

Effects of Internet Banking on the Financial Performance of Commercial Banks in Kenya a Case of Kenya Commercial Bank

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Abstract- Financial institutions have been in the process of significant transformation. Despite this transformation, even though there's a richness of information on the nature and scope of internet banking, there is a scarcity of evidence about the impact of internet banking activities among banks that have adopted it compared to those that have not done so. The research aimed at determining the effects of internet-banking on financial performance of financial institutions in Kenya. The study adopted a descriptive survey design. The target population comprised of 31 employees of KCB, Treasury Square in Mombasa Kenya. Data collection was done through the use of questionnaires and analyzed using statistical tool. From the study, it was revealed that the impact of ICT adoption on the performance of banking sector mainly refers to time reductions and quality improvements, rather than cost reductions as reported by many authors.

Index Terms- internet banking, e-banking, mobile banking, banking information systems

I. INTRODUCTION

The revolution of information technology has influenced almost every facet of life, among them is the banking sector. The introduction of electronic banking has revolutionized and redefined the ways banks were operating. As technology is now considered as the main contribution for the organizations' success and as their core competencies. All the banks considered observed that cost reduction and enhanced ability to deal with customers were drivers of extreme importance. Yaklef, (2001) identified cost reduction as an inherent benefit to banking. The desire to reduce both operational and administrative costs has driven banks to the electronic world. However, cost reduction is only realizable with an increase in consumer adoption (Stewart, 2003, Yaklef, 2001, FinCen, 2000).

Internet banking (e-banking) is the use of internet and telecommunication networks to deliver a wide range of value added products and services to bank customers. Internet banking includes importing data into personal accounting software. Some online banking platforms support account aggregation to allow the customers to monitor all of their accounts in one place whether they are with their main bank or with other institutions. Banking through internet is considered as a complimentary delivery channel for the services rather than a substitute for the brick and mortar banking branches. Internet has changed the

dimensions of competition in the retail banking sector. Following the introduction of PC banking, ATMs and phone banking, which are the initial cornerstones of electronic finance, the increased adoption and penetration of Internet has added a new distribution channel to retail banking: Internet/Online-banking. Internet banking has gained worldwide acceptance as a new delivery channel for performing various banking transactions. It provides the opportunity to the customers to conduct banking transactions at their convenience. There are two ways to offer Internet banking. First, an existing bank with physical offices can establish a website and offer Internet banking in addition to its traditional delivery channels. Second, a bank may be established as a "branchless," "Internet-only," or "virtual" bank (DeYoung, 2001, Allen et al, 2002, Steven, 2002)

Internet banking is called transactional online banking, because it involves provision of facilities such as accessing accounts, funds transfer and buying financial products or services online. The Internet also helps banks penetrate other financial markets without requiring their physical presence in those markets. The widespread availability of Internet banking is expected to affect the mixture of financial services produced by banks, the manner in which banks produce these services and the resulting financial performances of these banks. This therefore is seen by banks as a better means to serve its wide and ever-growing customer base with quality service, fast, efficient and convenient manner. It is also believed to create a good revenue to banks thus leading to profitability. In addition, industry analysis outlining the potential impact of Internet banking on cost savings and risk profile of the banks have also generated considerable interest and speculation about the impact of the Internet on the banking industry. (Berger, 2003(Karjaluo, Mattila and Pento, 2001, Simpson, 2002).

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. Miklaszewska (1998) identified four roles for the Internet in a modern banking industry. First, it facilitates financial transactions between banks and their consumers. Second, it gives financial institutions permanent access to

financial information. Third, the Internet connects a bank's head office to its branches. Finally electronic banking lets customers check their account information, pay bills, transfer funds between accounts, and perform other functions. Customers will soon have access to additional services such as online stock and bond trading (Miklasewska, 1998).

In Kenya a recent survey indicates that there is steady increase in use of e-banking technologies such as automated teller machine (ATM), mobile and Internet (online) banking, electronic funds transfer, direct bill payments and credit card (CBK 2008). ATM banking is one of the earliest and widely adopted retail-banking services in Kenya (Nyangosi et al. 2009). However, according to an annual report by Central Bank of Kenya (CBK), its adoption and usage has been surpassed by mobile banking (M-banking) 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. (Kolodinsky and Hogarth 2001).

