IMPACT OF E-BANKING STRATEGY ON PERFORMANCE IN THE KENYAN BANKING INDUSTRY

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DECLARATION

STUDENTS DECLARATION

This research project is my original work and has not been presented to any other university for academic purposes.

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SUPERVISORS DECLARATION

This project has been submitted for examination with my approval as the university supervisor.

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DEDICATION

I dedicate the work of this research to God for imparting in me with the wisdom and strength to make the research worth academic acceptance.

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ABSTRACT

Innovations in information and communication technology have changed the operations of many organizations. In recent years, the adoption of E-banking strategies began to occur quite extensively as a channel of distribution for financial services due to rapid advances in information and communication technology and intensive competitive banking markets. It has become necessary for banks to use of technology to respond to their continuously changing requirements. This study is designed to evaluate e-banking strategies adopted by commercial banks in Kenya and their impact on their profitability. It has been shown, from the results of the study that adoption of e-banking strategies had a positive impact on banks' profits. E-banking strategies bring in returns and banks should put more emphasis on innovations in information and communication technology which help in achieving cost effective channels of offering banking products and services. Banks should endeavour to implement technologically driven banking strategies that are expected to re-engineer the processes of providing banking services in Kenya.

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CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The innovations in information and communication technology has influenced almost every aspect of life, among them is the banking sector. The introduction of electronic banking (e-banking) has altered and redefined the ways banks operate. Technology is increasingly being considered as the main contribution for the organizations' success and as their core competencies. Subsequently, banks are investing more on providing on the customers with the new technologies through e-banking. E-banking can be described as the provision of banking products and services through electronic channels including Automatic Teller Machines, the internet and telecommunication devices. E-banking has been viewed as a revolution progress in the banking industry. The industry believes that by adopting new technology, they will be able to provide more quality service level and retain their customers. The banking industry has been searching for methods to expand its customer base and to counteract the aggressive marketing effort of the non-traditional banking entities (Tan and Teo, 2000). Many banks have found out that there are an increasing number of customers who prefer to do banking electronically. As a result, many banks have incorporated 24-hour telephone banking systems, implemented important e-banking systems which allow their customers to perform a diverse number of transactions. As the banking fraternity continues to make foray into the retail segment of the market, it is becoming more crucial to create value for their customers.

The new banking environment is about providing differentiating banking products, increased accessibility and convenience and ensuring security to the customers. How well the banks are able to deliver products and services in the most efficient and effective way, will therefore determine their ability to perform, achieve customer satisfaction and increasing profitability. In today's competitive banking environment, excellent delivery of products and services is crucial; it enables banks to establish a competitive advantage. Since most banks offer comparable products and services, they continually search for a ways that will attract new customers and help them retain existing ones. Banks therefore, must endeavor to develop innovative programs and initiatives to maintain superior customer service levels while remaining profitable. Innovations in information and communication technology have been beneficial to the banking industry. They have brought about new distribution avenues that are less costly and have wide reach. Technological innovations and globalization are impelling banks to adopt new modes of operation to supplement their traditional evolving under the impact of several forces which include competition, regulatory changes and technology. In recent times, e-banking is regarded as a strategic tool by the global banking sector to attain and maintain competitiveness and also increase revenues and market share by retaining and increasing customers.

1.1.1 The Concept of Strategy

Strategy defines the future direction and actions of an organization or part of an organization. Johnson and Scholes (2006) define corporate strategy as the direction and scope of an organization over the long term which achieves advantage for the organization through its configuration of resources within a changing environment to meet the needs of markets and to fulfil stakeholder’s expectations. Porter (2001) defines strategy as the strong focus on profitability not just growth, on ability to define a unique value proposition, and a willingness to make tough tradeoffs on what not to do. Henderson (1989) defines strategy as the deliberate search for a plan of action that will develop a business competitive advantage and compound. Barney (2007) states that a firm’s strategy is its theory of how to achieve high levels of performance in the markets and industry within which it operates. The central goal of strategy is therefore to achieve sustainable competitive advantage over rivals and thereby ensuring lasting profitability.

1.1.2 E-banking Strategy

E-banking strategy entails the use of information communications and technology innovations as leverage to achieve sustainable competitive advantage. It is supported by advancements in telecommunications, computer software and hardware and programmes that ensure secure encryption. Its implementation leads to capture of a large share of the financial services market and improved performance. These advancements have introduced new ways of delivering banking to the customer. Banks began at to look at e-banking as a means to replace some of their traditional bank functions.

E-banking strategy holds a ground breaking potential for the delivery of banking products and services, it not only has a cost advantage in providing banking products and services, it enhances possibility for creating more value for these products and services by making them more accessible to customers, offer opportunity to customers to make better choices, and personalize products and services to their individual needs. The banks that effectively apply innovations in information and communication technology to deliver services will be rewarded with greater profitability. Incorporating e-banking as part of their business strategy, banks are able to increase the attractiveness of their products and services. Undeniably, e-banking has sufficient potential to allow banks to become even more profitable in an increasingly aggressive and competitive environment. The banking industry is seen as continuing to move towards more e-banking strategies in response to competitive pressures from non-banking financial service companies. Competition from non-banking sector, has forced the banking industry to adopt a more aggressive approach to fight competitors for the financial services market share. It is only those banks that are able to adapt to the changing environment, adopt new ideas and ways of doing business that can be guaranteed continued existence.

