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E-banking Services and Performance of Top Performer Commercial Banks in Ethiopia

"A thesis submitted in partial fulfillment of the requirements for the Master of Business Administration (MBA) degree."

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Addis Abeba, Ethiopia

Declaration

I, the undersigned, declare that this work titled "E-banking Services and Performance of Top Performer Commercial Banks in Ethiopia" is a result of my own effort and study. I have produced it independently except with the guidance and suggestion of the advisor Zewdie Shibre (PhD). All sources of materials used for the research paper have been duly acknowledged. This has not been submitted either in part or full in this university or any other university for earning any degree. It is submitted here in partial fulfillment of the requirement for the Master of Business Administration (MBA) degree.

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Addis Abeba, Ethiopia

Certification

Addis Ababa University

School of Graduate Studies

This is to certify that the thesis entitled, "E-banking Services and Performance of Top Performer Commercial Banks in Ethiopia" is an original piece of work carried out by Betelhem Berhane under the supervision of Zewdie Shibre (PhD), and is submitted in partial fulfillment of the requirements for the degree of Master of Business Administration in Management. It complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

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Advisor: Zewdie Shibre (PhD) Signature _____Date_____

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Signature _____ Date_____

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List of Abbreviations and Acronyms

ATM - Automatic Teller Machine

CBE-Commercial Bank of Ethiopia

CBK-Central Bank of Kenya

E-banking- Electronic banking

ICT- Information and Communications Technology

IT-Information Technology

MBA- Masters of Business Administration

NBE-National Bank of Ethiopia

NATM-Number

PIN-Personal Identification Number

POS -Point of Sale

ROA -Return on Assets

ROE- Return on Equity

SMS - Short Message Service

WAP-Wireless Application Protocol

WIG-Wireless Internet Gateway

WWW- World Wide Web

Abstract

The main objective of this study is to examine the impact of e-banking service on the performance of top performer commercial banks in Ethiopia. The specific objectives were to examine the impact that ATM, POS, Mobile banking and bank size have on the performance of top performer commercial banks. The study used explanatory method of study based on quantitative approach. The population of interest in this study comprised eleven commercial banks operating in Ethiopia out of those nine commercial banks are selected using a purposive sampling method for the period 2013 – 2017. The study used secondary data. In analyzing the data, the study used both descriptive and inferential statistics. Result using fixed effect panel least square regression with the aid of E-views9 econometric software exhibited that, increasing the number of ATMs variable has a negative and significant impact on bank ROA , increasing the number of POS has negative and insignificant impact on bank ROA, increasing number of mobile banking users variable has positive and significant impact on bank ROA, and increasing bank size has a negative and significant impact on bank ROA. The overall results revealed that e-banking services have negative significant impact on the performance of commercial banks in Ethiopia.

Key Words: Bank's Performance; Commercial banks in Ethiopia; Electronic Banking; ROA

Chapter One: Introduction

1.1 Background/Rationale of Study

Electronic banking is a term used for new age banking system, represents an automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. It is a service that provides customers the opportunity to gain access to their accounts, execute transactions, and obtain information on financial products and services through a public or private network, including the internet. (Driga, and Isac,2014)

Electronic banking in the banking industry has evolved over the years; According to Shah and Clarke (2009), Automated teller machines (ATMs) were the first means of providing electronic access to retail customers, made possible through the introduction of computer networks. The first bank to use ATM was Barclays Bank in Enfield Town in north London, United Kingdom, on 27 June 1967. Telephone banking arrived next, which was a revolutionary concept since it made banking possible from anywhere as long as telephones were available. Since then, e-banking has constantly innovated through technology improved products and services. (Ogare, 2013)

The advancement in technology has played an important role in improving service delivery standards in the banking industry. (Ogare, 2013). According to Karimzadeh et al (2014), the new technology has been able to alter the way of doing basic tasks. Most of the jobs, which were assigned to the bank cashier in a traditional way, now are done much cheaper by ATMs. Advancement of technology has led people to do their banking at home.

The implementation of E-banking can bring about many competitive advantages for banks in today's highly competitive banking market. E-banking transactions are much cheaper than branch or even phone transactions. (Shah and Clarke 2009). Some of the benefits related with adoption of E-banking are: it can provide a cost effective way of conducting business and enriching relationship with customers by offering superior services, and innovative products, which may be customized to individual needs. (Shah and Clarke 2009). It is also beneficial to the easier documentation and transaction tracking, reducing the costs of printing, maintenance and distribution of banknotes, and it offers multiple payment options and gives immediate notification on all transactions on customers' account. etc. (Karimzadeha et al 2014).

On the other hand, there are challenges related to e-banking services that have greatly held its progress. Some of the challenges that hinder e-banking services to contribute for the performance of banks are security problems, lack of adequate ICT infrastructure, power failure, infrastructural cost of providing e-banking facility is very high, and lack of awareness by customers.

It is therefore important that e-banking innovations are made by sound analysis of risks and costs associated so that to avoid harms on the bank performance. 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. (Aduda1 and Kingoo, 2012),

In Ethiopia, e-banking is in its earliest stage. Even though, the concept of e-banking implemented in Ethiopia when the largest state owned, commercial bank of Ethiopia (CBE) introduced ATM to deliver service to the local users during late 2001, It doesn't show that much improvement as its age. Nowadays some banks are adopting e-banking system, which include mobile banking, internet banking and agent banking. In addition, many banks are making what seem like huge investments in technology to maintain and upgrade their infrastructure, in order to provide new electronic information based services.

According to NBE annual report (2017), Ethiopian financial sector has been resilient and continued to operate under safe and sound environment. Commercial banks have continued to expand their financial intermediation and remained highly profitable. With the opening of 956 new branches in 2016/17 alone, which raised the total number of branches to 4,257 from 3,301 a year ago. As a result, bank branch to population ratio declined from 1:27,932 people in 2015/16 to 1:22,164 people in 2016/17. About 33 percent of bank branches were located in Addis Ababa. Banks have also increased their deposit mobilization (by 29.8 percent), loan collection (by 25.9 percent) and loan disbursement (by 23.8 percent). Therefore this study investigates whether and how the adoption of e-banking services contributes for improvement of Commercial banks performance.

1.2 Statement of the 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 IT and intensive competitive banking markets. In addition, financial institutions have been investing millions of dollars in the new technology system with the expectation that it will contribute to the overall profitability and market share. However, the return will be less or operating in loss, if the consumers do not accept or fully utilize its capacity. So, the understanding of consumers acceptance and use of new technology and its impact on the performances are prerequisites in obtaining returns' from this investments. (Kumegan,2004). There is also a growing concern that e-banking is not yielding the anticipated results, creating a gap between the actual returns and the proposed objectives and thereby losing a large amount of investment. (Nyangena and Muturi, 2015).

According to Arisa and Muturi, (2015), despite the importance of e-banking in explaining banking performance, the effect of e-banking on banks performance is inadequately researched to show the drivers of innovation and innovation's effects on bank's performance. As per the knowledge of the researcher only a very limited number of researches have been done on e-banking services in Ethiopia. The previous studies like that of Gardachew (2010), Ayana, (2014, and Berhanu, (2015) focused on adaption of e-banking services and, the study of (Girma, 2016) and (Dawit, 2017) studied the impact of IT investment on financial performance of commercial banks in Ethiopia. From the above discussions, it is evident that not much research has been focused on the impact of e-banking service on the performance of commercial banks in Ethiopia. This study therefore aims to examine the impact of e-banking services on the performance of top performer commercial banks in Ethiopia.

1.3 Research Questions

The study attempts to answer the following research questions: what is the impact of e-banking service on the performance of top performer commercial banks in Ethiopia?

1.4 Research Objectives

1.4.1 General Objective

The main objective of this study is to examine the impact of e-banking services on the performance of top performer commercial banks in Ethiopia.

1.4.2 Specific Objectives

The study pursued the following specific objectives;

- To determine the impact that ATM has on the performance of top performer commercial banks in Ethiopia.
- To determine the impact that POS has on the performance of top performer commercial banks in Ethiopia.
- To examine the impact that Mobile Banking has on the performance of top performer commercial banks in Ethiopia.
- To examine the impact that Bank Size has on the performance of top performer commercial banks in Ethiopia.

1.5 Research Hypothesis

Based on the research objectives stated above, the following research hypothesis are developed:

H0: ATM has no significant impact on the performance of top performer commercial banks in Ethiopia.

H0: POS has no significant impact on the performance of top performer commercial banks in Ethiopia.

H0: Mobile banking has no significant impact on the performance of top performer commercial banks in Ethiopia.

H0: Bank Size has no significant impact on the performance of top performer commercial banks in Ethiopia.

1.6 Scope (Delimitation) of the Study

The study covered nine commercial Banks licensed by National Bank of Ethiopia (NBE) and operational in the country. The commercial banks that formed the units of analysis of the study are those that are top performer commercial banks in Ethiopia (banks that have a net profit greater than 250 million in 2016/17), and banks that have organized e-banking service report

since 2013. As a result, including the largest government owned bank Commercial bank of Ethiopia, Awash international bank, Bank of Abyssinia, Dashen bank, Wegagen bank, United bank, Nib international bank, Birhan bank and Zeman bank are selected for this study. The explanatory variables used in the study are, automated teller machines, point of sale terminals, mobile banking, and bank size. The financial performance measure used for this study is return on asset. The collected data covered the period 2013 to 2017.

1.7 Limitation of the Study

The major limitation faced in conducting the study is the difficulty faced while collecting the data from the sampled banks. It was challenging to get some detailed data because the concerned parties in the selected banks hesitate to give permission to collect data since they think the study will take time from their employees to do their job.