Since the introduction of e-banking in Kenya, financial institutions have witnessed many changes. Customers now have access to fast, efficient and convenient banking services. They have realized that a company that ignores customer needs and preferences in its products development would be deemed to fail (Agarwal et al. 2009). However while the rapid development of ICT has made some banking tasks more efficient and cheaper, technological advancements have their fair share of problems. Gupta (2000), Aladwani (2001) and Hwang et al. (2003), cited that internet security and customer related issues are the greatest challenges facing banking sectors. This is true in Kenya since e-banking in Kenya is still developing thus the focus of most banks is on setting up the systems giving less attention to the industry technical issues. Thus there is a need to manage costs and risks associated with internet banking. It is crucial that internet banking innovations be made through sound analysis of risks and costs associated to avoid harm on banks performance. The influence of internet-activities of banks on their performance continues to be insignificant irrespective of what is used as performance variable following banking literature and industry norms for bank performance definitions in Kenya. However the research on the adoption of internet banking by the consumers has been vast, while there has been very limited research on the effects of internet banking on the bank profitability especially within the Kenyan context. Thus, this study sought to explore the effects of internet banking on the financial performance of commercial banks in Kenya.

II. OBJECTIVES

General objective

The purpose of the study was to establish the effects of internet banking on the financial performance of commercial banks in Kenya.

Specific objectives

- i. To establish the effect of cheaper internet connectivity on performance of banks.
- ii. To determine the effects of 24 hour e-banking to the overall financial performance of commercial banks.
- iii. To determine effects of the ICT competence of the customers on the financial performance of banks.

a) LITERATURE REVIEW

Recent literature has a narrow focus and ignores internet banking almost entirely; it equates internet money with the substitution of currency with internet gadget. For instance Freedman (2000) suggests that internet banking and internet money consists of three devices; access devices, stored value cards, and network money. Internet banking is simply the access to new devices and is therefore ignored. Internet money is the sum of stored value (smart cards) and network money (value stored on computer hard drives). According to a survey by KPMG (1999), the evolution of Internet-banking can be analyzed within a five-stage conceptual framework, where the extent of services provided through Internet start from a promotional stage and extend to transaction-enabled business innovation stage in where value-chains are redesigned in the process and offer highly personalized products and services. Analyzing the consumer side, Birch and Young (1997) show that consumers seek convenience, transactional efficiency, a choice of core banking products and non-core products, and access to competitive returns and prices. On the other hand, Wright (2002) mentions that Internet-banking has lifted the branch network as an entry barrier to the retail banking while introducing price transparency as customers can now easily compare prices online. In order to adopt internet technology as an id in the banking sector, the following models need to be looked at to facilitate smooth adoption of the innovation in order to maximize profits and provide quality banking services to clients.

2.2.1 Innovation diffusion theory

Mahajan and Peterson (2010) defined an innovation as any idea, object or practice that is perceived as new by members of the social system and defined the diffusion of innovation as the process by which the innovation is communicated through certain channels over time among members of social systems. Diffusion of innovation theory attempts to explain and describe the mechanisms of how new inventions in this case internet banking is adopted and becomes successful. Sevcik (2004) stated that not all innovations are adopted even if they are good it may take a long time for an innovation to be adopted. He further stated that resistance to change may be a hindrance to diffusion of innovation although it might not stop the innovation it will slow it down. There are five critical attributes that greatly influence the rate of adoption. These include relative advantage, compatibility, complexity, triability and observability. The rate of adoption of new innovations will depend on how an organization perceives its relative advantage, compatibility, triability, observability and complexity. 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. (Rogers 2005, Clarke (2005)

2.2.2 Transactions Cost Innovative Theory

The transaction cost innovation theory pioneered by Niehans (2006) advocated that the dominant factor of financial innovation is the reduction of transaction cost, and in fact, financial innovation is the response of the advance in technology which caused the transaction cost to reduce. The reduction of transaction cost can stimulate financial innovation and improvement of financial service. It states that financial innovation reduces transaction costs. Transaction costs Innovation theory is also relevant in this context: for instance, the use of Internet-connected Information Technology (IT) can substantially reduce a firm's transaction costs as it enables efficient coordination, management and use of information. Mobile, Internet-connected IT may further lower transaction costs as it provides also off-site access to the firm's internal database and other relevant sources of information. Consequently, reduction of operation costs through agency banking, internet banking and mobile banking may influence growth in profitability for the bank.

