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Department of Accounting and Finance

***Effect of E-Banking Services on Profitability
of Dashen Bank***

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Adama

***Effect of E-Banking Services on Profitability
of Dashen Bank***

**A Thesis Submitted in Partial Fulfillment of the
Requirements for the Award of the Degree of Master of
Science in Accounting and Finance.**

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DECLARATION

I, the undersigned, declare that this thesis is my original work, has not been presented for degree in any other university and that all sources of materials used for the thesis have been duly acknowledged.

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Acronyms

ATM	Automatic Teller Machine
AVR	Automated Voice Response
CBE	Commercial Bank of Ethiopia
DW	Durbin-Waston
ECX	Ethiopia Commodity Exchange
GDP	Gross Domestic Product
NCH	Number of Card Holder
PIN	Personal Identification Number
POS	Point of Sale
ROA	Return on Asset
ROE	Return on Equity
SPSS	Statistical Package for Social Sciences
VIF	Variance Inflation Factor

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ABSTRACT

The subject of this study was focused on Dashen Bank e-banking services on its profitability. Among all other banks found in the country and the study area, Dashen Bank was selected for this study because it was the first bank that penetrates the market in rendering e-banking service and dominantly provided the services during those years in the study area. The major purpose of this study was to investigate the effects of e-banking services on profitability of Dashen Bank. To achieve this objective of the study, explanatory research design was employed; considering ATM, POS and NCH as independent variables and Profitability of the Bank as dependent variable. Among quantitative types of data commonly employed in the analysis of financial problems; a time series data were collected and used. Those data were obtained from annual reports of the bank during the fiscal years under review. Consequently, the analysis of the data was based on six years annual reports of the bank on NCHs, net-profits, and profit contribution of ATM and POS services of the bank. The data collected were processed using SPSS (V20) software; and the analyses of the data were made using descriptive statistics and multiple regressions. The Descriptive statistics were used to analyze the features and annual growth rate of e-banking service variables and annual net- profits of the Bank during the study years. Furthermore, multiple regressions were made to identify the extent of influences of e-banking services (ATM, POS, and NCH) on the profitability of the bank. Accordingly, the results of data analysis indicated that, the contribution of ATM on profit of the bank was increased from year to year since the beginning of the services in the bank. However, the rate of profit obtained from POS was increased only for one year after the commencement of the services. A constant failure of its Annual Growth Rate was identified in the following years till 2013 fiscal year. Similarly, the annual growth rate of NCH in the bank was not proceeding as that of the first two years of starting the services. It was radically declined for consecutive three years starting from 2011. However, the overall Annual Growth Rate of ATM, POS, and NCH in relation to the annual net-profits of the Bank were positively identified during the periods under review. In addition, with respect to the extent of ATM, POS and NCH effects on net-profit of the Bank, the results of regression analysis confirmed significant contribution of them towards the overall profit of the Bank at 0.05 levels of confidence. Based on these findings, it is possible to conclude that, the effects of ATM, POS and NHC on overall profit of Dashen Bank was positive and significant. Finally, based on these findings and the conclusions; recommendations like strengthening the current practices of the services and introducing other e-banking services, making comparison with others banks practices of e-banking services; and conduct further in-depth study to identify specific problems related to e-banking services were forwarded.

Key words: *E-banking services, ATM, POS, NCH, and Bank's profitability.*

CHAPTER ONE

1. Introduction

1.1. Background of the Study

Electronic banking (e-banking) is the newest delivery channel of banking services. The definition of e-banking varies amongst researches partially because electronic banking refers to several types of services through which a bank's customers can request information and carry out most retail banking services via computer, television or mobile phone (Daniel, 1999; Mols, 1998; Sathye, 1999).

People start using cards as a means of effecting payment some 50 years back. During its half century existence, the influence of payment card on the worldwide economy is increasing significantly (Dawd, 2004).

At present payment cards become the most widely used means of handling value exchanges in the developed part of the world. As per statistical evidences, over the past 30 years transactions worth more than USD 5 trillion are being handled annually through electronic Medias using payment cards. Today cards are becoming more popular in the other parts of the world to effect payments safely and in a convenient manner. According to information obtained from VISA, bank cards with a Visa or MasterCard logo are now used by over one and a half billion people worldwide, accepted in more than 24 million retail locations as well as over one million ATMs and is the preferred method of payment for over 10% of consumer transactions (ibid)

Burr, 1996, for example, describes it as an electronic connection between the bank and customer in order to prepare, manage and control financial transactions. Electronic banking can also be defined as a variety of the following platforms: (a) Internet banking (or online banking), (b) telephone banking, (c) TV-based banking, (d) mobile phone banking, and (e) PC bank (or offline banking).

Gholipoor (2010) believes that banks as the firm which is responsible for giving financial services can reduce the expenses by taking advantage of information technology into consideration. Also, the bank itself and the beneficial gain interest too which provides the customer's satisfaction. However, the technology of electronic financial services and payment

instruments to use integrated information system is developed , but we are beginner in case of making electronic between bank and through bank and interactions and connection between the customer`s line to the bank.

Today e-banking starts a new phase in competition because of its characteristics like speed, efficiency, decreasing the expenses, and gaining benefit of the unique opportunities. Obviously, if the bank`s investment rise the profitability, the e-banking usage in banking industry would be beneficial. (Torki and Zadeh, 2004).

The banking industry in Ethiopia is embarking on capacity building arrangements and modernize the banking system by employing the state of the art technology being used anywhere in the world (Worku, 2010).

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. As CBE continues to move at a snail's pace in its turnkey solution for Card Based Payment system, Dashen Bank remains so far the sole player in the field of E-Banking since 2006 (Worku 2010).

Dashen bank, a forerunner in introducing E-banking in Ethiopia, has installed ATMs at convenient locations for its own cardholders. Dashen`s ATM is available 24 hours a day, seven days a week and 365 days a year providing service to Debit Cardholders and International Visa Cardholders coming to the country. At the end of June 2009, Dashen bank has installed more than 40 ATMs in its area branches, university compounds, shopping malls, restaurants and hotels. In the year 2011 the payment card services have witnessed significant strides, Dashen`s ATM service expanded to 70 and 704 POS terminals (Dashen bank Annual report, 2011).

1.2. History of Banking in Ethiopia

The agreement that was reached in 1905 between Emperor Minilik II and Mr. Ma Gillivray, representative of the British owned National Bank of Egypt marked the introduction of modern banking in Ethiopia. Following the agreement, the Emperor inaugurated the first bank called Bank of Abyssinia in February 16, 1906. The Bank was totally managed by the

Egyptian National Bank within agreed capital out lay of 500,000 pound. Shortly after Emperor Haileselassie came to power, Bank of Ethiopia legally replaced The Bank of Abyssinia in 1931. The new Bank, Bank of Ethiopia, was a purely Ethiopian institution, was the first indigenous bank in Africa, and established by an official decree on August 29, 1931 with capital of \$750,000. Ethiopian government owned 60 percent of the total shares of the Bank and all transactions were subject to scrutiny by its Minister of Finance. Bank of Ethiopia took over the commercial activities of the bank of Abyssinia and was authorized to issue notes and coins and continued successfully until the Italian invasion in 1935.

Then after the forcing of the Italians on 15th April 1943, the State Bank of Ethiopia Commenced full operation. It acted as the Central Bank of Ethiopia and had a power to issue bank notes and coins as the agent of the Ministry of Finance. The Bank also functioned as the principal commercial bank in the country and engaged in all commercial banking activities.

The Ethiopian Monetary and Banking law that came into force in 1963 separated the function of commercial and central banking creating National Bank of Ethiopia and Commercial Bank of Ethiopia. Following the incorporation as Share Company on December 16, 1963 as per proclamation No 207/1955 of October 1963, Commercial Bank of Ethiopia took over the commercial banking activities of the former States Bank of Ethiopia. It started operation on January 1, 1964 with a capital of Eth. Birr 20 million.

The first privately owned bank, Addis Ababa Bank Share Company, was established on Ethiopians initiative and started operation in 1964 with a capital of 2 million in association with National and Grind lay Bank, London that had 40 percent of the total share. In 1968, the original capital of the Bank rose to 5 million. It was merged with the other privately owned banks namely Banco di Roma and Banco Di Napoli in 1976 to form the second largest bank in Ethiopia called Addis Bank with a capital of Ethiop Birr 20 million.

Then Addis Bank and Commercial Bank of Ethiopia Share Company were merged by proclamation No. 184 of August 2, 1980 to form a sole commercial bank in the country until the establishment of private commercial banks in 1994.

A new banking proclamation enacted in 1994 created several new opportunities for the private sector to be involved in the banking sector. This made CBE to stop having its monopoly position in the country's banking industry, even though, it is still the leading bank in the country in terms of its market share, customer base, and branch network and capital base.

The opportunities for the private sector in the banking sector open the door for competition of each other through introducing new services delivery channel like E-banking services. Currently majority of commercial banks are introduced some e-banking services in Ethiopia.

1.3. Statement of the Problem

Throughout the world, banks are increasing using technology for providing services through self-service mode using various electronic-banking channels. The services through these channels offer numerous advantages both to the banks and their customers (Ho and Ko, 2008). For the banks, the advantages are reduction in cost of transaction and lesser load on branches. For customers, it facilitates the service by reducing length of time and to obtain the services even at off-working time.

However, if it is not properly managed; the possible significance of e-banking services may not be achieved effectively and efficiently. As stated by Zeinab (2013), improper implementation and poorly managed e-banking service could affect both banks and customers by creating complication of utilization of technology and loss of profit to large extents. This author further stated that, pre and post implementation of e-banking service should be assessed in order to identify factors affecting its efficiency and sustainability of its services.

In this regard, study conducted at Saudi Arabia by Noorah, Hadeel, Ashwaq and WasheelaJaber (2010) on e-banking benefits and challenges found that among the components of e-banking services; Internet banking has a positive effect on bank's business. On the same line, the study conducted at North Cyprus on Internet Banking in Terms of Profitability by Nwobodo (2011) also identified as Internet banking has a positive effect on banking profitability.

The study conducted by Bahram, Zeinab and Hussein (2013) on the effect of using electronic banking on profitability of a bank; concluded that, Internet bank, POS, ATM and Telephone banking have a significant effect on bank income. Additionally, Keyong's (2012) study conducted on the Benefits of ATM (Automatic Teller Machines) fees in the retail Banks' at Korea, also identified positive effect of ATM on profitability of banks. The finding of a study conducted on the Economic Effects of Technological Progress in Banking Industry at Florida; using ATM as a variable (Berger, 2003), also concluded that ATM was positively related with bank's profit by reducing expenses.

Claessens et al., (2002) also studied on Electronic Finance: Reshaping the financial landscape around the world at USA and found that, E-Financing has reshaped financing of banking industry. Moreover, the findings of a recent study carried out by Mallikarjuna and Murali (2014) on Service Quality of Mobile Banking in India, argued as mobile banking service increases the service quality banking industry.

In general, the analysis of empirical evidences showed that, both in terms of their variables and the reported findings of those studies do not focused on the effect of all variables of e-banking services on profit of the bank. The types of e-banking service considered by those studies were usually emphasized on one and/or two.

In addition, most of them gave emphasis for challenges of e-banking services than their effects on profitability of the banks. Besides, all of the studies the researcher comes across were takes place at abroad. Also, as afar as the knowledge of the researcher is concerned there is no study conducted on the issues associated with effect of e-banking on bank's profit in the country and the study area.