1.8 Significance of Study

The outcomes and results of this research will have potential value to commercial banks. The study will help the banks to understand the impact of e-banking services on performance of the banks and use the services in the way that improve their performance. Enabling them to formulate and target their e-banking products effectively.

The study can be used as reference material by future researchers interested in further research on e-banking service and its impact on performance of commercial banks in Ethiopia by providing useful information. The study added to the existing literature, and will be an important tool for students, academicians, institutions, corporate managers and individuals who wanted to learn more about e-banking.

This study is of importance to the researcher as it equips the researcher with the knowledge of the impact of e-banking services on performance of financial institution. It will also enable the researcher to obtain a degree in Masters of Business Administration (MBA) in management.

1.9 Organization of the Study

The research paper was organized into five chapters. Chapter one present the introduction part, which contains, background of the study, statement of the problem, objectives of the study,

research question, research hypothesis, significant of the study, scope & limitations of the study, and organization of the study. Chapter two presents the literature review. Chapter three presents research methodology, which contains research design, sample and population, sampling techniques, data collection, data analysis technique and analytical model. Analysis and finding/results was presented in chapter four. The final part chapter five includes conclusions, some recommendations and Further Research.

Chapter Two: Literature Review

2.1Theoretical Review

The theoretical literature helps the researcher to identify clearly the variables of the study; provides a general framework for data analysis; and helps in the selection of applicable research design.

2.1.1 Definition of E-banking

E-banking, a term used for new age banking system, represents an automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. It is a service that provides customers the opportunity to gain access to their accounts, execute transactions, and obtain information on financial products and services through a public or private network, including the Internet. (Driga and Isac, 2014).

According to Daniel, (1999), e-banking is the provision of information about a bank and its services via a home page on the World Wide Web (WWW).More sophisticated e-banking services provide customer access to accounts, the ability to move their money between different accounts, and making payments or applying for loans via e-Channels.

Understanding e-banking is important for several stakeholders, not least of which is management of banking related organizations, since it helps them to derive benefits from it. The Internet as a channel for services delivery is fundamentally different from other channels such as branch networks, telephone banking or Automated Teller Machines (ATMs). Therefore, it brings up unique types of challenges and requires innovative solutions. (Shah & Clarke 2009)

2.1.2 Theories of Information Technology

In deriving, a framework for this study three existing research frameworks are considered: Those are Innovation Diffusion Theory, Task Technology Fit (TTF) Theory and Technology Acceptance Model (TAM)

2.1.2.1 Innovation Diffusion Theory

Diffusion of Innovation (DOI) Theory, developed by E.M. Rogers in 1962, is one of the oldest social science theories. According to the theory, an innovative idea or product gains momentum and diffuses through a specific population with the result being adoption of the product. (Wanja, 2014).The end result of this diffusion is that people, as part of a social system, adopt a new idea, behavior, or product. Adoption means that a person does something differently than what they had previously (i.e., purchase or use a new product, acquire and perform a new behavior, etc.). The key to adoption is that the person must perceive the idea, behavior, or product as new or innovative. It is through this that diffusion is possible. (LaMorte, 2016)

The diffusion of innovations is a key theory in understanding the adoption of technology, which in turn can help understand user needs and inform the design of user-friendly systems. The diffusion of innovations theory is actually a collection of models and concepts that form a coherent approach to understanding the many components within the process of innovation adoption. In this model, diffusion is described as "the process by which (1) an innovation (2) is communicated through certain channels (3) over time (4) among the members of a social system" Each part of this model – the innovation, communication channels, time, and social system – has a set of related concepts, approaches, and models that further describe and flesh out the core component. (Miller, 2015).

According to Rogers, (1983), the innovation-decision process is the process through which an individual (or other decision-making unit) passes from first knowledge of an innovation to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision. Rogers conceptualize five main steps in the process: (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation. Knowledge occurs when an individual (or other decision-making unit) is exposed to the innovation's existence and gains some understanding of how it functions. Persuasion occurs when an individual (or other decision-making unit) forms a favorable or unfavorable attitude toward the innovation. Decision occurs when an individual (or other decision-making unit) engages in activities that lead to a choice to adopt or reject the innovation.

The innovation-decision is made through a cost-benefit analysis where the major obstacle is uncertainty. People will adopt an innovation if they believe that it will, all things considered,

enhance their utility. So they must believe that the innovation may yield some relative advantage to the idea it supersedes. The newness and unfamiliarity of an innovation infuse the cost-benefit analysis with a large dose of uncertainty. People are on average risk-averse, the uncertainty will often result in a postponement of the decision until further evidence can be gathered. But the key is that this is not the case for everyone. Each individual's innovation-decision is largely framed by personal characteristics. (Greg Orr, 2003)

Under the diffusion of innovation theory, the key to adoption of mobile and internet banking is that the various adopter categories must perceive these services as new or innovative. In addition, the technology adoption model is relevant because it puts information technology adoption of internet and mobile banking into perspective; revealing that perceived ease of use, perceived usefulness, perceived self-efficacy, and perceived credibility significantly influenced customers" attitude towards usage of m-banking and e-banking. (Wanja, 2012)

2.1.2.2 Task Technology Fit (TTF) Theory

This theory contends that it is more likely to have a positive impact on individual performance and be used if the capabilities of Information Communication and Technology (ICT) match the tasks that the user must perform (Goodhue and Thompson, 1995). Goodhue and Thompson (1995) mention the factors that measure task-technology fit as; quality, locatability, authorization, and compatibility, eases of use/training, production timeliness, systems reliability and relationship with users. The model is useful in the analysis of various context of a diverse range of information systems including electronic commerce systems and combined with or used as an extension of other models related to information systems outcomes. (Ngumi, 2013)

Two largely independent theories of TTF have emerged. The first, initiated by Goodhue and Thompson (1995), established TTF as an important concept in assessing and explaining IS success. The second, initiated by Zigurs and Buckland (1998), developed a systematic profile for the task-technology combination of group tasks and group support systems (GSS). While Goodhue and Thompson (1995) focused on individuals' use of IS and presented a primarily positivistic research approach applicable to IS in general, Zigurs and Buckland (1998) focused on groups' use of IS and formulated fit profile applicable specifically to GSS. A good fit between

tasks and technology would result in good group performance. (Gebauer et al, 2006). An appropriate task/technology fit should result in higher performing groups.

Task-technology fit plays a key role in affecting individual impact and performance in the use of information systems. An information system must be both utilized *and* fit the task that is supported in order to have a positive impact on performance. (Irick, 2008) .Goodhue and Thompson (1995) found the TTF measure, in conjunction with utilization, to be a significant predictor of user reports of improved job performance and effectiveness that was attributable to their use of the system under investigation.

2.1.2.3 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) defines the casual relationship between perceived usefulness, ease of use, system design features, attitude towards using and actual usage behavior. In general, an informative representation of the mechanisms by which design choices influence user acceptance is provided by TAM. Hence, Technology acceptance model is useful in applied contexts for forecasting and evaluating user acceptance of information technology (Davis, 1993).

Technology Acceptance Model (TAM) explain how users come to accept use a technology determined. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. While TAM is one of the most influential models used in the studies of the technology acceptance and empirically proved to have high validity, it must be used to a certain extent with caution, because with the internationalization of companies, there is a growing need to understand how cultural factors can affect the ability of a multinational organization to adopt and use information technologies. (Silva 2015)

2.1.3 Roles of E-banking Service

The implementation of E-banking can bring about many competitive advantages for banks in today's highly competitive banking market. E-banking transactions are much cheaper than branch or even phone transactions. This could turn yesterday's competitive advantage - a large branch network - into a comparative disadvantage, allowing e-banks to undercut bricks-and-mortar banks. Some of major advantages of e-banking are:

1. Cost reduction

The main economic argument of e-banking so far has been reduction of overhead costs of other channels such as branches, which require expensive buildings and a staff presence. It also seems that the cost per transaction of e-banking often falls more rapidly than that of traditional banks once a critical mass of customers is achieved. (Shah and Clarke, 2009)

2. Choice and convenience for customers

This is the single most important benefits that outweigh any shortcoming of e- banking. Making transactions and payments right from the comfort of home or office at the click of a button without even having to step out is a facility none would like to forego. Keeping a track of accounts through the internet is much faster and convenient as compared to going to the bank for the same. Even non transactional facilities like ordering check books online, updating accounts, enquiring about interest rates of various financial products etc become much simpler on the internet. (Johnson, 2005)

3. Load reduction on other channels

E-Channels are largely automatic, and most of the routine activity such as account checking or bill payment may be carried out using these channels. This usually results in load reduction on other delivery channels, such as branches or call centers. This trend is likely to continue as more sophisticated services such as mortgages or asset finance are offered using e-Banking channels. In some countries, routine branch transactions such as cash/cheque deposit related activities are also being automated, further reducing the workload of branch staff, and enabling the time to be used for providing better quality customer services. (Shah and Clarke, 2009)

4. Enhancing image

According to Kassahun, (2016), a bank seems more state of the art to a customer if they offer Internet access. A person may not want to use Internet banking but having the service available gives a person the feeling that their bank is on the cutting image.