2.2.3 Constraint-Induced Financial Innovation Theory

This theory pointed out that the purpose of profit maximization of financial institution is the key reason of financial innovation. There are some restrictions however in the process of pursuing profit maximization. These may include but not limited to policy and internal organizational management. Constraint-induced innovation theory discussed the financial innovation from microeconomics, so it is originated and representative. However, it emphasized "innovation in adversity"

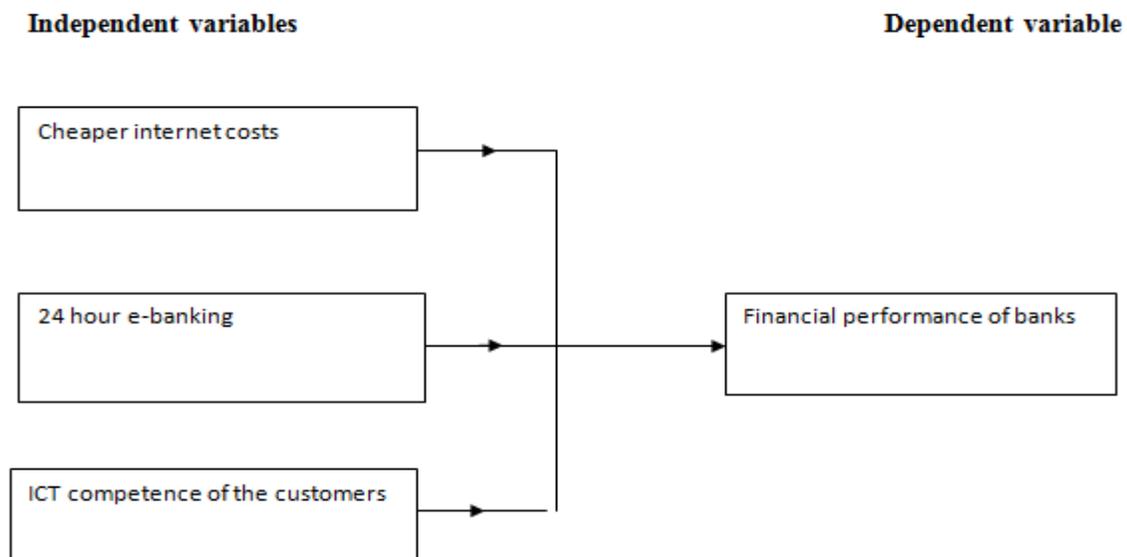
excessively so it can't express the phenomenon of financial innovation increasing in the trend of liberal finance commendably. Financial constraints significantly reduce the probability that a firm undertakes innovative projects. However, according to Silber (2004) financial innovation occurs to remove or lessen the constraints imposed on firms. Firms facing imperfections (e.g. regulation, entry barriers) have the greatest incentive to innovate and boost profits because of the high shadow costs of such constraints. (Silber 2004)

2.2.4 Information production and contemporary banking theory

Diamond (2002) suggested that economic agents may find it worthwhile to produce information about possible investment opportunities if this information is not free; for instance surplus units could incur substantial search costs if they were to seek out borrowers directly. Contemporary banking theory suggests that banks, together with other financial intermediaries are essential in the allocation of capital in the economy. This theory is centered on information asymmetry, an assumption that "different economic agents possess different pieces of information on relevant economic variables, in that agents will use this information for their own profit" (Freixas and Rochet, 2008). Asymmetric information leads to adverse selection and moral hazard problems. Asymmetric information problem that occurs before the transaction occurs and is related to the lack of information about the lenders characteristics, is known as adverse selection. Moral hazard takes place after the transaction occurs and is related with incentives by the lenders to behave opportunistically. Bhattacharya and Thakor (2003)

2.3 Conceptual framework

Fig. 2.1: Relationship between variables



2.3.1 Effects of cheaper internet costs on financial performance of commercial banks

The rapid development of the technology infrastructure, in particular the growth in the number of personal computers, the increased quality of Internet connections, the more widespread use of the Internet in both homes and businesses, and the significant reduction in both the fixed and variable costs of the Internet connections in Kenya, have made it possible for the Internet to play a more central role in banks' business strategy Delgado and Nieto (2004).

Kenyan banks benefited particularly from the adoption of the Internet because of their universal character. As with many European banks –unlike US banks prior to enactment of the Gramm-Leach-Bliley Act of 1999–, Kenyan banks have enjoyed the advantages of "broad banking" Barth, Brumbaugh and Wilcox (2000). Banks have been allowed to offer all sorts of financial products and engage in a wide variety of financial business (including securities trading and mutual funds management). Carbó and Rodríguez (2005) find that cost and profit global scope economies improve significantly when including mutual funds along with other earning assets, showing certain cross-selling and portfolio diversification benefits in the Kenyan banks.