E-banking strategy may be used to create competitive advantage and differentiate a bank from its competitors. E-banking strategy has a special role to play for retail bankers because it represents a potentially huge leap in the ability of the bank to interact with its customers. The leap is considered huge because it provides the capability for an extraordinarily comprehensive exchange of information on an exceptionally cost-effective basis. Adoption of e-banking will foster the creation of communities of interest that can serve to truly differentiate a bank from its competitors, creating value for present and potential customers thus enhance customer satisfaction.

1.1.3 Organization Performance

The objective of strategic management process is to enable a firm to choose and implement a strategy that generates a competitive advantage. Competitive advantage is achieved when an organization is able to create more economic value than its rivals.

Economic value is the difference between the perceived customer benefits associated with buying a firm's product or services and the costs of producing and selling these products or services. Approaches that can be used to measure firm's performance include the following.

First, measuring performance through the use of simple accounting measures. Accounting approaches rely on ratio analysis. The major categories of accounting ratios comprise of profitability ratios which are ratios with some measures of profit in the numerator and some measure of firm size or assets in the denominator. They include return on total assets (ROA), return on equity (ROE), earnings per share (EPS) and price earnings. Liquidity ratios focus on the ability of a firm to meet its short term financial obligations. They include current ratio and quick ratio. Leverage ratios focus on the level of firm indebtedness. They include debt to asset, debt to equity and times interest earned. Activity ratios focus on the level of activity in an organization's business. They include inventory turnover, accounts receivable turnover and average collection period.

Secondly, organization's performance can be measured through adjusted accounting measures. This compares the firm's revenues and costs. There are four adjusted accounting measures that can be used to measure the firm's performance. They include return on invested capital (ROIC), this characterizes an organizations return on its capital (in percentage terms) for a given time period. Economic profit (EP) is the actual economic value created by a firm in a given time period. Market value added (MVA) measures a firm's performance by summing the market value of a firm's equity and debt and sub-trade the amount that inventors have contributed to produce whatever value the firm has created. Tobin Q is defined as the ratio of a firm's market value to the replacement cost of the assets.

1.1.4 The Banking Industry in Kenya

The first bank in Kenya, the National Bank of India, was established in Mombasa in 1896. In 1911 and 1916 the Standard Bank of South Africa and Barclays Bank- were established respectively. In November 1970, the National Bank of India changed its name to Kenya Commercial Bank .At independence, in 1963, there were 7 banks in Kenya. By 1973, there were 8 banks. In 1982, the first private banks were licensed and this brought the total up to 15. By 1993, however this number had increased to 33 and this included both private and foreign owned banks. By 1996, there were 42 commercial banks in operation in Kenya. In 1994, the central bank made it possible for financial institutions to be converted into commercial banks. Currently there are there are 43 licensed commercial banks and 1 mortgage finance company. Out of the 43 institutions, there are 30 locally owned and 13 which are foreign owned. The ones locally owned include 27 commercial banks, 3 banks with major shareholding by the Government and State Corporations.

The banking industry is a key section in any economy and as prime movers of economic life; they occupy an important position in every nation. The Kenyan banking sector operates in a fairly deregulated setting. The foreign owned banks dominate and account for substantial part of the banking system. The banking industry has been rated fifth in the main sources of growth in the economy for the last five years averaging at 6.8 percent. Its contribution to the gross domestic product has been on an increasing trend with 4.6 percent in 2008 to the current 6.4 percent. This industry therefore contributes a significant amount to the country's gross domestic product.

1.2 Research Problem

In recent years, the adoption of E-banking began to occur quite extensively as a channel of distribution for financial services due to rapid advances in information and communication technology and intensive competitive banking markets. The customer's profiles are also changing and they are drawn more to products and services that offer more convenience. This dynamism of the banking environment is posing a lot of challenges to all banks. Tan and Teo (2000) note that the challenge to expand and maintain banking market share has influenced many banks to invest more in making better use of the Internet. The emergence of e-banking has made many banks rethink their strategies in competitive markets.

Banks' external environment, including globalization and deregulations; have made the banks very competitive. They need to consider other ways of maintaining and attracting customers. It has become necessary for banks to use of technology to respond to their continuously changing requirements. According to The Banking Survey 2009 in a local business and finance journal Market Intelligence, customers are not entirely satisfied with the quality of service provided by commercial banks in Kenya. Queuing time is considered reasonable at ATMs but too long in banking halls. The decline in the quality of banking services may be attributed to the fact that there has been an increase in the number of banking transactions. It is frequently reported that the grievance handling processes in the banks are not adequate enough to address the issues to fully satisfy the customers.

Research studies have been carried out on e-banking adoption by different researchers. Previous studies implied that dehumanized banking channels lead to less personal contact, which meant less customer satisfaction and loyalty (Samli and Frochlich, 1992). However, it's also known from prior studies that customer satisfaction is related to the service features like convenience and accessibility. Furst, Lang, and Nolle (2002), stated that the typical bank offering Internet banking services is most like more profitable than those not offering e-banking services. This notwithstanding, they also tend to generate larger sums of non-interest (fee-based) revenue. Ciciretti, Hasan, and Zazzara (2009) suggested that there is a substantial fact of significant connection that exists between the adoption e-banking by traditional banks and their profitability. A more recent study, Aduda and Kingoo (2012), indicated that there exists positive relationship between e-banking and bank performance. In addition e-banking research has tended to focus on customer's perspective rather than bank's perspective. But there are still little or fewer numbers of scholarly researches on the effect of e-banking based on their performances in Sub Saharan Africa. Moreover, critical issue that has received varied opinions among researchers is the effect of e-banking on performance. The differing opinions could stem from the fact that they have used different measures of performance among other reasons. This study is designed to evaluate e-banking strategy adopted by commercial banks in Kenya and its impact on their performance. This strategy brings out the emergence of electronic products and markets to complement the traditional business processes. This research aims at addressing the following questions. What is the impact of e-banking strategy on the performance of Kenyan banks?

