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## **Effects of Digital Banking on Competitiveness among Commercial Banks in Kenya: A Case of KISII Town**

**Nyaiyo Isaac Mosota**

Student, Masters in Business Administration, KISII, Kenya

**Dr. Walter Bichang'a Okibo**

Deputy Director, JKUAT-KISII CBD, Kenya

**Dr. Andrew Nyanga'u**

Marist International University College, Kenya

### **Abstract:**

*Digital banking has become a global concern in recent decades with all financial institutions embracing it as a competitive strategy despite the challenges that comes with it such as lack of security, lack of personalised service, lack of proper legislation governing digital transactions, functionality, dynamism of customer needs and innovation. This study was designed to assess the effects of digital banking on competitiveness among commercial banks in Kisii town in Kenya. The major objective of this study was to determine the effects of digital banking on competitiveness among commercial banks in Kenya. The specific objectives were to determine effects of mobile banking, internet banking and ATMs payment systems on competitiveness among commercial banks in Kenya. The study adopted a descriptive research design that allowed the researcher to collect primary quantitative data through structured questionnaires. The questionnaire with closed Likert-type scale questions was used. A total of 300 staffs from 15 commercial banks in Kisii town were the target population. Stratified sampling was used in selecting the respondents from every bank to be interviewed. Sample size of 90 respondents was calculated using 30% formula from the total population. The Cronbach's alpha reliability statistics was used to test data reliability. The data was analyzed using mean, percentage, weighted mean and chi-square. The tallies from the data collected indicated that digital banking had effects on competitiveness among commercial banks in Kisii. The study concluded that digital banking have attracted and retained so many customers giving the bank a competitive edge within the industry and the market. The study recommended that the use of ATMs was a must provide on the part of banks though the use of same chip for all ATMS cards lessens its competitiveness. Security was a concern for most customers who fear online fraud and this should be addressed.*

## **1. Introduction**

### *1.1. Background of the Study*

Digital banking has become a global concern in recent decades. With the rapid development and wide application of modern information and communication technology, the power of the internet, World Wide Web, and mobile phones applications are becoming increasingly significant worldwide in the daily life. More and more people prefer to use self-service technology (ATMS, internet, mobile phones) rather than traditional services. Internet and mobile phone based technologies bring convenience, flexibility, transparency, accountability and cost effectiveness as it can be carried out at any time of the day or night, attractive rate and incentives, consolidated portfolio interface and save time, enable customers to deposit pay checks and withdraw cash freely at anytime. (Kenova, 2006).

Digital banking is the fastest growing area for businesses (Aladwani, 2001). It leads to increased sales turnover. The monetary value of products and services exchanged electronically is estimated to be US\$ 7 trillion (Sanders, 2000) and based on the results of the current survey many respondents felt the estimates may have surpassed that of the year 2004. Most industries have been influenced in different ways by digital banking leading to a contagion effect within the economy (Foxall, 2003)

Digital banking in broad sense has lead to the increased customer base. It is estimated that more than 32 million households globally are banking online (Simpson, 2002).

For instance, in Pakistan, mobile technology which started to grow strongly over the last few years, rocketed to 95 million subscribers by June 2009 and is gearing up for further growth and population has been increasing at a remarkable rate 58%, people belonging to all income groups are using this technology. Banks and other financial institutions have moved to digital banking in their efforts to cut costs while maintaining reliable customer service and has enabled them establish new services. The encouraging prospect of mobile usage has led foreign banks of Pakistan to provide mobile banking services to customers in the country. After the multinational banks, numerous local banks have intended to initiate this service for their customers (Hogarth, 2001).

Martin (2012), survey of online banking customers in the US found that 60% of members thought their banks were doing great job at providing innovative technology. They keep customers happy by providing access to mobile and online banking services. The data bodes well for banks since adoption of Smartphone and tablets means demand for mobile banking service will only increase. Part of the reason that customers are so satisfied with their banks is that they have a distinct preference for digital banking. Banking convenience meant being able to take advantage of good online services. Having a branch located close to their homes or workplace was not as that important.

Killer online services level the playing field for smaller institutions. Ten years ago consumers' options for banking services were pretty obvious (Martin, 2012). If they wanted accessibility and convenience, they chose a large a bank. If they valued a personal service, a small bank was the best bet. But the choice isn't clear anymore, with online services leveling the playing field, (financial brand, 2012).

This means convenience and accessibility don't belong solely to large banks customers anymore closing the convenience gap and enhancing value proposition as large banks struggle to positively differentiate themselves (Martin, 2012)

Ghanaian banks are making huge investments in technology to upgrade their infrastructure, in order to provide new digital information-based services. Digital services such as online retail banking are making it possible for individuals and small institutions to take advantage of new technologies at quite reasonable costs. (Abor, 2004)

In Ghana, electronic retail payments are being continuously developed, to replace or reduce paper-based payments. Many new payment services have come into existence in recent years, most of which are based on technical innovations such as card, telephone and the Internet. (Abor, 2004)

According to Bawumia (2007), banks in Ghana need to reinvest themselves in this new conducive but challenging environment. This is important because electronic transactions will continue to grow and only countries that make a move towards embracing electronic business will participate in this revenue generation (Akoh, 2001). Harold and Jeff (2005) contend that financial service providers should modify their traditional operating practices to remain viable in the 1990s and the decades that follow. Woherem (2000) also contends 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 them within the framework of the dictates of the dynamism of Information and Communication Technology.

The growth in the adoption of digital banking services in South Africa is attracting the attention of financial institutions who wish to benefit from a booming industry.

South African banks focus on moderating customer dependence on branches by encouraging the use of cheaper self-service delivery channels such as the Internet, cell phones and ATMs. The banking industry views the digital banking service as a means of reducing operating costs and retaining customers

The Internet was launched in South Africa in or around 1996 and was followed by cell phones banking services in 2000. The subscriber base for digital banking in South Africa reached 5 719 280 by March 2009. Of this figure, 3 642 340 represented Internet banking subscribers, while cell phones banking customers numbered 2 076 94. This is a far-reaching development when one reflects on the World Wide Worx's 2006 Online banking in South Africa report. According to this report, Online Banking reached the one million mark in South Africa for the first time at the end of 2003, grew to 1,4-million in 2004 and 1,7-million in 2005. The researcher found that the number of digital banking accounts grew rapidly from 2005. The growth in digital banking has continued despite the security concerns of both banking executives and customers.

The growth of internet use is exponential reports Ryaport and Jaworski (2001). According to the study, it took other major media technologies decades to hit a fifty million use population but the internet took about 5 years. Internet use is estimated to double in every 100 days (Khan, 2007). Current figures put internet use, in June 2008, at 1,463,632,361- up from 360,985,492 in 2000- constituting 21.9% of the 6,676,120,288 world population (internet World Stats, 2008)

It is evident that banks in developed and emerging markets are embracing digital banking. In Kenya, there is steady increase in use of automated teller machine (ATM), mobile and Internet (online) banking. Kenya has and still faces explosive digital revolution in the banking industry and is not clear to what extent it affects competitiveness within the industry (CBK, 2008).