In Ethiopia, since the implementation of e-banking service was introduced in the recent years, analyzing its practices and the effect it has on profitability of the bank is strongly recommended. However, absence of identifying the effect of e-banking on the profitability of the banks through research findings will affect the implementation of the services effectively and efficiency. Likewise, the researcher, as a bank professional, observed that banks in Ethiopia are running to introduce and implement various components of e-banking services since 2008. None of them were not attempted to assess the effect of e-banking on the progress of their annual profit so far. Thus, the above mentioned facts and observations initiated the researcher to focus in this study on issues of the effect e-banking services on profitability of bank's using a time serious data and incorporating more than one variables of e-banking service.

Therefore, this study was carried out on the effect of e-banking services on profitability of Dashen Bank by analyzing ATM, POS and Number of Card Holder (NCH): which are mostly practiced e-banking services.

1.4. Objective of Study

1.4.1. General Objective

The general objective of this study was to investigate the effects of e-banking system on Dashen Bank S.C profitability from 2008-2013

1.4.2. Specific Objectives of the Study

The specific objectives of the Study are:

- To examine the effects of ATM on profitability of Dashen Bank.
- To examine the effects of POS on profitability of Dashen Bank.
- To examine the effects of number of card holders on profitability of Dashen Bank.

1.5. Research Hypotheses

The study has tested hypothesis:

Ho: 1.ATM service has no significant effect on the profitability of Dashen Bank.

Ha: 1. ATM service has significant effect on the profitability of Dashen Bank.

An ATM is able to do lots of banking activities and to eliminate human interferences. According to statistics by installing ATM devices since 1998-2004 all around the world they have an improvement rate of 45%, so it can be said that the big investment was in ATM installing for currency distribution around the globe. The installation rate of ATM devices in developed countries shows that for each 742 person there should be one ATM device. Now with the consideration of our population, Iran needs to have 95007 ATM to be along with developed countries. On one hand the number of ATM in Iran are 11065 that say 88.3% shortage in this case. To sum up, the ATMs are electronic processors or points that are installed by banks in specific places and are available round the clock. With the help of ATMs clients are able to do:

- Accounts cashing
- Accounts bill
- Cashing the check and currency

In addition to the above options, with the ATMs it is possible to pay the bills. An ATM is able to work as a branch of bank. With them lots of banking services are done without human

interfere. Besides, the ATM can work round the clock. They decrease the bank's costs (Bahram, Zeinab and Hussein 2013).

The proportion of ATM to bank profitability is estimated by dividing service fee collected from ATM in each year by respective ROA

$$\text{ATM} = \text{service fee collected from ATM} / \text{ROA}$$

Ho: 2. POS service has no significant effect on the profitability of Dashen Bank.

Ha: 2. POS service has significant effect on the profitability of Dashen Bank.

A POS is a device that installed in sale centers to remove the need to transfer the physical money and to deduct money from buyer account and to add it to seller account. This activity is done by a POS connected to central computer in the bank. It is provided by the bank for the seller and has modem and printer. Sale center and department stores are where POS is used (ibid).

POS functions:

- Exchanging currency from buyer account to seller account, that is very secure
- printing the account on paper
- Bill paying availability

The proportion of POS to bank profitability is estimated by dividing service fee collected from POS in each year by respective ROA

$$\text{POS} = \text{service fee collected from POS} / \text{ROA}$$

Ho: 3. NCH has no significant effect on the profitability of Dashen Bank.

Ha: 3. NCH has significant effect on the profitability of Dashen Bank.

Card service is another activity of the banks to makes the clients more comfortable. It is the use of magnetic cards instead of money. These cards are issued through a very secure procedure to let clients use them. The owner of this card is able to use it round the clock and in off days in POS, and with Pin Pad to exchange his/her founds and currency (ibid).

The proportion of NHC to bank profitability is estimated by number of card holder in each year by respective ROA

1.6. Significance of the Study

The outcomes and results of this research have potential value to financial institutions, particularly Dashen Bank S.C to understand the effect of e-banking on profitability and pay attention as per the significance of the variables. In addition, this study helps other researchers who will be interested to conduct further study regarding the issue under investigation by providing full information. Finally based on the findings of E-banking system on profit of Dashen Bank S.C. the study has provided recommendations for other commercial banks about these E-banking services.

1.7. Scope of the Study

This study deals with the effect of e-banking services on profitability of Dashen Bank. Since e-banking services are recent in Ethiopia, this study is conducted using Dashen Bank S.C for the period of 2008- 2013. Dashen Bank was selected for study because other banks either do not have sufficient record, or were reluctant to provide the same. This study attempts to determine the effect of e-banking services variables i.e. ATM, POS and number of card holders of Dashen Bank profitability using analytical statistics.

1.8. Limitation of the Study

While undertaking this study, researcher had encountered several limitations, to mention some, absence of well-organized and articles with regard to e-commerce in Ethiopia, Shortage of reference materials about e-commerce practices in Ethiopia etc., forced the investigator to depend largely on foreign countries experiences.

1.9. Organization of the Paper

The research was divided in to five chapters. The first chapter deals with the introductory part of the research in which background of the study, statement of the problem, objectives of the study, significance, scope of the study , organization of the paper and Operational definition are incorporated. The second chapter deals with the literature review; general information about e-banking; conceptual framework, E-Banking in Ethiopia and Forms of e-commerce

will be examined. Chapter three was incorporate methodology, which describes the methodology undertaken in relation to justification of the research design, source of data, type of data, Sample design and sample size and Data analysis technique. Chapter four was discussed with findings and discussion. Finally, conclusion and recommendation were presented in the fifth chapter.

CHAPTER TWO

2. REVIEW OF LITERATURE

2.1 Theoretical Literature Review

According to Basel Committee on banking supervision, (1998 and 2003) E-banking is defined as the provision of retail and small value banking products and services through electronic channels. Such products and services can include deposit taking, lending, account management, the provision of financial advice, electronic bill payment, and the provision of other electronic payment products and services such as electronic money. The term "electronic banking" or "e-banking" covers both computer and telephone banking. It refers to the use of information and communication technology by banks to provide services and manage customer relationship more quickly and most satisfactorily (Charity-Commission, 2003).

Kricks (2009) is more emphatic in definition of e-banking as the emergence of e-banking has not relinquished traditional banking products and services but rather transformed traditional models to enhance quality service delivery, real time access, reduce operational cost and ultimately achieve maximum efficiency in banking operations (Ovia, 2001; Gonzalez, 2008).

The concept of E-Payment is not new. Electronic transfer of money as a result of transaction between two parties has been in practice for a quite some time however its use varies among different countries as well as among business while carrying out transactions. The simple definition of E-payment, a part of e-commerce, means electronic payment for buying and selling goods or services through the Internet (American Education E-Payment Definition, 2008). A formal definition says "e-payment is one in which monetary value is transferred electronically or digitally between two entities as compensation for the receipt of goods and services." An entity refers to a bank, business, and individual consumers. However it is obvious that any payment that is not transacted by paper based instruments is considered as e-payment transaction (Armash & Saljoughi, 2010).

E-payment has grown steadily by replacing the traditional payment ways mainly because of wide spread use of technology and sense of security that technology is making it possible. This paper examines the benefits of e-payment system that have rendered fruits to many

banks around the world and focuses on the use of SADAD (Saudi E-payment System) to highlight to what extent Saudi banks have benefitted from the system. Why e-payment has become popular and what benefits it renders are well recognized however we have not seen any robust model in the literature that provides pillars of technology and relates it with profitability.

2.1.1 Profitability of Banks

The analysis of the main factors that impact on bank profitability has drawn the attention of the decision makers and of the researchers as the banking sector is of vital importance for developing a national economy and establishing the financial stability. Moreover, the serious implications of the recent international financial crisis on the banking sector bring back to the center of attention the evaluation of the bank profitability determinants. Knowing them represents an interest not only to the regulatory and supervisory authorities, bank managers, but also to their clients (Rivard and Thomas 1997).

In most research papers relating to this study the profitability is measured in the form of ratios which are normally reported by commercial banks in their annual reports. Devinaga Rasiah (2010) claims that the use profitability ratios are not influence by changes in price levels. And it is said to be the most appropriate way of measuring profitability as one make use of time series analysis. This is because the real value of profits cannot be affected by the varying inflation rates. According to Devinaga Rasiah (2010) for one to realise how well a bank is performing it is much more useful to consider return on assets (ROA) and return on equity (ROE); Bourke (1989) and Molyneux and Thornton (1992).

Return on assets (ROA) is the ratio of Net Income After Taxes (NIAT) divided by Total Assets. The ROA signifies managerial efficiency in other words it depicts how effective and efficient the management of banks has been as they seek to transform assets into earnings. The higher ratio is an indication of higher performance of the banks. It is a useful tool for comparing profitability of one bank with other or even the whole commercial banking system. Moreover, the ROA is said to measure the rate of return on the bank's shareholders equity and it is calculated by dividing banks net income after taxes by total equity capital which includes common and preferred stock, surplus, undivided profits, and capital reserves; Bourke (1989), and Molyneux and Thornton (1992).

This measure of profitability gives an indication of what the banks earns on the shareholders' investment; Devinaga Rasiah (2010). According to Anthony Karkrah and Ameyaw (2010) many researchers have presented ROA as an appropriate measure of bank profitability. Among them are Rivard and Thomas (1997) who argued that bank profitability is best measured by ROA. However, Hassan and Bashir (2003) also claims that as ROA tend to be lower for financial intermediaries, most banks heavily utilized financial leverage to increase their ROA to competitive levels.

2.1.2 E-Banking in Ethiopia

Electronic innovation in banking industry can be traced back to 1970, when the computerization of financial institutions gained momentum (Malak 2007). However; a visible presence of this was evident to the customers since 1980, with the introduction of ATM. Innovative banking has grown since then, aided by technological developments in the telecommunications and information technology industry. The early decade of the 1990s witnessed the emergence of automated voice response (AVR) technology. By using the AVR Technology, banks could offer telephone banking facilities for financial services. With further advancements in technology, banks were able to offer services, through PC owned and operated by costumers at their convenience, through the use of intranet propriety software. The users of these services were, however, mainly corporate customers rather than retail ones (Sohail&shanmugham 2003).

Available services on Dashen Bank ATMs are: Cash withdrawal, Balance Inquiry, Mini statement, Fund transfer between accounts attached to a single card and Personal Identification Number (PIN) change. Currently, the bank gives debit card service only for Visa cards. Dashen bank clients can withdraw up to 5,000 birr in cash and can buy goods and services up to 8,000 to 13000 birr per day. Expanding its leadership, Dashen Bank has begun accepting MasterCard in addition to Visa cards. Dashen won the membership license from MasterCard in 2008.