1.3 Research Objective

The objective of this study was to determine the impact of e-banking strategy on the performance of commercial banks in Kenya.

1.4 Value of the Study

The banking industry in Kenya has witnessed tremendous changes linked with the developments in information and communication technology. The market for financial products and services has become increasingly competitive. This competitive pressure is forcing banks to evolve increasingly powerful strategies. The pursuit for profits, local and global relevance, retaining existing market share and sustainable development has made exploitation of information and communication technology through the use of electronic channels imperative in the industry. This research aims at demonstrating how the development of information and communication technology systems, policies and strategies have become a subject of fundamental importance and concern to all banks and indeed is a prerequisite for local and global competitiveness. The findings of this research will also provide a basis for policy makers to formulate policies. Developments in information and communication in the banking industry has brought with it certain risks which require proper mitigation. The enhanced use of technology by banks is increasingly becoming an area of focus for the supervisory authority and in order to carry on with its mandate effectively, it has to align itself with the changing supervisory environment. This research will also contribute to the existing body of knowledge and the finding will serve as a source of reference for future researchers.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter reviews literature on Porter's generic strategies, e-banking strategies, e-banking strategies platforms and the impact of e-banking strategies on performance.

2.2 Theoretical Foundation

A strategy of an organization can be reduced to one of three generic strategies. These strategies are cost leadership, differentiation, and focus. These three generic strategies are a source of competitive advantage (Porter, 1980). The essential basis of achieving profitability in the long run is sustainable competitive advantage. An organization's relative position within its industry determines on its profitability in relation to the industry average.

An organization that choose cost leadership strategy focuses on gaining advantages by reducing its economic cost below all its competitors, it entails having the lowest costs (Barney 2007). A firm may gain cost advantage through economies of scale, technology, accessibility to low cost inputs among others (Porter, 1980). A firm with this strategy aims at producing or providing goods or services at a lower operating cost than its competitors. This enables the firm to make a more profit than its competitors. The firm also has the option of selling at a price below its competitor's thus gaining market share while making a profit. Cost leadership requires aggressive construction of efficient-scale facilities, vigorous pursuit of cost reductions, overhead control, and cost minimization (Porter, 1998). In e-banking strategy the source of the cost advantage is the use of technology to improve efficiency and reduce operational costs; they will therefore be able to provide products and services at low cost.

Differentiation is a strategy whereby organizations attempt to gain competitive advantage by increasing the willingness of customer to pay for the products or services they sell (Barney 2007). The strategy of differentiation involves offering products, delivery systems or marketing approaches that is unique to them (Porter, 1980). Organizations that pursue a differentiation strategy win market share by offering unique features that are valued by their customers (Porter, 1980). In e-banking strategy the technology is the source of differentiation since it provide unique qualities of product or service.

Focus strategy is the strategy where focus rests on the choice of a narrow competitive scope within an industry, focusing efforts on the unique needs of a specific market segment. The organization selects a segment or group of segments in the industry and tailors its strategy to serving them to the exclusion of others. Focus strategies involve achieving cost leadership or differentiation within niche markets in ways that are not available to more broadly-focused players (Porter, 1980)

2.3 E-banking Strategies

E-banking strategy entails the use of information communications and technology innovations as leverage to achieve sustainable competitive advantage. It involves investing in new technologies with the aim of innovating the traditional products and services as well as create new ones (Porter, 2001). E-banking strategy focuses primarily on differentiation; creating a unique user experience and cost leadership; use of innovations in information communications and technology to reduce costs.

According to Barney (2007), cost leadership strategy emphasizes on providing products or services at low cost. By using advanced technological systems banks can achieve cost leadership through reduced transactional and operational costs, this enables them create economic profits and improves their performance. To comprehend how overall cost leadership strategy may result in profitability, the benefits of maintaining a low-cost position must be identified. Porter (1980) suggests that a cost leadership position gives a firm protection from competitors, because its low costs mean that it continues to earn returns in the face of competition. A low-cost position defends the bank against powerful customers who can exert power to drive down prices to the level of the next most efficient competitor. The factors that lead to a low-cost position usually also provide substantial entry barriers in terms of cost advantages. A low-cost position usually places the firm in a favourable position with regard to substitutes relative to its competitors in the industry.

Product differentiation strategy emphasizes on the ability of organization to use technology to enhance product features and complexity, product customization product marketing, product location, service and support and distribution channels (Barney, 2007). These have the potential for generating competitive advantages on the basis of product differentiation, which in turn can enable an organization to increase its revenues and exploit more opportunities to expand its market share. Organizations that are able to differentiate their products and services are likely to seen an increase in their volume of transactions. This is especially so if the basis of product differentiation is attractive to a large number of potential customers. According to Porter (1980) differentiation may result in higher profitability for the reason that it provides insulation against competitive rivalry because of brand loyalty by customers and resulting in indifference to price. It also increases margins, which avoids the need for a low cost position. The resulting customer loyalty and the need for a competitor to overcome uniqueness provide entry barriers. Differentiation yields higher margins since customers lack comparable alternatives and are thereby less sensitive to price. The bank that has differentiated its products and services to achieve customer loyalty should be better positioned with regard to substitutes than its competitors. Differentiation also creates value by enabling a bank to charge a premium price that is greater than the extra cost incurred by differentiation.