Therefore, there is no doubt that the trend of online banking development cannot be halted and is becoming the new hot spot for banks' marketing and competitive strategy (Zhao, 2010), especially in Kenya with emergence of latest e-services such as M-shwari, M-benki, Pesa mob more and more banks are revamping their services to remain competitive irrespective of risks involved.

#### 1.1.1. Digital Banking in Kenya

The Banking industry in Kenya is governed by the Companies Act, the Banking Act, the Central Bank of Kenya Act and the various prudential guidelines issued by the Central Bank of Kenya (CBK). The banking sector was liberalized in 1995 and exchange controls lifted. The CBK, which falls under the Minister for Finance docket, is responsible for formulating and implementing monetary policy and fostering the liquidity, solvency and proper functioning of the financial system (PWC, 2011). The Kenya government through the central bank amended the finance Act 2009 to facilitate use of third parties by banks to provide banking services. Agency banking has proved to be a cost saving network as compared to the physical brick and mortar banking branches. Keen to take the agency banking advantages, Kenyan financial institutions since 2010 have embarked on an aggressive entry into this segment. The banks have come together under the Kenya Bankers Association (KBA), which serves as a lobby for the banking sector' interest .The KBA serves a forum to address issues affecting members (PWC, 2011).

As at December 2008 there were forty six banking and non bank institutions, fifteen micro finance institutions and one hundred and nine foreign exchange bureaus. The number has increased since then. This has lead to intense competition within the industry

as all seek to increase their customer base and profitability (PWC, 2011). Over the last few years, the Banking sector in Kenya has continued to grow in assets, deposits, profitability and products offering. The growth has been mainly underpinned by; an industry wide branch network expansion strategy both in Kenya and in the East African community region. Automation of a large number of services and a move towards emphasis on the complex customer needs rather than traditional ‘off-the-shelf’ banking products. Players in this sector have experienced increased competition over the last few years resulting from increased innovations among the players and new entrants into the market. The main challenges facing the Banking sector today include; New regulations; For instance, the Finance Act 2008, which took effect on 1 January 2009 requires banks and mortgage firms to build a minimum core capital of KShs 1 billion by December 2012. This requirement, it’s hoped, will help transform small banks into more stable organizations. The implementation of this requirement poses a challenge to some of the existing banks and they may be forced to merge in order to comply (PWC, 2011). Global financial crisis experienced in late 2008 is expected to affect the banking industry in Kenya especially in regard to deposits mobilization, reduction in trade volumes and the performance of assets. Others include declining/fluctuating interest margins which has lead to product portfolio dynamism (PWC, 2011)

### *1.2. Statement of the Problem*

Digital banking is what stress free banking is all about but digital banking faces several constraints such as Security: Majority of the customer shy away from digital banking services due to security concerns, human face: According some analysts, customers still value personalized and responsive services from their bankers, ignorance: “on average 30% of bank customers do not even know whether their banks provide online services. Computer illiteracy among majority of the population is still significantly high especially in Africa. Poor and/or lack of technological infrastructure and reliable power supply, lack of proper legislation governing e-transactions, preference to paper money, as opposed to “virtual” cash in transactions, (Waterfield, 2004) ,on the other hands banks are faced with challenges of Balance between convenience and security, designing products that offer a balance between competitive pricing and functionality, keeping abreast with dynamism of customer needs & innovation, lack of proper legislative framework to support the growth of digital banking. Despite all the challenges mentioned, more customers and banks are now switching to digital banking as means of banking as it offers major opportunities in terms of competitive advantage and it also allows banks to develop a stronger and more durable business relationship with its customers (Yasuharu, 2003). It is against this background that the study seeks to find out the effect of digital banking on competitiveness and solutions to the challenges facing this revolution.

### *1.3. Research objectives*

This entailed the general objective and specific objectives.

#### 1.3.1. General Objective

The purpose of the study was to find out the effects of digital banking on competitiveness among commercial banks in Kenya, a case study of Kisii Town (Kisii County)

#### 1.3.2. Specific Objectives

1. To examine the effect of mobile banking on competitiveness among commercial banks in Kenya
2. To determine the effect of internet banking on competitiveness among commercial banks in Kenya
3. To evaluate the effect of ATMs on competitiveness among commercial banks in Kenya

### *1.4. Research Questions*

The following were the research questions addressed by this study

1. To what extent does mobile banking affect competitiveness among commercial banks in Kenya?
2. To what extent does internet banking affect competitiveness among commercial banks in Kenya?
3. To what extent do ATMs affect competitiveness among commercial banks in Kenya?

### *1.5. Justification of the study*

Digital banking services are becoming mutually attractive for banks and users. From the banks’ perspective, online banking helps them to establish and keep close contact with customers, thus cut the operating costs and achieves much better financial performance (Zaman, 2013). From the customers’ perspective, online banking is becoming an attractive way to provide them transaction convenience, the round-the-clock availability and avoidance of long time waiting queues (Meuter, 2000). Currently, different types of services function are available online that e-banking can offer, like balance inquiries, payment of utility bills and account transfers etc. when users send information request or conduct online banking transaction via internet instead of physical visiting to banking department, (Daniel, 1999). What’s more, it is vital to retain the customers in the digital space as the switching cost is significantly lower (Reichheld, 2000). In other words, customer-orientated services play very important roles for competitive market. Good digital banking services are becoming competitive advantage in retailing banking services and retaining customers.

### *1.6. Significance of the Study*

The study looked into the effect of digital banking on competitiveness among commercial banks. The findings of this study is helpful to the following groups: Future Researchers, It will add to their body of knowledge on how to manage ever changing trends of e-banking, Commercial Banks: It gives an insight on the viable and available strategies in e-banking, Product managers,

the study will help them identify the best practices and strategy to use, policy makers: the study would help policy makers forecast on the effect of their decisions on digital banking and its contagion effect on the economy as a whole, hence aid in decision making, government the study offers insight on the effect of government decisions concerning taxations, governance and regulation of digital banking activities.

### *1.7.Scope*

The study was carried out in Kisii Town of Kisii County. The elements in the sample were the 15 commercial banks within Kisii. This study dealt with effects of digital banking on competitiveness among commercial banks in Kisii from March 2014 to July 2014.

## **2. Literature Review**

### *2.1. Introduction*

This chapter provided the basis for the present study. It looked at previous studies on the basis of risk shifting paradigm, moral hazard and adverse selection problem theory, franchise value hypothesis, conceptual framework knowledge gap and finally the possible empirical literature related to these study,

### *2.2. Theoretical Literature Review*

This part explains the theories that have informed this case study.

#### 2.2.1. Risk Shifting Paradigm

The studies supporting this paradigm basically focus on the moral hazard and adverse selection problems in the banking sector and analyze the effects of competition on moral hazard and adverse selection incentives of customers. Moreover researchers allow competition to exist in both the deposit and loan markets. However, they mainly take into account the loan market and hence the asset side of the balance sheet.

Before reviewing the studies which produce digital banking prediction resulting from the risk shifting incentives in the banking sector, it is appropriate to make the definition of moral hazard and adverse selection. Moral hazard arises when a party insulated from risk behaves differently from the way it would behave if it were fully exposed to the risk. The party does not take the full consequences and responsibilities of its activities (Boyd, 2005).