Harnessing its leadership with advanced banking technology, 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 (Amanyehun, 2011). Although Dashen's new technology is one step ahead in that it allows transfer of funds from one's account to others, the first ever E-banking gateway was signed between Ethiopian Commodity Exchange (ECX) and Dashen Bank and CBE. The E-banking system being developed with both banks is designed to give a secure electronic data sharing gateway between clients, banks and ECX, by facilitating a smooth transaction (Abiy, 2008)

By the end of 2008 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, Zemen Bank, the only Ethiopian bank anchored in the idea of single branch banking, by launching full-blown internet banking, a service which is new to Ethiopian banking industry in the year 2010. The bank tested the venture through its first phase of the online service, and now it is already started the full-fledged version, which enable customers to make online money transfer freely. Previously, the online banking service, delivered by the bank, only gave access to bank statements and exchange rate information. 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 agreement signed by three private commercial banks to launch ATM and POS terminal network, in February 2009 is welcoming strategy to improve electronic card payment system in Ethiopia. Three private commercial banks, Awash International Bank S.C., Nib International Bank S.C. and United Bank S.C. have agreed in principle to establish an ATM network called Fettan ATM network. If everything goes as planned, Fettan ATM will install over 140 ATM machines and over 340 POSs across Ethiopia. There will be one ATM at every branch of the consortium banks, all domestic airports serviced by Commercial service, shopping complexes and merchants. The agreement is the first significant cooperation between competing banks in Ethiopia, which others should be encouraged to follow as there is no single bank in Ethiopia that can afford to provide Extensive geographical coverage and access (Binyam, 2009).

According to Nathan (1999), electronic banking services have provided numerous benefits for both banks and customers. The first benefit for the banks offering electronic banking service

is better branding and better response to the market. Those banks that would offer such service would be perceived as leaders in technology implementation. As a result, they would enjoy a better brand image. The other benefits are possible to measure in monetary terms.

The benefits of E-banking are manifold and are to be seen from the point of view of the banks themselves, customers and even the regulators (Sergeant, 2000). Sergeant is of the view that for banks, E-banking brings different and arguably lower barriers to entry; opportunities for significant cost reduction; the capacity to rapidly reengineer business processes; and greater opportunities to sell cross border. For customers, the potential benefits are: more choice; greater competition and better value for money; more information; better tools to manage and compare information and faster service.

Electronic banking (E-banking) enables customers to do their banking 24 hours a day, 7 days a week. E-banking customers are able to check their account balances, pay bills, apply for a loan, trade securities, and conduct other financial transactions. E-banking can be divided into five major categories: (1) Internet banking, (2) Telephone banking, (3) TV-based banking, (4) Mobile phone banking, and (5) PC web banking. Technological innovations in recent decades have made the move towards E-banking possible. The increasing competition for customers in banking and need to decrease cost of providing banking services has led banks to integrate these changes.

2.1.3 Benefits of using E-banking

Cards are becoming the preferred way of payment in the developed world due to the fact that they understand the benefits very well through long years of using them in their economy. The benefits of using cards for payment can be seen from different perspectives as follows.

❖ Reduction of the cost for printing cash notes and its related distribution

In a cash based economy, governments are required to invest a great deal of fund on printing of cash notes and distributing same to the public. Due to manual transfer of currency between individuals the life of cash notes is very minimal. As a result of this frequent wear and tear, the magnitude and frequency of the investment on cash note printing as well as its related distribution is significant.

In the case of card payment systems the transaction values are transferred from one account to another using electronic means, reducing the need for cash note distribution. Thus, by encouraging acceptance of payment cards, governments can achieve huge cost saving for their economy in terms of reducing cash note printing and related expenditure.

❖ Enhancement of Aggregate Deposit

It is a known fact that, saving has a positive contribution to one's economy. When people start to increase the proportion of their saving compared to their daily consumption, the saved money can be utilized for investment purposes that in turn will create further employment opportunities. This is a great benefit for the economy as a whole. However, individual savings could not bring this kind of impact. The benefit can only be obtained when savings are made in a banking system whereby the saved fund can be deployed to the economy in the form of loan to encourage the required investment.

In a payment card infrastructure people do not need to carry cash notes for their day to day expenditures as well as contingencies. They rather are encouraged to deposit their fund in the banking system and obtain a single plastic to access this fund at any time of the day when the need arises. This implies that unused funds are always in the banking system that helps to facilitate economic growth.

❖ Banking the un-banked

While the payment card infrastructure is diversified, payroll for employees can be handled through this system. Besides creating ease and convenience, both for the employer as well as the employee, it enables individuals to enter into the banking system which they may not be interested otherwise. Such impact of banking the un-banked population also has a benefit in increasing aggregate deposits as indicated above.

❖ Increasing the potential for hard currency generation

Especially in developing economies, earning of hard currency is very essential to manage a country's balance of payment. The payment card system can bring a good potential of enabling economies to earn more foreign currency. This can be realized by attracting tourists and by encouraging them to spend more. In today's world, availability of payment card infrastructure is one of the criteria that tourists set while they decide which country to visit. As a result countries that maintain a developed payment card system has a better potential of

being visited by tourists than those which do not establish the infrastructure. Hence, more tourists and increased hard currency as a result of diversifying payment card business.

Furthermore, due to the fact that travelers can access their account at home easily while staying in another country, where the payment card infrastructure is established, their chance of spending more is great.

Travelers, being outside of their home country, feel more unsafe and uncomfortable to carry bulk amount of cash while on travel. Thus, they can be forced to spend only to the extent of the limited cash hand during a certain period of stay in another country. On the other hand, if they can use their card for payment, they can spend more since they have the right to access their account back home safely and conveniently.

❖ Lowering transaction costs

Studies show that electronic payment system generally costs in the range of one-half to one-third of a paper based system. This can be translated to a beneficial aggregate cost saving of at least 1% GDP.

❖ Stimulating consumption and thereby GDP

The fact that people can access their money at any time whenever they need so, have an impact in enhancing their level of consumption. This in turn can stimulate a country's GDP.

2.1.4 Forms of E-banking

Currently e-banking services includes ATM, POS Mobile and Internet banking,

A. Automated Teller Machines (ATM)

ATMs were the first known machines to provide electronic access to customers (Santos, 2003). Khan, (2010) says "ATM is an innovative service delivery mode that offers diversified financial services like cash withdrawals, funds transfer, cash deposits, payment of utility and credit card bills, cheque book requests and other financial enquiries". The ATM services that are offered by banks have evolved and have become better and more advanced. These machines perform the basic deposit and withdraw tasks of tellers and are more dependable as most customers prefer ATMs to error prone human tellers (Narteh & Owusu, 2011).

While it is thus clear that the average transaction cost of an ATM is considerably below the cost of using a standard banking office, this lower unit cost has not translated into much

overall cost savings for banks. The problem has been that the greater convenience of ATMs has led users to withdraw less cash per transaction from ATMs than they did from a branch office. This response is consistent with the inventory theory of demand for idle cash balances (Baumol, 1952). The greater convenience of ATMs reduced the cash acquisition transaction cost for depositors, leading to a greater frequency of these transactions and a corresponding reduction in the average amount of idle cash balances held by the public.

Although an ATM transaction costs as little as one-half as much as a teller transaction at a branch, ATMs are being used up to twice as often as was a teller. As a result, the cost savings per ATM transaction expected by banks has been largely offset by the unexpected increase in use (Berger, 1985).

Until recently, about the only way most banks have obtained revenues on their ATM investment has been through fees charged when one bank's ATM is used by a customer of another bank. When a customer uses another bank's ATM a "foreign ATM" for cash withdrawal, an interchange fee of about \$1.00 is commonly assessed. In contrast, a cash withdrawal from an ATM owned by one's own bank is usually, but not always, free. Although the foreign ATM fee may seem relatively small, it generates the majority of revenues associated with ATM use. As ATMs have expanded, the number of foreign (cash withdrawal, etc.) transactions has risen from 15 percent of all transactions in the mid-1980s, to 40 percent in 1989, to around 50 percent today (McAndrews, 1991).

Holden and El-Bannay (2004), in a study entitled "Investment in information technology systems and other determinants of bank profitability in the UK" have been analyzed the role of the e-banking on the profitability of 10 banks in the UK. They measured the effects of different variables including ATM as the e-banking indicator by using the panel data regression between 1996-2006. The ATMs were recognized as the easiest and the most effective, e-banking indicator electronic tools among the bank's customers. The conclusion of this article showed the positive effects of the increasing the number of ATMs on the bank's profitability.

B. Point-of-Sale (POS)

The system allows consumers to pay for retail purchase with a check card, a new name for 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 (Malak, 2007).

C. Internet Banking

It 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.

It is stated that the most pressing policy issues will involve the enabling environment for e-finance; setting regulatory and other frameworks for contract enforcement, for information and privacy, and for telecommunications, security, and public infrastructure for electronic transactions. Claessens et al. (2002), further contribute to leapfrogging advantage of emerging markets by suggesting that e-finance can benefit financial sector development of emerging countries by lowering costs, increasing the breadth and quality and widening access to financial services.

Simpson (2002) also suggests that e-banking is driven largely by the prospects of operating costs minimization and operating revenues maximization. A comparison of online banking in developed and emerging markets reveal that in developed markets lower costs and higher revenues are more noticeable. While (2000) finds no systematic evidence of a benefit of internet banking in US click and mortar banks, Furst et al. (2002), find that federally chartered US banks had higher ROE by using the click-and-mortar business model. Furst et al (2002), also examine the determinants of internet banking adoption and observe that more profitable banks adopt internet banking after 1998 but yet they are not the first movers. Jayawardhena and Foley (2000), show that internet banking results in cost and efficiency gains for banks yet very few banks are using it and only a little more than half a million customers are online in U.K.

In another study entitled “the effect of internet banking on the operation of banks” done by Malhotra et al. (2008), the effect of internet banking in 85 commercial bank has been analysed by using a regression model in the frame of panel data during 1998-2006. In their model the dependent variable represented the profitability and bank interest. Internet bank was a virtual variable which considered as 1 for internet banks. The data analysis shows e-banking cause minimizing the operational costs and rising the bank`s profitability. It is because of giving the higher income to the banks and consequently the lesser expenses for both bank and customers.

In 2006, the percentage of Internet users who use online banking or brokerage services has reached to the European average of 25.36 % (Deutsche Bank Research, 2006). According the Deutsche Bank Research Report “Online banking: What we learn from the differences in Europe” (2006) online banking grows in Europe. Bank customers in Europe strongly increase their use of online banking whereas adoption rates decrease from north to south and rich to poor. Europeans with higher formal education are more likely to use the Internet and do financial transactions online. Today, there are five major online banking trends in Europe; security, customer retention, technological progress, mobile banking and online research (Deutsche Bank Research, 2005). On the other hand, the Directive of 2000 EC (8 June 2000) on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market aims at creating the legal basis for online transactions and Article 3(4) to 6 are applicable to financial services (Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions, 2003).

Without doubt, the online channel is the most cost-effective way for financial institutions of all sizes to deliver their services (Calent, 2009). It also delivers a strong ROI: research from The Boston Consulting Group and other research firms has shown that online banking users are over 30% more profitable than offline users, while bill payers are nearly 100% more profitable.

D. Mobile Banking

Mobile banking is a service that enables customers to conduct some banking services such as account inquiry and funds transfer, by using of short text message (SMS). Banks offer Internet banking in two main ways. An existing bank with physical offices can establish a Web site and offer Internet banking to its customers in addition to its traditional delivery channels. A second alternative is to establish virtual branchless or Internet-only, Bank almost without physical offices. Virtual banks may offer their customers the ability to make deposits and withdraw funds via ATMs or other remote delivery channels owned by other institutions (Furst & Nolle, 2002:5). In the context of this study E-banking were not considered as only transferring of service by using internet connection rather it considered as multi-channel service provided through ATM, internet banking, Mobile banking (Modbirr system), point sale terminal and telephone banking.