In order to address customer concerns and remain competitive, banking institutions are increasingly turning to information communications and technology solutions to enhance service delivery, as a tool to maintain and expand their customer base (Ciciretti et al., 2008). Developments in information communications and technology are driving the growth of branchless banking. Branchless banking entails the extension of the outreach of banks without putting up physical 'brick and mortar' structures through strategic alliances between banks and other financial and non financial institutions with wide outreach. In such arrangements, banking institutions will partner with telecommunication companies, supermarket chains, petrol stations among others, in providing financial services. Application and development of information communications and technology systems, policies and strategies has therefore become a subject of fundamental importance and concern to all banks and indeed is a prerequisite for local and global competitiveness.

2.3.1 Automated Teller Machines (ATM) Banking

This is an electronic banking outlet that enables customers to perform simple transactions without the aid of a bank staff. There are two types of ATMs. The simple unit allows for one to perform basic transactions like cash withdrawal, checking balances and printing mini statements (Wonglimpiyarat, 2005). The more complex unit enables one to perform advanced transactions which include making deposits, pay bills among others. This allows for easy access to banking facilities by customers. There is usually, but not always, a fee incurred for using this facility. More recent technological advancements have brought about the intelligent ATMs which offer customer's hustle free banking with no tellers and a cashless environment that offer customers a digital self service banking experience. By migrating routine transactions away from the teller counter, this provides the combined benefits of lower operational costs, quicker and more accurate transactions and increased product sales and revenue growth.

2.3.2 Point-of-Sale (POS) Banking

Point-of-Sale (POS) systems enable one to perform banking services at merchant establishments. A Point of Sale terminal is a portable device that allows cardholders to carry out transactions outside the bank's environment. This allows bank's customers to make transaction anywhere that this device is available. This unique service offers the customers with the facility of cash withdrawal from their account, balance enquiry, mini statements, pay for bills or pay for purchases with a credit card or a debit card (Wonglimpiyarat, 2005). This is preferred by customers who do not like holding cash. Customer transaction information is captured at a physical spot when transaction occurs and value is credited to the merchant's bank account within a specified amount of time. This provides a convenient, modern and efficient means of carrying out transactions, providing a cheaper alternative to adding new branches and ATMs.

2.3.3 Internet Banking

Internet banking allows bank customers to carry out financial transactions on a secure website operated by the institution. Internet banking means that various banking activities can be performed from any location using an internet connection (Furst et al, 2002). Simply, it's the performance of banking activities through the internet.

2.3.4 Mobile Banking

Banking activities conducted through a mobile telecommunication network and wireless networks. The earliest mobile banking services were offered over Short Message Service (SMS), a service known as SMS banking. SMS banking services are operated using push and pull messages (Shah and Clarke, 2009). Those messages that the bank send out to customers without them requesting for the information is referred to as push message. An example is an alert concerning informing customer of a significant withdrawal of funds from the ATM. A customer can also initiate a message and this is referred to as pull messages, for obtaining information or performing a transaction in the bank account. For instance, account balance enquiry, or exchange rates enquiry.

2.3.5 Television banking

Television is the latest technology used in e-banking and e-commerce area for digital content delivery. Television banking allows customers to perform banking transactions with televisions as the terminals and the remote control as the operational tool (Shah and Clarke, 2009). Customers can perform transactions which include card transfers, bill payments, make inquiries among others. This is still a new concept but has potential for growth and development with the promotion of digital television technology.

2.4 Impact of E-banking Strategy on Bank Performance

The robust information communications and technology platforms are a prerequisite to a successful implementation of e-banking strategy in the banking industry. The bank's e-banking strategies are mainly driven by the capabilities of these core banking systems and other incorporated systems. The ability of these systems dictates the types of products and services the institution can offer and how efficiently those products and services will be offered to its customers. Developing an e-banking strategy requires a fusion of existing approaches of business, marketing and information systems strategy development. Chaffey (2009) emphasized that much of the organizational value created by e-banking is due to more effective use of innovations.

Product and service differentiation enables the banks to better quality products and services to the customers. Use of innovations to improve products and services creates value to the customers (Barney, 2007). This result in higher levels of satisfaction, which in turn translates to a higher retention rate of customers. Introduction of e-banking products and services, which are convenient and accessible, has made it possible for banks to attract potential customers thus enabling them to increase their market share.

Cost reduction is achieved by introducing e-banking processes which are more efficient. Efficiency is achieved through using electronic channels to source, create, market and deliver services using fewer resources than previously. Technology is applied to reduce paperwork, reduce the human resources needed to operate the processes through automation and improve internal and external communications (Ciciretti et al., 2008). Banks have used internet technology so that customers can apply for loans, credit cards and service them as well online. E-banking leads to lower transaction cost for banks. It reduces physical overhead since the number of bank staff and branches being maintained are reduced. Initial high costs associated with acquiring and updating information and communication technology infrastructure are distributed over a period of time. The cost reduction associated with this will invariably lead to an improvement in bank performance.