Therefore, it has a tendency to act less carefully than it otherwise would and make another party to hold responsibility for the consequences of its actions. In banking, moral hazard problems enhance default risk of borrowers (Boyd, 2005).

Adverse selection refers to a market process in which bad results occur when buyers and sellers have asymmetric information. For example, in adverse selection problem, a bank that sets one price for all its customers runs the risk of being adversely selected by least profitable customers. In banking, adverse selection means there may be loan customers with riskier projects than the banks know. (Boyd, 2005)

#### 2.2.2. Moral Hazard and Adverse Selection Problem Theory

The competition of banks is affected by a lot of factors such as macroeconomic and institutional factors, regulatory and supervisory policies as well as international economic conditions. Digital banking of the banking system may also be affected by the level of competition in the system. At this point the following question arises: Is competitive banking system more prone to digital banking or in other words, is there a negative relation between competition and digital banking in the banking sector? There has been a traditional perception among policymakers and economists that more competition in banking industry is associated with higher incentives to engage in more risky activities which ultimately lead to an increase in probability of bank failures. According to this view, there is a trade-off between competition and digital banking. A certain degree of market power raises the opportunity cost of bankruptcy, thus moderates risk taking incentives of banks and fosters the digital banking of the system. The argument that a more competitive banking sector might endanger the digital banking of the financial system has for so long been the key rationale for the restriction of competition in banking markets by regulators. They think that market power is beneficial for social welfare by reducing the probability of excessive risk taking and consequently by decreasing systemic portfolio dynamism. However, recently there is a counter argument that the competition in the banking sector may enhance the portfolio dynamism of banks. According to this opposite view, increase in market power has the potential to positively affect the digital banking due to moral hazard and adverse selection problems on the part of borrowers and hence increase competition. Therefore, there exists no trade-off between competition and digital banking for banking sector; (Berger, 2008).

#### 2.2.3. Franchise Value Hypothesis

The essence of this paradigm is the analysis of the relationship between market structure and excessive risk taking by banks. Generally speaking, this view states that competition negatively affects the franchise value of banks.

In accounting terms, franchise value is defined as an intangible asset. It is the market value of a bank's equity exceeding its book value and reflected in the market price of shares (Carletti, 2007). It can also be defined as the benefit that accrues to a bank's owners from its future operations or the present value of the expected future stream of profits. Hence, it represents the opportunity cost of going bankrupt (Northcott, 2004). This latter definition means that franchise value exists only if the bank remains in business and it is lost in the case of bankruptcy (Micco, 2005). The underlying source of franchise value is assumed to be the profits that result from market power present in concentrated banking systems. For banks, these profits provide a buffer against

adverse shocks and so increase the market value of the bank since investors value more the banks earning higher profits and more powerful against shocks. The rise in market price of shares beyond the book value creates in turn franchise value (Jimenez, 2007). Besides market power, bank size, efficiency, reputation and the relationship between banks and its clients are also seen as important determinants of franchise value (Furlong, 2006).

In the literature and in the actual supervision of banks worldwide, the dominant view is that franchise value plays a key role in limiting the riskiness of individual banks and hence of banking systems more broadly. The reason is that since franchise value exists only when banks remain in business, banks try to avoid bankruptcy not to lose it. Therefore higher franchise values reduce incentive for banks to take excessive risk. They limit or reduce their risk-taking and become relatively conservative in order to protect their franchise values. They tend to behave more prudently by holding more equity capital or less risky portfolios of the whole banking system (Schaeck, 2006).

Higher competition, instead, have a deleterious impact on portfolio dynamism. It erodes market power and profit margins causing banks' franchise value to drop, thus reducing the incentives for prudent behaviour. It leads to more aggressive risk taking in an attempt to earn higher profits (Keeley, 2012).

Examples of riskier policies that banks may follow are choosing more risky and lower quality portfolios, taking on more credit risk, lowering capital levels, etc. These riskier policies increase the probability of higher non-performing loan ratios and more bank bankruptcies resulting in greater fragility and financial instability. Therefore, less concentrated banking systems are more prone to experience crises. (Keeley, 2012)

### 2.3. Empirical Literature Review

#### 2.3.1. Mobile Banking

Internet and mobile technologies are increasingly being adopted and utilised in the banking industry; this has reshaped the consumption of financial services.

Simpson (2002) contends that digital banking has survived in a number of countries given its ability to increase banks market share and facilitation of business transaction. Banks have radically shifted from traditional banking to branchless mode of banking. Adoption of latest technology has enabled banks to extend their customer base, where electronic banking has proved to be the chief advancement. Mobile banking can be categorized as the latest advancement in electronic banking, which has widened customers' access to bank accounts through wireless channels. Mobile banking is a financial service where the bank customers perform balance inquiry, credit transfer, and other businesses according to instruction sent through the mobile phone

According to an annual report by Central Bank of Kenya (CBK), its adoption and usage has surpassed Automated Teller Machine (ATMs) in the last few years (CBK 2008). Currently, there are about 8 million users of M-banking services compared to 4 million people who hold accounts in conventional financial institutions in Kenya (CBK 2008). The tremendous increase in number of people adopting M-banking has been attributed to ease of use and high number of mobile phone users. This is consistent with the theory of consumer choice and demand as conceptualized in Au and Kauffman (2008) in relation to mobile payments. Based on their observation, customers can choose to adopt a particular banking technology such as M-banking, perceived to offer such advantages as ease of use.

Virtual banking is broadly defined as the provision of banking services via means other than traditional physical branches. Currently, virtual banking exists in the forms of ATM, phone banking, home banking and Internet banking-digital banking. Virtual bank accounts can then be defined as non-branch bank accounts, such as accounts held by a bank via a mobile based application or bill payment system via bank based system. This proposal will focus on the virtual accounts as part virtual banking or digital banking

There is also a growing partnership in financial institution and non-financial service providers where consumers through use of e-banking and other e-commerce services such as M-banking can transact and clear utility bills through shared banks' platforms. This has led to virtual accounts.

According to Kass (2004), virtual banking got started with the Automatic teller machine (ATMs). Others describe telephone banking and home banking as other forms of virtual banking (Talmor, 2005). A virtual bank can then be defined as a non-branch bank, while the virtual banking is the provision of banking services through electronic media such as ATM, telephone, personal computers and/or Internet. A recent study on the US retail banking sector shows that the transaction cost of telephone banking is only 40% of the cost through physical branch (Talmor, 2005).

New banking delivery channels such as extensive use of ATMs, trans-border fund transfers in banking, telephone banking have made banking services convenient to bank customers (Mitchell,2005). This new era is an integration of systems which have no distinction between back-office and front-office, and there are intelligent elements within the domain of information systems (Oppenheim, 2004). Banking transactions through the Internet and its related products are developing and will provide enormous opportunities to banking industry (Jones, 2005). Eventually, virtual banks will become a reality such as Security First Network Bank in the US (Gandy, 2005).

