St. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

THE IMPACT OF ELECTRONIC BANKING SERVICE QUALITY ON CUSTOMER SERVICE AND BANK PERFORMANCE; THE CASE OF DASHEN BANK SC

BY

LEYOUAGER TAYE WONDIMU

SGS/0228/2005B

June, 2015

ADDIS ABABA, ETHIOPIA

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ENDORESEMENT

This thesis has been submitted to St, Mary's University, School of Graduate Studies for examination with my approval as a University advisor.

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Dr. Degefe Duressa. All source of materials used for the thesis have been duly acknowledge. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Leyouager Taye   _____

                                                                         Signature

St. Mary's University, Addis Ababa   June, 2015

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LIST OF ACRONYMS

ANOVA   Analysis of Variance

ATM   Automatic Teller Machine

ICT   Information Communication Technology

IT   Information Technology

NBE   National Bank of Ethiopia

POS   Point of Sale machine

ROA   Return on Asset

ROE   Return on Equity

SPSS   Statistical Package for the Social Sciences

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ABSTRACT

Dashen Bank is the pioneer mover towards the adoption of electronic banking in Ethiopia. The purpose of this study is to investigate the impact of electronic banking on customer service and bank performance. The study used quantitative research approach and secondary financial data are analyzed using multiple linear regressions models for the two bank performance measures; Return on Asset (ROA) and Return on Equity (ROE).Beside this, the study used primary data analysis to obtain customers perception on service quality of the bank after the adoption of electronic banking; and interview is also made to solicit officials' perception towards the effects on customer service and bank performance obtained as a result of electronic banking. The findings from both customers and bank officials' indicated that, electronic banking has positive influence on customer service. Secondary data analysis and bank officials also confirmed that electronic banking has improved performance of the bank. However, it is also indicated that, there are some challenges such as machine downtimes, preventing the bank from enjoying benefit of electronic banking system to the maximum. This study suggests that, the bank should process cards as fast as possible, empower the support system as per customers' expectation, promote usage of cards and adopt alternative electronic banking features.
Keywords: bank performance, customer service, electronic banking

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CHAPTER ONE

1. Introduction

1.1. Background of the Study

The rise in the Information communication Technology (ICT) has significant impact on service delivery in most of the organizations adopting information system (Wisdom, 2012). New information technologies and emerging business forces have triggered a new wave of financial innovation, electronic banking (Wu et al 2006). Electronic banking has benefited banks as competitive advantage for achieving higher efficiency, control of operations and reduction of cost by replacing paper based and labor intensive methods with automated processes, which will lead to higher productivity and profitability.

The term electronic banking refers to "the use of computers and telecommunications to enable banking transactions to be done by computer or telephone instead of human interaction" (Okoro, 2014). Khrawish and Al-Sadi (2012) also defined electronic banking as the adoption of electronic means in the delivery of banking products and services. Such products and services include deposit taking, lending and payment products and provision of other electronic payment product and services such as electronic money.

From the above definitions so far, it can be understood that electronic banking is the delivery of banking products and services to the customers and general public electronically through the use of electronic banking instruments or products like Automated Teller Machine (ATM), Mobile, internet (Web), and point of sales (POS) terminals among others.

Sumra et al (2011) argued that the transformation from traditional to electronic means has not affected banks in the negative way. In fact, profit tends to increase as number of transitions increases. E-banking appeal as well its product development is rapidly growing and the global acceptance has strongly encouraged its penetration (Abaenewe et al,

2013).The situation happened due to an increase in customer satisfaction, which resulted in contributing to customer loyalty, and hence an increase in profits. The banks have acquired the benefits in the short run and they meet their costs within few years, even a few months' time.

The services that are provided electronically not only create new competitive advantages, but also improve the bank's relationships with its customers (Nupur 2010).Wu et al(2006) also supported the idea that electronic banking can create unique opportunities for financial product development, service delivery, and marketing through internet. A study conducted by Jing and Seon in 2013 also explained that, electronic service quality is considered as one of the key determinants of successful electronic commerce.

The provision of banking services in Ethiopia was basically manual. However, over time, Information and Communication Technology (ICT) has been deployed to improve service delivery in the banking sector. All banks in the country are now using ICT for service advancement and fulfill minimum requirement of National Bank of Ethiopia.

This study examined the impact of e-banking service quality on customer service and bank performance in Dashen Bank SC. Multi Stage Cluster sampling method is used to select customers and purposive sampling method is used to interview Bank officials.

1.2. Background of the Organization

Dashen Bank SC was established as per the intent of the new policy and the Ethiopian investment code. It came into existence on September 20, 1995 according to the commercial code of Ethiopia, 1960, and the licensing and supervision of banking business proclamation No. 84/1994.

The first founding members were eleven businessmen and professionals that agreed to combine their financial resources and expertise to form this new private bank. The bank

coined its name from the highest peak in the Country, mount Dashen, and aspires to be unparalleled in banking.

Headquartered in Addis Ababa, the Bank is the biggest private Bank in Ethiopia. It operates through a network of 144 Area Banks, Nine dedicated Forex Bureaus, more than 130 ATMs and 792 plus Point-of-Sale (POS) terminals spread across the length and breadth of the nation. The Bank has established correspondent banking relationship with 462 banks covering 70 countries and 169 cities across the world. The Bank also works in partnership with leading brands in the electronic payments industry (VISA, MasterCard, Union Pay and American Express) and prominent money transfer operators (Western Union, Money Gram, Express Money, Dahabshiil, Transfast and Ezremit).

Mission of Dashen Bank SC, is ''Provide efficient and customer focused domestic and international banking services, overcoming the continuous challenges for excellence through the application of appropriate technology'', is formulated by signifying the fact that adopting technology based system has an influence over customer service delivery. Likewise, keen to consciously build professionalism and service quality and sustainable growth and stability are some of the values which encourage continuous improvement in the ICT part of the operation (Dashen Bank, 2014).

