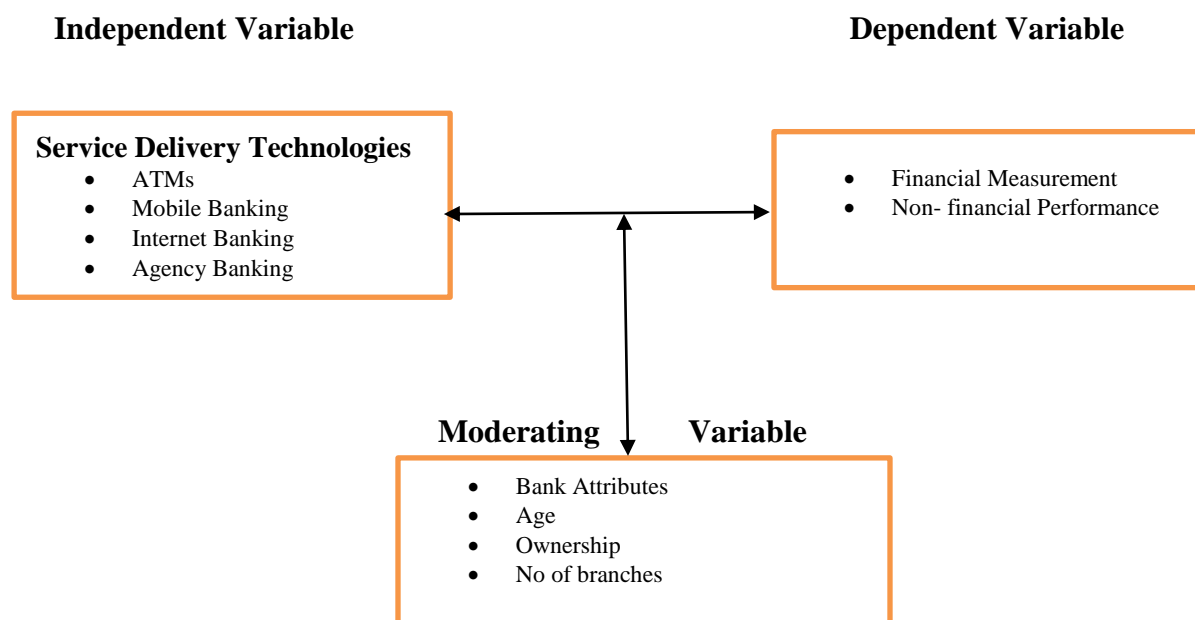
This study shows the positive impacts of different service technologies on commercial banks turnover and profitability and how they improve service delivery. Further (Kariuki, 2005) provides evidence that the use of service delivery channels can contribute to improved bank performance, in terms of increased market share, expanded product range, customized products and better response to client demand. It is against this background, that this study investigates how different electronic channels enhance the delivery of consumers and retails products, and also how banks choose to deal with key challenges that face them e.g. security and uptime which are very key in the provision of electronic services.

The aim is to identify and understand the changes that ICT is causing on the banking sector, in order to examine in detail how the recent (and foreseeable) advances in ICT are affecting the sector and can affect its future evolution. As ICT is having a strong influence on the evolution of the banking, the study investigates the influence ICT has on the banking sector. Among the issues reviewed include the effects of mobile, Internet and Agency banking which include market expansion/partnership, efficiency in service delivery, access to information and customer satisfaction. From the above discussion of the theoretical and empirical literature, most of the studies have looked into the narrower of each technology in an isolated case. This study therefore sought to fill this research gap by looking at the technologies in a holistic view.

## 2.7 Conceptual Framework

The conceptual framework for this study is provided in figure 1 below. Relationship between dependent and independent variables was depicted as the framework provided technologies that were capable of influencing customer service delivery and performance in the banking industry. Independent variables include: influence of information communication and technology, influence of mobile devices, influence of internet banking services and influence of agency banking as shown. The bank's attributes are the moderating variables e.g. size of the bank, age and ownership. The dependent variables were performance and profit which were influenced by the independent variables. The assumption of the model is that service delivery technologies affect the performance and profitability of commercial banks; however other attributes such as the size, age of the bank and ownership can also have an effect on performance.

