THE EFFECT OF ELECTRONIC BANKING ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

BY

HANNINGTON ODHIAMBO OGARE

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DECLARATION

This research project is my original work and has not been submitted for a degree award in any other university or college.

Signed:_____ Date:_____

Hannington Odhiambo Ogare

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

Signed:_____ Date:_____

Mr. Herrick Ondigo,
Lecturer,
Department of Finance and Accounting
School of Business,
University of Nairobi.

DEDICATION

In memory of my late parents, Mr. and Mrs Eli Ogare Adhiambo, my wife Emily Aketch Odhiambo and my children Harvey Eli Ogare Odhiambo and Laetitia Grace Yewa Odhiambo for their support and encouragement.

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LIST OF ABBREVIATIONS

ANOVA – Analysis of Variances

ATM – Automated Teller Machine

ASP - Application Service Providers

CBK- Central Bank of Kenya

EFT- Electronic Funds Transfer

E-Banking- Electronic Banking

ICT- Information, Communication Technology

IT- Information Technology

KEPSS- Kenya Electronic Payment and Settlement system

N.S.E - Nairobi Securities Exchange

PC- Personal Computer

POS - Point Of Sale

SMS- Short Message Service

TAT- Technology Acceptance Theory

TPB- Theory of Planned Behavior

TRA- Theory of Reason Action

TV - Television

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ABSTRACT

Electronic banking is the use of electronic and telecommunication networks to deliver a wide range of value added products and services to bank customers. E-business is therefore revolutionizing the way business is conducted in every industry and commercial banks are no exception to this transformation. Electronic banking services as an invention has proven to be a fundamental innovation in the Kenyan banking industry. It is against this background that this study investigated the relationship between e-banking and performance of commercial banks in Kenya. Specifically, the study was meant to establish whether there exists a relationship between the dependent variable, for example, performance measured by profit after tax and the independent variables consisting of number of ATMS, number of debits and credit cards issued to customers, number of point of sales terminals and the usage levels of Mobile banking, Internet banking and Electronic funds transfer, as components of e-banking.

The study used secondary data which was collected from the annual report of commercial banks and Central Bank of Kenya. The study used both descriptive and inferential statistics in analyzing the data.

The findings of the study were that e-banking has a strong and significant effect on the profitability of commercial banks in the Kenyan banking industry. Thus, there exists positive relationship between e-banking and bank performance. The significance test showed that the influence of bank innovations on bank profitability was statistically significant meaning that the combined effect of the bank innovations in this research is statistically significant in explaining the profits of commercial banks in Kenya.

The study recommends to the management of those banks that are slow in innovation adoption, to move in and adopt various innovations in their operations in order to shore up their profitability. This recommendation is well supported by the fact that highly profitable banks are mostly the fast movers in adoption of new technologies. It also recommends that the Government policy makers should review policies related to promotion of innovation adoption and transfer of technology. Adoption of innovations will improve profitability of organizations because it will translate to better tax revenues for the government.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Electronic banking is the use of electronic and telecommunication networks to deliver a wide range of value added products and services to bank customers (Steven, 2002). The use of information technology in banking operations is called electronic banking. Ovia, (2001) argued that Electronic banking is a product of e-commerce in the field of banking and financial services. Banks are also offering payment services on behalf of their customers who shop in different e-shops. It is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution, (FinCen, 2000).

Today's business environment is extremely dynamic and experience rapid changes as a result of technological improvement, increased awareness and demands that banks serve their customers electronically. Banks have traditionally been in the forefront of harnessing technology to improve their products and services. The Banking industry of the 21st century operates in a complex and competitive environment characterised by these changing conditions and highly unpredictable economic climate. Information and Communication Technology (ICT) is at the centre of this global change curve of Electronic Banking System in Kenya today. Managers in the banking industry in Kenya cannot ignore Information Systems because they play a critical impact in current Banking system by pointing out that the entire cash flow of most banks are linked to Information Systems.

Kalakota and Winston (2009) arguably indicated that e-payment systems are becoming central to online business process innovation, as companies look for ways to serve customers faster and at lower cost. In line with this, Chhabra (2009) suggested that electronic payment systems are being used in air ticketing, insurance, banking, retail, health care, online markets and even governments - in fact, everywhere money needs to change hands. There are many evident advantages of an electronic mode of transfer compared to the conventional clearing house, because banks are increasingly turning to technology for managing their payments (Kumar 2009). Some of the value attributes include secure payments, cost cutting, payment on due date and easier cash management compared to conventional systems. They have invested huge

amounts of money, in implementing the self-banking services with the objective of improving the quality of customer service. The development of e-banking services is expected to decongest banking halls and reduce the incidences of long queues in banking halls. ICT –based financial services have made a significant contribution in reducing the cost of offering financial services (CBK 2009).

The payment industry in Kenya has over the last few years been transformed with the new wave of IT advancements. Currently the use of cash has been replaced by digital cash and digital wallets. It can be rightly said that this is the fourth stage of evolution after Barter, Currency, Paper money (Cheques) and now digital cash. From the reports of Central Bank of Kenya (CBK), Kenyan banks have exponentially embraced the use of information and communication technologies in the provision of banking services which has enhanced the application of e-payments. The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concern to all banks and indeed a prerequisite for local and global competitiveness banking. The advancement in technology has played an important role in improving service delivery standards in the banking industry. In its simplest form, Automated Teller Machines (ATMs) and deposit machines now allow consumers carry out banking transactions beyond banking hours. (CBK annual report, 2012)

1.1.1 Electronic Banking

E-banking is the use of electronic means to deliver banking services, mainly through the Internet. The term is also used to refer to ATMs, telephone banking, use of plastic money, mobile phone banking and electronic funds transfers. Electronic Banking offers different online services like balance enquiry, request for cheque books, recording stop payment instructions, balance transfer instructions, account opening and other form of transitional Banking services. With online banking, individuals can check their account balances and make payments without having to go to the banking halls. This is gradually creating a cashless society where consumers no longer have to pay for all their purchases with hard cash. For example: bank customers can pay for airline tickets and subscribe to initial public offerings by transferring the money directly from their accounts, or pay for various goods and services by electronic transfers of credit to the sellers

account. E-Banking has made banking transactions easier around the World and it is fast gaining acceptance in Kenya. Virtually almost all Banks in Kenya have Electronic Banking. E-Banking's greatest promise is timelier, more valuable information accessible to more people, at reduced cost of information access (DeYoung , 2005).

Common embodiments of e-banking include the following: Mobile/SMS Banking, Telephone Banking, Electronic funds transfers, Self Service (PC) Banking, POS Banking (Credit and Debit cards), ATMs, Interactive TV and Branchless Banking. In Kenya, for example, we have M-Shwari which is offered by Commercial Bank of Africa in conjunction with Safaricom Kenya Limited. M-Shwari is the revolutionary new banking product for M-PESA customers that allow one to save and borrow money through the phone while earning interest on money saved. With M-Shwari, one is entitled to affordable emergency loans. This is a paperless banking service offered through M-PESA that will enable a customer open and operate an M-Shwari bank account through a mobile phone, through M-PESA, without having to visit any bank to fill out bank account opening forms. It provides the ability to move money in and out of an M-Shwari savings account to an M-PESA account at no charge. It also gives an opportunity to save as little as Ksh.1 and earn interest on the saving balance and the cash is moved into the savings account using a handset via the M-PESA Menu. It enables access micro credit product (loan) of a minimum of Ksh.100 anytime and receive a loan instantly on an M-PESA account (CBK, 2012).