1.3. Statement of the Problem

The introduction of electronic banking has revolutionized and redefined the way banks were operating. Now a day's customers of financial institutions, especially bank customers, prefer to use a bank by the quality and variety of services delivered. Wisdom (2012) also explained that in earlier times customers use bank services basically in need of security, however recently their demand shifted from security issues to the quality of service delivered by the bank. According to Rifat (2013) e-banking became a fact of life and even a survival issue

for banks with their clients trusting and demanding it as a convenient, safe, and trustworthy way of conducting banking transactions.

Numerous studies have shown transforming the banking system from traditional to electronic based have brought support in business operations and serve as competitive advantage. Sumra et al (2011), indicated that electronic banking has substantial impact on banks' performance. Similarly, Wu et al (2006) explained that developing core capability help institutions to divert resources, which in turn sustain competitive advantage and to cope up with the changing business environment. According to Parisa (2006) (as sited in Aliyu et al 2012), electronic banking has lower operating costs, improve customer's services delivery, retain customer, reduce branch offices and downsize the number of branch staff. This situation will lift profit and improve performance.

On the other hand, some researchers such as Saatcioglu et al (2001), Okibo and Wario (2014) and Malhotra and Singh (2009); argue that despite electronic banking has a benefit; it also has major drawbacks that can harm bank performance and reduce service quality. Electronic banking offers new opportunities to banks, but it also poses many challenges such as the innovation of IT applications, the blurring of market boundaries, the breaching of industrial barriers, the entrance of new competitors, and the emergence of new business models (Saatcioglu et al. 2001).Okibo and Wario (2014) also argued that, electronic banking service is less reliable and brings higher cost per transaction. Their study also indicated that electronic banking is not secured and creates possibility of fraud on customers' account. The study by Malhotra and Singh (2009) also indicated application of internet banking is a reason behind the lower profitability of banks.

Currently, almost all of the banks operating in Ethiopia are using at least one aspect of electronic banking aspects, the emerging hotel and tourism industry and the change in the life style of customers. Particularly, Dashen Bank SC has adopted most of electronic banking

features to make the service more attractive, to gain competitive advantage and increase bank performance. This situation has increased competition among banks.

However, the impact of electronic banking service quality on service delivery and bank performance is yet to be studied from Ethiopian perspective. Various studies have been conducted on electronic banking practice and its effect on bank performance using descriptive research method like Okiro and Ndungu (2013) and Sumra et al (2011). Besides, these studies covered relatively shorter period of time, which this study surpassed.

Going by the findings of most of the studies, the literature on the impact of e-banking service quality is inconclusive in developing economies especially in Ethiopia and serve as an open ground for more research in the area of e-banking and its impact. Consequently, this study aims at closing the research gap by taking one of the leading private banks in Ethiopia as a case study.

This study focused to know the effects on customer service and bank performance caused as a result of adopting electronic banking, in Ethiopian context. Service quality and performance of an organization can be measured using different proxies. Hence, this study measured bank performance and customer service quality by answering the following basic research questions.

➢ What is the contribution of electronic banking service quality to service reliability?
➢ Does e-banking service quality contribute to tangibles of the Bank?
➢ What is the impact of adopting e-banking service quality on responsiveness?
➢ What is the contribution of electronic banking service to assurance?
➢ What is the effect of electronic banking service on Empathy?
➢ Does e-banking contribute to ROA of Dashen Bank SC?
➢ What is the impact of e-banking towards ROE?

1.4. Objectives

1.4.1. General Objective

The general objective of the study is to assess the impact of electronic banking service quality on customer service and bank performance of Dashen Bank SC.

1.4.2. Specific Objectives

Specifically this research addressed the following issues;

- ➢ To examine the contribution of electronic banking service quality to reliability.
- ➢ To investigate the role of e-banking service quality on service tangibles.
- ➢ To examine the impact of e-banking service quality on bank responsiveness.
- ➢ To measure the influence of electronic banking service quality over assurance.
- ➢ To investigate the effect of e-banking on Empathy.
- ➢ To evaluate is the contribution of electronic banking on ROE.
- ➢ To measure the impact of electronic banking service quality on ROA.

1.5. Significance of the Study

The findings of this study are considered important to provide insight into the relationships between electronic banking and customer service and bank performance brought by transforming from traditional banking in to electronic banking. Practically, the study is significant because, it provided crucial facts about the drawbacks and challenges of electronic systems that are faced by the bank and the impact of the system from service delivery and the bank's performance perspectives.

Furthermore, this study contributed to the debates that are currently argued on the outcomes of e-banking. Some researchers (for example Hernando and Nieto, 2006, Okiro and Ndungu, 2013, Nupur, 2010, Adewoye, 2013, to Fragata and Moustakas, 2013) argue that electronic banking improves customer service and maximize bank performance. On the other hand, the

other group such as Saatcioglu et al (2001), Okibo and Wario (2014) and Malhotra and Singh (2009) argue that this system maximize cost to banks, increase complexity and lessens security to customers.

On top of that, electronic banking is an emerging technology, especially in our country. The issues discussed under this study are relatively current for Ethiopian financial market. The, recentness of the topic makes it relevant from both the academic and practice point of view. The study will be used as a source of reference material besides suggesting areas where future research may be conducted.

1.6. Scope of the Study

This study is focused on the effect of electronic banking on bank performance and customer service in the case of Dashen Bank SC. Commercial banks operating in Ethiopia are forced to adopt electronic banking by National Bank of Ethiopia. Accordingly, Dashen Bank SC also adopted electronic banking system to maximize service delivery, to retain customers, reduce costs and maximize profit.

Dashen Bank SC is selected among the banks because the bank has been operating long enough to give academic insight on what the study seek to offer. On top this, Dashen Bank SC is the first private bank to adopt electronic banking, which helps to make comparative analysis on this matter. Therefore, the scope of this research is to analyze the effect of electronic banking on customer service and bank performance the case of Dashen Bank SC for the period starting from 1997 to 2014 fiscal year; hence, the findings of the study might not necessarily be generalized to other commercial banks.