**Figure 2.1 Conceptual Framework**



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter introduces the logical framework to be followed in the process of conducting the study. It is divided into: research design, population and sample, data collection and data analysis.

#### **3.2 Research Design**

Descriptive research design is the best design to find out the effect of IT on service delivery and financial performance of commercial banks in Kenya. Based on the purpose of the study and the type of data involved, descriptive and cross sectional designs were used. The design refers to a set of methods and procedures that describes variables. It involves gathering data that describes events and then organizes, tabulates, depicts and describes data.

#### **3.3 Population**

Cooper and Emory (1995) define population as the total collection of elements about which the researcher wishes to make some inferences. An element is the subject on which the measurement is being taken and is the unit of the study. The population of interest in this study consisted of 43 commercial banks. This enabled the researcher get objective response in the area of study.

#### **3.4 Data Collection**

Primary sources and secondary data were used in data collection. Close-ended questionnaires were administered to the target population which were mainly two senior managers, one in IT and one in banking operations. Bank financial reports were also

analyzed. The purpose was to find out information regarding the level of usage of ATMs, Agency, Mobile and Internet banking. The questionnaire was subdivided into four sections. The first was on demographics, second measured the extent of service delivery, then the challenges faced and finally how they affect performance and profitability.

### **3.5 Data Analysis**

According to Bryman and Bell (2003) data analysis refers to a technique used to make inferences from data collected by means of a systematic and objective identification of specific characteristics. Once data is collected it has to be edited to verify to the completeness of data, coded in order to assign numbers or symbols to the various answers for effective categorization/classification, entered in order to convert the information gathered to a medium for viewing and manipulation (e.g. excel or statistical package for social sciences SSPS) and finally displayed through the use of frequency tables and charts.

Collected data was analyzed using both quantitative and descriptive measures. The data was tabulated in pie-charts, tables and graphs for easier understanding and presentation.

Object a and b used descriptive statistics .Object c used the following regression model:

$$Y = a_0 + a_1x_1 + a_2x_2 + c \quad \text{Whereby:}$$

**Y**=Performance

**X<sub>1</sub>**=Service delivery Channels (Mobile banking, Atms, Agency banking and Internet banking)

**X<sub>2</sub>**=Bank Attributes

**a<sub>0</sub>a<sub>1</sub>a<sub>2</sub>**=regression coefficient

**e** = Error Term

## **CHAPTER FOUR**

### **DATA ANALYSIS, RESULTS AND DISCUSSIONS**

#### **4.1 Introduction**

This chapter entirely covers the findings, data presentations and analysis of the findings on the influence of service delivery technologies on the performance of commercial banks in Kenya. The data presented and analyzed is based on the questionnaires that were answered by the respondents. Analysis is done using frequencies and percentages and the flow of data presentation and analysis follow the ranking of objectives of the study. Primary data was collected using a questionnaire. Of the forty three commercial banks, thirty five (35) questionnaires were returned representing an 81.4% response rate. The response rate was considered adequate given the recommendations by Saunders, Lewis and Thornhill (2007) who suggest a 30-40% response, Sekaran (2003) who document 30%, Mugenda and Mugenda (2003) advice on response rates exceeding 50% and Hager. Wilson. Pollack and Rooney (2003) recommend 50%. Based on these assertions, this implies that the response rate for this study was adequate.

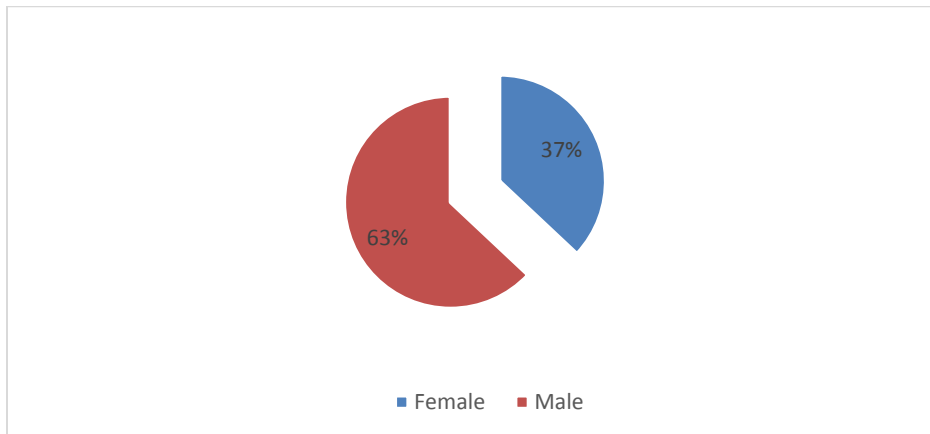
#### **4.2 Demographic Characteristics**