5. Easier expansion

Traditionally, when a bank wanted to expand geographically it had to open new branches, thereby incurring high start up and maintenance costs. E-channels, such as the Internet, have

made this unnecessary in many circumstances. Now banks with a traditional customer base in one part of the country or world can attract customers from other parts, as most of the financial transactions do not require a physical presence near a customer's living/working place. (Shah and Clarke, 2009)

6. Organizational efficiency

Banks can become more efficient than they already are by providing Internet access for their customers. The Internet provides the bank with an almost paper less system. (Noorah et al, 2009)

7. Customer Service and Satisfaction

Banking on the Internet not only allows the customer to have a full range of services available to them but it also allows them some services not offered at any of the branches. The person does not have to go to a branch where that service may or may not be offer. A person can print of information, forms, and applications via the Internet and be able to search for information efficiently instead of waiting in line and asking a teller. With more better and faster options a bank will surely be able to create better customer relations and satisfaction

2.1.4 Types of E-banking service

2.1. 4.1 Automated Teller Machines (ATM)

ATM is an electronic terminal which gives consumers the opportunity to get banking service at almost any time. To withdraw cash, and transfer funds between accounts, a consumer needs an ATM card and a personal identification number (PIN).

The ATMs also enable customers to check their account balance, deposit cash or cheques, and transfer money between their bank accounts. (Noorah et al, 2009). In order to get ATM services, customers need ATM cards and secrete PIN codes. The ATM card is a smart card used for security purpose only. The ATM card coupled with a PIN code provides state-of-the-art authentication scheme called two-factor authentication.

ATM card is a kind of plastic card which allows a cardholder to withdraw money from his bank account through automated teller machine (Buckle and Beccalli, 2008). This card can be used also for other banking services like deposit ,transfer to any other account by using the ATM

machine and ,make payment of purchases by using point of sale (POS) outlets. The primary advantages of ATMs are they save the customer's time in service delivery and it is cost efficient way of yielding higher productivity per period than human tellers. Furthermore, as the ATMs continue when human tellers stop, therefore, there is continual productivity for the banks even after banking hours. (Tilahun, 2015)

Major challenge in the usage of ATM is the unreliable telecommunication networks and power failure, which results in temporary service interruption.

2.1.4.2 Debit Card

Debit cards are also known as check cards. Debit cards look like credit cards or ATM (automated teller machine) cards, but operate like cash or a personal check. Debit cards are different from credit cards. While a credit card is a way to "pay later," a debit card is a way to "pay now." When customers use a debit card, their money is quickly deducted from their checking or savings account. Debit cards are accepted at many locations, including grocery stores, retail stores, gasoline stations, and restaurants. (Noorah et al, 2009)

2.1.4.3 Point-of-Sale Transfer Terminals (POS)

POS is system that allows consumers to pay for retail purchase with a check card or debit card. This card looks like a credit card but with a significant difference. The money for the purchase is transferred immediately from account of debit card holder to the store's account.

Electronic Fund Transfer at Point Sale would provide service for customers to pay cheques and cash withdrawals for shopping without clerical duties. In addition, the system continues after banking hours and hence continual productivity for the bank even after bank working hours. In the same development it save the customer time without going to bank branches and ATMs point.(Tilahun, 2015)

It is important to note that in Ethiopia very few departmental stores and restaurants have established POS machine to perform transaction through debit cards. In Ethiopia people are hesitant to receive payment through electronic medium due to lack of proper education about e-payment.

2.14.4 Internet Banking

Internet banking is an electronic home banking system using web technology in which Bank customers are able to conduct their business transactions with the bank through personal computers.

Internet banking also referred as online banking, web banking or virtual banking a system that enables bank customers to access accounts and general information on bank products and services or performs account transactions directly with the bank through a personal computer using the internet as the delivery channel. customers are able to access all of their accounts through the website of the bank and are allowed to conduct banking activities such as transferring funds, paying bills, viewing account balances, paying mortgages or purchasing financial instruments and certificates of deposits.(Imola and, Claudia, 2014).

According to Noorah et al (2009), Internet Banking used to handle many banking transactions via your personal computer. Personal computer is connected by a network service provider directly to a host computer system of a bank such that customer service requests can be processed automatically without need for intervention by customer service representatives. The system is capable of distinguishing between those customer service requests which are capable of automated fulfillment and those requests which require handling by a customer service representative

2.1.4.5 Mobile Banking

Mobile banking is a system that allows bank customers to conduct different financial transactions through a mobile device, being the newest service in electronic banking; mobile banking relies on WAP (Wireless Application Protocol) technologies since a mobile device requires a WAP browser installed in order to allow access to information. (Driga and Isac, 2014).

Some banks are making significant investments in mobile systems to deliver a range of types of business value, from increased efficiency and cost reduction, to improved operational effectiveness and customer service to provide a competitive advantage. (Shah & Clarke,2009)

In those countries where traditional telecommunication infrastructure is not well developed, mobile technologies is transforming accessibility to the Internet based services.

Mobile banking may be described as the newest channel in electronic banking to provide a convenient way of performing banking transaction using mobile phones or other mobile devices. The potential for mobile banking may be far greater than typical desk-top access, as there are several times more mobile phone users than online PC users. Increasingly "mobile life styles" may also fuel the growth of anywhere, anytime applications. (Shah & Clarke,2009)

There are two main types of technologies available for use in mobile Banking: Wireless Application Protocol (WAP) and Wireless Internet Gateway (WIG).WAP is an application environment and set of communication protocols for wireless devices designed to enable manufacturer, vendor, and platform independent access to the Internet and advanced telephony services. WIG is a Short Message Service (SMS)-based service, in which a menu of available banking options is initially downloaded from the bank to the phone device. (Shah & Clarke,2009)

This enables users to browse bank accounts and conduct other banking related tasks. Mobile banking was offered in the UK by the banks such as The Woolwich during early 2000s, but it failed to achieve a critical mass of users. The same story has been repeated in many other counties with mixed results. (Shah & Clarke,2009)

The main hurdle in development of mobile banking is low consumer adoption due to a number of factors discussed below: Internet connectivity costs, difficult user interface, lack of awareness amongst customers, limitations in functionality of mobile devices, accessibility issues, security concerns, organizational changes, small number of choices (only a few banks offer mobile banking), and technology overload. (Shah & Clarke, 2009)

The mobile banking development in Ethiopia is not full-fledged in terms of exhaustively utilizing all the mobile services one can get. Currently, of all the types of mobile banking services, most customers of the bank use notification or alarm inquiry. (Biritu, 2015)

2.1.4.6 Agent Banking

A banking agent is a retail or postal outlet contracted by a financial institution or a mobile network operator to process clients' transactions. Rather than a branch teller, it is the owner or an employee of the retail outlet who conducts the transaction and lets clients deposit, withdraw, transfer funds, pay their bills, inquire about an account balance, or receive government benefits or

a direct deposit from their employer. Banking agents can be pharmacies, supermarkets, convenience stores, lottery outlets, post offices, and more.

Banking agents are usually equipped with a combination of point-of-sale (POS) card reader, mobile phone, barcode scanner to scan bills for bill payment transactions, personal identification number (PIN) pads, and sometimes personal computers (PCs) that connect with the bank's server using a personal dial-up or other data connection. Clients that transact at the agent use a magstripe bank card or their mobile phone to access their bank account or e-wallet respectively. Identification of customers is normally done through a PIN. With regard to the transaction verification, authorization, and settlement platform, banking agents are similar to any other remote bank channel.

According to NBE Directive, agent banking is the conduct of banking business on behalf of a financial institution through an agent using various service delivery channels. Mobile banking is performing banking activities which primarily consists of opening and maintaining mobile/regular accounts and accepting deposits; furthermore, it includes performing fund transfer or cash in and cash out services using mobile devices.(Solomon,2016),

The service enables the Bank to use Banking agents that double as a kind of branch to process basic banking services including opening M-wallet account, making deposits and withdrawals, transferring funds as well as sending and receiving money. (Solomon, 2016)

2.1.5 E-Banking System in Ethiopian Banking Sector

The appearance of E-banking in Ethiopia goes back to the late 2001, when the largest state owned, commercial bank of Ethiopia (CBE) introduced ATM to deliver service to the local users. In addition to eight ATM Located in Addis Ababa, CBE has had Visa membership since November 14, 2005. But, due to lack of appropriate infrastructure it failed to reap the fruit of its membership. Despite being, the pioneer in introducing ATM based payment system and acquired visa membership, CBE Lagged behind Dashen bank, which worked aggressively to maintain its lead in E-payment system. (Gardachew, 2010)

According to Wondwossen and Tsegai, (2005), in 2005 commercial bank of Ethiopia (CBE) offer ATM service with eight ATMs in Addis Ababa. These ATMs enable customers to withdraw limited amount of money from their account at any time. The ATMs also enable customers to

check their account balance. However, depositing money through ATM is not currently possible. In order to get ATM services, customers need ATM cards and secrete PIN codes. The ATM card is a smart card used for security purpose only. The ATM card coupled with a PIN code provides state-of-the-art authentication scheme called two-factor authentication.