1.7. Organization of the Paper

This paper is arranged in a way which sequentially answers the questions raised under the introductory part. Thus there would be five chapters in which Chapter One deals with introductory aspects namely, background of the study area, Objectives of the study Statement of the problem, Significance of the study, scope of the study and limitations throughout this paper. Chapter two would be dedicated to the review of related literature consisting scientific review and empirical review. Chapter three covers the methods used during data collection and data analysis. Chapter four includes finding and discussion part of the study. The last chapter incorporated the conclusion and recommendation part of the research.

CHAPTER TWO

2. Review of Related Literature

2.1. Electronic Banking

The concept of e-banking is providing alternative service delivery channel for banking services and accessibility for customers. According to Abaenewe et al (2013) as cited by Hassan et al (2012), electronic banking is the conduct of banking business electronically which involves the use of information communication technology to drive banking business for immediate and future goals. Jamaludine (2013) defined electronic banking as delivery of banking services to customers at their office or home with the help of electronic technology. The term e-banking refers to transforming the banking and financial industry in terms of the nature of core products /services and the way these are packaged, proposed, delivered and consumed (Auta, 2010).

E-banking is a borderless entity permitting anytime, anywhere and anyhow banking. This facilitates us with all the functions and many advantages as compared to traditional banking services (Vyas 2009).Most of the time, the system uses the internet as the delivery channel by which to conduct banking activity, for example, transferring funds, paying bills, viewing checking and savings account balances, paying mortgages and purchasing financial instruments and certificates of deposits (Mohammed, et. al, 2009; as cited by Auta 2010). The introduction of electronic banking has changed the banking environment. The manual banking was a lengthy and time consuming procedure, there was manual maintaining of the accounts and transactions for which the accuracy was damaged due to human errors and labor cost was also significant (Sumra et al, 2011).

On the other Hand, giving the services electronically is not sufficient enough but providing quality customer service is the main issue. There are many factors that make the service good enough for the customers to be adopted. Web design, security, trust, product diversification, credibility, collaboration, access and communication are some of the factors that make the perception of customer about the quality of electronic banking service (Hassan et al, 2012). Actually, electronic banking has become popular because of its convenience and flexibility, and also transactions related to benefits like speed, efficiency, accessibility and others (Auta, 2010).

2.2. Types of E-banking

Electronic banking is bigger concept than just internet banking. Auta (2010) explained several types of electronic banking, such as (i) Internet banking (or online banking), (ii) telephone banking, (iii) TV-based banking, (iv) Mobile Phone banking, and e-banking (or offline banking). The evolution of banking technology has been driven by changes in distribution channels as evidenced by automated teller machine (ATM),Phone- banking, Tele-banking, PC-banking and most recently internet banking (Chang, 2003; as cited in Auta, 2010). Okoro (2014) also indicated that some banks offer home banking, whereby a person with a personal computer can make transactions either via direct connection or by accessing a website in addition to the previous services. According to Sumra et al (2011), electronic banking services provided by the banks include ATM, credit cards, funds transfer, check payment, funds deposit, balance enquiry, utility bills payment, statement of account, remittance, draft, pay order, phone banking, mobile banking, PC banking etc.

2.3. Benefits and challenges of E-banking

According to Mia et al (2007), several models of E-Business were tried by different banks all over the world to get them involved in the E-Banking vicinity. Electronic banking improves the speed and quality of service delivery and has radically changed how banking is done worldwide (Agboola, 2003).There are many benefits obtained by both the bank and customers as a result of using electronic banking. According to Fragata and Moustakas (2013), convenience, reliability, accuracy, responsiveness and assurance are the qualities expected by customers. As a result of transforming in to electronic banking system, the performance of banks has been increased, the labor costs have decreased as now, less number of employees are required to deliver the services because of electronic means, the accuracy of transactions and maintenance has been also supplemented as computer has taken the place of humans. Hence, decreasing human errors, the procedures, processes and services are now fast and reliable which saves time, efforts and costs. The customers are more satisfied with electronic banking services, their accuracy and timeliness. This will also improve the performance of banks; decreasing the costs and increasing profits (Sumra et al, 2011).

Rasoulian and Safari (2011) explained the advantages of electronic banking in their study. Specifically, they listed more number of customers, services in higher quality and lower price, preservation and enhancement of share in market, unlimited space for market, concentration in new distribution, making competition between commercial brands, concentration on expenses and improvement of revenue, providing extensive services, improvement in management system, decreasing the expenses of contractions, close intra banking connection and controlling ecological pollution as the major interesting benefits.

Agboola (2003) also indicated that various innovations have brought about reduction in costs, a wider range of banking services and greater convenience for customers. According to Chang (2003) study (as cited by Wisdom, 2012), e-banking contributes significantly to

the distribution channels of banks such as automated teller machine (ATM), Phone banking, Tele banking, PC banking and now internet banking.

Emmanuel (2011) explained that internet based banking system benefits both the customer and the bank. He listed less expensive and gaining customer loyalty as benefits gained by the bank, whereas ease of account monitoring, ease of transacting and quick detection of fraud as customers benefit. On the other hand, he discussed Technophobia, High Cost of Internet Service, Security, Fraud, Expense, and Unreliable Internet Connection as challenges of the system. Ruby and Pankja (2011) also indicated in their research that even if E-banking offers a higher level of convenience for managing one's finance, it has also challenges regarding privacy and risk.

Similarly Vyas (2009) also listed, bill Payment through electronic banking, the electronic shopping mall, effecting personal investments through electronic banking, investing in mutual funds and fund transfer request as the benefits entertained by customers of a bank which provide electronic banking service. This does not mean that most of the benefits are not provided in the traditional banking services. However, this indicates if the services are rendered using e- banking, they will become less costly, fast and convenient for both the bank and customers as well. On the other hand, Vyas indicated that adopting electronic banking also has its own drawbacks, such as safety situations around ATMs, abuse of bank cards by fraudsters at ATMs, danger of giving your card number when buying on-line.