The study sought to establish the information on the respondents employed in the study with regards to the gender, age, academic background and duration of service. These bio data points at the respondents' appropriateness in answering the study questions.

### 4.2.1 Gender

The respondents were asked to state their gender, this was expected to guide the researcher on the conclusions regarding the degree of congruence of responses with the gender characteristics. Figure 4.1 below shows the results of the findings based on the gender analysis.

**Figure 4.1: Gender**

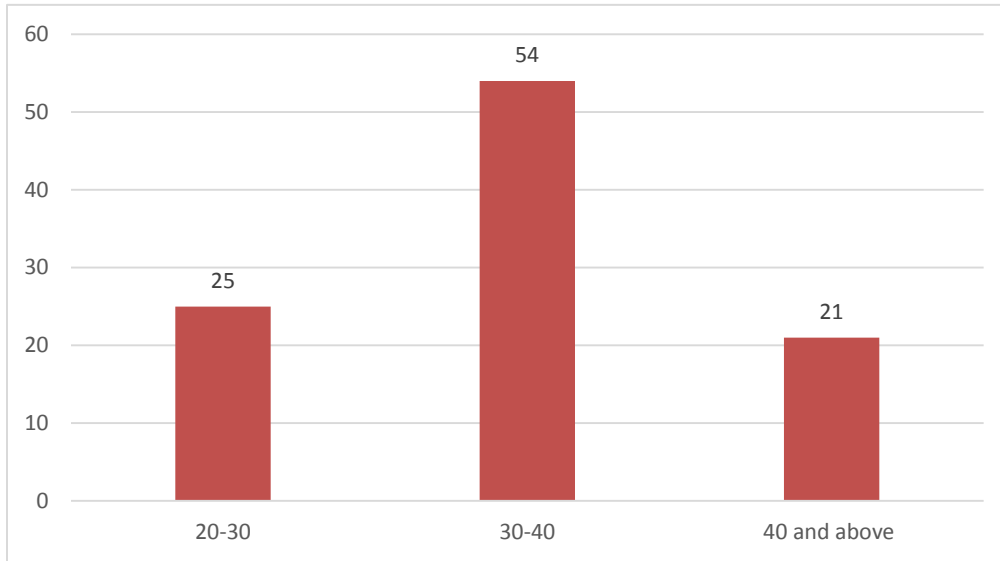


The results as in the figure above show that majority of the respondent were male at 63% while female was 37% implying that most of the workers were male. This is an indication that the respondents were a representation of both genders and majority of the employees in banks are male.

### 4.2.2 Distribution of Age Group

The respondents were asked to disclose their age. The figure 4.2 below shows the study finding on the distribution of age of respondents.