Another form of E-Banking in Kenya is Eazzy 247 offered by Equity Bank of Kenya. This is a mobile banking service that allows one to access to bank services using a mobile phone. Eazzy 247 access is available through all the mobile telephone companies namely, Safaricom, Orange, YU, Airtel & MTN . Equity Bank of Kenya limited also has M-KESHO which is a Bank Account enabling send money/Funds transfer between the bank account (M-KESHO) & M-PESA system (Deposit & Withdrawal).There is also Straight to Bank (S2B) offered by Standard Chartered Bank of Kenya which allows one-stop online Banking and Cash management solution. With S2B, customers enjoy control and convenience of managing their own cash flow without having to step out of their doors. SME Straight 2 Bank is a cash management solution which uses online banking as a platform to give you more convenience by performing the following tasks online: Checking balances, Payroll, Direct Debits, Direct Credits, Payments of Utilities, taxes

(URA), NSSF, Telegraphic transfers. In Kenya, there is also the Hello Money offered by Barclays Bank of Kenya among other forms of electronic banking offered by commercial banks in Kenya (CBK annual report, 2012)

1.1.2 Financial Performance

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. Some useful measures of financial performance are coined into what is referred to as CAMEL. The acronym "CAMEL" refers to the five components of a bank's condition that are assessed: Capital adequacy, Asset quality, Management, Earnings, and Liquidity. A sixth component, a bank's Sensitivity to market risk was added in 1997; hence the acronym was changed to CAMELS, (Gilbert, Meyer and Vaughan 2000).

One of the benefits banks derive from electronic banking products and services delivery is improved efficiency and effectiveness of their operations so that more transactions can be processed faster and most conveniently, which will undoubtedly impact significantly on the overall performance of the banks. Despite the potential benefits of ICT and e-commerce, there is debate about whether and how their adoption improves bank performance. Use of and investment in ICT requires complementary investments in skills, organization and innovation and investment and change entails risks and costs as well as bringing potential benefits. There are positive impacts of e-banking on bank turnover and profitability and to a lesser extent on employment, most notably when e-commerce is part of larger business strategies of bank. The use of e-banking can contribute to improved bank performance, in terms of increased market share, expanded product range, customized products and better response to client demand. E-banking continues to influence banks activities and their income structure. Among the activities that may be subject to stronger pressures for change are those that, up to today, have remained relatively insulated from ICT developments. This applies mainly to some retail banking activities that are suitable for standardization, and also to developments in remote banking (Kariuki, 2005).

1.1.3 Effect of E-Banking on Financial Performance of Commercial Banks

Commercial banks assaulted by the pressure of globalization and competition from non-banking functions must find new ways to add value to the services. The question "what drives performance?" is at the top in understanding superior performance and hence striving for it. Substantial research efforts have gone into addressing this question, starting from the strategic level and going down to operational details. Customers in developing economies seems to keep the "technological factors" of services as the yardstick in differentiating good & bad services and the human factor – the employees seem to play a lesser role in discriminating the quality of service for banks. The variation in services offered by the banks develops the excellence for service quality. Banking is no longer regarded as a business dealing with money transaction alone, but it also seem as a business related to information on financial transaction (Padwal 1995). As electronic banking is becoming more prevalent, so level of customer satisfaction is also changing the scenario of technological environment. Informational technology in form of e-banking plays a significant role in providing better services at lower cost. Several innovative IT based services such as Automated Teller Machines (ATM), Internet banking, Smart cards, Credit Cards, Mobile banking, Phone banking, Anywhere-Anytime banking have provided a number of convenient services to the customer so as the service quality improves, the probability of customer satisfaction increases. Increase in customer satisfaction in turn increases the mutual understanding, customer retention and a bond of trust between the customer and bank. The banks which are providing these services at large extent to customers are more reputed in the eyes of customers. But at the same time technology based product is different in public and private sector banks.

E-banking is an improvement over traditional banking system because it has reduced the cost of transaction processing, improved the payment efficiency, financial services and the banker-customer relationship. The relationship between e-banking and service quality can be studied with the level of satisfaction. The customer satisfaction is the function of customer expectation level and service quality level provided by the organization. E-banking plays a pivotal role in giving satisfaction to the customers because e-banking fills the gap between the expected and perceived service quality. So in order to fill this gap, banks should find ways of making electronic services more accessible and by allowing the customer to verify the accuracy of the e-banking transactions. On the whole we can say that e-banking has become pre-imminent method of carrying the banking transaction and increase the

customer satisfaction (Sathye, 1999).

1.1.4 Banking Industry in Kenya

According to the Central Bank of Kenya annual report as at 31st December 2012, the banking sector consisted of the Central Bank of Kenya, as the regulatory authority, 44 banking institutions (43 commercial banks and 1 mortgage finance company -MFC), 5 representative offices of foreign banks, 8 Deposit-Taking Microfinance Institutions (DTMs), 2 Credit Reference Bureaus (CRBs) and 112 Forex Bureaus. Out of the 44 banking institutions, 31 locally owned banks comprise 3 with public shareholding and 28 privately owned while 13 are foreign owned. The 8 DTMs, 2 CRBs and 112 forex bureaus are privately owned. The foreign owned financial institutions comprise of 9 locally incorporated foreign banks and 4 branches of foreign incorporated banks. As indicated in the CBK reports, local banks dominate Kenyan banking sector in terms of numbers, and account for 66.6% of the sectors total net assets, while foreign owned banks account for 33.4%. Banks in Kenya have exponentially embraced the use of information and Communication Technologies both in their service provision and as a strategy to ensure their survival. They have invested huge amounts in implementing the self and virtual banking services with the objective of improving quality of customer service.

Some ICT based products and services include introduction of SMS banking, ATM's, Anywhere banking softwares, core banking solutions, Electronic clearing system and direct debit among others. In mid 2005, Kenya's banking industry moved a milestone by introducing RTGS which was renamed Kenya Electronic Payment and Settlement system (KEPSS). In October, 2009, Value Capping was introduced. This was meant to decongest banking halls and reduce long queues. Digital-based financial services have made significant contribution in covering the cost of offering financial services. As the banking fraternity continues to make forays into the retail segment of the market, it is becoming more paramount that customers must be given value for their hard earned deposits (Market intelligence, 2005). The Kenyan banking industry has been embracing the new technology in order to fulfil the dreams of their customers and to create healthy competition. The new banking environment is about differentiating banking products, increased choices, security and accessibility. The ability of financial Institution to deliver

products and services in the most efficient and effective manner, will therefore be the key to performance and relevance. In Kenya, majority of banks have introduced e-payment facilities, Internet banking and mobile banking to enhance delivery channels to their customers. Kumar (2009) argues that there are many evident advantages of an electronic mode of transfer compared to the conventional clearing house, because of which banks are increasingly turning to technology for managing their payments. These include but are not limited to Secured payments.