Harnessing its leadership with advanced banking technology, Dashen bank started to use ATM machine to deliver service to it's customers in 2006, and the bank adopts mobile banking (Modbirr) in the year 2009.(Ayana, 2012). Dashen Bank signed an agreement with iVery, a South African E-payment technology company, for the introduction of mobile commerce in April 21, 2009. According to the agreement, iVery Payment Technologies has licensed its Gateway and MiCard E-payment processing solution to Dashen Bank. Dashen‟s Modbirr users can transfer 500 birr to other Modbirr users in 24 hours a day. This would make Dashen Bank the first private bank in Ethiopia to acquire E-commerce and mobile merchant transactions. (Alemayehu and Jacqueline, 2011)

Although Dashen Bank is pioneer in harnessing new technology, the younger United Bank was the first to introduce telephone and Internet banking systems - including text messages (SMS) - by the end of 2008.(Esayas, 2016). United bank received the approval to go on delivering agent banking on March 31, 2015. In its Agent Banking Services, United will provide branchless services banking especially for the unbanked society. Following the permission of mobile and agent banking, United bank established a team responsible for the implementation of the service in line with the Bank's strategic focus on technology led banking which synchronize with its new motto "Beyond Core Banking to Technology Led Excellence". (Solomon, 2016),

Wegagen Bank has signed an agreement with Technology Associates (TA), a Kenyan based information technology (IT) firm, for the development of the solutions for the payment system and installation of a network of ATMs on December 30, 2008. In the other hand in February 2009 three private commercial banks - Awash International Bank S.C., Nib International Bank S.C. and United Bank S.C signed to launch ATM and POS terminal network. (Ayana, 2014)

Zemen Bank launched multi-channel banking (MCB) services in Ethiopia, which includes ATMs, Internet Banking, Banking through Call Centre and SMS banking. These services introduced October 22, 2009, makes Zemen Bank the first in Ethiopia to introduce fully IT supported and 24/7 customers services to local bank customers. (Matiwos, 2016).The new and never-been-tried

service proposed by the bank is to include free account money transfer, corporate payroll uploading system where employers could upload payroll to the system and make payments to individual worker's accounts online and online utility bill settlement system, when utility companies are ready(Asrat, 2010).

The Multi-Channel Banking services were designed for bank customers that require easy access to the bank's facilities while they are On-The-Go. Zemen Bank designed and equipped each of the new services with a user friendly Amharic and English language support. Zemen Bank customers can access their account from their PC/Laptop, Mobile Phone, ATM, and through a direct phone call to the dedicated and customer friendly Zemen Bank Call Centre. The Multi-Channel Banking Services are free of charge to all Zemen Bank customers. ATM cards are also issued immediately and free of charge to all customers who open an account with Zemen Bank. (Beza, 2010)

The long awaited national switch system, ET switch S.C, has gone operational on April 20, 2016. According to AddisBiz report, now depositors in Ethiopia can cash their account from any ATM even if it is not operated by the bank where they have deposited their savings. ET switch was established in 2011 by 16 banks, with 80.5 million Br registered capital. This event has great advantage to the development of e banking service in Ethiopia by increasing the accessibility of ATM machine for bank customers all over Ethiopia.

By using ET switch, a client of any of the 16 banks will enjoy services including cash withdrawal and cheque balancing by the ATMs. There are close to 2000 ATMs operating across the country, but mainly in the capital, Addis Abeba. Clients are now also buy and be refunded through point of sale (POS) machines.

2.1.6 Measures of Bank Performance

There are various types of bank performance measures in order to understand them it is better to classify them in terms of internal and external factors. Internal factors described as efficiency, productivity and profitability of the bank concerning size optimizes and capital structures. Whereas, the external factors consists of degree of liberalization of the banking industry and GDP of the country. (Athanasoglou, 2008)

A commonly used measure of bank performance is the level of bank profits. Profit is the ultimate goal of commercial banks. All the strategies designed and activities performed thereof are meant to realize this grand objective. (Okoth and Gemechu, 2013).Bank profitability can be measured by the return on a bank's assets (ROA), Return on equity (ROE) and Net Interest Margin (NIM). (Naifar, 2010). They are the most famous measure of bank performance.

1. Return on Equity (ROE)

ROE is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested or found on the balance sheet. ROE is what the shareholders look in return for their investment. A business that has a high return on equity is more likely to be one that is capable of generating cash internally. Thus, the higher the ROE the better the company is in terms of profit generation. It is further explained by (Khrawish, 2011) that ROE is the ratio of Net Income after Taxes divided by Total Equity Capital. It represents the rate of return earned on the funds invested in the bank by its stockholders. ROE reflects how effectively a bank management is using shareholders‟ funds. Thus, it can be deduced from the above statement that the better the ROE the more effective the management in utilizing the shareholders capital. Banks with a lower leverage ratio (higher equity) usually report a higher ROA, but a lower ROE. However, the ROE disregards the higher risk that is associated with a high leverage; at the same time, financial leverage is affected by regulation.

2. Return on Asset (ROA)

ROA is also another major ratio that indicates the profitability of a bank. It is a ratio of Income to its total asset (Khrawish, 2011). It measures the ability of the bank management to generate income by utilizing company assets at their disposal. In other words, it shows how efficiently the resources of the company are used to generate the income. It further indicates the efficiency of the management of a company in generating net income from all the resources of the institution (Khrawish, 2011). Generally, ROA shows the profits earned per dollar of assets and indicates how effectively the bank's assets are managed to generate revenues, although it might be biased due to off-balance-sheet activities.

3. Net Interest Margin (NIM)

Net interest margin measures the gap between the interest income the bank receives on loans and advances and interest cost of its borrowed funds. It reflects the cost of bank intermediation services and the efficiency of the bank. The higher the net interest margin, the higher the bank's profit and the more stable the bank is. Thus, it is one of the key measures of bank profitability. However, a higher net interest margin could reflect riskier lending practices associated with substantial loan loss provisions (Khrawish, 2011).

2.2 Empirical Studies

A number of empirical studies exist in the literature, which have examined the relative performance of banks offering e banking service. Malhotra and Singh (2009), found that on an average, Internet banks are more profitable than non-Internet banks and are operating with lower cost as compared to non-Internet banks. On their study, they conclude that the Internet banks in India are able to generate more deposits or customer accounts than non-Internet banks. In addition to revenue enhancement, Internet banking may enable banks to reduce costs of operation, in particular, by allowing them to reduce expenditures related to maintaining physical branches.

The analysis of Malhotra and Singh, (2009), study indicates several significant differences in the profile of banks that offer Internet banking and banks that do not. Broadly speaking, on an average, Internet banks are larger, more profitable and are more operationally efficient than non-Internet banks. Internet banks have higher asset quality and are better managed to lower the expenses for building and equipment. In contrast to developed countries Internet banks in India rely substantially on deposits, the traditional source of financing. However their study also found that smaller and new banks had their profitability impacted negatively by internet adoption, because Internet banks in new private sector were operating with higher cost of operations, including fixed cost and labour cost, thus affecting negatively the profitability of these banks.

Muiriuri, (2014) found that credit cards, mobile banking and internet banking are positively related with the bank performance. The study established that the use of internet banking increased accuracy and efficiency, reliability and speed which give them competitive advantage

over the rest of the banks. According to the findings, credit cards, mobile banking, and internet banking were all significant in predicting the profits of the banks.

Arisa and Muturi (2015) studied effects of electronic banking on financial performance of commercial banks in Kenya, they found out that electronic banking do contribute to the financial performance of banks in Kenya. The study showed that the introduction of mobile banking as an electronic banking tool has great impact on ROA of commercial banks in Kenya. Mobile banking affects financial performance to a greater extent. Respondents of the study felt that mobile banking introduces new financial innovations, is addictive, one can check his or her balance and pay credit card bills, provides latest information on account status and most importantly it is locally well known and utilized. The partnership between banks and mobile phone companies has boosted the mobile banking technology. One can deposit money to any account, make withdrawals, transfer money from one account to another, pay bills directly from account, borrow loans, check balance and mini statement.

Munyok, (2015) in his study on effect of mobile banking on the financial performance of banking institutions in Kenya, found out that mobile banking had greatly increased the profitability of the commercial banks. Findings revealed that M-banking products offered by banks some of which include, Fund Transfer between Accounts/ E-funds transfer, Bill Payment, and order for cheque books and bank statements have greatly increased the banks revenue in the last five years. The study thus concludes that banks that accept M-banking services have largely increased their customer outreach, and hence have improved their financial performance.

Karimzadeh et al (2014), in their study on the effects of electronic banking expansion on profitability of a commercial bank (Sepah bank of Iran), showed that e banking expansion has led to increase the bank's profitability index. In other words, by expanding the number of ATMs, credit cards, POSs and finally number of terminal branches and totally increasing electronic services for customers has increased bank deposits; customers trust the banks and in total, profitability indexes will raise by increasing the bank deposits.

Gakure and Ngumi (2013), conducted a study whether bank innovations influence profitability of commercial banks in Kenya.The study conclude that bank innovations have a moderate influence on profitability of commercial banks in Kenya. The study found that ATMs contributed positively to the profits of commercial banks in Kenya. In Kenya ATMs 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. Some banks in Kenya have further invested in intelligent ATMs which have face and finger print detection capabilities all in the need to attract more customers. The study also shows that there was more agreement with the statements on whether POS terminals have a positive influence on banks' profitability. In Kenya POS terminals have been used mainly at service points like hotels, petrol stations and supermarkets. Recently this has changed due to establishment of agent banking where the main equipment for facilitating transaction is the POS terminal. 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. The findings also 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 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.

In the other hand the study of Mutual (2010) found that there is a weak positive insignificant correlation between mobile banking and financial performance of commercial banks in Kenya. This was largely because the financial performance of commercial banks is a function of many other variables not looked at in this study. However, with the increasing levels of adoption of information technology, commercial banks that adopt the latest information technologies are likely to outperform.

Ogare (2013), 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. The study conclude that 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. 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.

Wanja (2014) found out that there was a positive and significant relationship between mobile banking income and financial performance of the commercial banks. The study concludes that there has been tremendous increase in the mobile banking income and internet banking income in commercial banks in Kenya. This increase in mobile banking and internet banking incomes may be as a result of increased innovations and increased use of mobile phones among customers. The high reliance on mobile phones and other communication devices have enhanced increased use in business transactions which also involves even the commercial banks.