Financial institutions and mobile phone service providers are introducing resourceful methods of bringing these unnerved populations into the formal economy using mobile phones. For the banks, the main advantages of the mobile phone lie in its capabilities to reach everywhere. Its power is in transforming the economics of service delivery, especially by reducing the costs of financial transactions.

Mobile banking is the provision of banking services, notably a bank account, which can be accessed via a mobile phone. It's generally banking using a mobile phone. Mallikarjuna & Murali (2014), define mobile banking as a channel whereby the customer interacts with a bank via a mobile device, such as a mobile phone. There are several services that a bank can offer through mobile banking. For instance, customers can check the balance and transactions of their accounts, pay invoices (also abroad), pay bills, transfer funds between accounts, monitor the use of credit cards and even check when invoices fall due. However a congested network may result in poor reception. For mobile banking to be able to take place and to be of benefit to the bank and the customer, there needs to be a telecommunications network.

2.2 Empirical Literature Review

Throughout the world, banks are increasing using technology for providing services through self-service mode using various electronic-banking channels. The services through these channels offer numerous advantages both to the banks and their customers (Ho & Ko, 2008). For the banks, the advantages are reduction in cost of transaction and lesser load on branches.

However, if it is not properly managed; the possible significance of e-banking services may not be achieved efficiently. As stated by Zeinab (2013), improper implementation and poorly managed e-banking service could affect both banks and customers by creating complication of utilization of technology and creating loss of profit to large extents. This Author further stated that, pre and post implementation of e-banking service should be assessed in order to identify factor affecting its efficiency and sustainability of its services.

In this regard, study conducted at Saudi Arabia by Noorah, Hadeel, Ashwaq & WasheelaJaber (2010), on e-banking: benefits & challenges and found Internet business is a catalyst for new technologies and new business processes. On same line Bahram, Zeinab and Hussein (2013), also studied on The Effect of Using Electronic Banking on Profitability of Bank concluded ATM, pin pad; POS, internet bank and telephone bank have significant effect on bank income.

Table 2.1: Summery of Empirical Evidences on E-banking Services

N ^o	Author	Country	Title	Variable	Findings
1	Noorah, Hadeel, Ashwaq & WasheelaJaber (2010)	Saudi Arabia	E-Banking: Benefits and Challenges	Internet Banking	Internet has a positive effect on business
2	Bahram, Zeinab and Hussein (2013)	Iran	The Effect of Using Electronic Banking on Profitability of Bank	Internet bank, POS, ATM and telephone	Internet bank, POS, ATM and telephone bank have significant effect on bank income respectively
3	Keyong, Jeon (2012)	Korea	The Benefits of ATM (Automatic Teller Machines) Fees in the Retail Banks	ATM	ATM has have positive effect on profitability of banks
4	Chimezie, Nwobodo (2011)	Northern Cyprus	Internet Banking in Terms of Profitability	Internet Banking	Internet banking has a positive effect on banking profitability
5	Mallikarjuna & Murali (2014)	India	Conceptual Model for Assessing Service Quality of Mobile Banking	Mobile banking	Mobile banking increase service quality of banking industry
6	Berger, A. N (2003)	Florida	The Economic Effects of Technological Progress: Evidence from the Banking Industry	ATM	ATM is positively related with bank profit by reducing expenses
7	Noor, Mousa Al-Sa'di (2011)	Jordan	The Impact of E-Banking on Bank Profitability	Internet Banking	Internet Banking has Positive relationship with bank profitability
8	Ogare, H, O (2013)	Kenya	The effect of e-banking on the financial performance of commercial banks	Number of ATMS, card holder and POS, Mobile banking, Internet banking and Electronic funds transfer	Positive relationship with profit after tax.
9	Shaik, Mohammed Arif (2014)	Ethiopia	Ethiopian Banker's Perception of Electronic Banking in Ethiopia	Internet banking, ATM Banking, SMS Banking and Call Center Banking	Minimizes the risk of carrying cash and cost of transaction

2.2.1 Effects of Electronic Banking on Profitability

The main goal of every company is to maximize profits for its owner and other stakeholders. According to Allen and Hamilton (2002), an estimated cost of providing the routine business of a full service branch in USA is \$1.07 per transaction, as compared to 54 cents for telephone banking, 27 cents for ATM banking and 1.5 cent for internet banking. On

the other hand, the advantages for the customers are significant time saving and reduced costs in accessing and using the various banking products and service, increased comfort and convenience (Pyun, Scruggs and Nam, 2002).

The number of banks ATMs increased by 226 from 1,979 in December 2010 to 2,205 in December 2011 representing an increase of 11.4%. 6 large banks accounted for 54 percent of total assets, 53 percent of customer deposits, 55 percent of capital & reserves and 62 percent of pre-tax profit in 2011. Developments within the banking sector are strongly guided by the medium-term objectives of the financial sector reform and development strategy embedded in the economic development blueprint, Vision 2030.

European central bank (1999) stated that the information communication technology developments have had a strong influence on the structure and the activities of the banking sector. The elements that have changed are several, besides allowing transactions to be conducted more efficiently; technology allows banks to market their products more effectively. The technology deployed in banks affects its operational efficiency and determines its competitive position in the market (Brickwork ratings, 2008).

Asper Thomas et al. (2010), technological developments have removed repetitive, time consuming tasks, reduced human error and extended access to banking related facilities. Technology also provides customer information that it would be much more expensive to provide on a person-to-person basis. The dilemma still remains, however, as to how to maintain a satisfactory number of face-to-face interactions with the customers.

At present payment cards become the most widely used means of handling value exchanges in the developed part of the world. As per statistical evidences, over the past 30 years transactions worth more than USD 5 trillion are being handled annually through electronic Medias using payment cards. Today cards are becoming more popular in the other parts of the world to effect payments safely and in a convenient manner. According to information obtained from VISA, bank cards with a Visa or MasterCard logo are now used by over one and a half billion people worldwide, accepted in more than 24 million retail locations as well as over one million ATMs and is the preferred method of payment for over 10% of consumer transactions (Dawd, 2004)

Although indirect measure of profitability through cost savings does offer appealing arguments, for example according to American Education(2008), E-Payment definition the

US banking environment has seen the use of checks declined from 85% of non-cash payments in 1979 to 59% in 2002, while electronic payments grew to 41%. Of course there is an element of cost saving both for banks and the user of banking service in this example however we further go into the system of profitability measurement resulting from e-payment systems. In line with our objective we concentrate on the literature to identify pillars that support e-payments and present an empirical study of implication of SADAD in order to develop a model that links pillars of e-payment with the profitability pillars.

The link between technology and profitability is not an obscure factor as Onayet (2008), considers e-banking has positive impact on banks' revenues. They mentioned that "Internet has changed the dimensions of competition in the retail banking sector. It has also provided opportunities for emerging countries to build up their financial intermediation infrastructure".

A survey entitled "the effect of e-banking on the profitability of the bank system, on state and private banks" by Vaseghnia (2010), examined the relationship between the development of the e-banking services and the profitability of private and state banks in Iran within the time frame of 2004 to 2009. It has been done by using the data panel regression. In this study, the e-banking indicators have been analyzed in three categories including all banks, state banks, and private banks. The findings show that all three categories developing the electronic e-banking have a positive effect on the profitability in all banks; this effect is more obvious in the private banks rather than the state banks.

Egland et al. (1998), was the first important study, which estimated the number of US banks offering electronic banking and analyzed the structure and performance characteristics of these banks. It found no evidence of major differences in the performance of the group of banks offering electronic banking activities compared to those that do not offer such services in terms of profitability, efficiency or credit quality.

Njuru (2007) did a study on the challenges in implementing electronic banking strategy by commercial banks in Kenya. The objective of the study was establishing the challenges inhibiting electronic banking implementation and how banks are responding to these challenges. The targets of the study were the commercial banks in Kenya. This study gives a brief overview of the academic literature on the challenges and the responses that organizations employ in strategy implementation and the extent of electronic business use.

Noor (2011) conducted a study on the impact of e-banking on bank profitability: evidence from Jordan. This study is aimed to test the effect of e-banking services provided by banks on the internet on the profitability of these banks during the period 2000-2009.

Ogare (2013), did a study on the effect of electronic banking on the financial performance of commercial banks in Kenya, the study sought to establish whether there exists a relationship between the dependent variable, for example, performance measured by profit after tax and the independent variables consisting of number of ATMS, number of debits and credit cards issued to customers, number of point of sales terminals and the usage levels of Mobile banking, Internet banking and Electronic funds transfer, as components of e-banking.

Maiyo (2013) conducted a study on the effect of electronic banking on financial performance of commercial banks in Kenya. The main objective of the study was to establish the effect of electronic banking on financial performance of commercial banks in Kenya. Conceptual frame work

2.1.2 Effects of Information Technology on Banks Profitability

Information technology developments affect banking in two main ways. First, it contribute to the reduction of the costs associated with the management of information (collection, storage, processing and transmission) by replacing paper-based and labor-intensive methods with automated processes. Second, it modifies the ways in which customers have accesses to banks services and products, mainly through automated channels (remote banking). Whereas, improvements in the area of information management have been taking place for a long time, remote banking is a more recent phenomenon with developments occurring more progressively, especially in retail banking (European Central Bank, 1999).

The role of ICT in the banking sector became of interest to this study due to the significant role it plays in the economy by stimulating economic growth through the intermediation of funds to economic agents that need them for productive activities. This function is very vital for any economy that intends to experience meaningful growth because it makes arrangements that bring borrowers and lenders of financial resource together and more efficiently too than if they had to relate directly with one another (Adam, 1998; & Ojo, 2007).

Irechukwu (2000) itemized some bank services that have been revolutionized through the use of ICT as including account opening, customer account mandate, and transaction processing and recording. Information and Communication Technology has provided self-service

facilities (automated customer service machines) from where prospective customers can complete their account opening documents direct online. It assists customers to validate their account numbers and receive instruction on when and how to receive their cheque books, credit and debit cards. ICT products in use in the banking industry include Automated Teller Machine, Smart Cards, Telephone Banking, Electronic Funds Transfer, Electronic Data Interchange, Electronic Home and Office Banking.

IT improves the management of the customer life cycle, from increasing contact and closing rates to improved customer retention, customer knowledge, and customer satisfaction (Bardhan, 2007; Srinivasan and Moorman, 2005). In turn, higher customer satisfaction leads to higher loyalty and willingness to pay (Homburg et al., 2002), which ultimately leads to higher revenue growth (Babakus et al., 2004).

In general, empirical evidences illustrated in Table 2.1 and the above discussions showed that, both in terms of their variables and the reported findings of those studies do not focused on the effect of all e-banking services on profit of the bank. The types of e-banking service considered by those researches were usually one and or two. In addition, most of them were emphasized on challenges of e-banking services than their effects on profitability of the banks.

2.3. Conceptual frame work

For the evaluation of profitability, Return on total assets (ROA) was used as a dependent variable. It is considered that it includes all the influences of the assets' management and it is acknowledged as a key indicator of increasing company performance; it also defines their economic growth potential (Helfert, 2002).

The Return on Assets (ROA) indicator expresses the company's ability to generate profit as a consequence of the productive use of resources and of the efficient management, and it's used as a dependent variable in the assessment of economic performance. It is computed as a ratio between Net Income and Total Assets (Burja, 2010).

The relationship between dependent and independent variables was depicted by the following figure.