With the convenience virtual banking provides, bank customers may now perform their banking transactions at the place and time of their choice. In addition, banks benefit from low operating cost through less staff and less physical branches. However, there are some concerns on virtual banking. Security is one of the most frequently quoted concerns, especially in the area of Internet Banking (Gandy, 2005). Furthermore, the decrease of cross-selling opportunities is another concern for virtual banking (Talmor, 2005). At a branch, tellers and bank staff can cross-sell other services to customers through face-to-face interaction. With the introduction of virtual banking, customers can now perform transactions by themselves. Consequently, bank staffs do not interact

with customers and the chance of cross-selling is thus reduced. Finally, as Internet banking is mainly conducted through computer networks, it seems it is only applicable for those technically competent customers (Wills, 2006).

### 2.3.2. Internet Banking

From the iResearch (2011), the total transaction amount of personal internet banking was 96.5 trillion Yuan in 2010, with growth at 80.6% year-on-year. The year-on-year growth rate remains stable from 2007 to 2014. It is expected that online banking will enter into the development of a mature stage that will keep stable of increasing year-on-year rate. The study emphasizes that not only transaction scale of personal online banking but online banking user scale has been researched. Online banking users were 260 million in 2010, increasing by 34.7% year-on-year. The year-on-year increase rate was stable from 2008 to 2010. After 2010, it is expected that the year-on year rate will keep a steady growth since online banking development will enter into greater maturity. With the current rapid development and popularity of online banking, it is easy to understand why urgent concentration on the topic 'the effect of digital banking on competitiveness' especially in Kenya where the digital revolution is being embraced. Centeno (2003) indicates that not only can online banking provide the basic services, including accounts checking, accounts transfer etc., but it also develops into a variety of directional services to meet the diversified needs of users. It is very common phenomenon to see that almost all the services provided by branches or even by mobile phone can achieve internet access nowadays. As can be seen the Figure shown as below, information technology helps banks to achieve the goal, which is not only offering branch-based services from internet, but also the only online value added services from internet. It means that digital banking has its own unique services offering that can be differentiated it from traditional services offering from branch, including services of financial information menu, online load application, investment products (e.g. fund/bond purchasing), other financing products (e.g. life or traffic insurance purchasing) as well as the third party services (e.g. online tax payment, online bill payment) and other conveniences products.

Mattila (2002) notes that the attraction for consumers to use online banking can explained mainly in the following aspects: services offering anywhere and anytime, the round-the-clock availability and avoidance of long time waiting queues, speed, low price etc Bank providers still face disadvantage and challenge in order to make profits despite benefits brought by online banking services. Users are able to choose the service providers freely if their requirements are not met, given that switching cost is becoming lower because of online banking service offering. As such, it is really challenge for bank providers to deal with immediately, otherwise the original customers would be lost. Accordingly, attraction for new coming customers is as important as retaining the old ones. At this moment, digital banking adoption plays a very important role to deal with the challenge. Good service deliveries are the assurance for meeting customer needs and retain the customers.

### 2.3.3. ATMs Services

ATM is also called 24-hour tellers are electronic terminals which give consumers the opportunity to bank at almost any time (FTC, 2006). ATM banking is one of the earliest and widely adopted retail e-banking services in Kenya (Nyangosi et al, 2009). ATM provides some basic banking services on a 24 hour basis. By using an ATM card and a personal password (PIN), customers can deposit or withdraw cash, transfer funds from one account to another, inquire about account balance and request for cheque books and account statement. The transactions are electronically recorded instantaneously ATM is now widely accepted by bank customers in Kenya. ATM plays a crucial role in the retail banking business of Hong Kong. Hang Seng Bank claimed their number of transactions conducted via ATM is about 3 million per month and Standard Chartered Bank claimed 40% of their daily transactions are processed by ATM (Carstairs, 2008).

To withdraw cash, make deposits or transfer funds between accounts, a consumer needs an ATM card and a personal identification number. Once the customer login, access to transactions are displayed on the screen. It offers several retail banking services to customers. They are mostly located outside of banks, and are also found at airports, malls, and places far away from the home bank of customers. They were introduced first to function as cash dispensing machines (Abor, 2004). Some ATMs charge a usage fee for this service, with a higher fee for consumers who do not have an account at their institution. If a fee is charged, it must be revealed on the terminal screen or on a sign next to the screen (Rose, 2009).

Manager (2008) in his article, "ATMs: Changing Fundamentals" stressed that the ATM industry has seen explosive growth in recent times and Banks have committed to substantial capital outlays on ATM deployment, recognizing the significance of the 3 Ms – Maintenance, Monitoring and Management – of the ATMs to make the self service channel a reliable and profitable one.

Agnihotri (2001), in his paper "IT way of getting cash" explained the working of ATM, ATM penetration per million persons in Asian countries and the system of security –how it works and also the frauds of ATM. Inter-connectivity of ATM Networks provides access to the customers to use any ATM in the country irrespective of the bank with which the customer is banking. There are a number of ATM network switches such as KENSWITCH. In addition, most ATM switches are also linked to VISA or MasterCard gateways.

KENSWITCH (Kenya switch) is a national network of interconnected ATMs, a project owned by a group of banks which was launched in 2002. It had about 14 ATM locations by the end of 2002, which has now grown to about 152 (CBK, 2007).

ATM services have a lot of advantages. They include increase in productivity during banking hours if the service is available in addition to the human tellers. They are cost-effective way of achieving higher productivity per period of time. According to Rose (2009), an ATM transaction is an average of about 6,400 per month compared to 4,300 for human tellers. Furthermore, it saves customers time in service delivery as alternative to queuing in bank halls, customers can invest such time saved into other productive activities (Abor, 2004). In addition, ATMs continue to serve customers while human tellers in the banking hall have stopped work, thereby increasing productivity for the banks.

2.4. Conceptual Model for the Study

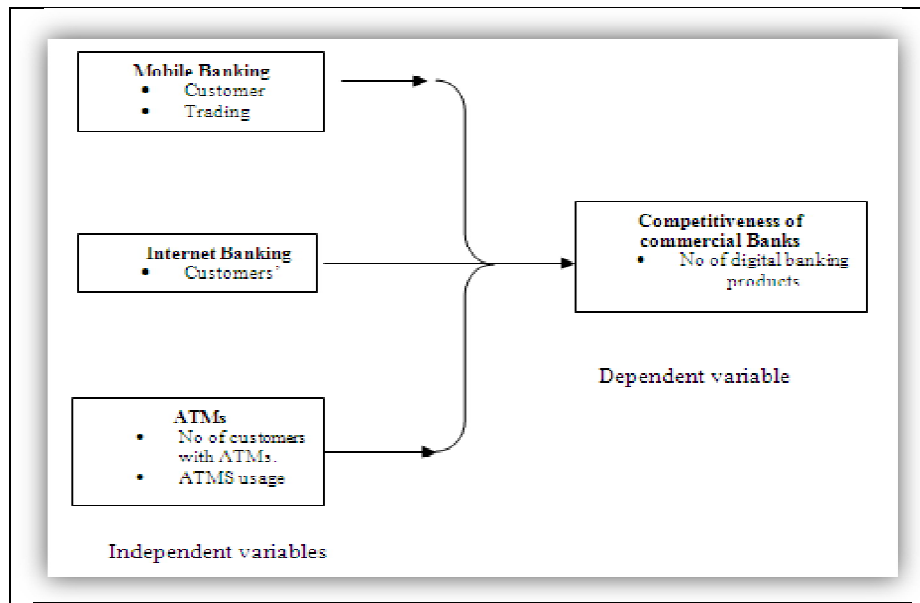


Figure 1: Conceptual Framework

Those variables believed to be relevant to competitiveness were included in the above model. These variables were divided into two groups, independent variable and dependent variables (Banks’ competitiveness)

3. Research Methodology

3.1. Introduction

This chapter describes the procedure that was followed in order for the research objective to be realized. In this chapter the following are discussed: research design, sample site, target population, sampling and sample size, data collection tools and procedures, piloting and data analysis tools and methods.