2.4. Functions of E-banking

According to Vyas (2009), electronic banking system provides various functions. Among them, Inquiry about account information Such as, card's / account's balance and the detailed historical records of the account and downloads the report list. The second function is Card account transfer. This function benefits the customers to transfer fund to another person's Credit Card in the same city. Thirdly e-banking system allows Bank securities accounts

transfer. The mentioned functions benefit customers to achieve the fund transfer between his own bank savings accounts of his own Credit Card account and his own capital account in the securities company.

Moreover, the client can inquire about the present balance at real time. Foreign exchange transaction is among the functions of e-banking. By this the client can trade the foreign exchange, cancel orders and inquire about the information of the transaction of foreign exchange accordingly. B2C disbursement also gives a permission to do the real-time transfer and get the feedback information about payment from the bank when the client does shopping. The system also provides Client Service, which lets the client to modify the login password, information of the Credit Card and the client information in e-bank. Account management is another function helping the client to modify his own limits of right and state of the registered account in the personal e-bank, such as modifying his own login password, freezing or deleting some cards and so on. The last but not the list one is Reporting the loss of Cards or passbook. By this the client can report the loss in the local area (not nationwide) when the client's Credit Card or passbook is missing or stolen.

Accordingly Dashen Bank's electronic banking system provide majority of the functions that are mentioned above. Bank securities accounts transfer, Foreign exchange transaction and Reporting the loss of Cards or passbook are the functions that are yet to be provided by Dashen Bank SC. Similarly from the other functions, some features are also not delivered by the bank. This includes managing one's limit, freezing or deleting of cards and online shopping.

2.5. Empirical Review

The study conducted by Agboola (2003), concentrated on the impact of electronic banking on customer service in Legos, Nigeria. The study evaluated variables such as accuracy of records, convenient business hour, prompt and fair attention, faster services, possibility for home and office banking. The variables are evaluated through statistical measure like mean, median, frequency and percentage. The findings of the study indicated that, the evaluated variables have influence over electronic banking, in which faster customer service and general improvement over of customer services scored highest.

Adewoye (2013); conducted a research on impact of mobile banking on service delivery in the Nigerian Commercial Banks". The findings of the study and the hypotheses tested showed that, mobile banking improve banks service delivery in a form of transactional convenience, saving of time, quick transaction alert and cost saving. Thus customers have been able to save considerable banking time and relatively lesser costs. The researcher also argued that, the introduction of electronic payment products such as m-banking, ATM, Internet has increased the level of economic activities.

Agboola (2006); conducted a research aiming to study electronic payment systems and tele banking services in Nigeria. The findings indicated that, payments are now being automated and absolute volumes of cash transactions have declined. The result of the study revealed that tele-banking is capable of broadening the customer relationship, retain customer's loyalty and enable banks to expand their market share. The result also indicated improvement will be entertained if the problems such as, ineffectiveness of telecommunications services, epileptic supply of power, high cost, fear of fraudulent practices and lack of facilities necessary for their operation were solved.

Auta (2010), the research is undertaken focusing on E-banking in developing economy in Nigeria. The study evaluated the identified factors using statistical tools. The results of the study indicated that, security, user friendly, queue management, accessibility, time factor and fund transfer are major factors that determine electronic banking service.

Khrawish and Al-sa'di (2011), assessed the impact of e-baking on banks profitability for the banking sector in Jordan. They adopted ROA, ROE and NIM to measure the effect of electronic banking on bank profitability. Their study found that banks that do not apply electronic banking service have no significant effect on ROE, but significant in terms of ROA. For banks that apply electronic banking services for more than two years, there is no significant effect on ROA and ROE, but it is found to be significant on interest margin. They also found out that for banks that are applying e-banking for more than two years, all the measurements indicated that there is no significant effect on profitability.

Braret al(2012), studied various security aspects in e-banking and concluded that, as a result of lower transaction costs, 24 hours services, increased control over transactions, higher volume of transactions in less time, remote transaction facilities, and much wider array of banking products and services; e-banking has become an integral part of modern banking. On the other hand, the study indicated that, the system may increase risks to the bank and can change the behavior of customers negatively.

Kumbhar (2011); as cited by Agehaei (2013)also evaluated influence of service quality on brand perception, perceived value and satisfaction in e-banking. The results of his study indicated the importance of perceived value, brand perception; cost effectiveness, easy to use, convenience, problem handling, security or assurance and responsiveness in customer's satisfaction with e-banking.

Wu et al (2006); studied focused on Core Capabilities for Exploiting Electronic Banking in Taiwan. The results suggest that the e-banking is a disruptive innovation for the existing banks. It leads to massive changes in the areas of both technological knowledge and business model.

To cope up with the change, banks must seriously rethink about how to reinvent the ways they serve their customers. The core capabilities identified for exploiting e-banking classified into two distinct groups that must be balanced. The first group relates to the Technical dynamic capabilities, while the second group is associated with the capabilities for the reconfiguration of the existing business model.

Takele, and Sira, (2013), conducted study on Analysis of Factors Influencing Customers' Intention to the Adoption of e-banking service channels in Bahir Dar City. The findings revealed that the seven factors included in the models (attitude, subjective norm, perceived behavioral control, perceived usefulness, perceived ease of use and perceived risk) were significant in affecting users' behavioral intention to use e-banking.
Results also discovered that the construct perceived behavioral control is the dominant factor followed by perceived ease of use and attitudes in predicting an individual's intention to accept e-banking service channels. The regression result also shows that attitude is jointly predicted by perceived behavioral control, perceived usefulness, perceived ease of use, and perceived risk while perceived ease of use contributed more for the variation in attitude.

Korankye (2014); studied the impact of e-banking on customer service and profitability of banks in Ghana. The study is undertaken in 10 banks operating in Ghana. Result of the study indicated that, electronic banking has increased customer service and profit significantly. As a result of increased customer service, customer satisfaction, retention, sales revenue and market share are also improved.

Sumra et al (2011); focused on the impact of e-banking on the profitability of Banks in Pakistan. Hence the finding of their study indicated that,e-banking has changed the business environment. Manual banking has been reduced; the culture of keeping ledgers and recording transactions by hand has diminished by the advent of electronic banking. They also found that, the customer service process require less time compared to previous manual operation. They identified that, e-banking enable banks to achieve efficiency, increase accuracy, less time, less labor costs and it also has resulted in improvement in the services provided. The researchers found that, electronic banking has influenced the profitability, service quality and efficiency significantly. All in all the study indicated that electronic banking improves performance of the banks.