The study also concludes that there is a positive and significant relationship between financial performance of the commercial banks and internet banking income as well as mobile banking income. This means that a unit increase in mobile banking and internet banking leads to a unit increase in increased income of the commercial banks, which leads to increased profits.

Ngami, (2013) revealed that the combined effect of bank innovations influenced bank performance positively. The findings revealed that mobile phones have a higher moderating effect than internet services on the bank innovations when influencing financial performance of commercial banks in Kenya. It can be concluded that bank innovations influence financial performance of commercial banks in Kenya positively. The adoption of innovations by commercial banks has a high potential of improving financial performance and hence better returns to the shareholders.

Diergaardt, (2013) indicate that e-banking has positive significant effect on the performance of commercial bank in Namibia. The study of Mburu, (2013), also found that there is a significant positive relationship between Mobile Banking and financial Performance. This growth in mobile payments supports the findings of this study and those of other corroborating studies. Mobile

banking has experienced high penetration levels in Kenya because it offers an alternative service delivery channel for banks which is both accessible and affordable to many customers. The ease and speed with which customers can transact on mobile phones has made mobile banking very popular to both the banks and the customers. The findings also disclosed a significant positive relationship between internet banking and financial Performance. The findings of this study show that internet banking is used by bank as a convenience platform to enable customers to transact as opposed to it being an avenue for banks to make more revenue.

Oira and Kibati, (2016) concluded that bank innovations influence financial performance of commercial banks in Kenya positively. The versatility of innovations has made their adoption rate to be high among both the banks and their customers. It could have been challenging if the adoption was only with either the banks or the customers. Banks in Kenya have continued to perform well even when other sectors of the economy show lagged performance. This can be explained by the use of innovations which have enabled banks to start making income away from traditional sources like interest, trade and asset financing. Banks have been able to make more commission income from transactions done on innovation channels like; mobile phones, agents, internet and balance assurance.

Oyewole et al, (2013) indicates that e-banking begins to contribute positively to bank performance after two years of adoption in terms of ROA and NIM while a negative impact was observed in first year of adoption. Hence, decisions regarding investment in electronic banking should be rational so as to justify cost and revenue implications on bank performance.

Osondu et al, (2013) , while studying e-banking on the performance of Nigeria banks, found that there is significant difference between pre and post returns on equity on adoption of electronic banking, The clearer picture of the results is that adoption of e-banking in Nigeria has significantly improved Nigerian banks performance in terms of returns on equity (ROE) only. On the other hand, the results also reveal that there is no significant difference between pre- and post-returns on assets (ROA) of Nigeria banks on adoption of e-banking. Here, the implication of this result is that electronic banking adoption has not significantly improved the returns on assets of Nigerian banks.

Wondwossen and Tsegai, (2005) also studied on the challenges and opportunities of E-payments in Ethiopia; their objective was studying of E-payment practices in developing countries, Africa

and Ethiopia. The authors employ interview and on site observation to investigate challenges to E-payment in Ethiopia and found that, the main obstacles to the development of E-payments are, lack of customers' trust in the initiatives, Unavailability of payment laws and regulations particularly for E-payment, Lack of skilled manpower and frequent power disruption. According to Wondwossen and Tsegai (2005), an adequate legal structure and security framework could foster the use of E-payments, which is contradicting with the finding of the previous study.

A study conducted by Gardachew (2010) on practices, opportunities and challenges of E-banking in Ethiopia, analyzed the main challenges and opportunities of E-banking. After conducting a survey he came up with the challenges being low level of internet penetration and poorly developed telecommunication infrastructure, lack of suitable legal and regulatory framework for e-commerce and e-payment, high rates of illiteracy, high cost of internet, absence of financial networks that link different banks, lack of reliable power supply and cyber security issues. And mentioned opportunities offered by ICT through e-learning programs, the help of non governmental agencies like ECA and World Bank to developing countries to design national strategies like e-commerce and commitment of the government on ICT as prospects for E-banking development.

Ayana, (2014) explored in his study on that E-banking system, such as ATM, mobile banking, internet banking and others were not well adopted by Ethiopian banking industry. This is due to low level of ICT infrastructure and lack of legal frame work at NBE, which can initiate banking industry to implement the system. In addition to the above two basic factors affecting adoption of E banking in Ethiopia, result of the study also shows that security risk and lack of trust on the use of technological adoption are other major barriers for the system. The level of security risk associated with E banking product or service, such as ATM, internet banking, mobile banking and others, pose different challenges to different banks. Improvements are required to ensure client confidence. Lack of competition among local and foreign banks is also another challenge for the adoption of E-banking in the country. Technical and managerial skills available in Ethiopian banks for the adoption of E-banking are also limited.

According to Berhanu, (2015) difficulty to be used by illiterate and semi literate customers and the interruption of telecommunication network could hinder ATM and POS machines expansion.

Tilahun (2016) showed in his study that debit card have positive influence on banks' profitability. POS and Debit Card enhance transaction by accessing the account of the customer anytime including out of office hours. By using debit card the customers were secured from theft and not carry bulk of money papers wherever they undergo shopping and market of any sort. Further, it is beneficial for the government by decreasing the printing of paper money that cost it sorely. In other hand the study, indicate that ATMs terminals and POS terminal have a negative influence on banks' profitability. The number of ATM terminals has a negative impact on profitability; it is to mean as the number of ATM terminals increase the impact on profitability not attractive, or profitability would decrease. In other words, it does not bring profit since the customers solely withdraw the money. Whereas it increases customer satisfaction by accessing their account 7/24; the major reason was the cost of installation and price of ATM terminals compared to profit (i.e. the banks collect as a commission fee) was too expensive.

Girma,(2016) conducted a research about the impact of ICT on the performance of Ethiopian banking industry using secondary data over the period 2010-2014. Data analysis is carried out in panel environment. The finding shows that the ICT, ATM and POS have no statistically significant effect on return on asset on commercial banks in Ethiopia. Moreover result showed that the POS, ICT and number of branches have negative effect on return on asset on commercial banks in Ethiopia.

Dawit, (2017), found out that the two big IT investments in Ethiopian Commercial banks are hardware investment and software investment; these investments have a negative and significant impact on the ROA of the commercial Banks in Ethiopia. The study conclude that the hardware investments particularly made on ATM, POS, Mobile banking, internet banking etc don't have positive effect on the financial performance measures in Ethiopian banking industry indicates that such services only increase customers' intimacy rather than earning. However they would probably have the desired effect in the long-run when all bank share electronic resources one another and recover their cost as currently such services are at earliest stage..

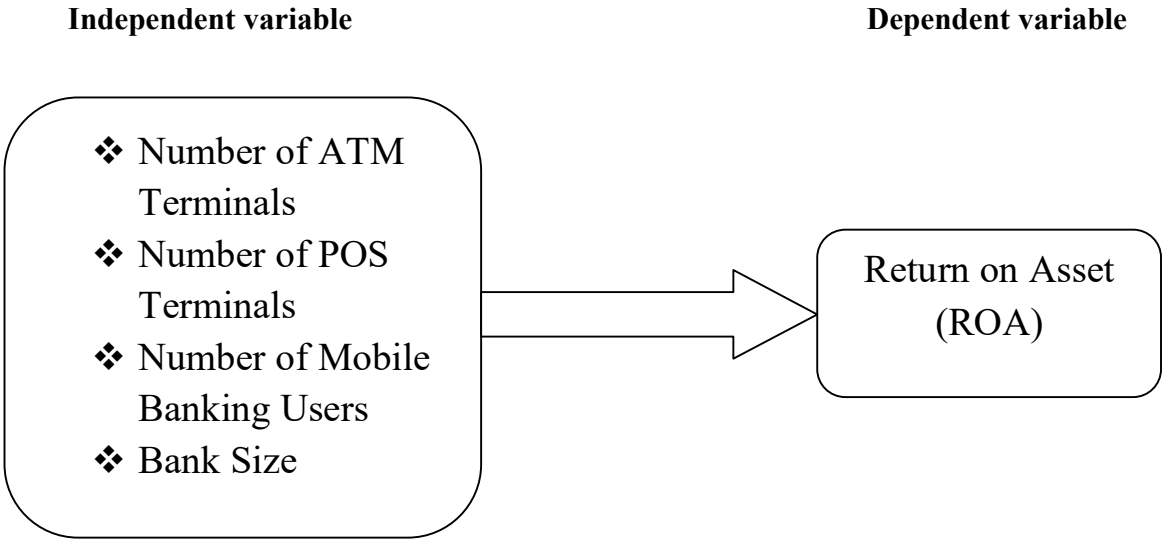
2.3 Conceptual Framework

A conceptual framework is a research tool intended to assist a researcher to develop awareness and understanding of the situation under analysis and to communicate it. When clearly articulated, a conceptual framework has potential usefulness as a tool to assist a researcher to

make meaning of subsequent findings. It forms part of the agenda for negotiation to be scrutinized, tested, reviewed and reformed as a result of investigation and it explains the possible connections between the variables. (Smyth, 2004)

A conceptual framework for the present study shows the relationship of e-banking services on financial performance of top performer Commercial Banks in Ethiopia and has been depicted in Figure 2.1 below. Figure 2.1 conceptualizes that e-banking services (Automatic Teller Machines, Point of Sale terminals, mobile banking, and bank size) impact on financial performance of top performer commercial banks ascertained through return on assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings.

Figure 2.1- Conceptual frame work-Relation between variables



Source: Developed for the research

Chapter Three: Research Methodology

3.1. Research Design

Research design is a comprehensive plan for data collection in an empirical research project. It is a "blueprint" for empirical research aimed at answering specific research questions or testing specific hypotheses. (Bhattacherjee, 2012).