3.2. Research Design

This study employed a survey approach with a descriptive research design. According to Trochim (2006), a descriptive research design was best suited for this kind of research where studies are conducted to demonstrate relationships between things or interactions between groups of people (variables).

3.3. Target Population

The target population was the 300 employees from the 15 commercial banks in Kisii County. This study targeted the branch managers, operations managers, and functional level (other) employees as shown in the table 3.1 below: Target population.

S/No	Name of Bank	Operations Managers	Functional Manager(s)	Level	Total
1	Family	2	3	14	19
2	K.C.B	2	4	26	32
3	N.B.K	2	3	17	22
4	Chase	2	3	9	14
5	I & M	2	3	8	13
6	Post	2	3	8	13
7	Credit	2	3	10	15
8	Barclays	2	3	25	30
9	B.O.A	2	3	25	30
10	Equity	2	3	22	27
11	NIC	2	4	9	15
12	K-rep	2	2	4	8
13	CFC Stanbic	2	2	10	14
14	Co-Op	2	4	28	34
15	StanChart	2	3	9	14
	<b>Total</b>	<b>30</b>	<b>46</b>	<b>224</b>	<b>300</b>

Table 1: Target Population  
Source: Bank Records (2014)

3.4. Sampling Techniques and Sample Size

For the detailed study 90 (30%) employees of the commercial banks out of 300 employees were selected. The primary data for the study was collected from selected 90 employees, who formed the sample of the study. Stratified sampling was used in selecting the employees from whom data was collected. Stratified sampling was used to select. This was the most convenient procedure for the study and was best suited for this kind of study.

S/No	Name of Bank	Operations Managers	Manager(s)	Functional Level	Total
1	Family	1	1	4	6
2	K.C.B	1	1	6	8
3	N.B.K	1	1	5	7
4	Chase	1	1	3	5
5	I &M	1	1	2	4
6	Post	1	1	2	4
7	Credit	1	1	3	5
8	Barclays	1	1	6	8
9	B.O A	1	1	6	8
10	Equity	1	1	7	9
11	NIC	1	1	3	5
12	K-rep	1	1	1	3
13	CFC Stanbic	1	1	3	5
14	Co-Op	1	1	6	8
15	StanChart	1	1	3	5
16	<b>Total</b>	15	15	60	90

Table 2: Population Sample Derivation

3.5. Data Collection

The research employed the following data collection tools and data collection procedure.

3.5.1. Data Collection Tools

The questionnaire with closed questions was used. The tool was chosen because it is the most appropriate for the study; it contained Likert –scaled questions. The questionnaire was tailored for easy use by the respondents in the study and only relevant question aligned to the case study included. Document review for secondary data was also used to gather data that was recorded in the institutions that were contacted. The data were gathered from reliable sources, banking professionals, employees and records and journals. Data was then analysed using mean, weighted mean, percentage and chi-square.

3.5.2. Data Collection and Analysis Procedure

An authorization letter to carry out the case study and interview the respondents was obtained from the university and attached to the questionnaire so as to help in improving the response rate, the response rate was 100% as all the questions were received from respondents. The questionnaires were self-administered by the researcher to the respondents during bank working hours. The respondents were allowed 2 days to fill them after which they were collected for analysis.

3.6. Validity and Reliability

The reliability of this study was vital to how believable the work would be (Smith, 2008).

To ensure the reliability (internal consistency) of the study, Cronbach’s alpha was conducted on the survey instrument prior to official data collection. Cronbach’s alpha was applied to determine consistency of items in the questionnaire.

	N	Mean	Variance	SD
Statistics for Scale	5	2.600	6.300	2.510
Variances	0.30	0.30	0.30	0.30
Sum of item variances				1.50
<u>Alpha</u>				
Reliability Coefficients for Item 5				0.952381

Table 3: Reliability Coefficients Estimation (Cronbach’s Alpha)

Where the Kuder Richardson (KR) formula was used,  $k/[k - 1r]$

Where k is the number of items considered and r is the mean of the inter-item correlations the size of alpha is determined by both the number of items in the scale and the mean inter-item correlations. George and Mallery (2003) provide the following rules of thumb: “\_ > .9 – Excellent, \_ > .8 – Good, \_ > .7 – Acceptable, \_ > .6 – Questionable, \_ > .5 – Poor, and \_ < .5 –Unacceptable”.



According to George and Mallery rules of thumb the study reliability was excellent. The content validity of the questionnaire was censured by supervisors’ expert opinions and colleagues’.

3.7. Data Analysis and Presentation

The data was analyzed using mathematical and statistical tools which included the mean, percentages, and the Weighted Average score method, chi square specific weights were predetermined on the basis of the ranks given by, respondents and Cronbach’s Alpha using SPSS.

Data was presented using tables where applicable.

4. Results and Discussion

4.1. Introduction

This chapter discusses the results and discussion of the research findings. The results of this study are presented, analyzed and interpreted in the context of the purpose of the study and the research questions formulated. The objective of this study was to find out the effects of digital banking on competitiveness among commercial banks in Kenya, a case study of Kisii Town in Kisii County. The findings will indicate the effects of mobile banking, internet banking and ATMs on competitiveness of commercial banks.

4.2. Background Information

The research sought to analyze the profile of the respondents. This includes the response rate, gender, age and education levels of the respondents. The following were the findings of this study.

4.2.1. The Response Rate

The respondents chosen for the project were 90. The number was divided into three categories. Category A included 15 branch managers of commercial banks in Kisii County. Category B was made up of 15 operations managers and category C was made up of 60 functional level employees.

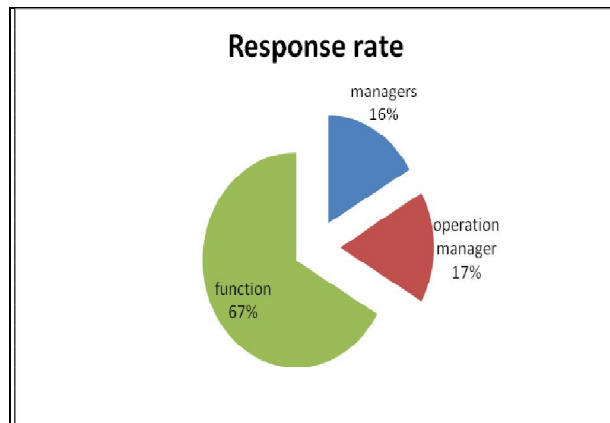


Figure 2: Response rates of respondents

The response rate was 100% whereby no questionnaires were withheld or not returned by the respondents and none was rejected by the researcher. The respondents provided reliable information and disclosed strengths and shortcomings of digital banking on competitiveness of banks.