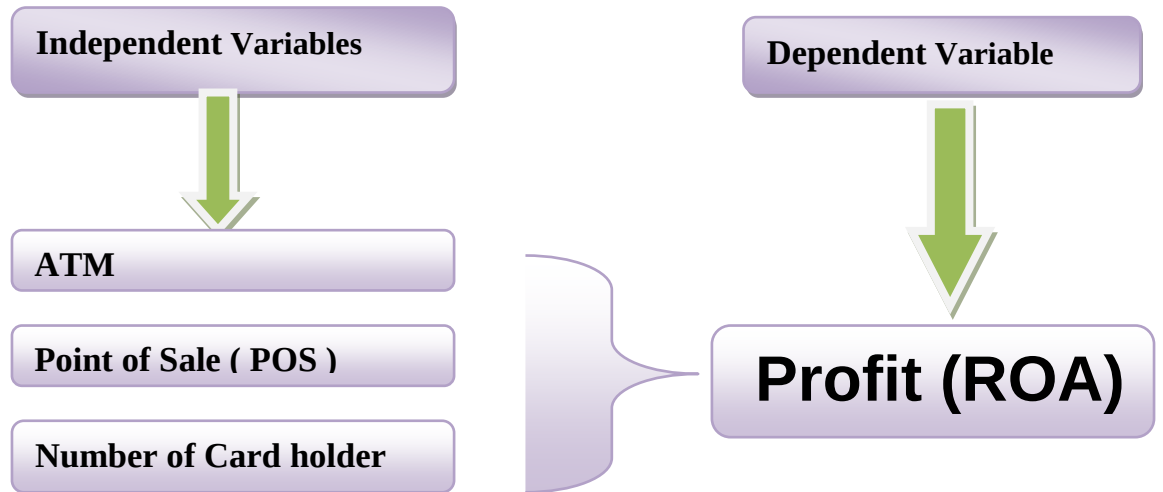


Figure 2.1: Conceptual frame work
Source: The researcher

CHAPTER THREE

3.METHODOLOGY

This chapter presents the research design and methodology of the study. It includes research design, data type, data sources, sample size and techniques, data analysis techniques and ethical considerations.

3.1 Research Design

A research design is an important part of a research because it serves as a guideline as how to carry out the study. The choice of a research design is based on considering the research problem in the study, experiences of the researcher, and the purpose for which the research study will be carried-out. A research design is a plan and procedures for research that span the decisions from broad assumptions to detailed methods analysis. It is the outline, plan, or strategy used to answer a research question (Creswell, 2009).

Since the objective of this study was to investigate the effects of e-banking services on profitability of the bank, explanatory research design was employed in this study. Because it is mainly concerned with cause and effect relationships of the variables. In this regards, Kothari (2004:318) stated that, explanatory technique is used and appropriate when the researcher has a single, metric criterion variable; which is supposed to be a function of other explanatory variables. The main objective in using this technique is to predict the variability the dependent variable based on its covariance with all the independent variables. One can predict the level of the dependent phenomenon through regression analysis, given the levels of independent variables.

Thus, in order to identify and analysis the effect e-banking services on profitability of the bank during past six years (2008-2013) explanatory research method was preferred and used by the researcher to draw valuable conclusion of the study. In general, in order to achieve the objectives of the study and to test the research hypotheses of the study, the researcher adopted explanatory research method for the study

3.2 Types and Sources Data

The major type of data employed for this study was quantitative data. Since quantitative data (Time series data) are applicable to phenomena that can be expressed in terms of quantity; the

researcher focused on this type of data to measure the effect of e-banking services on profitability of Dashen Bank.

With regards to this, as identified by Brooks (2008), there are broadly three types of data that can be employed in quantitative analysis of financial problems: time series data, cross-sectional data, and panel data. A time series data are a data that have been collected over a period of time on one or more variables. Those types of data have associated with them a particular frequency of observation or collection of data points.

For the purpose of this study the types of data used were based on six year annual profit of the bank and number of card holders with the contribution of ATM and POS services of the bank. So, the data type used for this study was times series quantitative data to analysis and explains the effect of e-banking services delivered in the bank on its profitability.

Since, a time series data are usually organized and compiled in the form of reports, proceedings, annual abstracts and munities; in this study the major data used were collected from secondary sources. They were particularly obtained from annual reports of the bank during 2008-2013 years.

3.3 Data Collection Tools and Procedures

For this study the data were collected from annual reports of the bank. In collecting those data, the financial statements of the bank during 2008-2013 were used as instrument of data collection. The researcher collected the data for this study from secondary sources for 6 years from 2008 to 2013, on the bank profitability and the contribution of electronic banking services. The data obtained from the bank's annual financial statements: revenue generated from ATM and POS. Furthermore number of card holders also collected from official documents of the bank by the researcher himself.

3.4 Sample and Sample Size

In this research, the subject of the study was focused on Dashen Bank e-banking services. Among all other banks found in the country and the study area, Dashen Bank was selected for this study because it was the first bank that penetrates the market in rendering e-banking service and dominantly provided the services during those years in the study area. Other commercial banks found in the study were started e-banking services two or more years after Dashen. Moreover, some of the banks started the services two year late were begin e-banking

with one or two elements of E-banking with no charges or service free (for example Commercial Bank of Ethiopia); which can influence the comparison of the effects of e-banking on profitability of the Banks. Yet, there were some banks that do not still started the services in the study area.

The years included in this study were all the years since the beginning of e-banking services in Ethiopia in general and Dashen bank in particular. Thus, six years (2008-2013) were the maximum possible years to analysis the effect of E-Banking services on profitability of the bank. Moreover, other banks were either didn't have sufficient record, or reluctant to provide the data related to E-banking services and its effects on profit of them.

As stated by Zeinab (2013), e-banking services include ATM, POS, Mobile and Internet banking. However, even though Dashen bank is pioneer in dominantly implementing e-banking services, its e-banking services were focused on ATM POS and number of card holder's services. Those two services were started in the same year with the provision of cards for card holders. So, this study was emphasized on effect of ATM, POS and NCH on profitability of the bank.

In general, as a result of differences in starting year of proving e-banking services, variation on the mode of providing the service and dissimilarity in the number of e-banking components provided among commercial banks found in the study area; Dashen Bank was selected purposively for this study considering the facts stated above and those reasons focusing on ATM, POS, and NCH.

3.5 Data Analysis Techniques

The data collected for this study were processed using Statistical Package for Social Science (SPSS) software version-20. This software was preferred by the researcher and used for the study considering the potential and relevance it has to process and generates an ultimate range of simple and sophisticated statistical results of the collected data accurately within few minutes.

The analyses of data were made using descriptive statistics and multiple regressions. Descriptive statistics, like frequency, percentage, mean, and standard deviation were used to analyze and describe features and annual growth rate of NCH, overall profit of the bank, and profit contribution of ATM and POS during 2008-2013 in the Bank. In addition, correlation

coefficient was calculated to see the relationship between e-banking services of the Bank and the dependent variable.

Furthermore, multiple regression analysis was made to analyze the effect of e-banking services on the profit of the bank. Moreover, the regression analysis was used to identify the extent of influences of each variable of e-banking services (ATM, POS, and NCH) on the profitability of the bank.

Besides, F-test was used to test the significances of the associations between dependent and independent variables. In the interpretation of the data tables and graphs were used for visual presentation of the results of the study.

3.6 Ethical Considerations

There are a number of key ethical issues that protect the rights of research participants. These are protection from harm, informed consent, the right to privacy and honesty with professional colleagues (Leedy & Ornrod, 2005).

The principle of informed consent requires that organization not be forced to participate in research. This means that prospective research participants must be fully informed about the procedures and risks involved in research and must give their consent to participate. In this study, the participants were well informed about the nature of the study and participation was on voluntary basis.

Ethical standards also require that researchers not to put participants in a situation where they might be at risk or harm both physical and psychological as a result of their participation. The researcher assured that the participant's responses will be treated confidentially and with anonymity of the respondents.

During the data collection process, a letter from the ASTU was used as introductory means to get permission to collect data from Dashen Bank. The data collection processes was conducted by informing the managements at head office the right they have to provide or not in the research activities. Thus, all data for this study were collected from Dashen Bank by the will and interest of the bank.

CHAPTER FOUR

4. ANALYSIS AND DISCUSSIONS

The subject of this study was focused on Dashen Bank e-banking services on its profitability. Among all other banks found in the country and the study area, Dashen Bank was selected for this study because it was the first bank that penetrates the market in rendering e-banking service and dominantly provided the services during those years in the study area.

The major purpose of this study was to investigate the effects of e-banking services on profitability of Dashen Bank. To achieve this objective of the study, explanatory research design was employed; considering ATM, POS and NCH as independent variables and Profitability of the Bank as dependent variable. Among quantitative types of data commonly employed in the analysis of financial problems; a time series data were collected and used. Those data were obtained from annual reports of the bank during the fiscal years under review.

Consequently, the analysis of the data was based on six years annual reports of the bank on NCHs, net-profits, and profit contribution of ATM and POS services of the bank. The data collected were processed using SPSS (V20) software; and the analyses of the data were made using descriptive statistics and multiple regressions. The Descriptive statistics were used to analyze the features and annual growth rate of e-banking service variables and annual net-profits of the Bank during the study years. Furthermore, multiple regressions were made to identify the extent of influences of e-banking services (ATM, POS, and NCH) on the profitability of the bank.

The analysis and discussions this chapter was organized in to two sections. The first section includes presentation and analysis of the data using graphs, tables and regression results. In the second part discussion of major findings of the study were made.

4.1 Presentation and Analysis of the Data.

4.1.1. Features of NCH, ATM and POS during 2008-2013 in the Bank

In this part the data obtained from the bank concerning ATM, POS and NCH services during the past six years were organized using four figures and Presented for analysis and discussions.

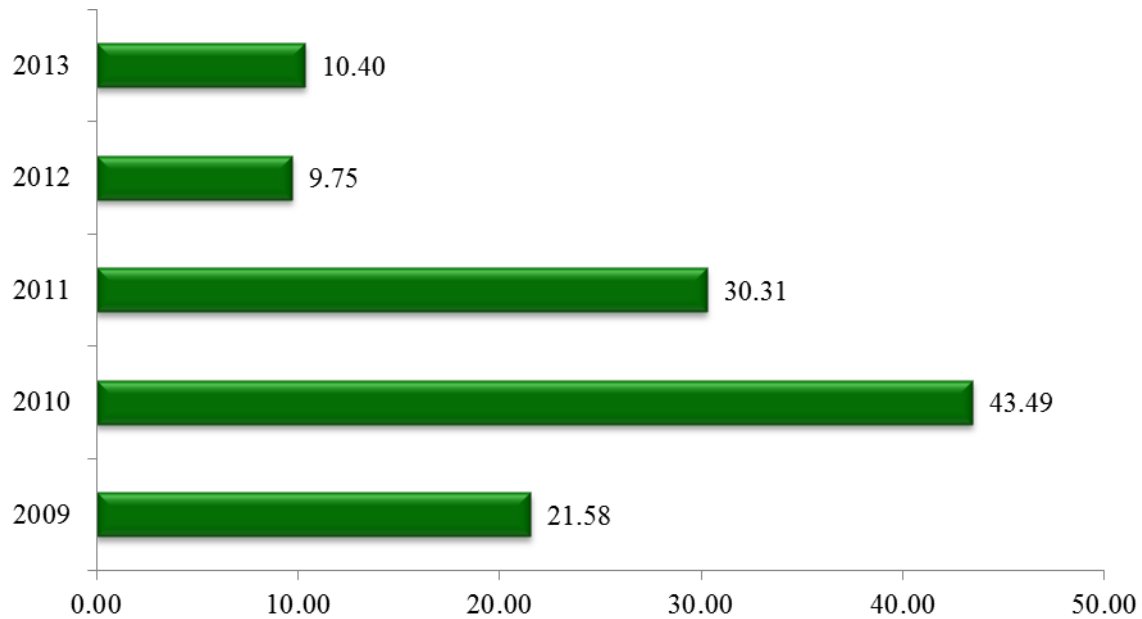


Figure 4.1: Annual Growth Rate of Number Card Holders' (2008 – 2013 Fiscal Year).