It is expected that banks implementing e-banking strategies will have some profitability edge over their competitors. E-banking offers more avenues for income generation, since they generate additional income from non-interest sources. The increase in profit gained by banks that adopt e-banking channels as a part of their delivery channel is mainly attributed to reduction on overhead cost and increased revenues. Even though, the reductions costs related to adoption of e-banking are gradual in the long run they may make a significant impact on a banks profit.

2.4.1 Revenue Generation

It is expected that banks offering e-banking will have some profitability edge over their competitors. E-banking offers more avenues for income generation, since they generate income from other non-interest sources. Introduction of e-banking products and services, which are convenient and accessible, has made it possible for banks to attract potential customers thus enabling them to increase their market share. Value is added by providing better quality products and services to the customer (Ciciretti et al., 2008). This result in higher levels of satisfaction and customer retention rate. This increases revenue generation.

2.4.2 Cost Saving

In addition to revenue enhancement, e-banking may enable banks to lower costs of operation by allowing them to reduce expenditures on human resource, buildings and equipments. This leads to lower expenses related to maintaining physical branches. Jayawardhena and Foley (2000) maintain that the cost savings come through combined effects of reduction and better utilization of workforce, more economic usage of space and operational savings that help raise the profit margin by a surprising large number. Banks with high costs of maintaining branch network are therefore motivated to adopt Internet banking by the prospect of future cost savings (Furst et al., 2002). Electronic processing reduces transaction costs and provides an electronic avenue for bank to deliver services thus lower costs. These cost savings can offer customers and banks alike reduced cost of banking and still provide efficient and varied services.

2.4.3 Improve Efficiency

E-banking strategy entails implementation of core banking systems which reduces manual tasks and process time. To implement e-banking, organizations often have to re-invent their business systems and develop new working practices. This result in greater efficiency and agility in organizations (Shah and Clarke, 2009).The elimination of error and data redundancies also results in increased branch productivity. This enhances reduction in turnaround and processing time, increasing output and enabling greater efficiency in service delivery to their customers.

2.4.4 Cross-Selling Opportunities

E-banking systems offer diverse features for banks to design and deploy products for varying market segments. The product bundling capabilities of the solution offers a wide range of possibilities for banks to create products with innovative features (Tawfik and Albrecht, 2008). The facilities provided for differential pricing, channel rules and customization through. This empowers banks to continuously innovate and extend their suite of products, across segments. E-banking system's ability to provide detailed data about customers' financial profiles and purchasing behaviour also provide detailed understanding of customers enables customizing of advertisement and products and provides an opportunity for cross selling (Shah and Clarke, 2009).

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the techniques and procedures that were used by the researcher in conducting the study and accumulating the data for the study. It comprises of the description of the population of the study, sources of data, method of data collection and method of data analysis.

3.2 Research Design

The research employed a descriptive survey research design. A survey research is one in which information is collected without changing the environment. It was done with the aim of establishing the relationship between bank's performance and the e-banking strategies in place. Descriptive research was conducted to demonstrate associations or relationships between the variables (Jackson, 2009). This approach was used because the research investigated whether e-banking strategies implemented by banks leads to changes in their performance. The study was a longitudinal study since it involved a fixed sample of elements that were measured repeatedly through time.

3.3 Population of the Study

The population of the study consisted of all 43 commercial banks in Kenya, registered by the Central Bank of Kenya at the time of the study. A census study was carried out given the small size of the population. The list of banks is provided in Appendix II.

3.4 Data Collection

Data from secondary sources was obtained for utilization in the study. Secondary data was extracted from the financial and operational data for the banks released in their annual reports and annual supervision reports released by the Central Bank of Kenya. A secondary data collection framework was developed to extract information concerning specific issues from the bank. For the purpose of this analysis, annual time series data of the variables was used. A time series data set consists of observations on a variable or several variables over time. Because past events can influence future events and lags in behaviour are prevalent in the social sciences, time is an important dimension in a time series data set (Wooldridge, 2004). Bank's profits before tax which measures performance of the banks was the dependent variable. Efficiency score and interest income were the independent variables. Data covering the period between 2003 and 2012 was used.

3.5 Data Analysis

The study used both descriptive and inferential statistics in analyzing the data. Descriptive statistics includes statistical procedures that are used to describe the population we are studying. It provides simple summaries about the observations that have been made. Such summaries may be either quantitative, for instance mean, percentages or visual, for instance, graphs. Inferential statistics is concerned with making predictions or inferences about a population from observations and analyses of a sample. Examples of inferential statistics include linear regression analyses and correlation analyses. In this study the regression model to be used is as follows:

$$Y = \delta_0 + \delta_1 INTINC + \delta_2 ES + E$$

Where; $\delta_{0,}$ $\delta_{1,}$ δ_2 are the parameters to be estimated.

Y is the bank performance measured as bank's profit before tax

δ_0 is a bank fixed effect term that captures time-invariant influences specific to the banks.

ES is the efficiency score variable which represents the ratio of customer deposit accounts to employees. This is estimated by dividing total bank deposit holders with the number of bank's staff. Efficiency score was used as the proxy for e-banking strategy.

INTINC is a variable which represents the interest income received by the bank from loans and advances, government securities and placements.