**Figure 4.2: Distribution of Age Group**



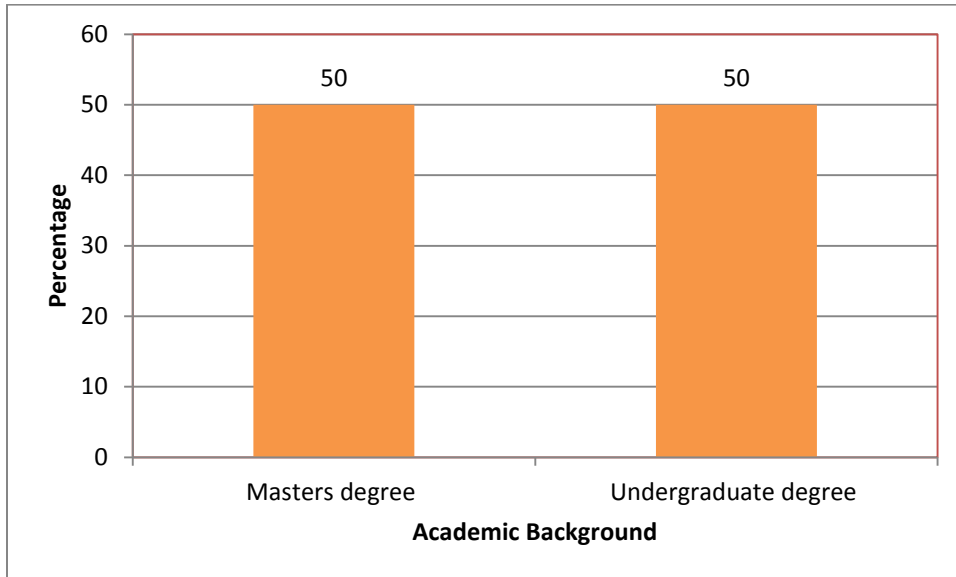
The results presented in figure 4.2 show that a large proportion of 54% the respondents were aged from the ages of 30 to 40 years; this was followed by a significant 25% who were aged from 20-30 years while 21% of the respondents were aged above 40 years. The age composition shows that most of the respondents were of the 30 to 40 years and therefore had rich experiences, could also appreciate the importance of the study.

#### **4.2.3 Level of Education**

The respondents were asked to indicate their academic background. Figure 4.3 shows the study findings on the respondent's academic background.



**Figure 4.3: Academic background**



The study findings indicate that 50% of the respondents are undergraduates and another 50% are master's degree holders- All of the Managers are degree holders therefore, provided information based on the academic and experience they have gained in management. The findings indicate that majority of the respondents had attained their undergraduate studies and therefore were in a good position to respond effectively and give rich information to our study.

#### **4.2.4 Department of Operation**

The respondents were asked to indicate their current department in the bank. Table 4.1 below show the results of the respondents.

**Table 4.1: Department Operation**

Department	Percentage
Information technology	41
Operation	29

Forty one percent of the respondents are said to operate in the Information Technology department whereas twenty nine (29) percent work at the Operations department.

### 4.3 Frequency of Service Delivery Technologies Usage

The study in this part aimed at identifying the frequency at which the following Service Delivery Technologies are used in their respective institutions. Data was collected using Linkert scale of Never (1), Rarely, (2), Sometimes (3), Frequently (4) and Always (5).

The table below shows the research findings.

**Table 4.2: Frequency of Service Delivery Technologies Usage**

	<b>Mean</b>	<b>Std. Deviation</b>
ATM balance enquiry	4.8372	.37097
ATM cash withdrawal	4.7442	.48961
ATM cash deposit	4.4419	.33356
Internet banking balance enquiry	4.8628	.47372
Transfer of funds from one account to another using internet banking (EFT/RTGS)	4.8465	.34548
Transfer of funds from one bank to another using internet banking	3.9302	.43269
Request for bank statement via internet banking	4.0000	.38680
Raise standing orders by use of internet banking	4.4419	.29589
Request for cheque book via internet banking	4.1628	.47372
Loan request via internet banking	2.8372	.37097
Check foreign exchange rates via internet banking	4.442	.48961
Cash withdrawal via mobile banking	4.9419	.33356
Balance enquiry via mobile banking	3.9628	.47372
Transfer funds from one account to another using Mobile banking	4.0465	.34548
Transfer funds from one bank to another using Mobile banking	3.9302	.43269
Direct debits e.g. pay for utilities by use of mobile banking	3.000	.38680
Cash withdrawal at an Agency outlet	3.4419	.29589
Cash deposit at an agency outlet	3.1628	.47372
Agency banking has reduced congestion in our	2.9355	.37097
Transfer funds from one account to another through agency banking	4.4442	.48961
Transfer funds from one account to another through agency banking	4.4419	.33356

The results of descriptive statistical analysis for frequency of Service Delivery Technologies usage are presented in table 1.1. From the table mean and standard deviation were used to test respondent ideas where Standard deviation is the square root of the variance. It measures the spread of a set of observations. The larger the standard deviation, the more spread out the observations are while mean is the arithmetic mean across the observations. It is the most widely used measure of central tendency. It is commonly called the average. The mean is sensitive to extremely large or small values. From the table the statements on Cash withdrawal via mobile banking, Internet banking balance enquiry. ATM balance enquiry, ATM cash withdrawal, Transfer of funds from one account to another using internet banking (EFT/RTGS) were found to be always used in the service delivery technologies by the commercial banks as suggested by the mean of 4.8.