Regarding card services in a bank, Bahram, Zeinab and Hussein (2013) argued that, it makes the customers to use magnetic cards which are issued through a very secure procedure to let customers use them instead of money. The holder of this card is able to use it round the clock and in off days with POS and ATM. Moreover, as stated in Dashen Bank (2006) Guideline, an electronic card is designed to be used on electronic terminals (like ATM and POS) with an un-embossed card features. These kinds of cards are generally debit cards facilitating access to one's own deposit account. It is also used for shopping without cash; that is, a card holder can use to pay for purchases, the money being transferred directly from the holder's bank account to the seller.

So, to get services of a Bank rendered through ATM and POS, a customer of the bank should be a card holder. Since it makes the customers more secured and comfortable, most customers preferred to have the card (Njogu, 2014).

The data in figure 4.1 illustrate the number of card holders (NHC) in Dashen Bank since the beginning of ATM and POS services (2008-2013). As can be seen from the data of the table, annual growth rate of the number of card users were range from 43.49% in 2010 and 9.75% in 2012.

According to the data obtained from the Bank's Annual report (Dashen Bank, 2008), during the starting year of the service (2008), the number of card holders of the bank was about 168,920 people. In the next year it increases by 21.58%. In the third year (2010) the number

of card users was increased twofold than the previous year. It was increased by 43.49%. Since the starting of ATM and POS services of the bank; the highest increment of number of card users were observed during 2010.

However, following 2010, annual growth rate of the number of card users was radically decreased. For example in 2011 its annual growth rate was declined from 43.49% to 30.31%. In 2012 and 2013 it goes to 9.75% and 10.40% respectively.

This implies annual growth rate of number of card holders of Dashen Bank did not proceed as that of the first two years of starting the ATM and POS services. This might be happened as a result of the starting of the services in other private banks in the country. For example, Wogagen, Hibret, and Awash Banks were started the services of ATM and POS since 2011 (NBE, 2011). In addition, Commercial Bank of Bank of Ethiopia (Government owned bank) also strengthen the services especially in 2012 fiscal year (CBE, 2012). The decline of annual growth rate of the number of card holders may affect the profitability of ATM and POS in the bank.

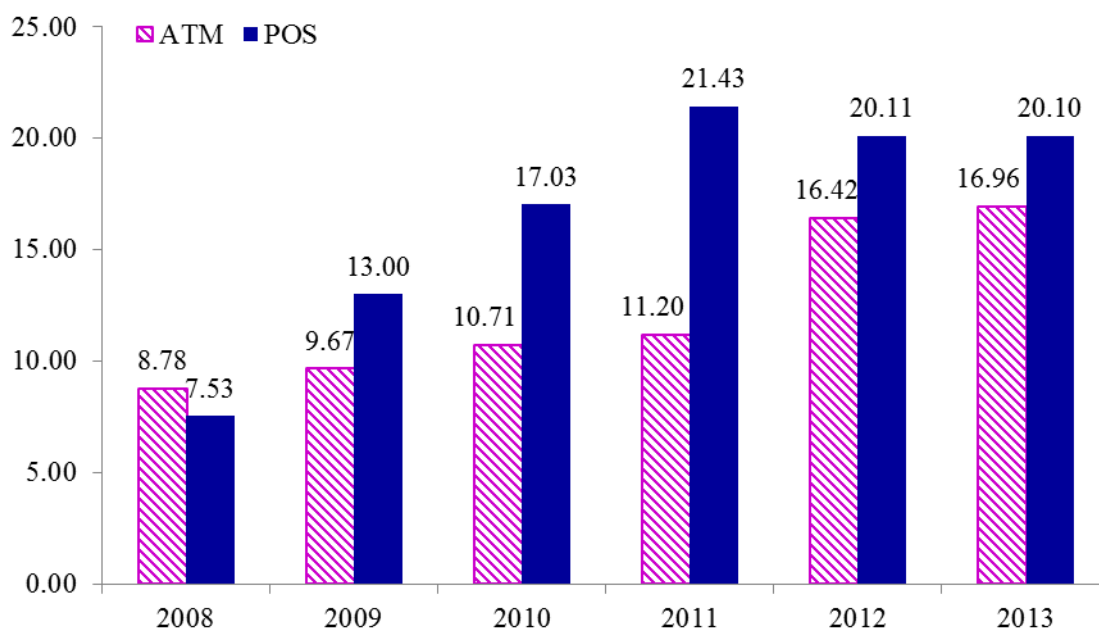


Figure 4.2: ATM & POS's Contribution in Dashen Bank's Annual Net Profit (Out of 1000)

The data illustrated in figure 4.2 showed the amount of ATM and POS contribution in annual net profit of the bank out of 1000 ETB during 2008 through 2013. According to the data of the figure both ATM's and POS's contribution in the annual net profit of Dashen Bank were increased from year to year since the beginning of the services in the bank. However, higher

contribution of POS was observed than ATM during five fiscal years except at initial year: in 2008. Particularly, during 2011 fiscal year the contribution of POS (21.13 ETB) was much higher than ATM's contribution (11.20 ETB).

The annual contribution of POS during 2008 was 7.53 ETB out of 1000 ETB and increased to 20.10 ETB during 2013. Furthermore, the data of the figure showed that the contributions of POS up to the year 2011 were increased; and then it slightly declined from 21.43 ETB during 2011 ETB to 20.10 ETB at the end of 2013 fiscal year.

However, the contribution of ATM in net profit of the bank was not strongly increased as that of POS's contribution. It increased from 8.78 ETB during 2008 to 16.90 ETB in 2013 fiscal year. Nevertheless, the contribution of ATM in annual net profit of the bank was continuously increased from year to year since the beginning of the services. Concerning ATM, most authors of the field and bankers who practiced the services argued that, if properly utilized, an ATM can acts like a bank branch and does lots of bank services without need of human interferences (Ogare, 2013).

Moreover, the findings of a research conducted on E-banking by Bahram, Zeinab and Hussein (2013), found that, at the first stage of starting E-banking (including ATM and POS services) they took large amount of budget and could decrease annual profit of the banks due to personnel pedagogical costs, but when they were used widely, the annual profit of the bank and the profitability rate of them can increases up to 17% of annual profits of the banks.

In relation to this, the overall results of the data illustrated in figure 4.2 showed lower level of ATM and POS's contribution in the net profit of Dashen Bank during the past six years (Since the starting year in 2008 till 2013). The maximum rate of profit generated was 2.143% (21.43 ETB out of 1,000.00 ETB) from POS services during 2011; the minimum was 0.753% (7.53 ETB out of 1,000.00 ETB). Yet, the contribution of both ATM and POS services in annual net profit of the bank have been going at increasing rate since starting the services to 2013 fiscal year.

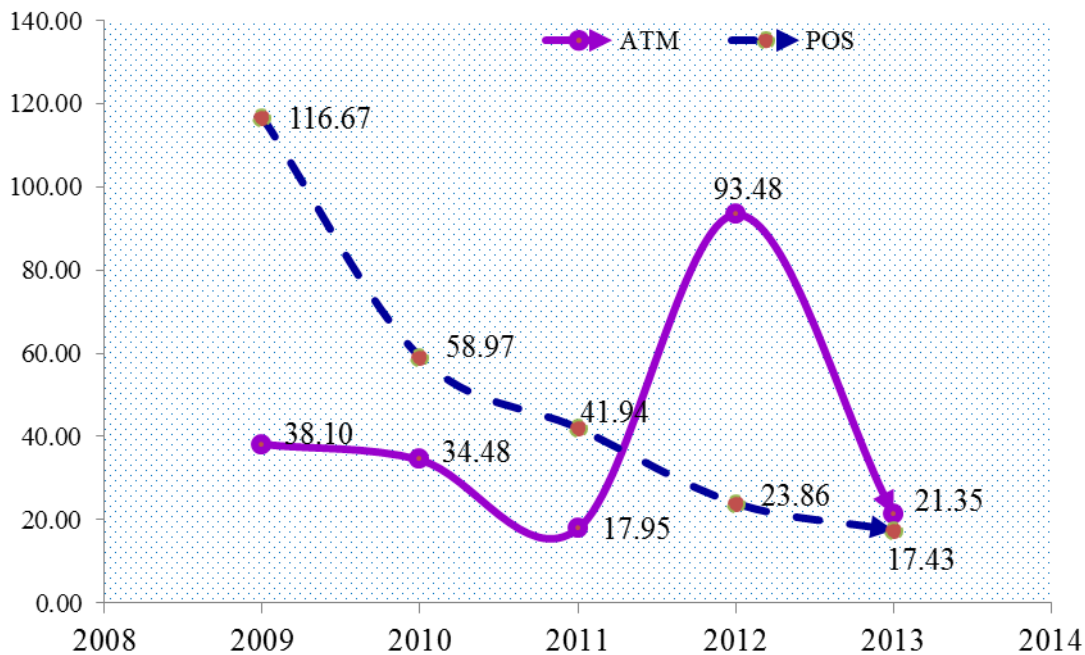


Figure 4.3: Annual Growth Rate of Profit Generated from ATM and POS (Percentages)

One of the indicators of the contribution ATM and POS in annual net profit of the Bank can be expressed in terms of Annual Growth Rate of the amount of profit gained from them.

In Figure 4.3, the Annual Growth Rate of Profit Generated from ATM and POS services of the bank were illustrated. According to the data of the figure, one year after the commencement of the services at the end of 2009 fiscal year, rate of profit obtained from POS and ATM was increased from the year 2008 by 116.67% and 38.10% respectively. However, during the years after 2009; the Annual Growth Rate of profit contribution of ATM and POS services were significantly dropped and reached 17.43% (POS) and 21.35% (ATM) at the end of 2013 fiscal year. Nevertheless, during the year 2012, the Annual Growth Rate of profit obtained from ATM was significantly increased from 17.95% in 2011 to 93.48%.

Furthermore, the data of the figure clearly shows constant failure of Annual Growth Rate of amount of profit obtained from POS services of the bank since 2009. It dropped from 116.67% in 2009 to 58.97% in 2010; then to 41.94% in 2011; and then to 23.86% in 2012 fiscal years. In other words, when compared with ATM, the contribution of POS in the net profit of the bank was dropped to lower level every year after the second year of the beginning of the services(that is, after the year 2009). This implies, the practices of POS services need the attention of the bank.