The main economic argument for adopting the Internet as a delivery channel is based on the expected reduction in overhead expenses made possible by reducing and ultimately eliminating physical branches and their associated costs (e.g. staff and rent). This is particularly relevant in the Kenyan banking system the Internet delivery channel may generate scale economies in excess of those available to traditional distribution channels. The unit costs of Internet banking fall more rapidly than those of traditional banks as output increases as a result of balance sheet growth. In this context, DeYoung, Lang and Nolle (2006) refer to the Internet banking as a process innovation that functions mainly as a substitute for physical branches for delivering banking services.

2.3.2 Effects of 24 hour e-banking on financial performance of commercial banks

Internet banking by its nature offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking. Service delivery is informational (informing customers on bank's products, etc) and transactional (conducting retail banking services). As an alternative delivery conduit for retail banking, it has all the impact on productivity imputed to Telebanking and PC-Banking. Aside that it is the most cost-efficient technological means of yielding higher productivity. Furthermore, it eliminates the barriers of distance / time

and provides continual productivity for the bank to unimaginable distant customers since it is accessible on a 24 hour basis.

2.3.3 Effects of ICT competence of customers on financial performance of commercial banks

Information and Communication Technology (ICT) is fast becoming a dynamic channel that drives the Kenyan economy. ICT is becoming increasingly important for the growth of our economy as a whole. The availability and usage of adequate ICT skills are important factors, which influence the competitiveness among commercial banks in this era of e-Economy. Availability of skilled labor is a questionable resource requirement. There is a qualitative and quantitative imbalance in the supply of skilled labor and computer literacy amongst customers. It depends on the demographic factors, business cycles and rapid technological advancements taking place around us. Due to the vast development in the area of e-Banking it is essential that the policy makers should focus on the growing demand in ICT skills and take corrective steps to prepare the required numbers and quality beforehand. e-Banking enables to conduct banking business electronically over the Internet where the costs are minimal and it is no longer bound by time or geographical boundary. The target customers should as well equally be knowledgeable on the essential skills of applying Information Technology for the success of e-banking. (Malden and Jayasena, 2009)

b) RESEARCH DESIGN AND METHODOLOGY

Research design

The study adopted a descriptive research design which describes the state of affairs as they exist at present. The descriptive research design formulates the problem for more precise investigation and in this case was to explore the impact of internet banking on the financial performance of commercial banks in Kenya. (Berinsky, 2008).

Target Population

The population is the larger set of observations while the smaller set is referred to as the sample. The target population comprised of employees of Kenya Commercial Bank, Treasury square branch Mombasa. (Cooper & Schindler 2008, Berinsky, 2008)

Sampling frame

The researcher used a sample size of 31 respondents representing 60.7% from a target population that totaled to 51 respondents. This was obtained from the different departments in the Bank. This number represents the target population for purpose of reliability, flexibility and efficiency (Mugenda, 2008, Dillman, et al 2011).

Table 3.1 Sampling frame

Department	Population	Ratio	Sample	Percentage (%)
Operations	22	0.6	13	41.9
Marketing	17	0.6	10	32.3
Finance	6	0.6	4	12.9
ICT	6	0.6	4	12.9
TOTAL	51	0.6	31	100

Source: Researcher (2015)

III. RESEARCH FINDINGS AND DISCUSSIONS

The study comprised 31 respondents in collecting data with regard to the effects of internet banking on bank's performance.

Response rate

Table 4.1: Illustrating the percentage of response rate.

Number of questionnaires distributed	Number of questionnaires returned	Percentage
31	31	100%

From the study, all the sampled respondents filled in and returned the questionnaires making a response rate of 100%.

Respondent's experience

The table below shows how long the respondents have served in the bank. It is very important characteristics because respondents are able to monitor the performance of their company.

Table 4.2: Number of years respondents worked in the bank.

Number of years worked in the bank	frequency	Percentage
0-2 years	4	12.9%
2-4years	6	19.4%
4-6years	8	25.8%
6 and above years	13	41.9%
Total	31	100%

From table 4.2 above it can be observed that 41.9% of the respondents had served the bank for above 6 years, while 25.8% respondents had served the bank for 4-6 years, 19.4% of the respondents had served the bank for 2-4 years and 12.9% of the respondents had served the bank for 0-2 years. This indicates that majority of the respondents have served the bank for at least 6 years and above.

diploma holders. In its innovative quest the bank has been able to attract educated employees as others have gone up to the Master's level as shown by the 12.9% representing 4 respondents.

IV. DESCRIPTIVE ANALYSIS OF INDEPENDENT VARIABLES

Cheap internet costs and financial performance of banks

This shows the relationship between cheap internet costs and its effect on the banks' financial performance.