1.2. Research Problem

In line with rendering quality and acceptable services, most Banks in Kenya are gearing toward investing large sum of money in Information and Communication Technology. Expectedly such Banks services have been improved. Equity Bank of Kenya, Standard Chartered Bank of Kenya, Kenya Commercial Bank, Commercial Bank of Kenya,(to mention few) are in the forefront in the use of IT in rendering services to their Customers . They also seek the challenges involved in Electronic Banking and best industrial practice and the approach of implementing them in the Kenyan Banking system. While the rapid development of information technology has made some banking tasks more efficient and cheaper, technological investments are taking a larger share of bank's resources. Currently, apart from personnel costs, technology is usually the biggest item in the budget of a bank, and the fastest growing one. Another problem associated with this financial innovation is plastic card fraud, particularly on lost and stolen cards and counterfeit card fraud. Banks need to manage costs and risks associated with electronic banking. It is therefore important that e-banking innovations are made through sound analysis of risks and costs associated so as to avoid harms on the bank performance, (Davenport 2003). On one hand the bank performance is directly related to efficiency and effectiveness of electronic banking, but on the other tight controls and standards are needed to prevent losses associated with electronic banking. The banks have to balance these two options in order not to impair its overall prosperity. This is only possible if overall effects of electronic banking on the banks and its customers are understood.

Despite the potential benefits of ICT and e-commerce, there is debate about whether and how their adoption improves bank performance. Several attempts have been made to investigate the impact of electronic banking on bank performance. A research carried out by Kariuki (2005)

showed the positive impacts of ICT on their banking performance using bank turnover and profits as measure of performance. He established that those banks with high profit growth are more likely to be using greater numbers of advanced ICTs. He concluded that e-banking leads to higher profits though in long-term but not in short-term due to high ICT investment cost. All this studies used profit and turnover as measures of bank performance. A cording to Davenport (2003) and Oshikoya (2007) suggest that use of and investment in ICT requires complementary investments in skills, organization and innovation, investment and change entails risks and costs which might reduce bank profits in shorter term. Hence there is need to use some non-financial performance measures such as efficiency and effectiveness to assess the impact of ICT investment on banking performance. This is the gap that will seek to be addressed in this study.

Regardless of the importance of e-banking in explaining banking performance, the impact of e-banking on banks performance, is still misunderstood for two main reasons; first, there is a lack of understanding about the drivers of innovation and secondly innovation's impact on bank's performance remains untested Mabrouk & Mamoghli (2010). Previous reseachers like Pooja and Singh (2009), Francesca and Claeys (2010), Batiz- Lazo and Woldesenbet (2006) and Mwania and Muganda (2011) have produced mixed results regarding the impact of innovations on bank performance. Pooja and Singh (2009), in their studies they concluded that innovations had least impact on bank performance, while Batiz-Lazo and Woldesenbet (2006) and Mwania and Muganda (2011) concluded that financial innovation had significant contribution to bank performance. It is at the center of such mixed conclusions that creates and necessitates the need to carry out a study from a Kenyan context to establish the effect of E-Banking on commercial banks performance. The study will address the following research question: What is the effect of electronic banking on financial performance of commercial banks in Kenya?

1.3 Objective of the study

To establish the effect of electronic banking on the financial performance of Commercial Banks in Kenya.

1.4 Value of the Study

This study will be of great importance to:

Banking Industry

The recommendations and findings of this study will assist commercial banks in Kenya identify and monitor challenges facing electronic banking adoption and also evaluate the development and growth of Electronic banking. In addition, banks will have the knowledge of electronic banking as a product of electronic commerce with a view to making strategic decisions.

Academia

Academicians will also benefit from this research work since it will suggest possible solutions and strategies to the problems in electronic banking and have thorough knowledge of electronic banking.

Policy Makers

The study will also contribute to the body of knowledge and to additional information in the banking industry. Scholars will use the study for reference and research based on findings of study. Thus, the study will bring out the differences arising from different environmental and organizational factors unique to the bank relevant for successful E-banking.

CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction

This section discusses literature on electronic banking theories and empirical findings on the effect of electronic banking on the financial performance of commercial banks.

2.2. Theoretical Review

This section provides an overview of information system adoption, factors determining customers' acceptance of e-banking and introduces the concept of customer loyalty. All the adoption models like TAM, TPB and TRA were developed for studying technology adoption in developed countries; however, technology adoption in developed countries might be different from those of developing countries as the challenges are different in various contexts (Molla and Licker, 2005).

2.2.1 Technology Acceptance Theory

Davis, Bagozzi, and Warshaw (1989) proposes TAT to explain the conceptual model that users' intention or acceptance degree towards information system or new technology. TAT is constructed on the foundations of perceived usefulness and perceived ease of use. Perceived usefulness refers to individual belief to improve the degree of job performance through using particular new technology and information system. Perceived ease of use indicates how easy an individual learns how to operate or use new technology or information system (Davis et al., 1989; Gefen et al., 2003). The model places more emphasis on how perceived ease of use would positively affect perceived usefulness. Exogenous variables such as environment are also the antecedent that induces perceived usefulness and perceived ease of use. Thus, TAT is based on both important perceptive factors as perceived usefulness and perceived ease of use. TAT is widely applied on the research of information technology. Liu and Arnett (2000) examined the significant variables to build a successful website based on TAT theory. Gefen et al. (2003) combined TAT and rust to propose an integrated model for explaining online consumer behavior. Pavlou (2003) proposes e-commerce acceptance model of online consumers by separating and applying experiment designs and survey.

Follow-up studies such as Horst, Kuttschreuter and Guttering (2007) discusses whether or not the government of Netherlands should serve the public with electronic government like other countries do. The study integrates TAT factors, the experiences of the public, perceived risk and faith. The empirical results show that the principle of e-government is that people fully trust the governmental organization and that they highly identify with information technology. As a result of the empirical study, scholars find that TAT does not only apply to examine new information technology accept intention or behavior, but also ensures that TAT is suitable for the explanation of online user behavior issues (Liu and Arnett, 2000; Gefen et al., 2003; Pavlou, 2003;Horst et al., 2007).

2.2.2. Theory of Planned Behavior

Early studies mainly focus on theory of reason action (TRA) as identified by (Fishbein and Ajzen, 1975).TRA is based on the fundamental variables of attitude and subjective norm. The two variables are seen to have a positive effect on individuals' behavioral intentions, which positively induce individuals' actual action. Attitude is an individual's positive or negative evaluation of self-performance of a particular behavior. The concept is the degree to which performance of the behavior is positively or negatively valued. Subjective norm is an individual's perception about particular behavior, which is influenced by the judgment of significant others (e.g., parents, spouse, friends, teachers). Behavioral intention is an indication of an individual's readiness to perform a given behavior and it is assumed to be immediate antecedent of behavior. However, the basic hypothesis of TRA states that the occurrence of behavior is based on volitional control of one's willpower (Fishbein and Ajzen, 1975). Thus, the behavior occurs mostly from one's willing. Thus, Ajzen (1985) modifies TRA and further proposes the theory of planned behavior (TPB). Ajzen (1985) proposes TPB to explain and predict human behavior patterns. TPB extends the theoretical framework of TRA and adds perceived behavioral control to account for individuals' uncontrollable factors.