Malhotra and Singh (2009); studied on The Impact of Internet Banking on Bank Performance and Risk in India. The result indicates several significant differences in the profile of banks that offer Internet banking and banks that do not. Existing strong internet banks have higher asset quality and are better managed to lower the expenses for building and equipment. Internet banking has a negative and significant impact on profitability of private sector banks particularly new private sector banks. Their study insisted that adoption of Internet banking was a reason behind the lower profitability of these banks, as Internet banks in new private sector were operating with higher cost of operations, including fixed cost and labor cost, thus affecting negatively the profitability of these banks.

Wondwossen and Tsegai (2005); studied on the challenges and opportunities of e-payments in Ethiopia. The aim of the study was studying of e-payment practices in developing countries. This study identified that, lack of customers trust in the initiatives, unavailability of payment laws and regulations, especially for e-payment, lack of skilled manpower and frequent power disruption are the challenges that are faced by banks. However, in recent years the law regarding with e-payment is formulated by national bank of Ethiopia.

Nupur, (2010); conducted a study focusing on E-Banking and Customers' Satisfaction in Bangladesh. The main objective of the study was to measure customer satisfaction on electronic banking service delivery. He adopted SERVQUAL method to collect necessary data. The findings of the research indicated that, the measured variables; reliability, empathy, responsiveness, assurance and tangibles have relationship with electronic banking customer service.

Nochai and Nochai (2013); studied a research focusing on the Impact of Internet Banking Service on Customer Satisfaction in Thailand. The aim of the study is to evaluate the impact of online banking on customer satisfaction. The variables measured by the study consists of safety reliability, transaction efficiency, customer support, service security, ease of use, performance and service content. Regression model is used to analyze the collected data. The finding of the research indicated that, the first six variables tend to have impact on customer satisfaction while, the last variable failed to prove the hypothesis.

Sadr (2013), studied on consideration the effect of e-banking on bank profitability; case study on selected Asian countries. The study found that E-banking has shown significant decrease on ROA and ROE in the adoption year. However, Both ROA and ROE has indicated gradual increase after a year of adoption. Having this, the researcher concluded that the effect of electronic banking is negative in the first year due to Information technology related expenditures and will be positive in the next consecutive years.

Okibo and Wario (2014); conducted a study on Effects of E-Banking on Growth of Customer Base in Kenyan Banks. The study focused on the effects of electronic banking on customer base expansion. The finding of the study indicated that electronic banking service of a bank has influence on the bank's customer base expansion. On the other hand, their study found that e-banking is less reliable and higher costs per transaction. On top of that the finding indicated that, the service is not secured and there is possibility of fraud.

Abaenewe et al (2013) conducted a study on electronic banking and bank performance in Nigeria through secondary data collected form financial statement of the banks. The study proved that electronic banking has improved ROE significantly and ROA fund to be not affected significantly. The change in the ROA is insignificant due to higher initial investment on equipment, software and training of manpower. Despite the fact that electronic banking is highly costly, profit will tend to improve over time. The banks profit tends as service year pass. The study also indicated that adoption of electronic banking helps customer satisfaction, convenience and improve service delivery.

2.5.1.   E-banking and Bank Performance

Performance can be described as a measure that evaluates the status of an organization. It helps to identify how well an organization has improved in terms of profitability as a result of its product or service delivery.

According to Rose (2001) as cited in Abaenewe et al (2013), a fair evaluation of any bank's performance should start by evaluating whether it has been able to achieve the objectives set by the management and stockholders. Whether a bank's performance is in good position or not is likely to be obtained from the published financial reports. In spite of various banks have different objectives, almost all business firms are operating to maximize stockholders wealth. For the purpose of this study, profitability indicators, precisely Return on equity (ROE) and return on Asset (ROA) are used as to access bank performance. These ratios are indicators of management efficiency and rate of return. The ROE and ROA are popularly in use today. They further stressed that when the ROE is higher than the ROA, the company has favorable financial leverage. Jose and Mauricio (2014), also consider ROA and NIM to be measures of performance. ROA measures the bank's ability to manage its asset to production of benefit.

Lin et al (2011), conducted a research on "Banking on Internet: Does Internet Banking Really Improve Bank Performance?" They measured performance using three key performance measures; ROA, ROE, and EEFFR. During their study they found that the adoption of Internet banking actually results in worse performance for many banks. Additional analyses suggest that younger banks and banks that are earlier adopters are more likely to enjoy the benefits of Internet banking.

Also, in a similar study, Malhotra and Singh (2009), found that profitability and experience in offering of internet banking do not have any impact on banks' performance in the Indian banking context. Their study indicated that adopting electronic banking system in the early years of a bank drives to higher fixed and overhead costs in addition to demanding extra manpower.

Hernando and Nieto (2006) as cited by Abaenewe (2013) also measured performance of a bank through ROA and ROE. Actually their study indicated that, electronic banking has significant impact on ROE and gradually on ROA. As a result of this, it can be said that electronic banking has an impact over performance of a bank.

Okiro and Ndungu (2013), conducted a study on the impact of mobile and internet baking on performance of financial institutions in Kenya. They tested that the difference between both the means of Return on Asset and Return on Equity before and after adopting electronic banking service. The results revealed that there is significant difference between pre and post returns on equity on adoption of electronic banking. The clearer picture of the results is that, adoption of e-banking in Nigeria has significantly improved Nigerian banks performance in terms of returns on equity (ROE) only. On the other hand, the results also revealed that there is no significant difference between pre- and post- returns on assets (ROA) of Nigerian banks on adoption of e-banking. Here, the implication of this result is that electronic banking adoption has not significantly improved the returns on

assets of Nigerian banks. Electronic banking is cost intensive and will improve on total profitability performance in future, as incidence of banking fraud caused by electronic facilities reduced and when the assets get older.