Figure 4.3: Employee's level of education

Most of the employees in the bank were degree holders. They constituted 48.4% representing 15 respondents from the sampled population, 25.8% representing 8 respondents were

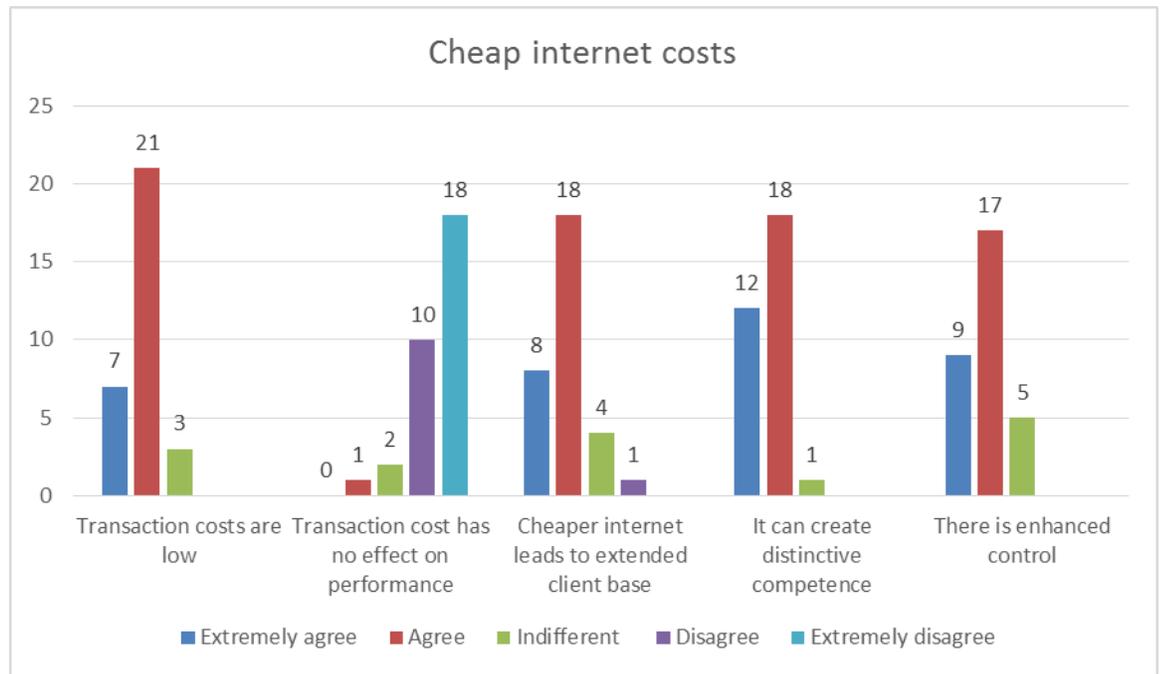


Figure 4.5: How respondents rate cheap internet costs to the banks' financial performance.

On whether internet lowers transaction costs, it can be observed from the findings that majority of the respondents representing 67.7% agree with the statement, while 7 respondents representing 22.6% extremely agree and only 3 respondents representing 9.7% are indifferent with the statement.

On the assumption that transaction cost has no effect on performance, majority of respondents representing 58.1% extremely disagree with the assertion, while 10 respondents depicting 32.3% are indifferent and only 2 respondents representing 6.5% agree to the statement. In a nut shell, transaction costs affects performance.

On whether cheaper internet leads to extended client base, 18 respondents representing 58.1% agree with the statement, while 8 respondents representing 25.8% extremely agree and

only 4 respondents representing 12.9% are indifferent to the statement.

On whether cheaper internet can create distinctive competence, majority of the respondents representing 58.1% of the sampled population agree with the statement, while 12 respondents representing 38.7% extremely agree and only 1 respondent who is indifferent.

On whether internet leads to enhanced control, majority of respondents constituting 54.8% agree, while 9 respondents representing 29.0% extremely agree and 16.1% are indifferent to the statement.