TPB is founded on the three factors as perceived behavioral control, attitude, and subjective norms. Hence, behavioral intention is influenced by perceived behavioral control, attitude, and subjective norms. Actual behavior is, in turn, determined by behavioral intention. Among all, perceived behavioral control refers to individual's perceived ease or difficulty of performing

the particular behaviors. In recent years, the use of internet has been widespread and has been more diversified. Studies on TPB applying on electronic commerce have increased. Tan and Teo (2000) integrate TPB and diffusion of innovation theory to investigate the factors that affect people's intention towards using internet. Empirical results show that attitude and perceived behavior control would positively affect people's intention to use internet banking. In the subsequent studies, Huanget al. (2006) find that TPB indeed can explain the people's behavioral intention of on-line tax filing. Hsu et al. (2006) review users' continual behavior towards internet shopping by longitudinal investigation, which not only employ TPB factors (attitude, subject norms and perceived behavior control) but also integrate expectation disconfirmation theory to construct the research model. The empirical results show that subjective norms, attitude, and perceived behavior control are the major factors affecting consumers' continuous intention of internet shopping. In addition, equity concept which is respected by accounting scholars (Jackson and Milliron, 1986; Moser et al., 1995; Efebera et al., 2004) is also omitted in the pre-factors. To sum up, the empirical results of the above-mentioned literatures prove that TPB could be applied to explain the behavioral process of human being engaged in or accepted information technology.

2.2.3. The Theory of Reasoned Action

The Theory of Reasoned Action (TRA) which was formulated in 1975 by Fishbein and Ajzen has been used extensively in marketing research. TRA has been applied to explain the behaviour beyond the acceptance of technology and includes four general concepts: behavioural attitudes, subjective norms, intention to use and actual use. It argues that individuals evaluate the consequences of a particular behaviour and create intentions to act that are consistent with their evaluations. More specifically, TRA states that individuals' behaviour can be predicted from their intentions, which can be predicted from their attitudes and subjective norms. Following the chain of prediction further back, attitudes can be predicted from an individual's beliefs about the consequences of the behaviour. Subjective norms can be predicted by knowing how significant other individuals think the behaviour should or should not be done. A particularly helpful aspect of TRA from a technology perspective is its assertion that any other factors that influence behaviour do so only indirectly by influencing attitude and subjective norms. Such variables would include, amongst others

things, the system design characteristics, user characteristics (including cognitive styles and other personality variables) and task characteristics. Hence, TRA is quite appropriate in the context of predicting the behaviour of using multimedia technology. Although TRA, is a very general theory and as such does not specify what specific beliefs would be pertinent in particular situations. Nevertheless, the inclusion of subjective norm represents an important variable, which is not even included in more popular models.

2.3. Measures of E-Banking and Financial Performance

E-banking is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution. The following are the indicators of e-banking when used by customers and commercial banks: personal computer (PC) banking, Internet banking, virtual banking, online banking, home banking, remote electronic banking, and phone banking. PC banking and Internet or online banking are the most frequently used designations.

The Basle Committee on Banking Supervision of the Bank of International Settlements (BIS) has recommended using capital adequacy, assets quality, management quality, earnings and liquidity (CAMEL) as criteria for assessment of financial performance (ADB 2002). The sixth component, market risk (S) was added to CAMEL in 1997 (Gilbert, Meyer and Vaughan 2000). CAMELS framework is a common method for evaluating the soundness of financial institutions including commercial banks. This system was developed by regulatory authorities of the U.S banks. The Federal Reserve Bank, the Comptroller of the Currency and the Federal Deposit Insurance Corporation all use this system (McNally 1996). Monetary authorities in most of the countries are using this system to check up the health of an individual financial institution. CAMELS framework system looks at six major aspects of a financial institution: capital adequacy, asset quality, management soundness, earnings, liquidity, and sensitivity to market risk (Hilbers, Krueger and Moretti 2000).

2.3.1 Capital Adequacy

Capital adequacy ultimately determines how well commercial banks shocks to their balance sheets. Thus, it tracks capital adequacy ratios that take into account the most important financial risks, foreign exchange, credit, and interest rate risks by assigning risk weightings to the institution's assets. Leverage ratio can be used to measure the capital adequacy of a bank. This is the ratio of bank's book value of capital to the book value of its assets. The higher ratio shows the higher level of capital adequacy. The leverage ratio stated in the foregoing discussion is simple capital to assets ratio. In other words, assets are not risk adjusted. The 1993 Basel Accord enforced the capital ratio to risk adjusted assets of commercial banks. According to this accord, capital must equal to or exceed 4 percent of the risk weighted assets of the commercial banks.

2.3.2 Asset Quality

Credit risk is one of the factors that affect the health of an individual commercial bank. The credit risk depends on the quality of assets held by an individual commercial bank. The quality of assets held by a commercial bank depends on exposure to specific risks, trends in non-performing loans, and the health and profitability of bank borrowers especially the corporate sector. We can use a number of measures to indicate the quality of assets held by commercial banks. ADB suggests these measures—loan concentration by industry, region, borrower and portfolio quality; related party policies and exposure on outstanding loan, approval process of loan, check and balance of loans; loan loss provision ratio; portfolio in arrear; loan loss ratio; and reserve ratio-of checking the quality of assets of a commercial bank (ADB 2002).

2.3.3 Management Quality

Sound management is key to bank performance but is difficult to measure. It is primarily a qualitative factor applicable to individual institutions. Several indicators, however, can jointly serve as an indicator of management soundness. Expenses ratio, earning per employee, cost per loan, average loan size and cost per unit of money lent can be used as a proxy of the management quality. ADB recommends cost per unit of money lent as a proxy of management quality. But this can not be used as an indicator of management quality l. Since the data on

amount of the total loan mobilized during a particular financial year is not available in published financial statements and annual reports.

2.3.4 Earning Performance

Earning capacity or profitability keeps up the sound health of a commercial bank. Chronically unprofitable commercial bank risks insolvency on one hand and on the others, unusually high profitability can reflect excessive risk taking of a commercial bank. There are different indicators of profitability. Return on assets, return on equity, interest-spread ratio, earning-spread ratio, gross margin. Commercial Banks operating profit margin and net profit margin are commonly used profitability indicators.

2.3.5 Liquidity

Liquidity risk threats the solvency of financial institutions. In the case of commercial banks, first type of liquidity risk arises when depositors of commercial banks seek to withdraw their money and the second type does when commitment holders want to exercise the commitments recorded off the balance sheet. Commercial banks have to borrow the additional funds or sell the assets at fire sale price to pay off the deposit liabilities. They become insolvent if sale price of the assets are not enough to meet the liability withdrawals. The second type of liquidity risk arises when demand for unexpected loans can not be met due to the lack of the funds. Commercial banks can raise the funds by running down their cash assets, borrowing additional funds in the money markets and selling off other assets at distressed price. Both liability side liquidity risk (first type risk) and asset side liquidity risk (second type risk) affect the financial performance of commercial banks adversely. But maintaining the high liquidity position to minimize such risks also adversely affects the profitability of FIs. Return on highly liquid assets is almost zero. Therefore, financial institutions should strike the trade-off between liquidity position and profitability so that they could maintain their health sound. Commercial bank's liquidity exposure can be measured by analyzing the sources and uses of liquidity. In this approach, total net liquidity is worked out by deducting the total of uses of liquidity from the total of sources of liquidity. In addition, different liquidity exposure ratios such as borrowed funds to total assets, core deposit to total assets, loans to deposits, and commitments

to lend to total assets are used to measure the liquidity position of a commercial bank (Saunders and Cornett 2004).

2.3.6 Sensitivity to Market Risk

Commercial banks are increasingly involved in diversified operations such as lending and borrowing, transaction in foreign exchange and selling off assets pledged for securities . All these are subject to market risk like interest rate risk, foreign exchange rate risk, and financial asset and commodity price risk. The health of a commercial bank is more sensitive to market risk is more hazardous than that of less sensitive. Foreign exchange risk, interest rate risk, equity price risk, and commodity price risk are the indicators of sensitivity to market risk.