2.5.2.   E-banking and Customer Service

Nupur (2010) conducted a research on electronic banking and customer satisfaction. The study measured customer satisfaction with customer service measures, which are tangibles, empathy, responsiveness, assurance and reliability. From the statistical analysis it is observed that there is a relation between customer satisfaction in e-banking and reliability, responsiveness, assurance, empathy, and tangibles. Adewoye (2013) also measured adoption of electronic banking service using same variables as Nupur (2010) used. The study revealed that adoption of electronic banking has affected reliability, responsiveness and assurance aspects of electronic banking service. Whereas, empathy and tangibles are dropped having lowest level of significance.

2.6. Summary

A review of existing literature reveals that though there are a number of researches undertaken on the effect of electronic banking, it is found to be unsatisfying to the subject matter. Most of the studies conducted to study the impact of electronic banking on bank performance and profitability using qualitative methods. In addition to this the identified studies in Ethiopian context discuss the growth of e-banking instead of the influence on customer service and bank performance.

As discussed above, Auta (2010) evaluated the influence of electronic banking on security and convenience. The study proved that the stated factors or variables are related

significantly. Accordingly Sumra et al study in 2011 also argued electronic banking has influenced the profitability, service quality and efficiency. The study conducted by Malhotra and Singh in 2009 proved that, internet banks are larger, more profitable and are more operationally efficient than non-Internet banks. Nupur in 2010 and Adewoye in 2013 measured variables; reliability, empathy, responsiveness, assurance and tangibles has relationship with electronic banking customer service.

Nochai and Nochai (2013) measured variables such as safety reliability, transaction efficiency, customer support, service security, ease of use, performance and service content. They also argued that, the first six variables tend to have impact on customer satisfaction while, the last variable failed to prove the hypothesis. Okibo and Wario (2014) found that electronic banking service of a bank has influence on the bank's customer base expansion. Agboola (2006) explained that telle-banking is capable of broadening the customer relationship, retain customer's loyalty and enable banks to expand their market share.
On the other hand, Okibo and Wario (2014) in their study found that e-banking is less reliable and higher costs per transaction. On top of that their finding indicated that, the service is not secured and there is possibility of fraud.

Even if some of the articles indicate that e-banking has its own drawbacks, majority of the literatures reviewed imply electronic banking brings efficiency for the delivery of service in the bank. Hence the system also benefits customers in different ways. For instance the system saves time and cost and similarly it is very convenient.

Service quality and efficiency in the banking industry has increased greatly in the bank due to the integration of information technology into banking operation. The articles also indicated as a result of deploying electronic systems, efficiency of the banks is maximized significantly. This can be achieved due to low cost, fast delivery time, better distribution channel, convenience and ease of transaction.

From the research evidence so far, there has not been a study undertaken to measure electronic banking and banks performance since the adoption of electronic banking in Ethiopia.

Thus this study investigated the extent to which the electronic banking has influenced service delivery and bank performance in the case of Dashen Bank SC.

2.7. Factors Affecting Electronic banking

According to Al-Smadi (2011), Culture and Perceived risk are major external factors that influence adoption of electronic banking; on the other hand he identified Size of the organization, and Lack of financial resources as internal factor.

Bultum (2014) also studied about factors affecting adoption of electronic banking system in Ethiopian banking industry. The study found that, Technological factors, Perceived risk, Environmental Factor, lack of legal and regulatory framework and lack of competition are major factors that affect electronic banking system.
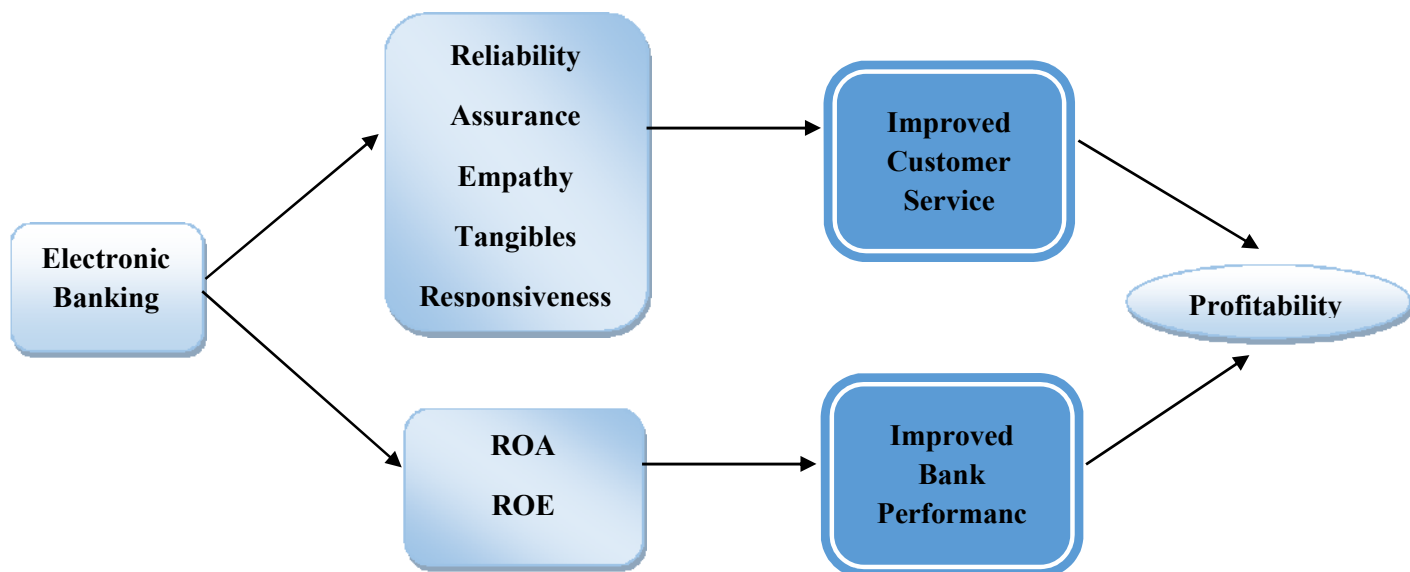
Conceptual frame work of the study

CHAPTER THREE

3. Methodology

The study is conducted by using case study method. This method is used because it is good source of ideas about behavior and the method allows collecting detailed information about the subject matter. This is a method used to narrow down a very broad field of research into one easily researchable topic. The case study research design is also useful for testing whether scientific theories and models actually work in the real world. On the other hand, it is argued that a case study provides more realistic responses than a purely statistical survey (Martyn, 2014).