4.2.2. The Gender Analysis of the Respondents

The gender of the respondents was sought in this study in order to confirm the gender representation of respondents. Data regarding the sex of participants was therefore collected, analyzed and presented in the table below.

Gender	Frequency Operations Managers	Managers	Functional level employees	Percentage (%)
Females	1	3	22	28.89
Males	14	12	38	71.11
<b>Total</b>	15	15	60	100

Table 4: The gender Analysis of the Respondents

The research established that 28.89 % (29%) of the respondents were females and 71.11% (71%) of the respondents were males. This shows that most of the respondents were males. This is probably due to the pressure associated with performance in banks.

**4.2.3. The Age Analysis of the Respondents**

The study sought to establish the demographic profile of the respondents. Data giving information of the age of the respondents was therefore analyzed and presented in the table below.

Age Bracket	Frequency Operations Managers		% Per Managers		Functional level Employees		Age Bracket
	No.	%	No.	%	No.	%	
Below 20 Years	0	0	0	0	0	0	0
21-25 Years	0	0	0	0	4	6.67	4.44
26-35 Years	1	6.67	2	13.33	9	15	13.33
36-45 Years	9	60	10	66.67	41	68.33	66.67
Above 46 Years	5	33.33	3	20	6	10	15.56
Total	15	100	15	100	60	100	100

Table 5: Age Analysis of the Respondents

From the table, it can be deduced that most of the bank employees are between 36 years and 45 years, an indication that they are middle aged. This shows that this industry is important to people as it creates employment of the young people. This empowers a critical mass of the people who are raising families hence improving the economy.

According to the above table, most employees interviewed are between the age of 26 years and above. This was especially important because these employees have had a relatively long experience with banks and that they are technologically informed and able to make reliable assessment of technological advancements in banks.

**4.2.4. Education Level Analysis**

The study also sought to determine the education levels of respondents. The data obtained in relation to the education levels was analyzed and presented in the table below.

Education Level (%)	Frequency		Operations (%)		Functional (%)		Percentage (%)
	Managers	Managers	Managers	Managers	Level employees	Level employees	
None	0	0	0	0	0	0	0
0-Level	0	0	0	0	2	3.33	2.23
A-Levels	3	20.00	4	26.67	15	25.00	24.44
Tertiary	12	80.00	11	73.33	43	71.67	73.33
Total	15	100	15	100	60	100	100

Table 6: Education Level Analysis

According to the above table, it was established that 73.33% of the respondents had attained tertiary education. The researcher deduced that their responses were from an informed point of view hence their perception about their banks can be trusted as captured in the questionnaires.

**4.3. The Use of Digital Channels in Commercial Banks**

The researcher sought to establish the frequency of the use of digital channels by commercial banks. This study found out that the use of digital channels was preferred by banks in Kisii County. From the data collected, all the respondents confirmed the use of digital channels by all the banks in Kisii County. Most of the banks predominantly employ the use of ATMs and less frequently through the use of phones (mobile banking) and internet channels. All banks had an operational controls department that was entrusted with managing these digital channels, evidenced by the respondents from every bank in Kisii County.

**4.3.1. Effects of Mobile Banking on Banks' Competitiveness**

This study sought to find out the effects of the use of mobile banking on the competitiveness of commercial banks. A section of the respondents were requested to indicate whether the use of mobile banking services did affect their level of competition with other banks. Their responses were as shown in the table below

	Managers		Operations Managers		Functional Level Employees		Total
	No.	%	No.	%	No.	%	No. %
Yes	14	93.33	13	86.67	50	83.33	77 85.56
No	1	6.67	2	13.33	10	16.67	13 14.44
Total	15	100	15	100	60	100	90 100.00

Table 7: The Use of Mobile Banking and its effects on competition in the banking

From the findings, it was established that 86.67% of the respondents felt that the use of mobile banking services had changed competition trends in the banking sector. . The researcher deduced that customers were keen on the facility as it was a convenient way of banking from the comfort of their homes or workplaces. Banks were therefore keen to exploit any advancement in mobile telephony to strategically place them to claim a larger market share. According to an annual report by Central Bank of Kenya (CBK), its adoption and usage has surpassed Automated Teller Machine (ATMs) in the last few years (CBK 2008). Currently, there are about 8 million users of M-banking services compared to 4 million people who hold accounts in conventional financial institutions in Kenya (CBK 2008). The tremendous increase in number of people adopting M-banking has been attributed to ease of use and high number of mobile phone users. This explains why almost all banks are aligning their product and services (portfolio) to mobile platform. A further analysis to test the homogeneity of responses from the three groups of respondents, the chi-square test was carried out and the findings were as shown in the table below, where the formula for calculating the expected (E), is as follows:

$$\text{Expected (E)} = \frac{(A) \times (B)}{N} = 12.83$$

Observed (O)	Expected (E)	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> / E
14	12.83	1.3689	0.1067
1	2.17	1.3689	0.6308
13	12.83	0.0289	0.0023
2	2.17	0.0289	0.0133
50	51.33	1.7689	0.0345
10	8.67	1.7689	0.2040
			$\Sigma (O-E)^2$
			E

Table 8: Chi-Square test for homogeneity of responses on the use of Mobile Banking and its effects on competition in the banking industry

The table value for chi square for one degree of freedom ((2-1) (2-1)) at 0.05 significance level is 3.841. The calculated value of chi sq is 0.9916, which is less than the table value. This means that there was no significance difference on the respondents pertaining, the effects of mobile banking on the banking industry competition. The three groups agree that mobile banking does affect competition in the banking sector.

The researcher sought to know whether the exploitation of mobile banking had the trust of customers in their daily banking transactions. The following table indicates the respondents’ level of agreement as to whether mobile banking creates an emotional trust between banks and customers. On the basis of the table above, the weighted Average was employed to demonstrate the level of agreement, Weighted average =  $\sum f(n) / N$

S.NO	Category	Ranks					Weighted Averages	
		1	2	3	4	5		
1.	Branch managers	10	2	2	1	0	4.40	
2	Operations managers	12	1	1	1	0	4.60	
3.	Function employees	21	5	2	1	1	8.93	

Table 9: The Effects of mobile banking on customers’ emotional trust

The score of 5 was given to rank 1, 4 to rank 3, 3 to rank 3, 2 to rank 4, and 1 to rank 5. On the basis of this, weighted average is employed, Weighted average =  $\sum f(n) / N$

After analyzing the weighted average scores, it was inferred that respondents strongly agree that mobile banking creates a strong emotional trust between the banks and their customers. This was especially inferred due to a strong score of 8.93 on the part of functional level employee, attributed to their roles as they are the ones who are tasked with the cross selling, registration, and queries on operations of the mobile facility. Majority of the respondents felt that they need mobile banking because with the emotional trust that comes with it, they would retain and even attract more customers from the competition. This is consistent with the theory of consumer choice and demand as conceptualized in Au and Kauffman (2008) in relation to mobile payments. Based on their observation, customers can choose to adopt a particular banking technology such as M-banking, perceived to offer such advantages as ease of use.