The main objective of this study is to examine the impact of e-banking services on performance of top performer commercial banks in Ethiopia. To achieve this objective explanatory type of research design with a quantitative approach is used. According to Saunders et al (2009), Studies that establish causal relationships between variables termed explanatory research.

3.2. Sample and Population

According to Bhattacherjee (2012), a population can be defined as all people or items (unit of analysis) with the characteristics that one wishes to study. The target population for this study is eleven commercial banks that were registered by National Bank of Ethiopia (NBE) and banks that are top performer commercial banks in Ethiopia (banks that have a net profit greater than 250 million in 2016/17).

Table 3.1 List of banks selected for this research (Target population)

	Name of the Bank	Year of Establishment	Profit after Tax
1	Commercial Bank of Ethiopia	1963	(PBT)14.6 Billion
2	Awash International Bank	1994	1 Billion
3	Dashen Bank	1995	756 Million
4	Bank of Abyssinia	1996	535 Million
5	Wegagen Bank	1997	532 Million
6	Nib International Ban	1999	516 Million
7	United Bank	1998	382 Million
8	Berhan International Bank	2009	349 Million
9	Oromia International Bank	2008	290 Million
10	Lion International BanK	2006	268 Million
11	Zemen Bank	2008	266 Million

Source: Commercial Banks Annual Report, 2016/17

For the purpose of this study, the sample commercial banks used comprises nine commercial banks out of eleven commercial banks. Sampling is the statistical process of selecting a subset (called a "sample") of a population of interest for purposes of making observations and statistical inferences about that population. (Bhattacherjee, 2012).

3.3. Sampling Technique

This study used purposive sampling method to draw the sample from the population. Purposive sampling enables to use a judgment to select cases that will best enable you to answer your research question(s) and to meet your objectives. (Saunders et al 2009).The sample banks wear selected because they have readily available information (banks those having organized e-banking service report since 2013). From all commercial banks listed by NBE, sample of the below listed nine banks wear selected for the study based on the above criterion. The researcher considers that the sample size is sufficient to make sound conclusion about the population.

Table 3.2 List of banks selected for this research (Sample Banks)

	Name of the Bank	**Year of Establishment**	**Profit after Tax(2016/17)**
1	Commercial Bank of Ethiopia	1963	(PBT)14.6 Billion
2	Awash International Bank	1994	1 Billion
3	Dashen Bank	1995	756 Million
4	Bank of Abyssinia	1996	535 Million
5	Wegagen Bank	1997	532 Million
6	Nib International Bank	1999	516 Million
7	United Bank	1998	382 Million
8	Berhan International Bank	2009	349 Million
9	Zemen Bank	2008	266 Million

Source: Commercial Banks Annual Report, 2016/17

3.4. Data Collection

The study used secondary data collected from the annual report of commercial banks and National Bank of Ethiopia and, published and unpublished reports obtained from E- banking departments of sampled banks. Secondary data refers to that statistical material which is not originated by the investigator himself, but which he obtains from others records. (Gupta, 2004).

The data was collected using data collection sheet which was edited, coded and cleaned. Data was mainly obtained covering the period from 2013 to 2017. Additional data were obtained by examining various documents, including, research reports, books and journal articles.

3.5 Data analysis

In order to determine the impact of e-banking service on the performance of commercial banks in Ethiopia, The study used both descriptive and inferential statistics in analyzing the data. Analysis was done with the help of E-views9 econometric software package. First, data collected was cleaned, sorted and collated. Then the collected panel data which comprising both time series and cross-sectional elements was entered into the computer, after which analysis was done. Descriptive statistics (Mean, maximum and minimum, standard deviations, Kurtosis and Skewness) was used to analyze the general trends of the data from 2013 to 2017. In order to test the relationship between the variables the inferential tests regression analysis were used.

3.6 Analytical Model

For this study, return on asset was used as a dependent variable which is determined by many factors. And those factors have chosen by taking in to account the availability of data and its influence on bank performance.

The analytical model was as follows

$ROA= \alpha 0 + \beta 1NATM+\beta 2NPOS+ \beta 3NMBU+ \beta 4BS+\varepsilon$

Where:

ROA is the dependent variable (Performance i.e. Return on Asset)

$\alpha 0$ is the regression constant

$\beta 1$, $\beta 2$, $\beta 3$, and $\beta 4$ are the coefficients of independent variables,

NATM is Number of ATM terminals

NPOS is Number of POS terminals

NMBU is Number of Mobile banking users

BS is the Bank Size

ε is the Error Term.

3.7 Variable Measurement

The variables were measured based on the following;

Table 3.3 Variable Measurement

Variable	**Measurement**
Dependent Variable	
Performance	Return on Asset
Independent Variable	
ATM	Number of ATM terminals Installed by the Bank
POS	Number of POS terminals Installed by the Bank
Mobile Banking	Number of Mobile Banking Users in the Banks
Control Variable	
Bank size	Number of Branches

Source: Developed for the research

The multiple linear regression analysis was used to find the value of $\alpha 0$ (constant term) and βi (independent variables). The beta will explain whether the relationship between the dependent and the independent variable is high or low, positive or negative; this will be revealed by the value of the beta coefficient. Adjusted R2 was used to measure the proportion of variance in the dependent variable that was explained by the independent variables to a maximum of one. The study use F-test to test for joint significance of all coefficients. The significance of the variables in the regression model will be measured or determined by the p value. Whereby, if the p value of the variable is 0.05 (5%) and below, then the variable will be deemed significant while where the p value co-efficient of the variable is above 0.05, then the relationship of the variables will be deemed insignificant.

Chapter Four: Analysis and Finding/Results

To find the major out puts of the study and to give important recommendations, the collected data should be analyzed and discussed, accordingly the analysis and important findings from the collected data are discussed below.

The data was collected from secondary sources which were the financial statements and published and unpublished annual reports for the years 2013to 2017. The data was analyzed using E-Views9 econometric software package.

4.1 Variables

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

Dependent Variable

The dependent variable is performance of top performer commercial bank represented by profitability (Return on Asset).

Independent and control Variables

The independent variables of this study was measured by the number of ATM terminals installed by the banks, number of POS terminals installed by the bank, and number of mobile banking users in the banks, and bank size hold by the banks is control variable.

4.2 Descriptive Statistics

The summary of descriptive statistics that was intended to give general descriptions about the data (both dependent and independent variables) is presented in Table 4.1. The total number of observation for each variable was 45 (i.e., data for 9 banks for the period from the year 2013 to 2017). Accordingly, mean, standard deviation, minimum, maximum, Kurtosis and Skewness values of each variable were used so as to show the overall trend of the data over the period under consideration.

Table 4.1 Descriptive Statistics

	BS	NATM	NMBU	NPOS	ROA
Mean	227.6222	222.2444	73187.49	534.1333	0.035244
Median	136.0000	115.0000	10247.00	138.0000	0.034000
Maximum	1310.000	1501.000	1400000.	6883.000	0.049000
Minimum	7.000000	3.000000	0.000000	0.000000	0.022000
Std. Dev.	296.5676	340.4475	231605.4	1368.068	0.006260
Skewness	2.421993	2.753147	4.809172	3.985524	0.100044
Kurtosis	7.966696	10.02527	26.43446	17.99120	2.438855
Jarque-Bera	90.24800	149.3881	1203.162	540.5130	0.665473
Probability	0.000000	0.000000	0.000000	0.000000	0.716959
Sum	10243.00	10001.00	3293437.	24036.00	1.586000
Sum Sq. Dev.	3869903.	5099798.	2.36E+12	82350869	0.001724
Observations	45	45	45	45	45

Source: E-Views output

Note: Return on asset (ROA), Number of ATM (NATM), Number of POS (NPOS), Number of Mobile banking user (NMBU), and Bank Size (BS).

As shown in the table 4.1 above, during 2013 to 2017 the average profit level; ROA of Ethiopian top performer commercial banks are 3.5. It can be noticed that the bank ROA growth fluctuates between 2.2 and 4.9 percent. The standard deviation among banks in terms of bank profit growth is 0.63 percent; this confirms that there were lower variations of performance growth among top performer commercial banks during the study period.

Skewness of both dependent and independent variables are positive, indicating that the distributions are skewed to the right. Since the Kurtosis of ROA is less than 3, indicating that the distribution is thin and long tailed. The Kurtosis for NATM, NPOS, NMBU and BS is greater (>) than 3, it indicates that the distribution is fat and short tailed.

4.3 Multicollinearity Test

Multicollinearity is a phenomenon where the two or more of the explanatory variables used in a regression model are highly related to one another. Testing for multicollinearity simply involves looking at the matrix of correlations between the individual variables. (Brooks, 2014).

Table 4.2 Correlation Matrix of Independent Variables

	BS	NATM	NMBU	NPOS
BS	1.000000	0.665425	0.799019	0.769409
NATM	0.665425	1.000000	0.678571	0.642096
NMBU	0.799019	0.678571	1.000000	0.797238
NPOS	0.769409	0.642096	0.797238	1.000000

Source: E-Views output

Note: Return on asset (ROA), Number of ATM (NATM), Number of POS (NPOS), Number of Mobile banking user (NMBU), and Bank Size (BS).