Extent to which KCB has embraced electronic banking

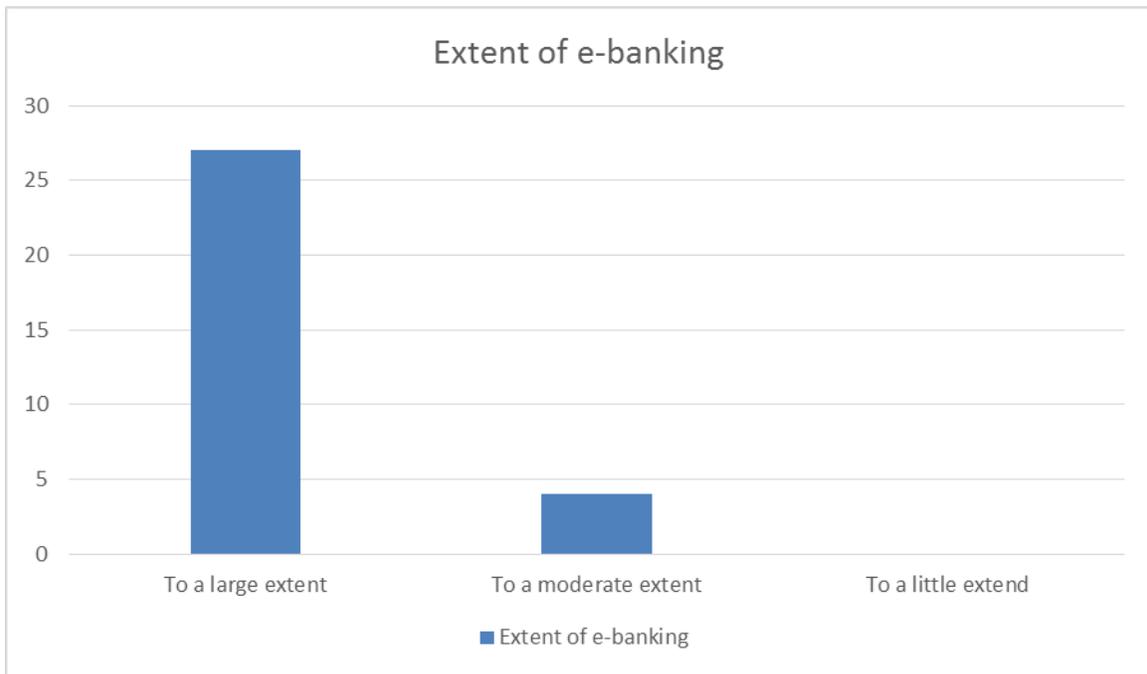


Figure 4.6: Extent to which KCB has embraced e-banking

From the above analysis it can be observed that majority of respondents constituting 87.1% of the sampled population agree that KCB has embraced e-banking in its operations, while only 4

respondents representing 12.9% agree to a moderate extent. This indicates that KCB has entrenched electronic banking in its operations.

Effects of 24hr internet banking on selected variables

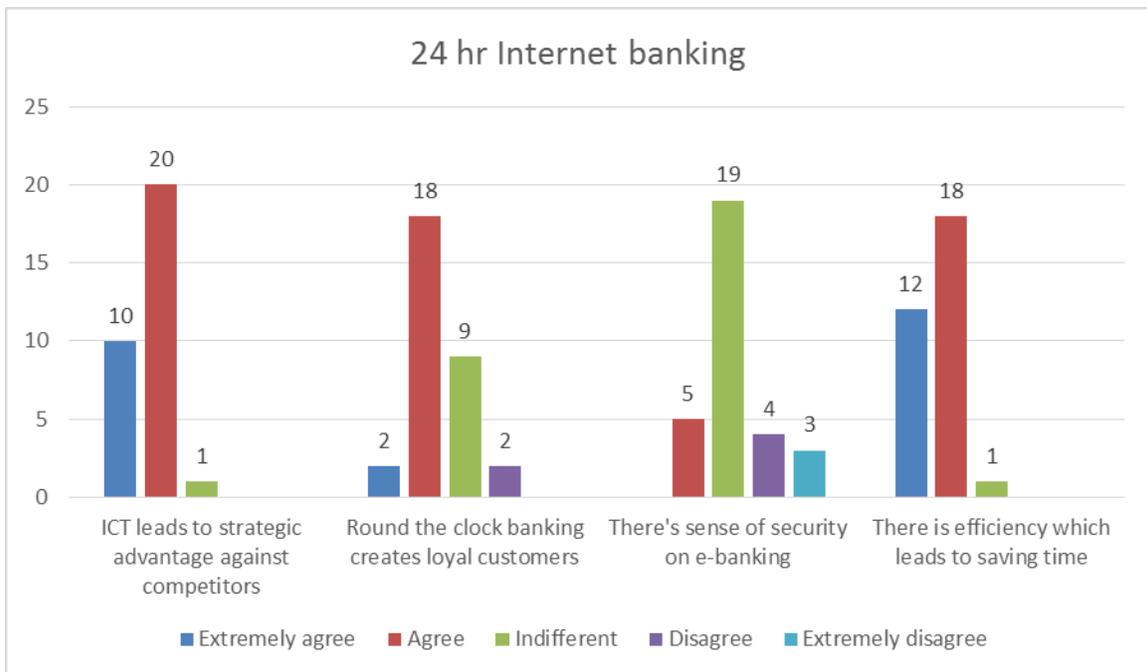


Fig 4.7: Effects of 24hr internet banking

On whether ICT leads to strategic advantage against competitors, it can be observed from the findings that majority of the respondents representing 64.5% agree with the statement, while 10 respondents representing 32.3% extremely agree and

only 1 respondent representing 3.2% are indifferent with the statement.