Other frequently used services were raising standing orders by use of internet banking, Check foreign exchange rates via internet banking, Transfer funds from one account to another using Mobile banking, Transfer funds from one account to another through agency banking and transfer funds from one account to another through agency banking which were supported with a mean of 4.0. The least used services were Loan request via internet banking and the statement that agency banking has reduced congestion in the banking halls which were given a response rate of 2.8372 and 2.9355 respectively.

#### 4.4 Challenges Faced

This part of the study aimed at identifying potential challenges faced in the process of service delivery technologies usage by the commercial banks in Kenya. Data was collected using Linkert scale of 1 Least extent, 2 Low extent, 3= Neutral, 4 Moderate extent and 5 Great extent. The table below shows the research findings.

**Table 4.3: Challenges Faced**

Potential challenges	Mean	Std. deviation
ATMS are normally not secure especially because of card Skimming	3.0419	.29589
ATMS do not dispense cash all the time	2.3953	.25971
ATMS can sometimes dispense cash twice or not at all	2.0930	.31760
There are sometimes network failures hence service becomes unavailable	3.3488	.38604
Many customers are not willing to adopt using internet banking	3.9628	.37372
Internet banking is susceptible to fraudster's online	4.0465	.44548
When there are technical problems regarding Internet Banking it takes time to resolve.	2.9302	.23269
Mobile banking is mostly affected by network failures	3.4419	.39589
Mobile banking is not secure and its susceptible to fraud	2.5558	.38961
Many customers are not aware about Agency Banking	3.2302	.30357
Many customers are not willing to visit Agency outlets but go to	3.4419	.29589
A customer can only be served at an agency outlet if there is network	3.3953	.35971
Data protection and retention	3.9628	.37372

Respondents were asked to provide answers on each item that was measured by a five point Likert scale ranging from 1 (very low) to 5 (very high). From the table, respondents of the study agreed to a great extent that ATMS are normally not secure especially because of card skimming, There are sometimes network failures hence service becomes unavailable, Internet banking is susceptible to fraudsters online, Mobile banking is mostly affected by network failures, Many customers are not aware about Agency Banking. Many customers are not willing to visit Agency outlets but go to branches, a customer can only be served at an agency outlet if there is network and data protection and retention as potential challenges faced commercial banks in Kenya with a mean above 3.0.

#### **4.5 Financial Performance**

On the financial performance front, respondents of the study were asked to indicate their views on the performance of the commercial banks in regards to performances on profits, cost of technology, service delivery channels and number of transactions. Based, on the responses, all the respondents were in agreement that the introduction of service delivery technologies has positively affected profits. On the cost of acquiring information technology, majority of the respondents were in agreement that the cost of acquisition of technology and infrastructure does not outweighs its benefits.

Respondents of the study were however in agreement that Information technology has positively impacted the performance of their banks. As well as the statement that service delivery channels has enabled your bank to open more accounts. The statement on whether the number of transactions has increased due to the bank using service delivery channels was also unanimously agreed.

#### 4.6 Regression Analysis

The regression analysis is concerned with the distribution of the average value of one random variable as the other variables which need not be random are allowed to take different values. The regression model specifically connects the average values of y for various values of the x-variables. The regression model was as follows:

$$y = \alpha_0 + \alpha_1 x_1 + \alpha_2 x_2 + \varepsilon$$

**Table 4.4: Strength of the model**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change statistics				
					R Square Change	F change	Df1	Df2	Sig. change
1	.918(a)	.843	.805	.51038	.843	1.242	4	67	.001

*Predictors:* (Constant), Service delivery, Bank Attributes

*Dependent Variable:* Performance

The coefficient of determination (the percentage variation in the dependent variable being explained by the changes in the independent variables) R<sup>2</sup> equals 0.843, that is, service delivery and bank attributes leaving only 15.7 percent unexplained. The P- value of 0.001 (Less than 0.05) implies that the model of performance is significant at the 95% confidence level