2.4. Empirical Studies

Several studies indicate that online bankers are the most profitable and wealthiest segment to banks (Robinson, 2000, Nyangosi, 2006). Electronic banking thus offers many benefits to banks as well as to customers. However, in global terms the majority of private bankers are still not using electronic banking channel. There exist multiple reasons for this. Foremost, customers need to have an access to the internet in order to utilize the service. Furthermore, new online users need first to learn how to use the service .Secondly, nonusers often complain that electronic banking has no social dimension, i.e. you are not served in the way you are in a face-to-face situation at branch (Mattila et al., 2003). Finally, customers have been afraid of security issues (Sathye, 1999). However, this situation is changing as the electronic banking channel has proven to be safe to use and no misuse has been reported by the media in Finland. E-banking continues to influence banks activities and their income structure. Among the activities that may be subject to stronger pressures for change are those that, up to today, have remained relatively insulated from ICT developments. This applies mainly to some retail banking activities that are suitable for standardization, and also to developments in remote banking (Kariuki, 2005).

Simpson (2002) suggests that e-banking is driven largely by the prospects of operating costs minimization and operating revenues maximization. A comparison of online banking in developed and emerging markets revealed that in developed markets lower costs and higher

revenues are more noticeable. While Sullivan and Richard (2000) finds no systematic evidence of a benefit of internet banking in USA brick and mortar banks. Furst et al; (2002) found that federally chartered USA banks had higher Return on Equity (ROE) by using the click and mortar business model. They also examined the determinants of internet banking adoption and observed that more profitable banks adopted internet banking after 1998 but yet they were not the first movers. Jayawardhena (2000) showed that internet banking results in cost and efficiency gains for banks yet very few banks were using it and only a little more than half a million customers were online in U.K. Nader (2011) analyzed the profit efficiency of the Saudi Arabia Commercial banks during the period 1998- 2007. The results of his study indicated that availability of phone banking, number of ATMs and number of branches had a positive effect on profit efficiency of Saudi banks. On the contrary he found that the number of point of sale terminals (POSs), availability of PC banking and availability of mobile banking did not improve profit efficiency.

Kariuki (2005), in his research paper titled, "Six Puzzles in Electronic Money and Banking", showed the positive impacts of ICT on their banking performance using bank turnover and profits as measure of performance. He established that banks with high profit growth are more likely to be using greater numbers of advanced ICTs. He concluded that e-banking leads to higher profits though in long-term but not in short-term due to high ICT investment cost. Further he provides evidence that the use of e-banking can contribute to improved bank performance, in terms of increased market share, expanded product range, customized products and better response to client demand. Kariuki (2012), in his research on the effect of product development on the Financial performance of commercial banks in Kenya concluded that new product development impacted positively on financial performance of banks in Kenya, however the same was not statistically significant. Yegon (2012) in his study on the impact of ICT investments on organisational performance at the Kenya Commercial Bank group limited concluded that the relationship was not very strong.

Agboola (2006), in his study on Information and Communication Technology (ICT) in Banking operations in Nigeria using the nature and degree of adoption of innovative technologies; degree of utilization of the identified technologies; and the impact of the

adoption of ICT devices on banks, found out that technology was the main driving force of competition in the banking industry. During his study he witnessed increase in the adoption of ATMs, EFT, smart cards, electronic home and office banking and telephone banking. He indicates that adoption of ICT improves the banks' image and leads to a wider, faster and more efficient market. He asserts that it is imperative for bank management to intensify investment in ICT products to facilitate speed, convenience, and accurate services, or otherwise lose out to their competitors.

Sushanta et al;(2006) studied the impact of information technology on the banking industry. They analyzed both theoretically and empirically how information technology and it's related products such as are internet banking, electronic payments, security investments and information exchanges impact the banks performances. Berger et al; (2003) related how banks spending can affect bank profits via competition in financial services that are offered by the banks. Using a panel of 68 US banks for a period of over 20 years to estimate the impact of IT on profitability of banks, they found out that though IT might lead to cost saving, higher IT spending can create network effects lowering bank profits. They further contend that the relationship between IT expenditures and bank's financial performance is conditional to the extent of network effect. They say that if network effect is too low, IT expenditures are likely to reduce payroll expenses, increase market share, and increase revenue and profit.

Hernando and Nieto (2006) while studying whether internet delivery channels change bank's performance, they found out that adoption of internet as a delivery channel involved gradual reduction in overhead expenses (particularly, staff, marketing and IT) which translates to an improvement in banks´ profitability. The study also indicates that internet is used as a complement to, rather than a substitute for, physical branches. The profitability gains associated with the adoption of a transactional web site are mainly explained by a significant reduction in overhead expenses. This effect is gradual, becoming significant eighteen months after adoption and reaching a maximum generally two and a half years after adoption. Their study showed that multichannel banks present statistically significant evidence of efficiency gains, that is, reduction in general expenses per unit of output. Banks would further profit

from cost reductions to the extent that the Internet delivery channel functions as a substitute for traditional distribution channels. Their analysis shows that this effect varies over time and explains, in terms of cost and income structure, the main drivers of better performance.

Cheruiyot (2010), in his study titled," Impact of internet banking on Financial Performance of Commercial Banks in Kenya", found that internet banks are larger banks and have better operating efficiency ratios and profitability as compared to non-internet banks. Internet banks rely more heavily on core deposits for funding than non-internet banks do. However, the multiple regression results reveal that profitability and offering internet banking does have a small significant association (less than 5%), larger significant and negative association with risk profile of the banks (more than 10%) meaning that internet based banks become better off from risks such as non-performing loans. However, the advantage expected of internet banking is yet to show some significant positive financial gains but begs for future investigation beyond financial measures used in the study as technology continues to penetrate the market.

Mabrouk and Mamoghli (2010) in their study on Dynamics of Financial Innovation and Performance of Banking Firms: Context of an Emerging Banking Industry, analyzed the effect of the adoption of two types of financial innovations namely; product innovation (telephone banking and SMS banking and so on) and process innovation (Magnetic strip card (debit, ATM and credit card), Automatic cash dispenser; (Automatic teller machine; Electronic payment terminal and so on) on the performance of banks. Their analysis included two adoption behaviours, first mover in adoption of the financial innovation and imitator of the first movers. They found out that first mover initiative in product innovation improves profitability while process initiative has a positive effect on profitability and efficiency. Banks that imitate are less profitable and less efficient than first movers.

Osage (2012) in his study on electronic banking adoption by Kenyan Commercial banks concluded that while adoption of electronic banking was beneficial, it was affected by factors such as availability of services 24/7, quickened transactions and customer convenience. Pikkarainen et al (2004) in their work on consumer acceptance of online banking found two

fundamental reasons underlying online banking development and diffusion. First, banks get notable cost savings by offering online banking services. It has been proved that online banking channel is the cheapest delivery channel for banking products once established (Sathye, 1999; Robinson, 2000; Giglio, 2002). Secondly, banks have reduced their branch networks and downsized the number of service staff, which has paved the way to self-service channels as quite many customers felt that branch banking took too much time and effort (Karjaluoto et al., 2003). Therefore, time and cost savings and freedom from place have been found the main reasons underlying online banking acceptance.