E is the error term.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DICUSSION

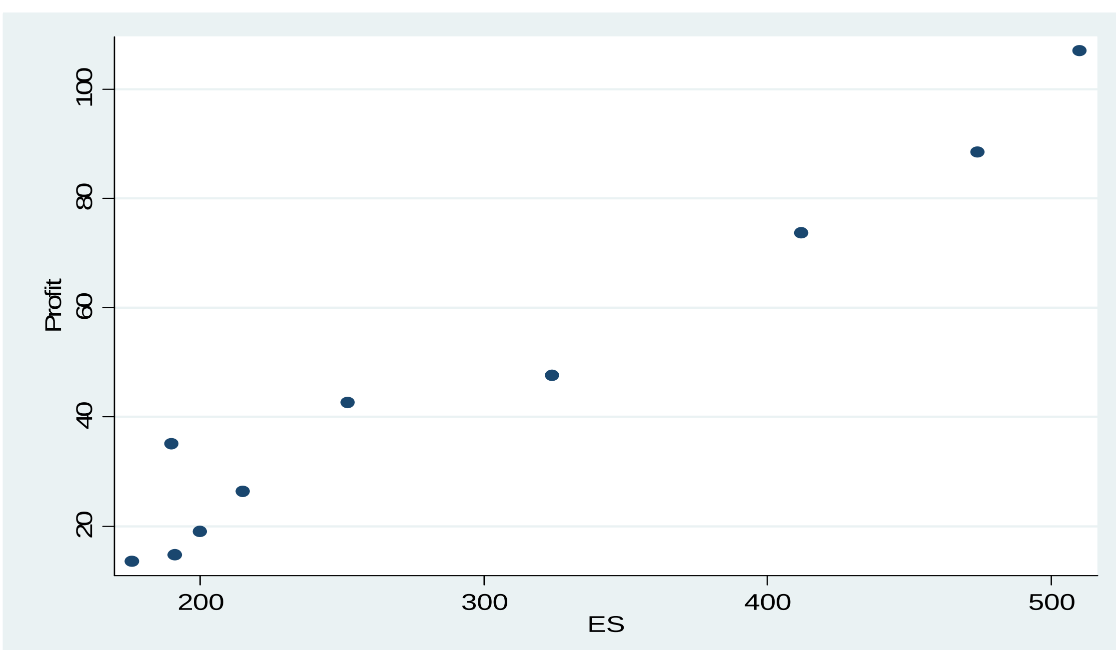
4.1 Introduction

In this chapter, the research presents the analysis, presentation and interpretation of data collected during the study.

4.2 Descriptive Statistics

Descriptive statistics are useful for exploring and examining data prior to performing statistical tests and subsequently carrying out statistical analysis and data interpretation. Charts, graphs, scatter plots, histograms, among others and are also helpful for visually exploring data and statistics. The study sought to establish whether there exist a relationship between the banking performance and e-banking strategies in the Kenyan banking industry. Bank performance was measured by profit before tax (In billions Kshs) while e-banking strategy was measured by efficiency score. This is estimated by dividing total bank deposit holders with the number of bank's staff over the study period as shown in Figure 4.1

Figure 4.1: Scatter plot of profit and efficiency score

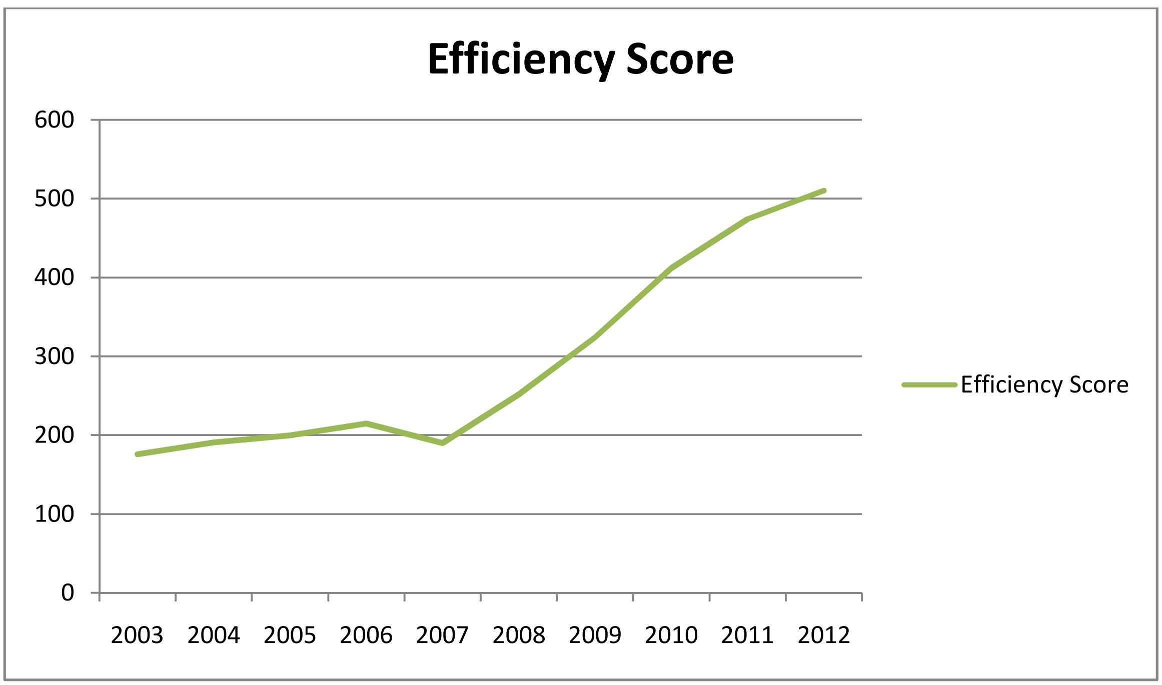


Source: Research Data

From Figure 4.1, the scatter plot of the variables profit and efficiency score above indicates correlation between profit and efficiency score, the points tend along a line going from the bottom left to the upper right, which implies that the correlation is positive. As one score increases, so does the other, indicating that as the efficiency score increases, we expect that the profit also increases.