On the assumption that round the clock banking creates loyal customers, majority of respondents representing 58.1% agree with the assertion, while 9 respondents representing 29.0%

are indifferent and only 2 respondents representing 6.5% disagree and extremely agree to the statement.

On whether customers derive sense of security on e-banking, 19 respondents representing 61.3% agree with the statement, while 5 respondents representing 16.1% extremely agree and only 4 respondents representing 12.9% are indifferent to the statement.

On whether e-banking saves time through efficiency, majority of the respondents representing 58.1% of the sampled

population agree with the statement, while 12 respondents representing 38.7% extremely agree and only 1 respondent who is indifferent.

On whether internet leads to enhanced control, majority of respondents constituting 54.8% agree, while 9 respondents representing 29.0% extremely agree and 16.1% are indifferent to the statement.

ICT competence of customers on financial performance of banks

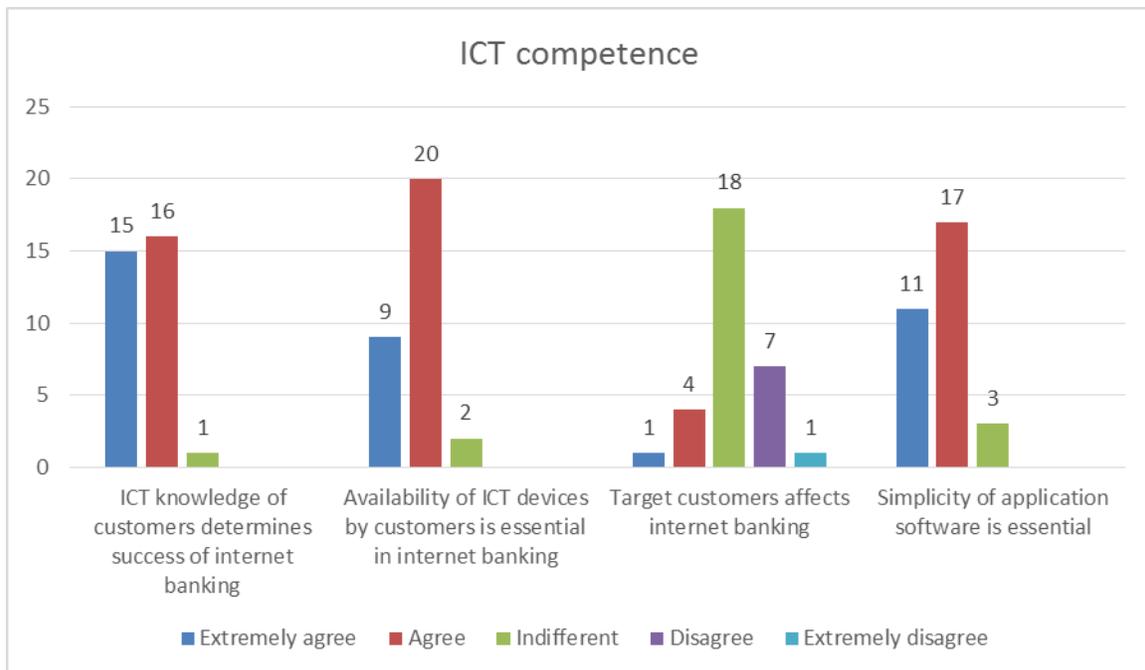


Fig 4.8: ICT competence of customers on banks performance

On whether ICT know how of customers determines success of internet banking, it can be observed from the findings that majority of the respondents representing 51.6% agree with the statement, while 15 respondents representing 48.4% extremely agree and only 1 respondent representing 3.2% are indifferent with the statement.

On the statement that availability of ICT devices by customers is essential in internet banking, majority of respondents representing 64.5% agree with the assertion, while 9 respondents representing 29.0% extremely agree and only 2 respondents representing 6.5% are indifferent.