2.5 Summary of Literature Review

Internet Banking is of quite eminence to customers and banks because it gives great advantages to the customer and the bank. Customers have found doing business online simple and speedy and have become very comfortable with the arrangement. Internet banking gives people more control over their money in a very convenient way that they find enjoyable and reassuring. However it comes with its own risks and responsibilities. It requires thought and caution, but it can be done.

The findings from many researches show that E-Banking has become a necessary survival weapon and is fundamentally changing the banking industry worldwide. Today, the click of a mouse offers bank customers services at a much lower cost and also empowers them with unprecedented freedom in choosing vendors for their financial service needs. No country today has a choice-whether to implement E-banking or not given the global and competitive nature of the economy. Banks have to upgrade and constantly think of new innovative customized packages and services to remain competitive. The findings show that Kenyan commercial banks do not invest in internet banking with a sole objective of making high incomes from the service. Internet banking in Kenya is mainly used as a compliment of other service delivery channels in order to create convenience to the customers. Internet banking is also used as a competitiveness tool in order to attract and retain mainly the corporate clients. In view of the overall findings, the research question for this study will therefore be whether e- banking improves the banks performance in terms of non financial measures which include efficiency and effectiveness.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains the methodology that was used to conduct the research. It describes the research design, the population, sample, data collection and how the data analysis was done.

3.2 Research Design

This study used descriptive survey research design. Lavrakas (2008) describes a descriptive survey research design as a systematic research method for collecting data from a representative sample of individuals using instruments composed of closed-ended and/or open-ended questions, observations, and interviews. It is one of the most widely used non-experimental research designs across disciplines to collect large amounts of survey data from a representative sample of individuals sampled from the targeted population.

3.3 Population

According to Mugenda and Mugenda (1999), a population is a complete set of individuals, cases or objects with some common observable characteristics. The target population comprises all commercial banks in Kenya and hence was a census. More specifically the target population was forty four (44) commercial banks (Appendix 1).

3.4 Data Collection

The type of data collected was secondary data obtained from the Central Bank of Kenya and the profit after tax from audited financial statements of commercial banks for the period 2008 to 2012.

3.5 Data Analysis

The study used both descriptive and inferential statistics in analyzing the data. Analysis was done with the help of Statistical Package for Social Scientists (SPSS).

First, data collected was cleaned, sorted and collated. Then, data was entered into the computer, after which analysis was done. Descriptive statistics such as mean score, frequencies and percentages for each variable was calculated and tabulated using frequency distribution tables, or pie charts and/or bar charts. In order to test the relationship between the variables the inferential tests including the Pearson Product-Moment Correlation Coefficient and regression analysis was used.

3.5.1 Analytical Model

The regression model that was evaluated was represented as follows:

$Y_i = \alpha_{0+} \beta_1 DC_i + \beta_2 ATM_i + \beta_3 POS_i + \beta_4 MIEi + \varepsilon_t$

Where:

Y_i is financial performance represented by profitability (net profit)

DC is number of debit/credit cards issued by banks

ATMS is the number of ATMS systems install by the banks

POS is the number of point of sale terminals.

MIE is the usage levels of Mobile banking, Internet banking and Electronic funds transfer.

α_0 = Estimated value of Y when all the other variables are zero

β = Correlated volatility of estimated value of Y

ε_t = Error term

The multivariate regression model was used to find the value of α_0 and β_i which explains the relationship between the independent variables and dependent variable. The reliability of the estimate of the individual beta was tested by p-value in the ANOVA table.

The data from the ANOVA table was tested the acceptability of the model from a statistical perspective. Adjusted R^2 was used to measure the proportion of variance in

the dependent variable that was explained by the independent variables to a maximum of 1. The F test was used to test the significance of R, which is the same as testing the significance of R^2 and testing the significance of the regression model as a whole while the T-test was used to test the significance of the individual betas.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction.

This chapter addresses the data analysis and research findings on the effect of electronic banking on the financial performance of commercial banks in Kenya and includes research variables, descriptive statistics and regression analysis. The data was collected from secondary sources which were the financial statements and CBK annual reports for the years 2008 to 2012. The data was analyzed using Microsoft Excel 2007 and SPSS.

4.2. Variables

There were two variables in the study which included the independent variables and dependent variable.

Dependent Variable

The dependent variable is the financial performance represented by profitability (net profit).

Independent Variables

The independent variables of electronic banking on the financial performance of commercial banks in Kenya was measured by the number of debit/credit cards issued by banks, number of ATMS systems installed by the banks, number of point of sale terminals and usage levels of Mobile banking, Internet banking and Electronic funds transfer.

4.3 Findings

Table 4.1.1 Descriptive statistics of variables

Year	Profit after tax (in Million Kshs)	No. of ATMs Installed by the Bank	No. of debits cards issued to customers	No. of POSs Installed by the Bank	Value of MIE transactions using (in Millions)
2008	1,352.00	1,641	4,858,802	14,629	23,746,482
2009	1,612.05	1,717	5,687,452	15,871	24,776,123
2010	2,495.30	1,979	7,672,695	18,179	25,739,794
2011	3,754.75	2,130	10,132,799	16,604	29,472,875
2012	4,970.20	2,306	10,715,595	18,478	29,773,966

Mean	2,836.86	1,954.60	7,647,738.60	16,752.20	26,701,848
Max	4,970.20	2,306	10,715,595	18,478	29,773,966

Source: Research Findings

From table 4.3.1 bank performance was measured by profit after tax over the study period of five years. From the research data, the net profit of commercial banks increased steadily from 2008 to 2012. This study used the number of ATMS installed by commercial banks, number of Credit and Debit cards issued, number of Point of sales installed and usage levels of Mobile banking, Internet banking and Electronic funds transfer as a measure of Electronic Banking. These generally indicate financial innovation within the banking sector. The findings show that these have been increasing steadily since 2008 to 2012 and hence contributing to development of the banking industry as it improves financial liquidity in the market.

4.4 Regression Analysis

Regression method helped to estimate the unknown dependent variable with the help of several known independent variables.

Table 4.1.2 Model Summary

Model	R	R^2	Adjusted R^2
1	.8479[a]	.7189	.2399

Source: Research Findings

a. Predictors: (Constant), Number of ATMs installed, Number of POSs installed, Number of DCs/CDs issued and Number of transactions for mobile bankings, internet bankings and

b. Dependent Variable: Profit after tax

Table 4.4.1 presents the coefficients of model fitness on how electronic banking explains bank profitability .The profitability has an overall correlation with e-banking of 0.7189 which is strong and positive. This means that approximately 71.89% variations from profitability are explained by the electronic banking variables at 5% level of significance. These indicate good fit of the regression equation used. Therefore, this is a good indication of the true position that bank

performance can be explained by the number of ATMS installed, number of debits cards/credit cards issued to customers, number of POSs installed and the MIE utilized by the commercial banks.

Table 4.1.3 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.312	3	1.107	2.549	.2275[a]
	Residual	1.267	39	0.439	0.000	
	Total	4.579	42			

Source: Research Findings

a. Predictors: (Constant), Number of ATMs installed, Number of POSs installed, Number of DCs/CDs issued and Number of transactions for mobile banking, internet banking and

b. Dependent Variable: Profit after tax

Table 4.4.2 shows the overall significance of the regression estimation model. It indicates that the model is significant in explaining the relationship between profitability and electronic banking at 5% level of significance. Analysis of Variance shows that f-calculated is greater that f – critical that is 2.549>0.2275. This implies that the regression equation was well specified and therefore the co-efficient of the regression shows that there is a strong relationship between bank performance and electronic banking. The analysis of variance of the predictors of the model has a significance of 0.2275.