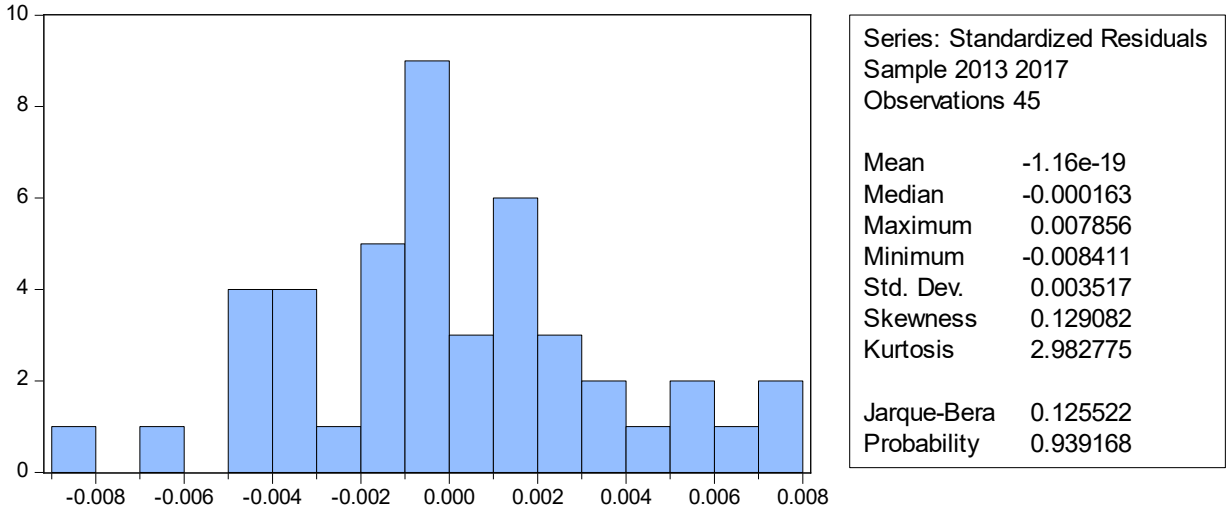
According to Brooks, (2014), suggestion in order to find out the multicollinearity problem, the bivariate correlations among the independent variables should be examined and the existence of correlation of about 0.8 or larger indicates a problem of multicollinearity. The results in the above correlation matrix table shows that the highest correlation of 0.79 which is between NMBU and BS. Since there is no correlation above 0.8 in this study according to Brooks, (2014), it can be concluded that there is no problem of multicollinearity.

4.4 Normality Test

Normality test is used to determine whether the error term is normally distributed. According to Brooks, (2014), if the residuals are normally distributed, the histogram should be bell-shaped and the Bera–Jarque statistic would not be significant. This means that the p-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level. Theoretically, if the test is not significant, then the data are normal, so any value above 0.05 indicates normality. On the other hand, if the test is less than 0.05 which proves significance, then the data are non-normal.

As shown in the histogram below in the figure 4.1 the distribution of the panel observation is symmetric about its mean. The Jarque-Bera statistic has a P-value of 0.94 implies that the p-value for the Jarque-Bera test is greater than 0.05 which indicates that there was no evidence for the presence of abnormality in the data and it can be concluded that the data is normally distributed.

Figure 4.1 Normality Test for Residuals



Source: E-Views output

4.5 Model Selection (Random Effect versus Fixed Effect Models)

Panel data may have unobserved group effects, time effects or both included in the error term. These effects are either fixed effects, random effects or both. These effects may lead to heterogeneity or even endogeneity and the OLS estimators will be biased and inconsistent .It is often said that the random effects model is more appropriate when the entities in the sample can be thought of as having been randomly selected from the population, but a fixed effect model is more plausible when the entities in the sample effectively constitute the entire population.

According to Brooks, (2014), a random effects approach can be used when any unobserved omitted variables (that were allowed for by having different intercepts for each entity) are uncorrelated with the included explanatory variables; otherwise the fixed effects model is preferable. To examine whether individual effects are fixed or random, a Hausman specification test was conducted providing evidence in favor of the REM model (Jeffrey, 2012). The null hypothesis for this test is that unobservable heterogeneity term is not correlated or random effect model is appropriate, with the independent variables. If the null hypothesis is rejected then we

employ fixed effects method. The hypothesis for the model selection test was formulated as follow;

H0: Random effects model is appropriate.

H1: Fixed effects model is appropriate.

Table 4.3 Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	22.226430	4	0.0002

Source: E-Views output

Table 4.3 above shows Hausman specification test, the P-value of a model is 0.0002, which is less than 5% level of significance. Hence, the null hypothesis of the random effect model is appropriate is rejected at 5% level of significant. This implying that, fixed effect model is more appropriate than random effect model.

4.6 Regression Analysis

Regression analysis is the statistical technique that identifies the relationship between two or more quantitative variables: a dependent variable, whose value is to be predicted, and an independent or explanatory variable (or variables), about which knowledge is available. The technique is used to find the equation that represents the relationship between the variables. Multiple regressions provide an equation that predicts one variable from two or more independent variables. The operational panel regression model used to find the significant factors of performance of top performer commercial banks in Ethiopia measured by Return on Asset (ROA) was:

$$ROA = \alpha 0 + \beta 1NATM + \beta 2NPOS + \beta 3NMBU + \beta 4BS + \varepsilon$$

Where: ROA is the dependent variable (Performance i.e. Return on Asset)

$\alpha 0$ is the regression constant

$\beta 1$, $\beta 2$, $\beta 3$, and $\beta 4$ are the coefficients of independent variables,

NATM is Number of ATM terminals

NPOS is Number of POS terminals

NMBU is Number of Mobile banking users

BS is the Bank size of banks

ε is the Error Term.

Table 4.4 Fixed Effects Model Regression Results

Dependent Variable: ROA
Method: Panel Least Squares
Date: 03/06/18 Time: 14:41
Sample: 2013 2017
Periods included: 5
Cross-sections included: 9
Total panel (balanced) observations: 45

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.043463	0.002569	16.91587	0.0000
NATM	-9.17E-06	3.02E-06	-3.039434	0.0047
NPOS	-7.99E-07	8.43E-07	-0.947904	0.3503
NMBU	1.46E-08	6.82E-09	2.142843	0.0398
BS	-3.00E-05	1.32E-05	-2.276397	0.0297

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.684344	Mean dependent var	0.035244
Adjusted R-squared	0.565973	S.D. dependent var	0.006260
S.E. of regression	0.004124	Akaike info criterion	-7.907037
Sum squared resid	0.000544	Schwarz criterion	-7.385113
Log likelihood	190.9083	Hannan-Quinn criter.	-7.712469
F-statistic	5.781347	Durbin-Watson stat	1.702779
Prob(F-statistic)	0.000034		

Source: E-views output

Note: Return on asset (ROA), Number of ATM (NATM), Number of POS (NPOS), Number of Mobile banking user (NMBU), and Bank Size (BS).

From table 4.4, the regression model therefore becomes:

ROA = 0.043+ - 9.17(NATM) + -7.99(NPOS) + 1.46(NMBU) + -3(BS)

Results on Table 4.4 showed that number of ATM, number of POS, number of mobile banking users and Bank Size explains 68.4% variations of ROA of top performer commercial banks in Ethiopia as represented by the R2. While the rest 31.6% variations of ROA is explained by other factors that are not included in the model.

Results in Table 4.4 presents the independent variables are statistically significant in predicting the return on assets or affecting the return on assets of the banks. The study established a significant value of p=0.000034 showing a statistical significance relationship at level of significance of 1%. This shows that the E-banking services included in the model have an overall high significance in explaining the return on assets of top performer commercial banks in Ethiopia.

4.7 Discussions and Findings

The general objective of the study was to examine the impact of e-banking services on performance of top performer commercial banks in Ethiopia. Regression result in the above table 4.4 shows that, coefficient intercept (α) is 0.043463. This means, when all explanatory variables took a value of zero, the average value ROA would be take 0.043 unit and statistically significant at 5% level of significance.

4.7.1 Number of Automated Teller Machine and Return on Assets

The result in table 4.4 show that other explanatory variables remains constant number of ATMs terminals has significant negative impact on ROA of top performer commercial banks in Ethiopia and implies that a unit increase in the number of ATMs lead to a decrease in ROA by a factor of 9.17. These findings are in agreement with those of Tilahun (2016) who stated that the number of ATM terminals has a negative impact on profitability; according to the finding when ATM terminals increase the profitability would decrease.

In contrast to the finding of this study Gakure and Ngumi (2013) found that ATMs contributed positively to the profits of commercial banks in Kenya. In Kenya ATMs 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.

4.7.2 Number of Point of Sale and Return on Assets

The result in table 4.4 also shows that other explanatory variables remains constant number of POS has negative impact on ROA of top performer commercial banks in Ethiopia therefore a unit increase of the number of POSs would lead to a decrease in ROA by a factor of 7.99. Moreover, number of POS is insignificant in explaining the ROA at 5 % level of significant. The findings is concur with those of another study conducted by Girma, (2016) which stated that POS have negative insignificant effect on return on asset on commercial banks in Ethiopia.

In contrast to the finding of this study Gakure and Ngumi (2013) which concluded that POS terminals have a positive influence on banks' profitability. In Kenya POS terminals have been used mainly at service points like hotels, petrol stations and supermarkets.

4.7.3 Number of Mobile Banking Users and Return on Assets

The result presented on table 4.4 indicate that when other explanatory variables remains constant number of mobile banking users has a positive and significant impact on ROA of top performer commercial banks in Ethiopia. This implies that a unit increase in the number of mobile banking user would lead to a increase in ROA by a factor of 1.46.The finding is consistence with the finding of Munyok, (2015) who found out that mobile banking had greatly increased the profitability of the commercial banks. Findings revealed that M-banking products offered by banks have greatly increased the banks revenue in the last five years. Additionally Arisa and Muturi, (2015) revealed that mobile banking affects financial performance positively. From the finding mobile banking was shown to have a good opportunity for financial providers to introduce new financial innovations, enhances the convenience of existing customers, allows bank customers to check their account balances, perform credit card transaction as well as provide information on the latest transaction made by customers.