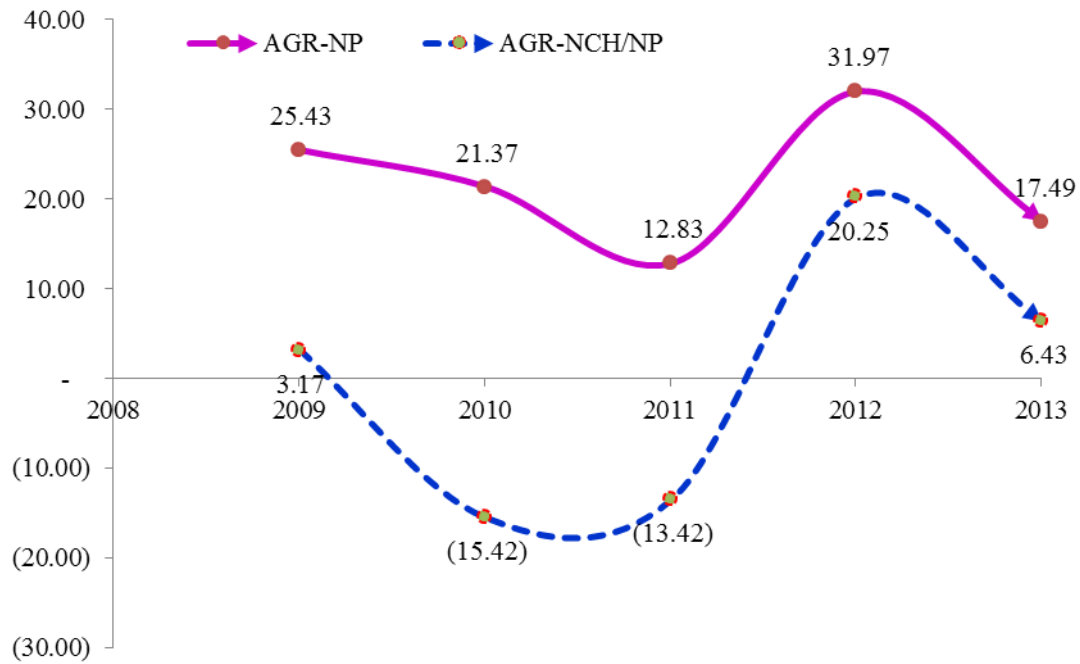


Figure 4.4: Annual Growth Rate of NCH in Relation to the Annual Growth Rate of Net Profit

In Figure 4.4, the Annual Growth Rate of NCH in Relation to the Annual Growth Rate of net profit (NP) of the bank was illustrated.

Accordingly, the Annual Growth Rate of Net Profit of the bank was decreased at decreasing rate from 2009 (25.43%) up to 2011(12.83%) and score the peak 31.97% during 2012 and finally decreased to 17.49% during 2013. However, Annual Growth Rate of NCH decreased at increasing rate from 2009 (3.17%) up to 2012 (-15.42%) and increased at increasing for two consecutive years of 2011 (-13.42%) and 2012 (20.25%) and finally decreased to 6.43% during 2013.

Generally, the figure 4.4 depicts that the Annual Growth Rate of NCH in relation to the Annual Growth Rate of net profit the bank was positive. That is, as the number of card holders increases, the amount of annual profit of the bank also increases.

4.1.2. Descriptive Analysis

Table 4.1: Results of Descriptive Statistics of POS, ATM and NHC ('00000)

Items	N	Minimum	Maximum	Sum	Mean	Std. Deviation
ATM	6	2.100	10.80	33.200	5.53	3.502
POS	6	1.800	12.80	44.400	7.40	4.205
NCH	6	1.689	4.65	19.397	3.23	1.200

Source: Authors Computation using SPSS version.20

The descriptive statistics of table 4.1 reveals as the mean of net profit generated from independent variables under study contributed towards the net profit of Dashen bank out of 100,000.00 ETB ranges from 3.23 ETB (from NCH) to 7.40 ETB (from POS) for the period of 2008 to 2013 fiscal years.

While the minimum average net profit generated from POS was 1.80; and the maximum were 12.80 ETB during the period under review. In the same vein, the minimum average net profit generated from ATM was 2.10 ETB; and its maximum was 10.80 ETB during same Period. Regarding NCHs, the data illustrate in the table showed that, the average minimum net profit generated from NHC was 1.69 ETB; and the maximum was 4.65 ETB for the period of 2008 to 2013 fiscal years.

This implies that, on average the contribution of POS (7.40 ETB) and ATM (5.53 ETB) in overall net profit of Dashen Bank were better than the contribution of NCH (3.23 ETB) during the study years. However, in terms of minimum average contribution, the contribution of ATM (2.10 ETB) on net profit of the bank were somewhat significant than POS and NCH during the study years

4.1.3. Autocorrelations Analysis

Autocorrelation which is sometimes called serial correlation or lagged correlation is the correlation of a time series with its own past and future values (Durbin & Watson, 1950). According to Maddala (1992), the problem of autocorrelation is frequently occurred in time series data. Hence, it is preferable to test for the existence of such problem for the data under study.

The test for the autocorrelation of the data under study (as illustrated in table 4.2) provided the Durbin-Watson (dw) of 2.13 for the models. According to Verbeek (2004) when the value of dw close to 2, it indicates that the first order autocorrelation coefficient ρ is close to zero which specifies there is no autocorrelations. However, if dw is 'much smaller' than 2, this is an indication for positive autocorrelation ($\rho > 0$); if dw is much larger than 2 then $\rho < 0$. Hence, for the data understudy, as the dw= 2.13, which is approximately close to 2, there is no problem of autocorrelations.

Table.4.2: Test of Autocorrelation

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.999 ^a	.998	.996	.96428	.998	601.459	2	3	.000	2.13

a. Predictors: (Constant), POS, ATM, NCH

b. Dependent Variable: Total Profit

Source: SPSS output version 20.

Moreover, to statistically test the null hypothesis, that states ATM, POS and NCH has no significant contribution for the profitability of Dashen bank during the periods under review, the researcher also used the data illustrated in table 4.2 which is the output of multiple regression models. The analysis of this hypothesis reveals that the correlation between ATM, POS & NHC and net profit of the bank during the period under review was positive. Adjusted R-square also showed that ATM, POS and NHC variables accounts for 99.59% of the variations in net profit of the bank and other variables account only for 0.41% of the changes in the net profit

4.1.4. Testing Assumptions

A. Testing for Multicollinearity

When there is a perfect linear relationship among the predictors, the estimates for a regression model cannot be uniquely computed rather estimates of the coefficients become unstable and the standard errors for the coefficients can get wildly inflated (Guajarati, 2004).

In this study, the researcher used the Variance Inflation Factor (VIF) after regression; to check for the multicollinearity among the independent variables. According to Maddala (1992), when the VIF values of each independent variables are greater than ten (10), there is a problem of multicollinearity in the model and it merit further investigations which correct such problem by using appropriate tools. However, if the computed value of VIF is less than ten (10), there is no problem of multicollinearity among the independent variables.

As it is showed in table 4.3, the VIF of all independent variables were less than ten and the mean of VIF for such predictors was 8.78. This indicates that there is no evidence of multicollinearity problems of data for the period under review and hence it is possible to use all independent variables in order to run the regression model.

Table 4.3: Variance Inflation Factor to Test Multicollinearity

Variable	VIF	1/VIF
-----+-----		
ATM	8.78	0.113926
POS	8.78	0.113926
NHC	8.78	0.113926
-----+-----		
Mean VIF	8.78	

Source: Computation using Stata / SE Version 11.0

B. Testing for Heteroskedasticity and Hypotheses

Heteroskedasticity means that there is not constant variance and such problems are frequently encountered in cross-sectional models (Guajarati, 2004). One of the main assumptions of the ordinary least squares regression is the homogeneity of variance of the residuals. However, if the variance of the residuals is non-constant, the residual variance has the problem of heteroskedasticity. If so, there are graphical and non-graphical methods for detecting heteroskedasticity. For this study, the researcher had interested to apply non-graphical methods of White's test of hypothetically checking the existence of heteroskedasticity as showed in table 4.4 below:

Table 4.4: White's Test for Heteroskedasticity:

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
-----+-----			
Heteroskedasticity	6.00	5	0.3062
Skewness	0.56	2	0.7570
Kurtosis	1.32	1	0.2501
-----+-----			
Total	7.88	8	0.4453

Source: Computation using Stata / SE Version 11.0

By using the White's test, we first check the null hypothesis that assumes constant variance. As a rule, if the null hypothesis is rejected, then data have the problems of heteroskedasticity. By looking straight line to the p-value after testing it at 95% confidence interval, and if the p-

value is (preferably) 0.05 or smaller, then the null hypothesis is rejected and there was significant evidence that there is a problem of heteroskedasticity (Guajarati, 2004). In contrast, if the p-value is greater than 0.05, then the null hypothesis accepted and there is no problem of heteroskedasticity.

So, for the data under study (as showed in table 4.4), the p-value was 0.3062, which is greater than 0.05. The evidence is to accept the null hypothesis and there is no problem of heteroskedasticity. Hence, it is possible to use such model to evaluate the effect of E-banking on the profitability of Dashen Bank for the periods under study.

4.1.5. Regression Analysis

A Multiple regression analysis was used to present and interpret the secondary data collected on independent variables of e-banking effects on profitability of Dashen Bank. The bank provides e-banking services; that includes ATM, POS and NHC used for the study period.

Thus, this part provides the empirical result of the inferential data related to ATM, POS and NCH and Net Profit of the bank; which are analyzed by multiple regression models. To achieve what was intended in this study, it was assumed that the regression model has three independent variables (ATM, POS and NHC) and one dependent variable (Net Profit) that indicates the effect of E- banking services on Dashen bank's profitability during 2008 to 2013 fiscal years. Hence as 'priory' expected, the model is estimated as follows:

$$\gamma = \alpha + \beta_1 \text{ATM} + \beta_2 \text{POS} + \beta_3 \text{NHC} + \varepsilon$$

Where:

γ : *ROA*

α : *Constant term*

ATM : *Automatic Teller Machine*

POS : *Point of Sale Terminal*

NHC : *Number of Card Holder*

β : *Coefficient of Independent Variables*

ε : *Error term*

Therefore, the outputs of multiple regression analysis of the data were illustrated in table 4.5 as showed below:

Table 4.5: Regression Outputs of Adjusted Model with its Relevant Statistics

Source	SS (Sum square)	df	MS (Mean square)	Number of Obs. = 6 F (2, 3) = 601.46		
Model	1118.52558	2	559.262789	Prob.> F = 0.0001		
Residual	2.7895331	3	0.929844367	R-squared = 0.9975		
Total	1121.31511	5	224.263022	Adj. R-squared = 0.9959 Root MSE = 0.96428		
Profit	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ATM	24.50448	3.647922	6.72	0.007	12.89516	36.11379
POS	15.68242	3.038216	5.16	0.014	6.013462	25.35138
NHC	12.26242	3.000652	4.12	0.018	5.425628	21.25457
_cons	16.37753	0.8604718	19.03	0.000	13.63913	19.11594

Source: Authors Computation using SPSS version.20

As we can understand from regression results illustrated in table 4.6, the coefficients of determination (Adjusted R-square statistics) of the model was 99.59%, which indicate that the independent variables (ATM POS and NHC) explained the variations of dependent variable (Net Profit) by about such percent and it is highly impressive to make strong conclusions.

The results of regression analysis also depicts, the probability of F-statistic value (0.0001); stated that ATM, POS and NHC were making a significant contribution to the composition of the Dashen Bank's overall net profit during the study period. Hence, it is preferably enough to use the independent variables to evaluate the profitability of Dashen Bank during the period under review (2008 to 2013 fiscal years).