Table 4.1.4 Coefficients

Model	Beta	Standard Error	T	Sig
Constant	3.481	1.178	2.745	0.040
ATM	-5.378	-7.849	0.681	0.821
DCs/CDs	1.435	0.728	2.017	0.464
POSs	-1.248	-3.276	0.328	0.721
MIE	4.217	2.069	1.894	0.002

Source: Research Findings

From table 4.4.3, the regression model therefore becomes:

Y_i = 3.481 + - 5.378 (ATM) + 1.435(DCs/DCs) + - 1.248 (POSs) + 4.217 (MIE)

On table 4.4.3 the regression coefficients of the predictors (e-banking) are presented. Results indicate that electronic funds transfer is the most significant in explaining profitability of commercial banks with a significance of 0.002 which is less that a p-value of 0.05.

This therefore means that the profitability of commercial banks would be at 3.481 when the e-banking components are held at a zero constant. ATM is negatively related to profitability and therefore a unit increase of the number of ATMs would lead to a decrease in profitability by a factor of 5.378. However, this is not significant at 5% level of confidence. DC/CD is positively related to profitability and therefore a unit increase of DCs/CDs would lead to an increase in the profitability by a factor of 1.435 and this is significant at 5% level of significance. POS is also negatively related to profitability and therefore a unit increase of POSs would result in a decrease in profitability by a factor of 1.248. However the result is not significant at 5% level of significance. MIE is positively related to profitability and therefore a unit increase in MIE would result in an increase in profitability of commercial banks by a factor of 4.217 and the results are highly significant.

4.5 Interpretation of Findings

From the analysis, the overall regression estimation of the model is significant at 5% level of significance. It indicates that the model is significant in explaining the relationship between profitability and bank performance at a 5% level of significance. Results indicate that electronic funds transfer is significant in explaining profitability of commercial banks with a significance of 0.02.These finding are corroborated by findings on EFT and bank profitability by Sana, Mohammad, Hassan and Momina (2011) in a study conducted in Pakistan that found that electronic funds transfer reduced costs, saved time, improved accuracy, improved reliability and quality of services and eventually led to improved profitability for the banks. Additionally Nofie (2011) found that a higher usage of electronic retail payment instruments seems to stimulate banking business leading to better bank performance dominated by fee income. The finding of the regression estimating confirms the multiplier effect created through money transfer through the

EFT system. Money transfer to or from a bank generates fees income and when the money reaches the other bank there are multiple of transactions that may arise from that money. It can be used to pay liabilities or it can be invested as a deposit by the customer and hence providing an opportunity for the bank to lend out the money and hence earn interest income over the tenure of the deposit. This means that EFT has both direct and indirect ways of boosting bank profitability.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides summary, conclusions and recommendations for the research findings in line with objectives of the study.

5.2 Summary

In Kenya ATMs, Debit Cards and Credit Cards are capable of generating some income for commercial banks due to the convenience they offer to bank customers. Banks in Kenya have been marketing themselves by showcasing their ATM network across the country with an objective to attract more customers and eventually contribute to bank profits. Agboola (2006) in a study in Nigeria found that the increase in the adoption of ATMs, Debit cards and Credit cards had a positive impact on a bank's image and its profitability. These Cards are also affordable to both the banks and the customers and they don't require a lot of maintenance costs both at acquisition and when in operation. This makes cards quite attractive as an instrument for conducting transactions for customers and the banks. This high usage of cards attracts commission income for the bank which adds to the bank profits. In Kenya, Ndung'u (2011) concurs that mobile banking has revolutionalised the money transfer business and has created further innovations that have lowered the transaction costs for both the banks and customers. This transformation of money transfer business has translated to more incomes and profits to the banks.

Many retail transactions in Kenya have moved to the mobile phone. Bank customers can move money from their bank accounts to their e-money accounts or from their e-money to their bank accounts. This improvement of the mobile money services has increased the pace and circulation of money in the country and has resulted to more profits for the banks through commission incomes. In Kenya internet banking is mainly used by corporate clients who would be given the service at highly subsidized rates due to the fact that corporate customers have several ways of contributing to the banks' profitability like through loans, overdrafts, letters of credit and cheques processing. Electronic payments can lead to cost savings; it can create network effects that could lower bank profits. Sana, Mohammad, Hassan and Momina (2011) in a study conducted in

Pakistan found that electronic funds transfer reduced costs, saved time, improved accuracy, improved reliability and quality of services and eventually led to improved profitability for the banks. The findings reveal that investment in EFT technology is important to banks but they cannot rely on it to improve their profits. Also in Kenya EFT technology is gradually being replaced by the RTGS system and mobile banking due to the low versatility of EFT systems.
Additionally, due to the increased use of POS terminals banks have managed to reach out to the unbanked segment of the society and hence improving on their commission income and subsequently increase their profitability.

5.3 Conclusion

The study results show that electronic banking have a moderate influence on profitability of commercial banks in Kenya. The analysis produced a coefficient of determination of 71.89% which shows the percentage of variations in profitability which is explained by electronic banking. The significant test showed that influence of electronic banking on bank profitability was statistically significant. This means that the combined effect of the electronic banking in this research is statistically significant in explaining the profits of commercial banks in Kenya. However the statistical significance is different for each electronic banking component tested and therefore if banks are to have meaning contribution to profits they should adopt complex forms of electronic banking.

The results also indicate that E-banking has strong and significant marginal effects on profitability of commercial banks in Kenya. Thus, there exists positive relationship between e-banking and bank performance. Based in the summary of the major findings there are several conclusions that can be drawn; The adoption of electronic banking has enhanced Kenyan banking industry by making it more productive and effective; Electronic banking also has a strong positive relationship on the overall banking performance by making workers performance more effective and efficiency; The adoption of electronic banking has enhanced the fortune of the Kenyan commercial banks. This is especially achieved through charges on the use of debit cards and ATM withdrawal charges; the electronic banking has improved the bank customer relationship by rendering effective services throughout the day and night in every week. Customers can now have access to their account outside working hours to make withdrawal to attend to their needs; the electronic banking guideline introduced by CBK strongly helps in effective electronic banking

system. Withdrawal can be made anywhere at any time and using any bank ATM machine, customer cannot make a withdrawal more than some certain amount to allowed other customers have access to cash and money, can be transfer from one place to another through electronic means. In general conclusion the electronic banking has made banking transaction to be easier by bringing services closer to its customers hence improving banking industry performance.

5.4 Recommendation

The study recommends to the management of banks which are slow in innovation adoption, to move in and adopt various innovations in their operations in order to shore up their profitability. This recommendation is well supported by the fact that in Kenya, the leading banks in terms of profitability are mostly the fast movers in adoption of new technologies.

Profitability is also crucial to shareholders and the market is also keen on the profitability of organizations. Any ethical and responsible attempt to improve profitability of a company will be appreciated by the shareholders. Commercial banks should therefore continue to adopt new technologies which will improve their margins and hence their profitability in order to attract more investors.

Government policy makers should also review policies related to promotion of innovation adoption and transfer of technology. Government should encourage adoption of innovations that will improve profitability of organizations because it will convert to better tax revenues for the government.