3.1. Research Design

As indicated in the objective of the study, the very purpose of this research is to identify and examine the effect of electronic banking on customer service and bank Performance in Dashen Bank SC. Therefore, explanatory type of research design is used to evaluate the cause and effect relationship between the independent (e-banking) and two dependent variables (bank performance and customer service).

3.2. Sampling Technique and Sample Size

Total population of the study is customers and employees of Dashen Bank SC, and the target populations are customers who are using electronic banking services of the Bank and employees who are working in e-banking department at supervisory positions.

Multi stage cluster sampling technique is used to identify sample size of customers and purposive sampling method is used to identify employees related to this study. It is not possible to include the entire population as the research subject hence, using this method

allows classifying the population into subgroups until desired sample size is found. In addition to this, this method allows eliminating the need for a complete list of all units in the population and it permits flexible grouping of the study frame. Total customers in the sample frame are classified in to two clusters based on geographical location. Cluster 0 is consisting of customers located out of Addis Ababa and Cluster 1 includes customers living in Addis Ababa. From this Cluster 1 or Customers living in Addis Ababa is selected randomly. To make the population more convenient for the study, further classification (clustering) is required. The second stage clustering is made based on area bank grade of the branches. Area Banks located in Addis Ababa city is classified in to five clusters. Cluster 0includes Customer service Area Banks, cluster I consists of Grade I Area Banks, and Grade II Area Banks are grouped as cluster 2. Cluster 3 consists of grade III Area Banks. Grade IV and Special grade area banks are classified as Cluster 4 and 5 respectively. From this two clusters are selected randomly.

After identifying the selected clusters, a total of 10 area banks are selected randomly from the two clusters proportional to the number of area banks they include. One hundred sixteen (116) customers are selected using convenient method from 5891 electronic banking customers in the identified Area Banks with 95% of confidence level and confidence interval of 9. The sample size is calculated using sample size calculator developed by Creative Research System (http://www.surveysystem.com/sscalc.htm).

Purposive sampling technique is used to collect specific data from specific category of employees. This method helps to collect specific information from concerning parties. Therefore, 6 selected supervisory level employees of electronic banking department, information technology and customer service employees are interviewed.

3.3. Data Collection Method

As this research is conducted to measure the influence of electronic banking on customer service and bank performance, use of both primary and secondary data collection method is found to be appropriate.

Primary data is collected using Questionnaire and Semi-structured Interview. The data collected from customers is obtained through self-administered questionnaire. To collect necessary information regarding the e-banking service of the bank, SERVPERF model is used.

Semi-structured interview is conducted to gather firsthand information from the Bank's officials.

Secondary data is collected from annual report of the bank. Longitudinal data type is used for this research purpose.

3.4. Measurement and Data Analysis Method

The main aim of the study is to investigate the impact of electronic banking service quality on customer service and bank performance. The analysis is made depending on deductive reasoning, since the study start with predetermined theories and continues to prove it.

After the data collection, data reduction is conducted to select, arrange, refine, focus and summarize the data for analysis.

The variables are measured by using Mean, Standard deviation and Multiple Regression method using SPSS software. The analyzed data is presented using graphs and tables followed by detailed interpretation. The data collected qualitatively is analyzed and presented using narration method.

3.5. Model Specifications

Measuring the quality of service provided is one of the main tasks to be accomplished. Hence, to examine the effect of electronic banking on customer service can be measured using different models. For this research, SERVPERF model is adopted. Likewise, understanding the link between internet banking and performance is an empirical issue. Financial Statement of Dashen Bank SC is obtained from the bank's Promotion Division. relevant ratios were computed from the financial statements . Multiple regression model is used in this study.

3.6. Variable Definition

Dependent Variable

Since the study examined the impact of electronic banking service quality on customer service and bank performance, the dependent variables are customer service and bank performance. Customer service refers to the degree of success in providing quality electronic service rendered for customers. To measure customer service SERVPERF model is be adopted from Cronin and Tylor (1992)as cited by Nguyen et al (2011).For this research purpose, among the twenty two parameters twenty one is taken as relevant. Since appealing physical facility and attractive physical facility carry almost the same mining, attractive physical facility is dropped because of redundancy. This model measures service quality through the following proxy variables.

- ➤ Tangibles: the physical surroundings represented by objects (for example, interior design) and subjects (for example, the appearance of employees).
- ➤ Reliability: the service provider's ability to provide accurate and dependable services.
- ➤ Responsiveness: a firm's willingness to assist its customers by providing fast and efficient service performances.

- ➢ Assurance: diverse features that provide confidence to customers (such as the firm's specific service knowledge, polite and trustworthy behavior of employees).
- ➢ Empathy: the service firm's readiness to provide each customer with personal attention.

The second dependent variable is bank performance. According to Hassan et al in 2012, performance refers to the degree of achievement in realizing stated objective. Since the major objective of an organization is maximizing shareholders wealth, profitability measures can be taken as proxy variables to evaluate performance. Accordingly, this study used common measures profitability to analyze bank performance. Banks performance can be measured by the return on bank's assets (ROA), a ratio of bank's net income to its total assets. Another good measure of banks profitability is the ratio of net income to equity (ROE) rather than assets since banks with higher equity ratio should also have a higher return on assets and finally the margin of interest. Therefore, in this study bank performance is measured through ROA and ROE.