From the information gathered, mobile banking was predominantly geared towards customer satisfaction as a retention strategy.

#### 4.4 The Effects of Internet Banking on Competitiveness among Commercial Banks

The study sought to determine the effects of internet banking on competition among Commercial Banks. The study was keen in establishing how banks endeavored towards meeting and even exceeding customer expectations on the part of internet banking as

ensuring value-providing performance and engaging customers using reliable communication internet channels. The participants were asked various questions requiring them to indicate whether internet banking drives the perceived value to the customers, and whether or not it is operations cost-saving strategy. They were asked to evaluate the performance of internet banking and whether they were of any value to both the customers and the banks, and whether their expectations were met. The following table indicates the respondents’ level of agreement with the said parameters. On the basis of the table above, the weighted Average was employed to demonstrate the level of agreement,

$$\text{Weighted average} = \sum f(n) / N$$

S.No.	Category	Ranks					Weighted Averages
		1	2	3	4	5	
1.	Meeting Expectation	40	14	5	1	0	18.20
2.	Value-Performance	41	15	4	0	0	18.46
3.	Reliable Comm. Channel	30	10	5	9	6	15.27
4.	Operations Cost-Saving	52	7	1	0	0	19.40

Table 10: Effects of Internet banking on banks’ Competitiveness

After analyzing the weighted average scores, it was inferred that respondents agree that all banks score well above average on internet banking parameters tested. The banks scored highest on operations cost-saving strategy. Mattila et al (2002) also notes that the attraction for consumers to use online banking can be explained mainly in the following aspects: services offering anywhere and anytime, the round-the-clock availability and avoidance of long time waiting queues, speed, low price (operation cost-saving) etc Bank providers still face disadvantage and challenge in order to make profits despite benefits brought by online banking services. Users are able to choose the service providers freely if their requirements are not met, given that switching cost is becoming lower because of online banking service offering. They resoundingly agree that internet banking significantly reduces the cost of operations by banks. It was realized that internet banking offers a cheap way of transacting by customers, including funds transfers, balance inquiries, pay bills, and placing and/or cancelling cheques. This is asserted by Centeno (2003), indicates that not only can internet banking provide the basic services but it also develops into a variety of directional services to meet the diversified needs of users. It is very common phenomenon to see that almost all the services provided by branches or even by mobile phone can achieve internet access nowadays. It means that digital banking has its own unique services offering that can be differentiated it from traditional services offering from branch, including services of financial information menu, online load application, investment products (e.g. fund/bond purchasing), other financing products (e.g. life or traffic insurance purchasing) as well as the third party services (e.g. online tax payment, online bill payment) and other conveniences products. On the reliability of the internet banking channel, the score was slightly above average. This was attributed to the level of civilization and exposure of customers to matters of internet.

The respondents, nevertheless, were in agreement that internet banking is a value-providing strategy to both customers and banks. It can be deduced that banks gave more attention to internet channels of communication with the customers because of the operational risk associated with mobile telephony. The internet was a preferred channel because it would least exposes the bank to fraudulent activities as it was a service restricted to certain services and clientele only.

4.5. The Effects of the use of ATMs on Competitiveness among Commercial Banks

The study sought to determine the effects of the use of ATMs on competition among commercial banks. Respondents were asked to rank their banks’ level of commitment to service quality offered by Automated Teller Machines in gaining a competitive advantage over other banks. The following table is a 5-Level scale that shows the respondents’ level of agreement on the effects of the use of ATMs as a customer service strategy to win over competitors. On the basis of the above table, the weighted average score is calculated

$$\text{Weighted average} = \sum f(n) / N$$

S.No	Category	Ranks					Weighted Averages
		1	2	3	4	5	
1.	Driving perceived Value	28	15	10	7	0	16.26
2.	VISA usage across banks	51	8	1	0	0	19.33
3.	Cost-effective	37	10	10	3	0	17.4
4.	Secure	26	19	5	3	7	15.6

Table 11: The Effects of the use of ATMs on Competitiveness among Banks

From the analysis, the use of ATMs is an indispensable tool in banking; ATM banking is one of the earliest and widely adopted retail e-banking services in Kenya (Nyangosi et al, 2009) as also seen in this analysis. After analyzing weighted average scores, it was inferred that respondents agreed that ATMs’ ‘helpful service’ by in terms of withdrawals, deposits, inquiries and transfers was an aspect of banking most emphasized by the banks. The respondents were in agreement that ATMs drive the perceived

value, score highly in terms of transactions across banks, and cost-effectiveness. They are cost-effective way of achieving higher productivity per period of time. According to Rose (2009), an ATM transaction is an average of about 6,400 per month compared to 4,300 for human tellers. Such parameters scored well above 16. ATM transactions security was however put to question as it scored 15.6. It can be deduced that banks have put limits in terms of withdrawals to curb cases of customers losing a lot of money in case of fraud. Despite the above average rating, security was therefore an issue to be investigated. This served as the reason as to why the customers were not as enthusiastically committal on referring their friends to go for the ATM debit cards, especially the not-so-well informed, accepting to refer them reluctantly.

## 5. Chapter Five: Summary, Conclusion and Recommendations

### 5.1. Introduction

This chapter provides the summary, conclusion and recommendations drawn from the findings of this study. The summary highlights the major findings of this study guided by the general research objective. The conclusions were drawn from the answers that the research questions sought to understand. Recommendations were based on the conclusions drawn while also giving some possible research areas to increase awareness on the effects of digital banking on competition among commercial banks in Kisii County. The focus on digital banking should be accompanied by an aggressive strategy to fight fraud and ignorance on the part of customers.

### 5.2. Summary of the Findings

The banks engaged in digital banking activities as a competitive strategy to remain relevant in the banking industry. Digital banking strategies is working for the banks, the reason as to why all banks in Kisii County engaged in aggressive adoption of digital banking channels. The respondents interviewed too confirmed that such channels provided an enormous avenues and platforms to be competitive and cover wider customer base via diverse digital products most of the products and services have been revamped into digital space. The general research objective was to assess the effects of digital banking on competitiveness among commercial banks in Kenya; a case study of Kisii Town (Kisii County). The tallies from the data collected indicated that digital banking had effects on competitiveness among commercial banks in Kisii.

The first specific research objective was to examine the effect of mobile banking on competitiveness among commercial banks in Kenya. From the information collected, mobile banking was an area that was given much consideration as a necessary digital tool to make a bank competitive. Most of the respondents strongly agreed that mobile banking digital channel enabled customers to make many transactions from the comfort of their homes. All the respondents interviewed said that digital contact with the bank through their mobile handsets built trust between their banks and the customers, customers' loyalty. Successful recruitment of customers to this channel and adoption of this channel by most banks is a clear testimony that the channel is popular with customers. It gives the bank a competitive edge within the industry and the market; it has led to the emergence of the 'digital bank' concept. Failure on the part of the banks to avail the channel would be a push factor to existing customers and not a pull factor to new customers thereby eroding competitiveness. Banks that have successfully exploited the mobile banking channel have attracted and retained so many customers.