4.7.4 Bank Size and Return on Assets

Table 4.4 shows that other explanatory variables remains constant bank size has significant negative impact on ROA of top performer commercial banks in Ethiopia, therefore a unit increase on bank size of the banks would lead to a decrease in ROA by a factor of 3.

This result contrast to the findings of Karimzadeha et al. (2014) who examined the effects of electronic banking expansion on profitability of a commercial bank on Iran banks indicate that increasing the variable of bank size has had positive and significant effect on bank profitability. In fact, increase in bank assets will lead to increase in banks' profitability indexes. This is also supported by Wanja (2012) who conclude that, there is a positive association between the financial performance of the commercial banks and bank size.

4.8 Hypothesis testing using p-values

H0: ATM has no significant impact on performance of top performer commercial banks in Ethiopia.

The p value for ATM is 0.00047 at 1% level of significance therefore; we reject the null hypothesis and conclude that ATM has a significant impact on performance of top performer commercial banks.

H0: POS has no significant impact on performance of top performer commercial banks in Ethiopia.

With regard to Point of Sales terminals the p value was 0.3503 at 5% level of significance; since it is more than 0.05 we accept the null hypothesis and conclude that point of sales terminals has no significant impact on performance of top performer commercial banks.

H0: Mobile banking has no significant impact on performance of top performer commercial banks in Ethiopia.

For mobile banking the P value is 0.039. This being less than 0.05 suggests that mobile banking has significant impact on performance of top performer commercial banks at 5% level of significance and we reject the null hypothesis

H0: Bank size has no significant impact on performance of top performer commercial banks in Ethiopia.

The p value for bank size is 0.029 at 5% level of significance therefore; we reject the null hypothesis and conclude that bank size has significant impact on performance of top performer commercial banks.

Table 4.5 Summary Hypothesis Testing

Independent variable	P-value	Observation	Actual result Statistical Significance test	Decision
NATM	0.0047	P-Value<0.01	significant.	Reject null
NPOS	0.3503	P-Value >0.05	Insignificant.	Accept null
NMBU	0.039	P-Value <0.05	significant.	Reject null
BS	0.029	P-Value <0.05	significant.	Reject null

Source: Author's Computation

Chapter Five:

Summary of Findings, Conclusion and Recommendation

5.1 Summary of Findings

The main objective of this study is to examine the impact of e-banking service on the performance of top performer commercial banks in Ethiopia. The study use panel data from nine commercial banks for five years period covering from 2013 to 2017 fiscal year. The regression result showed that number of ATM, number of POS, number of mobile banking users and Bank Size explains 68.4% variations of ROA of top performer commercial banks in Ethiopia. While the rest 31.6% variations of ROA is explained by other factors that are not included in the model.

The significant test showed that impact of e-banking services on bank ROA was statistically significant. This means that the combined effect of e-banking services in this study is statistically significant in explaining ROA of top performer commercial banks in Ethiopia.

The regression result showed that there is a negative association between the financial performance of top performer commercial banks and the variables- number of ATM terminals, number of POS terminals and bank size. In the other hand, the result show positive association between number of mobile banking user and financial performance of commercial banks.

The study further established that there is a significant relationship between financial performance of top performer commercial banks and the predictors- number of ATM terminals, number of mobile banking users and bank size. However, the relationship between financial performance of the commercial banks and number of POS terminal was found to be insignificant.

5.2 Conclusion

The study empirically analyzed the impact of e-banking service on the performance of commercial banks in Ethiopia. The study use panel data from nine commercial banks for five years period covering from 2013 to 2017 fiscal year. On the study the researcher carefully analyzed the impact of e-banking service such as number of ATM terminals installed by the banks, number of POS terminal installed by the banks, number of mobile banking users and bank size on performance (measured by return on asset) of top performer commercial banks in Ethiopia.

The regression result shows a significant negative relationship between ATMs terminals and ROA. The study also disclosed that number of POS has negative impact on ROA of commercial banks in Ethiopia. The negative impact may have arisen from the high cost on e-banking services, Low level of internet penetration, frequent power interruption and low computer illiteracy rate.

On the other hand, the study established a significant positive relationship between Mobile banking as depicted by the number of mobile banking users and ROA. Mobile banking has positive impact on ROA because it offers an alternative service delivery channel for banks, which is both accessible (available anytime, anywhere) and affordable (low cost both to the consumer and the bank). The study additionally found that bank size has significant negative impact on ROA. From the study it was evident that yesterday's competitive advantage - a large branch network can be a competitive disadvantage.

Based on the findings of the study, it can be concluded that e-banking services have negative significant impact on the performance of commercial banks in Ethiopia. However, e-banking services have a potential to contribute for the performance of commercial banks in the future.

5.3 Recommendations

- It is recommended that the government should support and work with commercial banks in order to promote the adoption and usage rate of e-banking services.
- National Bank of Ethiopia, private and governmental banks and technology operators should cooperate and form partnerships to improve and expand e-banking services in Ethiopia.
- Banks management should invest their time, effort and resources towards e-banking service and explore the way that e-banking can improve the bank performance.
- Banks should focus its work to promote the confidence of e-banking services, and develop marketing policies that encourage customers to use e- banking services.
- The banks management should from time to time train customers with regard to electronic banking, its benefits, risk exposure, physical and electronic security. Also, trainings should be held for bank staff in short periods to acquaint them with modern developments of the sophisticated technology in changing times.

- The banks must be focused in terms of their needs and using the right technology to achieve goals, rather, than acquiring technology of internet banking because other banks have it.

5.4 Further research

This study examined the impact of e-banking services on performance of top performer commercial banks in Ethiopia by using selected e-banking services variables. However, there are so many specific variables not included in this study like debit card, internet banking and agent banking. Thus, it is recommended for future researchers to further assess impact of e-banking services by incorporating these specific variables. It is also recommended for future researchers to study the impact of e-banking services on the overall financial markets in Ethiopia.

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Appendix:

1.Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	22.226430	4	0.0002

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
NATM	-0.000009	-0.000009	0.000000	0.6000
NPOS	-0.000001	-0.000001	0.000000	0.0522
NMBU	0.000000	0.000000	0.000000	0.0012
BS	-0.000030	0.000002	0.000000	0.0071

Cross-section random effects test equation:
Dependent Variable: ROA
Method: Panel Least Squares
Date: 03/06/18 Time: 14:41
Sample: 2013 2017
Periods included: 5
Cross-sections included: 9
Total panel (balanced) observations: 45

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.043463	0.002569	16.91587	0.0000
NATM	-9.17E-06	3.02E-06	-3.039434	0.0047
NPOS	-7.99E-07	8.43E-07	-0.947904	0.3503
NMBU	1.46E-08	6.82E-09	2.142843	0.0398
BS	-3.00E-05	1.32E-05	-2.276397	0.0297

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.684344	Mean dependent var	0.035244
Adjusted R-squared	0.565973	S.D. dependent var	0.006260
S.E. of regression	0.004124	Akaike info criterion	-7.907037
Sum squared resid	0.000544	Schwarz criterion	-7.385113

Log likelihood	190.9083	Hannan-Quinn criter.	-7.712469
F-statistic	5.781347	Durbin-Watson stat	1.702779
Prob(F-statistic)	0.000034		

2. Fixed Effects test result

Dependent Variable: ROA
Method: Panel Least Squares
Date: 03/06/18 Time: 14:51
Sample: 2013 2017
Periods included: 5
Cross-sections included: 9
Total panel (balanced) observations: 45

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.043463	0.002569	16.91587	0.0000
NATM	-9.17E-06	3.02E-06	-3.039434	0.0047
NPOS	-7.99E-07	8.43E-07	-0.947904	0.3503
NMBU	1.46E-08	6.82E-09	2.142843	0.0398
BS	-3.00E-05	1.32E-05	-2.276397	0.0297

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.684344	Mean dependent var	0.035244
Adjusted R-squared	0.565973	S.D. dependent var	0.006260
S.E. of regression	0.004124	Akaike info criterion	-7.907037
Sum squared resid	0.000544	Schwarz criterion	-7.385113
Log likelihood	190.9083	Hannan-Quinn criter.	-7.712469
F-statistic	5.781347	Durbin-Watson stat	1.702779
Prob(F-statistic)	0.000034		

Table Net Profit of commercial Banks in Ethiopia in 2016/17

	Name of the Bank	Year of Establishment	Profit after Tax
1	Commercial Bank of Ethiopia	1963	(PBT)14.6 Billion
2	Awash International Bank	1994	1 Billion
3	Dashen Bank	1995	756 Million
4	Bank of Abyssinia	1996	535 Million
5	Wegagen Bank	1997	532 Million
6	Nib International Ban	1999	516 Million
7	United Bank	1998	382 Million
8	Berhan International Bank	2009	349 Million
9	Oromia International Bank	2008	290 Million
10	Lion International BanK	2006	268 Million
11	Zemen Bank	2008	266 Million
12	Cooperative Bank of Oromiya	2004	207 Million
13	Buna International Bank	2009	201 Million
14	Abay Bank	2010	190 Million
15	Enat Bank	2012	100 Million
16	Addis International Bank	2011	92.2 Million
17	Debub Global Bank	2012	50.8 Million

Source: Commercial Banks Annual Report, 2016/17