5.5 Limitations of the Study

The study also faced the challenge of getting some detailed data because of confidentiality reasons which made the data collection very difficult since most of the commercial banks could not provide the critical information that was required because of fear that competitors could use the information for their own gains.

Another challenge to the study was time as this was an academic work which had to be completed within a limited period of time; this made the research work difficult.

Accessing historical data was also a challenge due to poor records coupled with retirement of old banking systems in place of new versatile systems.

5.6 Areas for Further Research

The study reveals that there is evidence that e-banking increases the bank performance. This study was done only on the commercial banks in Kenya. The study can also be extended to other financial markets such as capital and insurance companies in order to understand the implication of E-banking on the overall financial markets in Kenya. Similar the studies can be done for other bank industry in other countries. This study was confined to commercial banks yet the current banking innovation such as electronic money is targeted to include the rural marginalized mostly served by micro finance institutions in the banking net. However, the success of this drive is not yet known. Therefore, another study can be carried to evaluate whether e-banking has helped to bring banking services close to people especially in rural areas.

There is need to identify and understand the changes that E-banking is causing on the banking sector and the payments systems, in order to examine in detail how the recent (and foreseeable) advances in ICT are affecting the sector and can affect its future evolution. Therefore a study on the effects of ICT on the banking sector and the payments system is recommended.

Another related area of research should cover the determinants of internet bank service quality as banks need to know these determinants to improve their competitive advantage through adoption of internet banking strategies which will eventually improve the banks performance.

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APPENDIX I

LIST OF COMMERCIAL BANKS IN KENYA AS AT 31st DECEMBER, 2012

1 Kenya Commercial Bank Ltd
2 Standard Chartered Bank Ltd
3 Barclays Bank of Kenya Ltd
4 Co-operative Bank of Kenya Ltd
5 CFC Stanbic Bank Ltd Large
6 Equity Bank Ltd
7 Bank of India
8 Bank of Baroda Ltd
9 Commercial Bank of Africa Ltd
10 Prime Bank Ltd Medium
11 National Bank of Kenya Ltd
12 Citibank N.A.
13 Bank of Africa Kenya Ltd
14 Chase Bank Ltd
15 Imperial Bank Ltd
16 NIC Bank Ltd
17 Ecobank Ltd
18 I & M Bank Ltd
19 Diamond Trust Bank Kenya Ltd
20 Family Bank Ltd
21 Housing Finance Co. of Kenya Ltd
22 Habib Bank Ltd
23 Oriental Commercial Bank Ltd
24 Habib A.G. Zurich
25 Middle East Bank Ltd
26 Dubai Bank Ltd
27 Consolidated Bank of Kenya Ltd
28 Credit Bank Ltd
29 Transnational Bank Ltd

30 African Banking Corporation Ltd
31 Giro Commercial Bank Ltd
32 Equatorial Bank Ltd
33 Paramount Universal Bank Ltd
34 Jamii Bora Bank Ltd
35 Fina Bank Ltd
36 Victoria Commercial Bank Ltd
37 Guardian Bank Ltd
38 Development Bank of Kenya Ltd
39 Fidelity Commercial Bank Ltd
40 Charterhouse Bank Ltd
41 K-Rep Bank Ltd
42 Gulf African Bank Ltd
43 First Community Bank Ltd
44 UBA Bank Ltd

Source: Central Bank Supervision Annual Report, 2012

APPENDIX II

University of Nairobi,
School of Business,
Department of Finance and Accounting,

To The Central Bank of Kenya,
P.O.Box 60000 – 00200,
NAIROBI.

Dear Sir/Madam,

RE: FINANCIAL DATA FOR ACADEMIC ANALYSIS

I am an MBA Student in the above Department University of Nairobi. As one of the requirement of partial fulfilment for the award of Master degree in Business Administration (MBA) I am required to submit a researchable project.

In this regard, I require data from publications of your bank in the study titled, "The effect of E-Banking on the financial performance of commercial banks in Kenya".

To enable me collect the data necessary for writing the project, I am kindly requesting you to provide me with the latest CBK publications on Commercial banks in Kenya and data on ATMS, Cards, POS, EFT, RTGS and Mobile transactions per bank. I assure you that any information collected will be used for academic purposes only, and be treated as strictly confidential.

Thanks for your co-operation

Hannington Odhiambo Ogare

APPENDIX III

DATA COLLECTION SHEET

MONTH/ YEAR	PROFIT (millions)	ATM (Number)	CARDS (Number)	POS (Number)
Jan-08	1267	1214	3853362	12652
Feb-08	1784	1257	3683951	12963
Mar-08	1297	1385	3765385	13852
Apr-08	1458	1514	3825615	13078
May-08	1751	1491	3985441	15326
Jun-08	1145	1874	5525486	14785
Jul-08	967	1945	5682394	14654
Aug-08	1295	1785	5265841	15912
Sep-08	1198	1689	5594951	16638
Oct-08	899	1821	5997175	15478
Nov-08	1982	1854	5582328	14358
Dec-08	1181	1765	5543695	15852
Jan-09	1669	1675	5521487	15852
Feb-09	1891	1847	5658621	14951
Mar-09	1395	1745	5448752	15199
Apr-09	1587	1895	5474251	15762
May-09	1859	1959	5595781	15852
Jun-09	1348	1843	5474782	15369
Jul-09	1578	1715	5545258	15321
Aug-09	1374	1185	5625738	16658
Sep-09	1245	1645	5858962	15687
Oct-09	1943	1458	6074128	15965
Nov-09	1894	1785	5985654	16852
Dec-09	1561	1852	5986010	16984
Jan-10	2396	1895	6803188	17147
Feb-10	2687	1945	7012581	17526

Mar-10	2471	2145	7125789	17452
Apr-10	2296	2147	6985245	17654
May-10	2165	1987	7265498	18124
Jun-10	2484	1984	7045895	18952
Jul-10	2383	1983	7185296	18357
Aug-10	1952	2074	7852741	18937
Sep-10	2381	1985	8126981	18132
Oct-10	2579	1874	8852631	18324
Nov-10	2974	1745	8852654	18682
Dec-10	3174	1885	8963841	18861
Jan-11	4128	1895	9125874	18625
Feb-11	3795	1899	8947851	17852
Mar-11	3825	2015	9254852	16328
Apr-11	3178	2045	9485741	15962
May-11	2817	2147	9542653	16852
Jun-11	3458	2165	9695746	16369
Jul-11	3875	1989	9785654	15328
Aug-11	3128	2151	12341063	16698
Sep-11	4128	2195	10952357	16387
Oct-11	4612	2185	10657324	16962
Nov-11	4129	2348	10951841	14900
Dec-11	3984	2526	10852632	16985
Jan-12	4571	2527	10954752	18756
Feb-12	5617	2574	11952365	18741
Mar-12	5618	2514	10654985	17625
Apr-12	4768	2148	10852365	18326
May-12	5681	2245	10125954	18963
Jun-12	4781	2168	10357852	18357
Jul-12	5120	2181	10365920	18698
Aug-12	4581	2197	10382419	17698

Sep-12	5921	2275	10398751	17589
Oct-12	5127	2165	10295832	18938
Nov-12	3984	2280	10654952	19084
Dec-12	3874	2398	11590993	18961

Source: Central Bank Supervision Annual Report, 2012