**Table 4.5: ANOVA**

Model		Sum of squares	Df	Mean square	F	Sig
1	Regression	16.412	4	4.103	5.342	.001a
	Residual	51.463	67	.768		
	Total	67.875	71			

a. *Predictors:* (Constant). Service Delivery, Bank Attributes

b. *Dependent Variable:* Performance

The summary of the basic logic of ANOVA is the discussion of the purpose and analysis of the variance. The purpose of the analysis of the variance is to test differences in means (for groups or variables) for statistical significance. The accomplishment is through analyzing the variance, which is by partitioning the total variance into the component that is due to true random error and the components that are due to differences between means. The ANOVA analysis is intended to investigate whether the variation in the independent variables explain the observed variance in the outcome in this study the outcome Level of performance.

The ANOVA results indicate that the independent variables significantly ( $F_{5.342}$ ,  $p=0.001$ ) explain the variance in the firm performance. In this context, as have been presented in the table above, the dependent variable is the level of acceptance of firm performance while the independent or the predictors are service delivery and bank attributes.

**Table 4.6: Distribution of Coefficients**

Model	Unstandardized coefficients		Standardized coefficients	t	Sig
	B	Std. error	Beta		
Constants	.255	.133		4.8709	.001
	.131	.131	.041	.335	.000
	.170	.167	.161	.666	.000

a. Dependent Variable: Performance

These are the values for the regression equation for predicting the dependent variable from the independent variable. The regression equation is presented below.

Regression equation:  $Y=0.255+0.131X_1 \pm 0.170X_2+e$

Y = Performance

X<sub>1</sub> = Service delivery

X<sub>2</sub>= Bank Attributes

$\alpha$  = constant

$\beta$  = coefficient

$\varepsilon$  = error term where

Constant = 0.255, shows that if service delivery and bank attributes rated as zero,

Performance would be 0.255

X<sub>1</sub>= 0.131, shows that one unit Service Delivery results in 0.13 1 units increase in Performance

X<sub>2</sub> = 0.170, shows that one unit change Bank Attributes results in 0.170 units increase in Performance

The results are not very conclusive since all the banks investigated used Service Delivery technologies that the study was investigating.



## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents summary of findings as discussed in chapter four and interpretations of the data analysis, conclusions and recommendations based on the findings.

#### **5.2 Summary of Findings**

The findings show that Service Delivery Technologies have affected the performance of commercial banks in Kenya as indicated by majority of the respondents who strongly agreed Cash withdrawal via mobile banking, Internet banking balance enquiry, ATM balance enquiry. ATM cash withdrawal. Transfer of funds from one account to another using internet banking (EFT/RFGS) were found to be always used in the service delivery technologies by the commercial banks. Other frequently used services were raising standing orders by use of internet banking, Check foreign exchange rates via internet banking. Transfer funds from one account to another using Mobile banking, Transfer funds from one account to another through agency banking and transfer funds from one account to another through agency banking. Profit is the ultimate goal of commercial banks hence all the strategies designed and activities performed thereof are meant to realize this grand objective

Result show that internet banking and mobile banking affected efficiency in service delivery. It was found that Service quality can be seen as the extent to which a service meets customer's needs and expectations. The rapid advancement in technologies and

ease of use, coupled with the falling prices of devices, present the mobile phone as an appropriate and adaptable tool to bridge the digital divide. Cell phones have not yet achieved these levels of quality, but they do offer anywhere convenience, a disruptive innovation advantage. There are significant benefits to be gained by the use of mobile technology by financial services providers, especially in rural areas, in the form of cost savings, efficiency, fraud and error reduction, client security and convenience.

It was found that evolution of mobile banking affected the performance of the bank. Findings indicate mobile banking services are easily accessible from many points in the country and banks provide electronic/mobile banking services. The bank offers different kinds of value for customers and also banks offer a range of retail experiences. Results also show that mobile banking services are offered in collaboration with other companies.