On whether target customers affects success of internet banking, 18 respondents representing 58.1% are indifferent, while 7 respondents representing 22.6% disagree and only 4 respondents representing 12.9% agree with the statement.

On whether simplicity of application software is essential for the success of internet banking, majority of the respondents representing 54.8% of the sampled population agree with the statement, while 11 respondents representing 35.5% extremely agree and only 3 respondents who are indifferent.

V. SUMMARY OF FINDINGS

The purpose of the study was to establish the effects of internet banking on financial performance of banks; a case study of Kenya Commercial Bank. The objectives of the study were to determine the effect of cheaper internet costs on performance of commercial banks, to establish the effect of 24hr banking on the performance of commercial banks and to find out the effect of customers' ICT competence on performance of commercial banks.

Descriptive research design was used in the study and target population was the employees of KCB Treasury Square branch in Mombasa County. For ethical purpose, an official introductory letter was issued from Jomo Kenyatta University of Agriculture and Technology to request for a permission to carry out the academic research study. To assign meaningful numbers to responses variables were measured at interval scales. Numbers were assigned for responses which were closed ended.

From the study, 61% of the respondents were male and only 39% were female. On the highest level of education, majority (48.4%) of the respondents had degree and 12.9% of the respondents had masters and none had Phd. From the findings, majority of respondents had worked with Kenya Commercial

Bank for more than 6 years. And most of respondents were drawn from finance department and were aged 31 years and 40 years as per the findings.

According to the findings, majority of the respondents representing 67.7% were of the view that the internet lowers transaction costs. Many respondents agreed that there is likelihood of extended client base as a result of internet banking and that internet banking can lead to distinctive competence and enhanced control of banking activities.

On whether KCB has embraced e-banking, majority of the respondents (87.1%) agreed that the bank has fully embraced electronic banking in its operations. Majority of respondents agreed that ICT leads to strategic advantage against competitors and that there is likelihood of customer loyalty due to round-the-clock banking services. On whether customers derive sense of security on e-banking as opposed to over the counter transactions, majority of the respondents comprising of 61.3% agreed to the statement and added that e-banking saves time through efficiency in operations.

On effects of ICT competence of customers, it can be observed from the findings that the ICT know-how of customers determines the success of internet banking. Also majority of respondents comprising 58.1% agreed that the bank's target customers affect success of internet banking and that availability of ICT devices by customers is essential for the success of internet banking. Besides, majority of respondents agreed that success of internet banking is commensurate with simplicity of application software in use.

VI. CONCLUSION

This section was organized in subsection based on the research objectives including: effects of cheaper internet costs on performance of commercial banks; effects of 24hr banking on commercial banks' performance and how customers' ICT competence affects performance of commercial banks.

Effects of cheaper internet costs on banks' performance

From the study it can be found that the reduced internet costs lowers transaction costs which attracts potential customers to the bank. In addition, lower internet costs creates distinctive competence and leads to enhanced control over banking processes. The study reveals that cheaper internet costs can lead to extended client base as many potential customers seek value for their money.

Influence of 24hr banking on banks' performance

With e-banking customers are able to access banks' services round the clock and this creates strategic advantage against competitors hence leading to customers' loyalty and derived sense of security as opposed to over-the-counter banking. Besides, internet banking saves time as a result of increased efficiency.

Effects of customers' ICT competence on commercial banks performance

On ICT competence of customers on performance of banks, the customers' know-how of ICT positively affects success of internet banking, the study established that availability of ICT devices affects the outcome of internet banking and that the simplicity of application software on internet banking platform affects the success of internet banking.

VII. RECOMMENDATIONS

The researcher makes the following recommendations;

Effects of cheaper internet costs on banks performance

The researcher recommends that all the KCB should take advantage of reduced internet costs to lower its transaction costs which in return will attract potential customers hence create customer loyalty. If ICT is effectively used, the bank can create distinctive competence which will enhance its market share.

Effects of 24hr banking on banks performance

The bank should entrench mechanisms to ensure uninterrupted 24hr banking to its clients. This will improve its financial performance.

Effects of customers ICT competence on banks performance

The bank should target those customers who are ICT competent in order to ensure success of internet banking. Besides, KCB should take advantage of reduced costs and wide availability of mobile phones to attract potential customers. The application software used for accessing banks services online should be simple and user friendly so as to be hassle free to the customers.

Suggestion for further Research

The following areas are suggested for further study;

- i. The study should be undertaken under cross-sectional descriptive design which would ensure elimination of any bias experienced in this study.
- ii. A replica of the study should also be carried out within the context of another field other than banking industry for comparative purpose.

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