The most notable impact of e-banking strategies which are leveraged on developments in information communications and technology on the banking sector has been improved efficiency. As more and more banking business processes are automated, banks are in a position to offer services to many customers using reduced human resources.

Figure 4.2: Efficiency score trend



Source: Research Data

Efficiency score, shown in Figure 4.2, indicates financial innovation achieved through implementation of e-banking strategies within the banking sector. The findings show that this has been increasing steadily since 2003 but declined in 2006 before increasing steadily from 2007 to 2012.

4.3 Inferential Statistics

4.3.1 Correlation

Correlations measure the strength and direction of the linear relationship between the two variables. The correlation coefficient can range from -1 to +1, with -1 indicating a perfect negative correlation, +1 indicating a perfect positive correlation, and 0 indicating no correlation at all. A variable correlated with itself will always have a correlation coefficient of 1. Correlation coefficient indicates the extent to which one can determine the value of one variable given a value of the other variable.

Table 4.1 : Correlation Matrix

	profit	intinc	es
profit	1.0000		
intinc	0.9758*	1.0000	
es	0.9779*	0.2429*	1.0000

* Significant at 5%

Table 4.1 presents the correlation matrix of the variables in levels. The table shows that there is positive correlation between profits and interest income (In billions Kshs) and efficiency score (e-banking). The Pearson correlation coefficient between profits and interest income (In billions Kshs) and efficiency score (e-banking) is 0.9758 and 0.9779 respectively. These correlation coefficients indicate strong power of the relationships between the associated variables and profit.

4.3.2 Regression analysis

This study used ordinary least squares (OLS), linear regression with profit before tax as the dependent variable and interest income and efficiency score as the independent variables. The Stata outputs analysis of variance (anova) results along with the regression results were as follows:

Table 4.2: Regression Output

Source	SS	df	MS		
				Number of obs	= 10
				F(2, 7)	= 180.47
Model	9383.07474	2	4691.53737	Prob > F	= 0.0000
Residual	181.96983	7	25.99569	R-squared	= 0.9810
				Adj R-squared	= 0.9755
Total	9565.04457	9	1062.78273	Root MSE	= 5.0986

profit	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
intinc	.2135748	.0707381	3.02	0.019	.0463057	.3808439
es	.1333186	.0409559	3.26	0.014	.0364732	.230164
cons	-15.15089	5.749652	-2.64	0.034	-28.74666	-1.555126

Top left of Table 4.2 is the ANOVA table, and bottom is regression results. The dependent variable here is profit before tax (profit) and the independent variables are interest income (intinc) and efficiency score (es) .The interest income is measured in shillings. The coefficients for interest income and efficiency score are shown in the coef. column, std. err. is the standard error, t is the t test statistics, P>|t| are the p values at 95% confidence interval. The results can be written in regression equation form as:

Predicted profit = -15.15089 + 0.2135748 intinc + 0.1333186 es

For each shilling increase in interest income, profits increase by 0.2135748, and it is statistically significant at 95% level. For each unit increase in efficiency score, profits increase by 0.1333186, and it is statistically significant at 95% level. The statistical significance is deduced through the p value: when it is less than 0.05, it is significant at 95% level.

Right top corner of Table 4.2 lists information associated with the ANOVA and the regression output. Total number of observations used for the analysis is 10, F test statistic with 2 numerator degrees of freedom and 7 denominator degrees of freedom is 180.47, and it is statistically significant at 95% level, because the p value is 0.0000. R squared was 0.9810, meaning about 98% of the variance in profit is explained by the model. Adjusted R squared takes the number of variables into account, it adjusts the value of the R squared by the ratio of the sample size to the number of variables it is found to be 0.9755. Root MSE is square root of the mean squared error (MS Residual in the anova table), and is the standard deviation of the error term, what is not explained by the model.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter discusses of summary of findings, conclusion, recommendations for policy and practice, limitation of the study and finally suggestions for further research

5.2 Summary

The findings from this study presented significant progress towards understanding the nature of E- banking strategies and its perceived impact on performance of commercial banks in Kenya. It has been shown that adoption of e-banking strategies had a positive impact on banks' profits. According to the established relationship between e-banking strategies and bank's profits, the findings agree with earlier findings that increasing implementation of e-banking strategies will result in the increase of the profits received by commercial banks in Kenya.

The robust information communications and technology platforms in the banking sector are supported by stable and efficient operating core banking systems. The commercial banks e-banking strategies are mainly driven by the capabilities of these core banking systems and other incorporated systems. The ability of these systems dictates the types of products and services the institution can offer and how efficiently those products and services will be offered to its customers. This has led to greater implementation of e-banking strategies which has resulted in diversification of banking products as well as greater efficiency in service delivery to their customers. E-banking strategies bring in returns and banks should put more emphasis on this in addition to interest income which is the bank's traditional main source of revenue.