Finding show that mobile banking affects service delivery. This is because it enhances efficiency in services delivery, there was improvement in service quality it is convenient and there is Confidentiality. The study shows that Technology is an enabler a way to build up a new delivery channel, but communicating only technological features affects other elements of services such as service content. Technology-based electronic delivery medium does not constitute service offering and creates value alone, but service content has to function properly and the way of usage has to be known. Another main impediment seems to be functionality of a mobile phone as delivery medium for banking services. Mobile phone, obviously is not designed for this type of services: For instance, key board is relatively small, which makes it more prone for correcting errors in keeping the figures. Results indicate that consumers get disheartened by the complicated functions while accessing the mobile banking services which lead them to the dissatisfaction level as no proper guidance is to be provided to them.

### **5.3 Conclusion**

It is well recognized that internet and mobile banking have immense potential of conducting financial transactions thus leading the financial growth with lot of convenience and much reduced cost. For inclusive growth, the benefits of mobile banking should reach to the common man at the remotest locations in the country. Through m-banking platform customers can enjoy a wide range of services without necessarily having to visit their domicile branches or ATMs. Such services include: money transfer across accounts, Balance inquiry, making payments (utility bills), phone banking and buying airtime which according to the respondents, strongly agrees that the bank has the ability to keep customers transaction secure and confidential. Majority of the respondents agreed that mobile money services are one way of coping with the changing customer expectations.

From the findings of the study; it can be inferred that the introduction of service delivery technology services has contributed positively to the financial performance of the banking institutions. Convenience and reliability of various mobile moneys services has largely led to increased customer satisfaction and loyalty despite occasional technical hitches that prove disappointing to the customers. The interface between mobile money service providers and banking institutions has proven to be of great use to the Kenyans socio-economic life and thus one cannot envisage a future without mobile money. The future of the Kenyan banking industry remains electronic banking and the going concern of certain banking institutions will largely be determined on how well they are going to invest in technology infrastructure to make electronic banking more reliable to the ever growing middle class.

#### **5.4 Recommendation**

The study recommends that commercial banks keep adopting and using mobile banking in their operations because the number of people with access to a mobile hand set is increasing every day. In addition, the convergence of mobile phones and commercial banks has revolutionized the banking operations. For example, Safaricom limited in conjunction with Commercial Bank of Africa launched M-Shwari services which provide registered members an opportunity to borrow money from the bank and repay conveniently. This has introduced another perspective that is likely to revolutionize the banking operations for increased profitability.

#### **5.5 Suggestions for Further Studies**

The study suggests that further research be conducted on the relationship between service delivery technologies adoptions and financial performance in other countries within the East African Community. This study only concentrated on Kenya yet service delivery technologies have been adopted in all members of the Last African Community

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## APPENDICES

### APPENDIX I: QUESTIONNAIRE

#### SURVEY QUESTIONNAIRE

Dear survey participant,

This survey is aimed at understanding the impact of service delivery channels on performance of Kenyan banks. In meeting this objective, you have been duly selected as a member of the sample to provide relevant and objective data needed to satisfy the quest for this knowledge. This questionnaire will take approximately 15 minutes to be completed. Your answers will be treated in strict confidence and used for academic purpose only.

#### SECTION A: GENERAL INFORMATION

Please respond to the following statements by ticking (√) one answer from each question that applies to your circumstances.

##### A) Gender:

Male [ ]

Female [ ]

##### B) Age:

18 – 25yrs [ ]

26 – 33yrs [ ]

34 – 41yrs [ ]

42 yrs. and above [ ]



**C) Educational level:**

Diploma [ ]

Degree [ ]

Master's Degree [ ]

**D) Department:**

Information Technology [ ]

Operations [ ]

**E) Position:**

IT Manager [ ]

Operation Manager [ ]

**F) Ownership:**

Local [ ]

Foreign [ ]

**G) Number of branches:**

0-10 [ ]

10-30 [ ]

30-40 [ ]

40-50 [ ]

**H) How many of the below does your bank have?**

ATMS [ ]

Agency Banking Channels [ ]

**I) To what percentage does your bank offer the below services?**

Internet Banking [ ]

Mobile Banking [ ]

**SECTION B: FREQUENCY OF SERVICE DELIVERY TECHNOLOGIES USAGE**

Please indicate the level which the following items. Use the scales below. **Use Frequent, Always, Sometimes, Rarely and Never.**