Moreover, the analysis of regression result showed that, the independent variables (ATM, POS and NHC) were significant and positively contributed towards the net profit of the bank during the periods under review at 95% level of confidence.

Thus, the working model in this study was:

$$\gamma = 16.37753 + 24.50448 \text{ ATM} + 15.68242 \text{ POS} + 12.26 \text{ NHC} + \varepsilon$$

As can be seen from table 4.5, the coefficient of ATM (24.50448) indicates that a 1unit increase in ATM will causes such value increase in Dashen Bank net profit keeping other variables constant. Likewise, a 1unit increase in POS will also causes about 15.68242

increases in the bank's net profit. Moreover, a 1unit increase in NCH will results about 12.26242 increases in Dashen Bank net profit keeping other factors constant.

The level of significance for ATM, POS and NCH (which was less than 0.05) again indicates as they make a significant contribution to overall net profit of Dashen bank during the period under review.

The result of table 4.5 also informed us, when no money is received from ATM, POS and NCH, about 16.37753 ETB will be contributed for net profit from variables other variables.

In addition, the data in table 4.5 also showed that, F-ratio was 601.46; which was significant because the probability of F- statistic value (0.0001) was less than 0.05 level of significant.

Therefore, from this it is possible to infer that, the null hypothesis, which stated ATM, POS and NHC have no significant contributions to net profit of Dashen bank during the study years, was hereby rejected and their alternative hypothesis was accepted. In nutshell, the results of regression analysis showed that ATM, POS and NHC have significant contributions to the net profit of Dashen bank during 2008 to 2013 fiscal years.

4.2 Discussions

The major purpose of this study was to investigate the effects of e-banking services on profitability of Dashen Bank. To achieve this objective, ATM, POS and NCH were considered as independent variables; and profitability of the Bank was considered as dependent variable. A time series quantitative data were collected from secondary sources; basically from annual reports of the bank during 2008-2013 fiscal years. So, the analysis and interpretation of the data were made based on the above data were discussed hereunder.

Concerning the effects of ATM on the overall profit of Dashen Bank, the findings of this study identified that, ATM's contribution in the annual net profit of Dashen Bank was increased from year to year since the beginning of the services in the bank. Out of one thousand ETB, it was increased from ETB 8.78 during 2008 to ETB 16.96 in 2013 fiscal year. In addition, the findings of this study also identifies that, one year after the commencement of the services, the rate of profit obtained from ATM was increased from the year 2008 by 38.10%. The maximum Annual Growth Rate of ATM was 93.48% during the year 2012. But, it was dropped to 21.35% at the end of 2013 fiscal year.

Concerning ATM, most authors of the field and bankers who practiced the services argued that, if properly utilized, an ATM can act like a bank branch and does lots of bank services without need of human interferences (Ogare, 2013). Moreover, the findings of a research conducted on E-banking by Bahram, Zeinab and Hussein (2013), found that, at the first stage of starting E-banking (including ATM and POS services) they took large amount of budget and could decrease annual profit of the banks due to personnel pedagogical costs, but when they were used widely, the annual profit of the bank and the profitability rate of them can increase up to 17% of annual profits of the banks.

Regarding POS's effects on the profit of Dashen Bank, the findings of this study showed that, the contribution of POS on annual profit of Dashen Bank at the beginning of the service, during 2008, was ETB 7.53 out of one thousand ETB; and its contributions were also increased for the following three years and reached ETB 21.43 during the year 2011 (which was much higher than ATM's contribution during this year). Furthermore, the findings of this study identified that, one year after the commencement of the services, the rate of profit obtained from POS was increased by 116.67%. But, a constant failure of Annual Growth Rate of the amount of profit obtained from POS services of the bank was identified following 2009 fiscal year. It was dropped from 116.67% to 17.43% at the end of 2013 fiscal year.

With regards to the effects of NCH on profit of Dashen Bank, the finding of this study identified that, one year following the beginning of the services in 2009, the NCH was increased by 21.58%; and in the third year (2010) it was increased by twofold (43.49%). However, following 2010, annual growth rate of the number of card holder was radically declined for three consecutive fiscal years and reached 10.40% at the end of 2013. This clearly confirmed that, the annual growth rate of number of card holders of Dashen Bank did not proceed as that of the first two years of starting the services. Generally, the findings of this study made clear that the Annual Growth Rate of NCH in relation to Annual net profit of Dashen Bank was positive. That is, as the number of card holders increases, the amount of annual profit of the bank also increases.

With respect to the extent of ATM, POS and NCH effects on Dashen Bank's overall profit, the results of regression analysis confirmed that, keeping other variables constant, a 1% increase in ATM caused an increase of ETB 2.45 on the Bank's net profit. Moreover, a 1% increase in POS and NCH will result an increase of ETB 15.68 and 12.26 on net profits of Dashen Bank respectively.

The findings of this study were supported by a study conducted in Iran, by Bahram, Zeinab and Hussein (2013) on the effect of using electronic banking on profitability of the banks, in that, the extent of ATM effects on profitability of the banks was found at 0.329 Iranian Riyal. Moreover, regarding POS and NCH, the findings of the study identified as their effect on profitability of the profit of the bank was 0.483 Iranian Riyal and 0.401 Iranian Riyal respectively during year of the study. However, the effect of POS was much better in Iranian than the result identified in this study. The difference may be related to frequent usage of the services in the two countries (Iran and Ethiopia). Iran is more developed and familiar with internet technology than Ethiopia. Subsequently Ethiopia is positioned at the infancy stage of these services; since started in 2006 by Dashen and others joined to render those services about one or two years ago; while some commercial banks are not started yet. But, Bidabadi and Alahyary (2003) stated as Iranians started the services before 15 years ago.

Other similar studies carried out in Nigeria by Njogu (2012) on ATM and POS services also identified the effect of them on the profitability of the banks. According to the findings of them, a 1% increase in ATM and POS will causes an increase of 0.278 and 0.237 Nigerian Naira on the profits of the Banks respectively. Moreover, a recent study conducted in Nigeria identified the decline of ATM effects on profitability of the Banks in the Country. According to the findings of Adewoye (2013), a 1% increase in ATM causes an increase of 0.12 Nigerian Naira on the profits of the Banks under study in Nigeria. The findings of a study conducted by Keyong (2012) on the Benefits of ATM (Automatic Teller Machines) also identify supporting results.

CHAPTER FIVE

5 CONCLUSIONS AND RECOMMENDATIONS

In this chapter conclusions made based on major findings of the study and the recommendations forwarded to improve the practices of e-banking services and its positive effect on the profit of the bank were presented.

5.1. Conclusions

The major objective of this study was to investigate the effect of e-banking on profitability of Dashen Bank during 2008 - 2013. In this regards, ATM, POS and NCH are considered as e-banking service variables. To achieve the proposed objective, time series quantitative data were collected from secondary source and analyzed using descriptive statistics and multiple regressions.

The results of data analysis identified that, ATM's contribution in the profit of the Bank was increased from year to year since the beginning of the services in the bank. However, constant failures of the rate of profit obtained from POS and its Annual Growth Rate were identified during the years understudy. Similarly, the finding of this study identified that; annual growth rate of NCH in the Bank was not proceeding as that of the first two years of starting the services in the bank. It was radically declined starting from 2011 fiscal year. However, the findings of this study made clear that the Annual Growth Rate of ATM, POS, and NCH in relation to annual net-profits of the Bank were positive.

With respect to the extent of ATM, POS and NCH effects on Dashen Bank's overall profit, the results of regression analysis in this study identified the presence of significant contribution of them to overall profit of the bank during the years under study. The findings of this study also confirmed that, at 0.05 levels of confidence, e-banking variables (ATM, POS and NHC) were positively contributed towards the overall net-profit of the Bank during the periods under review. Therefore, from this it is possible to conclude that the null hypothesis, that stated; ATM, POS and NHC have no significant contributions to total profit of Dashen Bank during 2008 to 2013 fiscal years; were hereby rejected and their alternative hypothesis was accepted. Thus, based on these findings, it is possible to conclude that, the effects of ATM, POS and NHC on overall net-profit of Dashen Bank was positive and significant.

Since, E-banking can helped commercial banks to lower their cost of banking, through technology which could create greater opportunities to the banks to offer quality services to the customers; this intern can enabled them to minimize expenses and maximize profit. They could contribute to banks profit by lowering expenses of banks and thereby increase revenue through reducing operation cost, providing better cash management and save time, easy to use, facilitating access to information, generating transaction fee and hard currency. In this regards, is possible to concludes in this study that, there was a positive relationship between profit performance of commercial banks and electronic banking services, as it was found in Dashen Bank that there was a strong relationship between ATM, POS, and NCH services with profitability of the bank and electronic banking services during the study years.

In general, through the components of e-banking services were not fully hosted and practiced in Dashen Bank, based on the findings of this study related to ATM, POS and NHC, it is possible to conclude that, the effects of e-banking services on overall net-profit of a bank was significant. This may call the attention of bank's management to expand electronic banking services and the application of technology-lead banking services at their banks developing a well-articulated strategy to increase profitability of the bank on sustained manner.

5.2. Recommendations

Based on major findings of the study and the conclusions, the following recommendations were forwarded for the improvement of e-banking services and to maximize profits of the bank through reducing expenses.

- ✓ Although, e-banking services have significant effect on overall profit of the Bank; the finding of this study identified that e-banking services were not fully practices in Dashen Bank. As a result scope of this study was delimited to the effect of ATM, POS, and NCH services. Thus, in order to achieve full-fledged e-banking services in the bank and boost banks profit, it is better if the management of Dashen Bank strengthen current practices of the services and make further exploitation of these and other services throughout all its branches.
- ✓ In order to improve the current practices of e-banking services, in terms of quality and sizes of the services, there is also a need for Dashen Bank to compare the implementation practices of e-banking services with other commercial banks found in the country and setting further strategies enable the bank to penetrate market share in

banking industry. Doing so enables the bank to take better advantage of economies of scale and technical innovations, as well as to re-allocate capital and personnel to revenue-generating activities that maximize profits of the bank.

- ✓ Even though, the finding of this study identified most important variables on the profitability of e-banking services, there might be other issues not assessed through this research. So, it is advisable if Dashen Bank conduct further in-depth study to identify specific problems related to e-banking services and its profitability. In this regards, it is better if the issues related to the annual growth rate of POS's contribution in overall net-profit of the bank will get due considerations of the investigators during the study.
- ✓ In most countries banks have rapidly introduced innovative banking technologies and e-banking services in recent years. They have been investing on expanding and improving IT systems and introducing a number of new e-banking services integrated with other services and banks. So, considering the results this study on profitability of Dashen Bank, the researcher also advised to other Commercial Banks found in the country, to focus on e-banking services proficiently to exploit more as of these new products to the country's banking industry with the expansion of technological advancement all over the world.

The results of analysis presented in this study were mainly based on time serious quantitative data obtained from secondary sources of Dashen Bank's six years official documents only. Moreover, in this study the issues of e-banking services were investigated from profitability of the services for the bank only. Issues associated with the perspective of bank customers, service quality, customer preferences the services, suitability of the services, impacts of the service on progress and success of the banking industry, determinants and challenges of e-banking services were not addressed in this study. So, a profound research is required to map its consumer base and the impact of e-banking on the development of bank-customer relationships and its contributions to the development of the country and the sector.

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