5.3 Conclusion

The information communications and technology outlook for 2013 and beyond indicates that innovation in banking will continue to be embraced with the aim of achieving cost effective channels of offering banking products and services. Banks will hence continue to implement technologically driven banking strategies that are expected to re-engineer the processes of providing banking services in Kenya. In view of this, there are enormous opportunities in the economy to expand banking services to parts of the population that do not hold bank accounts, particularly in the rural areas. Banking institutions will need to cope with continuously changing business environments and a continuous flood of new requirements via robust information communications and technology platforms, while staying sufficiently agile.

The rapid pace of advancement in information communications and technology networking has offered a wide range of delivery channels in banking. With the advancement in technology, public awareness and increase in knowledge by customers, e-banking has evolved to become the preferred mode of banking rather than as an alternative channel. Customers are progressively requiring more efficient banking services and are becoming more discerning of the power that the technology brings. Banking institutions need to exploit the opportunities that arise from these developments to maintain competitiveness. The financial institutions that will succeed in the future will be those that are able to leverage most from the information communications and technology revolution. There is need to harness on the capability of information communications and technology in making strategic decisions. Attention at the highest management level is therefore vital in ensuring the formulation of the most appropriate information communications and technology strategies for banks to remain competitive.

5.4 Recommendation for Policy and Practice

Developments in information communications and technology bring with them certain risks which require proper mitigation. Therefore considering information communications and technology driven products, the oversight responsibility and management has been placed on the board of directors and senior management of the financial institutions to put in place appropriate and adequate controls in order to provide customer confidence on matters concerning discretion and reliability of banking services.
It is foreseen that these products will continue growing as the sector embraces innovation to improve provisions of banking products and services to their customers. There is expected rise in the number of transactions due to the automation of business processes;

this increases operational risks relating to processing, approval, dissemination and storage of information. This necessitates a change of policy on institutions' risk management framework as more effort is now required to ensure information is efficiently processed and data integrity and confidentiality is maintained.

The enhanced use of technology by financial institutions is increasingly becoming an area of focus for Central Bank of Kenya in ensuring a stable and efficient financial system. In order to carry on with its mandate effectively, it has aligned itself with the changing supervisory environment.

5.5 Limitation of the Study

The e-banking strategies in Kenya, as well as knowledge about use of information communications and technology innovations in the banking industry are at the infancy stage. At a time when rapid changes in new technologies are coming into the market, the results of the study may not be perfectly generalizable, especially to countries who adopted innovation in information communications and technology at different time period than that of Kenya. In addition, the measurement instrument for e-banking strategy, efficiency score, could be further refined to enhance its validity in future studies. Other studies including different measures of e-banking strategies could also lead to different results hence their impact on bank's performance may differ from this study.

5.5 Recommendation for Further Studies

As banking institutions expand into the region in search of growth opportunities in line with trends towards regional and economic integration. As foreign as well as Pan-African banking groups from South and West Africa target Kenya as their East and Central Africa regional hub, competition will become more aggressive. Diversification into other financial services such as insurance, securities and financial advisory services is also anticipated. This study can also be extended to these other financial markets in order to understand the implication of information communications and technology on the overall performance of financial markets in Kenya.

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APPENDICES

Appendix I: Data Request

As part of a research project that will be examining the impact of e-banking strategies on performance of commercial banks in Kenya. The following information shall be utilized in the study. Kindly provide the information as requested below.

1. Name of bank
2. Please provide statistics for the period indicated as specified below

	Number of account holders	Number of Staff	Interest Income	Profit before tax
2003				
2004				
2005				
2006				
2007				
2008				
2009				
2010				
2011				
2012				

Data provided will be treated with utmost confidentiality.

Appendix II: List of Commercial banks as at August 2013

1. African Banking Corporation Ltd
2. Bank of Africa Ltd
3. Bank of Baroda Ltd
4. Bank of India
5. Barclays Bank Ltd
6. CFC Stanbic Ltd
7. Charterhouse Bank Ltd
8. Chase Bank Ltd
9. Citibank N.A.
10. Commercial Bank of Africa Ltd
11. Consolidated Bank Ltd
12. Cooperative Bank of Kenya Ltd
13. Credit Bank Ltd
14. Development Bank Ltd
15. Diamond Trust Bank of Kenya Ltd
16. Dubai Bank Ltd
17. Eco-bank Ltd
18. Equatorial Commercial Bank Ltd
19. Equity Bank Ltd
20. Family Bank Ltd
21. Fidelity Bank Ltd
22. Fina Bank Ltd
23. First Community Bank Ltd
24. Giro Comercial Bank Ltd
25. Guardian Bank Ltd
26. Gulf African Bank Ltd
27. Habib A.G. Zurich
28. Habib Bank Ltd
29. I and M Bank Ltd
30. Imperial Bank Ltd

31. Jamii Bora Bank Ltd
32. Kenya Commercial Bank Ltd
33. K-Rep Bank Ltd
34. Middle East Bank Ltd
35. National Bank of Kenya Ltd
36. NIC Bank Ltd
37. Oriental Commercial Bank Ltd
38. Paramount Universal Bank Ltd
39. Prime Bank Ltd
40. Standard Chartered Bank Ltd
41. Transnational Bank Ltd
42. UBA Bank of Kenya Ltd
43. Victoria Commercial Bank Ltd

Source: Central Bank of Kenya Supervision Report (2013)