Always [5]

Frequently[4]

Sometimes [3]

Rarely [2]

Never [1]

**Please indicate the frequency to which the below service is used in your bank.**

	1	2	3	4	5
ATM balance enquiry					
ATM cash withdrawal					
ATM cash deposit					
Internet banking balance enquiry					
Transfer of funds from one account to another using internet banking (EFT/RTGS)					
Transfer of funds from one bank to another using internet banking					
Request for bank statement via internet banking					
Raise standing orders by use of internet banking					
Request for cheque book via internet banking					
Loan request via internet banking					
Check foreign exchange rates via internet banking					

Cash withdrawal via mobile banking					
Balance enquiry via mobile banking					
Transfer funds from one account to another using Mobile banking					
Transfer funds from one bank to another using Mobile banking					
Direct debits e.g. pay for utilities by use of mobile banking					
Cash withdrawal at an Agency outlet					
Cash deposit at an agency outlet					
Agency banking has reduced congestion in our banking halls					
Transfer funds from one account to another through agency banking					
Transfer funds from one account to another through agency banking					

**SECTION C: CHALLENGES FACED**

To what extent do you agree with the following as a challenge in using the following delivery channels? Always [5]

Frequently [4]

Sometimes [3]

Rarely [2]

Never [1]

	1	2	3	4	5
ATMS are normally not secure especially because of card skimming					
ATMS do not dispense cash all the time					
ATMS can sometimes dispense cash twice or not at all					
There are sometimes network failures hence service becomes unavailable					
Many customers are not willing to adopt using internet banking					
Internet banking is susceptible to fraudsters online					
When there are technical problems regarding Internet Banking it takes time to resolve.					
Mobile banking is mostly down					

Mobile banking is mostly affected by network failures					
Mobile banking is not secure and its susceptible to fraud					
Many customers are not aware about Agency Banking					
Many customers are not willing to visit Agency outlets but go to branches					
A customer can only be served at an agency outlet if there is network					
Data protection and retention					

**SECTION D: FINANCIAL PERFORMANCE**

By use of secondary data, answer the below statements.

a). The introduction of service delivery technologies has positively affected profits.

Yes [ ]

No [ ]

b). The cost of acquiring information technology in my bank outweighs its benefits

Yes [ ]

No [ ]

c). Information technology has positively impacted the performance of my bank

Yes [ ]

No [ ]

e) Has service delivery channels enabled your bank to open more accounts?

Yes [ ]

No [ ]

f) Has the number of transactions increased due to the bank using service delivery channels?

Yes [ ]

No [ ]

*Thank you for your cooperation*

## **APPENDIX II: LIST OF BANKS**

1. African Banking Corporation
2. Bank of Africa Ltd
3. Bank of Baroda
4. Bank of India
5. Barclays Bank of Kenya Ltd
6. CFC Stanbic Bank Limited
7. Charterhouse Bank Limited
8. Chase Bank Limited
9. Citibank N.A.
10. Commercial Bank of Africa
11. Consolidated Bank of Kenya
12. Co-operative Bank of Kenya
13. Credit Bank Limited
14. Development Bank of Kenya
15. Diamond Trust Bank Kenya
16. Dubai Bank Limited
17. Ecobank
18. Equatorial Commercial Bank
19. Equity Bank Limited
20. Family Bank Ltd
21. Fidelity Commercial Bank
22. Fina Bank Limited

23. First community bank
24. Giro Commercial Bank
25. Guardian Bank
26. Gulf African bank
27. Habib AG Zurich
28. Habib Bank Limited
29. I&M Bank
30. Imperial Bank Limited
31. Jamii bora Bank
32. Kenya Commercial Bank Ltd
33. K-REP BANK
34. Middle East Bank of Kenya
35. National Bank of Kenya Ltd
36. National Industrial Credit Bank
37. Oriental Commercial Bank
38. Paramount-Universal Bank
39. Prime Bank Limited
40. Standard Chartered Bank Ltd
41. Transnational Bank Limited
42. UBA Kenya bank Ltd
43. Victoria Commercial Bank

**Source: (Central Bank of Kenya)**