The second specific research objective was to determine the effect of internet banking on competitiveness among commercial banks in Kenya. The responses to a very large extent showed that digital banking has been used by banks to not only excite their customers but to also offer service that would otherwise cost the bank the engagement of tellers, or human resource. It is therefore an operations cost-cutting tool. This was confirmed by the responses given by all the categories of respondents interviewed, who rated it as well above average. From the findings in this study, operations managers were especially excited about this channel. This would be attributed to the fact that they are the ones tasked with the running and management of the channel. Internet banking was however rated slightly above average on security concerns. Fraudulent activities have been a case to most customers who fear online fraud. This has been a setback, although banks are moving towards curbing such cases by introducing secure ways of transacting and sending regular transaction alerts to customers through their mobile phones. This is however an area that needs technologically advanced ways of curbing the same, preferably through biometric designs like the use of finger prints. The customers too need to be well trained on such fraudulent cases and security features of such channels.

The third specific research objective was to evaluate the effect of ATMs on competitiveness among commercial banks in Kenya. Most of the respondents agreed that the use of ATMs was a must provide on the part of banks. The ATM debit cards provided the most convenient way to transact in the banking sector. In a world where self-service has been advanced to another level, customers prefer to transact at their convenience, twenty four hours a day, and seven days a week. Commercial banks have advanced the use of the debit card to include withdrawals, deposits, transfers and shopping. The banks that have conveniently offered such value to customers have managed to gain trust from their customers. Most of the banks had embarked on cardless ATM money transfers from their ATM machines. This has consequently attracted that class of customers who fear to carry debit cards for fear of fraud, thus gaining a competitive advantage over their rivals. The current move for banks to use same chip for all ATMS cards lessens its competitiveness.

### 5.3. Conclusion

The researcher drew the conclusions based on the research objectives which had been formulated in chapter one.

### 5.3.1. Objective One

the study sought to determine the effects of mobile banking on competitiveness among banks

The study found out that 85.56 percent of the respondents strongly agreed that mobile banking strategies aim primarily at increasing and keeping banks' market niche. The banks offer incentives for rewarding efforts aimed at recruiting new customers towards the use of mobile banking. Several advancements in the use of this channel had been sought to make the facility attractive. Banks are therefore keen to exploit any advancement in mobile telephony to strategically place them to claim a larger market share. Its adoption and usage has surpassed Automated Teller Machine (ATMs) in the last few years (CBK 2008).

### 5.3.2. Objective two

The study sought to find out the effects of internet banking on competitiveness among banks

The research question sought to assess the effects of internet banking on competition among commercial banks. The internet banking parameters included reliability, cost-effectiveness and driving the perceived value. The banks scored highest on operations cost-saving strategy (19.40). This approach made most of the customers satisfied with their banks. They were consequently willing to refer their friends to their banks. The effect of this strategy was therefore productive. Banks should be sensitive to the dynamic needs of its customers. Great banks are great because they forecast and see what might excite its customers in future most customers are currently shifting to online transactions as they are mutually cost effective, services offering anywhere and anytime, the round-the-clock availability and avoidance of long time waiting queues, speed, low price (operation cost-saving). Users are able to choose the service providers freely if their requirements are not met, given that switching cost is becoming lower because of online banking service offering. They resoundingly agree that internet banking significantly reduces the cost of operations by banks. It was realized that internet banking offers a cheap way of transacting by customers, including funds transfers, balance inquiries, pay bills, and placing and/or cancelling cheques.

### 5.3.3. Objective Three

the study sought to assess the effects of the use of ATMs on competitiveness among commercial banks

The respondents were in agreement that ATMs usage, score highly in terms of transactions across banks (19.33), and cost-effectiveness (17.4). They are cost-effective way of achieving higher productivity per period of time. What are the effects of the use of ATMs on competition among banks?. Building long-term relationships with their customers was their concern. The banks' product quality, cost-effective, flexible and timely delivery was tailored to attract new customers, and so was the aim of ATMs services in achieving competitiveness.

Based on the findings and interpretations of this study, it can be concluded that the use of ATMs is so popular with customers despite the risk of fraud (15.6). The few who harbor fear of using the debit cards can now use the ATMs' new cardless system of transacting.

## *5.4. Recommendations*

From this study and based on the conclusions made, the following are the recommendations as established by the research. The researcher drew the conclusions based on the research objectives which had been formulated in chapter one.

### 5.4.1. Objective One

the study sought to determine how mobile banking had affected competitiveness among commercial banks After analyzing the weighted average scores, respondents strongly disagree that mobile banking creates a strong emotional trust between the banks and their customers. This was especially due to a lowest score of 4.40 on the part of functional level employee, attributed to their roles as they are the ones who are tasked especially with the queries and complaints on operations/functionality of the mobile phone platform. Reliability is an issue causing inconvenience with various transactions. To explore this platform to the maximum reliability should be looked into. This was also an issue with internet banking (15.27) as will be discussed in the second objective. Banks may be able to lower the cost to serve this expensive consumer segment by promoting mobile banking as a more convenient and easy alternative to using the branch, call center, IVR and ATM

Mobile banking can help banks increase customer acquisition and loyalty while improving their overall competitive positions by establishing a future platform for delivering premium mobile products and services that can be monetized, such as mobile payments and remittances

To allay consumers' security concerns, banks should educate consumers about how easy it is to use mobile text (SMS) alerts to validate transactions and monitor accounts for potential fraud.

### 5.4.2. Objective Two

the study sought to find out the effects of internet banking on competitiveness among banks

The research sought to assess the effects of internet banking on competitiveness among commercial banks. The internet banking parameters included reliability, cost-effectiveness and driving the perceived value. The respondents were in agreement that banks had excelled in embracing this channel of banking.. Like in mobile banking internet banking faces reliability challenge (15.27). This digital channel has not been fully explored and much work needs to be done in this area.

To lower the barriers to adoption among offline customers, institutions should consider allowing enrollment in internet banking through the banking channel of choice.

### 5.4.3. Objective Three

the study sought to assess the effects of the use of ATMs on competition among commercial banks

The use of ATMs is an indispensable tool in banking; ATM banking is one of the earliest and widely adopted retail e-banking services in Kenya. After analyzing weighted average scores, it was inferred that respondents agreed that ATMs' 'helpful service' by in terms of withdrawals, deposits, inquiries and transfers was an aspect of banking most emphasized by the banks. Security was however put to question as it scored 15.6.

Security (15.6) was a major challenge. There is need for an integrated approach to digital selling. For a successful and sustainable digital banking strategy, internet banking and ATM transactions should be integrated well such that the customer is notified of any transaction online or through ATMs. This will curb fraud and keep an existing customers satisfied.

It was deduced that banks have put limits in terms of withdrawals to curb cases of customers losing a lot of money in case of fraud. Despite the above average rating, security was therefore an issue to be investigated.

### 5.5. Areas for Further Research

Further research should be undertaken to ascertain the competitiveness of digital channels with respect to exposing customers to online theft and fraud. There should be further research to find out ways of integrating or incorporating the three digital channels.

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