ROE = $\dfrac{\text{Net Income after taxes}}{\text{Total Equity capital}}$

ROA = $\dfrac{\text{Net income after taxes}}{\text{Total Assets}}$

- ➢ **Independent Variable**

The aim of this study is to measure the effect of e-banking on bank's performance. A dummy variable (EBANK) was created that takes the value of 1 if the bank adopted e-banking; otherwise it takes a value of 0. The coefficient associated with the e-banking dummy indicates the possible association between e-banking and bank's performance. The model which is used while conducting this study is adopted from Malhotra and Singh (2009).

$$Y_{it}= c + \alpha^* \text{EBANK}_{it}+ \sum \beta_i X_{it} + \varepsilon_{it}\dots\dots\dots\dots\dots\dots\dots\dots f1$$

Where Y_{it} presents performance measures at time t, c is constant term, the X_{it} are explanatory variables and ε_{it} the error term. The subscript i indexes bank level observation and the subscript t indexes time in years. EBANK is a dummy variable equal to 1 for adoption of electronic banking and 0 for years before electronic banking the coefficient. α provides the main static test. The coefficients are estimated by employing multiple regression.

> ➤ ROA= f (EBANK+ Control Variables)

Based on the main model formulated above, performance can be transposed to reflect ROA model as follows:

$$ROA_{it}= \alpha+ \sum\beta_iX_{it} + \varepsilon_{it}\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\text{f2}$$

Therefore the above model can be stated as follows:

$$ROA= \alpha+ EBANK_t+\beta_iNIM_{it} + \beta_iEQUITY_{it} + \beta_iLOANS_{it} + \beta_iNIINCOME_{it} + \beta_iDEPOSITS_{it} + \beta_iFDTA_{it}\varepsilon_{it}\dots\dots\dots\dots\dots\dots\dots\dots\dots\text{f4}$$

> ➤ ROE= f (EBANK+ Control Variables)

Based on the main model formulated above, performance can be transposed to reflect ROE model as follows:

$$ROE_{it}= \alpha+ \sum\beta_iX_{it} + \varepsilon_{it}\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\text{f5}$$

Therefore the above function can be stated as follows:

The above equation can be stated as follows or could be modified and transposed to reflect an intermediation efficiency model as follows:

$$ROE= \alpha+ EBANK_t+\beta_iNIM_{it} + \beta_iEQUITY_{it} + \beta_iLOANS_{it} + \beta_iNIINCOME_{it} + \beta_iDEPOSITS_{it} + \beta_iFDTA_{it}\varepsilon_{it}\dots\dots\text{f7}$$

The explanatory variables with their labels and definitions that have been used to examine the relationship between the performance of banks and adoption of electronic banking are provided in the following table.

Table 3:1 Variable Definition

Label	Name	Definitions
Dependent Variable		
Y_1	ROA	The ratio of Net Profits to Total Assets
Y_2	ROE	The ratio of Net Profits to Equity
Independent Variable		
X_1	EBANK	The ratio of Electronic Banking Income to Total income
X_2	EQUITY	The ratio of Equity Capital to Total Assets
X_3	LOANS	The ratio of Total Loans to Total Assets
X_4	NIINCOME	The ratio of Non-interest Income to total Income
X_5	NIM	The ratio of Interest Income to total Income
X_6	FDTA	The ratio of Foreign Deposit Total Asset
X_7	DEPOSITS	The ratio of Total Deposits to Total Assets

CHAPTER FOUR

4. Results and Discussion

4.1. Findings of Primary Data

For this research purpose, primary data was collected from both customers and concerned officials of Dashen Bank. Hundred and sixteen (116) questionnaires were distributed for electronic banking customers out of 5891 total customers with 95% confidence level and confidence interval of 9. Six selected employees from information technology, electronic banking and customer service departments were interviewed. The finding form the data will are discussed in the following sections.

4.1.1. Findings from Questionnaire

Major findings of the study and summary of discussion obtained from primary data collected through questionnaire is discussed under this section. A total of 116 questionnaires were distributed to collect the necessary data regarding the effect of electronic banking on customer service. After collecting the questionnaires, data reduction is conducted to select, arrange, refine, focus and summarize the data for analysis. Subsequently, 104 questionnaires, which are 89.6 percent of the sample size, were identified fully completed by respondents. Results of the descriptive statistics obtained from the questionnaire is processed by SPSS version 20, presented by table and chart and interpreted as follows.

Cronbach's alpha is the most common measure of internal consistency or reliability. The calculated reliability test for this research scored 0.789. This indicates that, there is high acceptable level of internal consistency of the scale within the samples.

Table 4:1*Descriptive Statistics of Tangibles*

Table 4:1 presents descriptive statistics of tangibles. The table includes mean and standard deviation of the three dimensions used to measure tangibles aspect of service quality.

Descriptive Statistics- Tangibles			
Dimension	**N**	**Mean**	**Std. Deviation**
Use of modern equipment	104	3.85	.879
Appealing physical facility	104	3.57	.845
Dressing code & neatness of employees	104	2.94	.666
Valid N (listwise)	104		

Source: *From field data collected*

According to Cronin and Tylor (1992) as cited by Nguyen et al (2011) tangibles is one of the five variables that can be used to measure customer service. Tangibles is the physical surroundings represented by objects (for example, interior design) and subjects (for example, the appearance of employees). The descriptive statistics as presented in table 4:1 showed that electronic banking has influenced the two parameters of tangibles with mean score of 3.85 and 3.57. On the other hand, Dressing code and neatness of employees observed to be the least influenced factor with mean score of 2.94. Out of 104 respondents, majority of the respondents selected strongly agree and agree options for use of modern equipment and appealing physical facility. Tables A1, A2 and A3 attached in the appendix indicates that, customers agreed on the first two parameters improvement, 66% and 53%, while dressing code and neatness of employees won the attention of only 17% of the respondents.

Table 4:2_Descriptive Statistics of Reliability_

Table 4:2 presents mean scores and standard deviations of reliability parameters. Reliability measures the service provider's ability to provide accurate and dependable services. Taking in mind this, this study evaluated the reliability of the banks service using five dimensions for which the mean and standard deviation is presented in table 4:2.

Descriptive Statistics- Reliability			
Dimension	**N**	**Mean**	**Std. Deviation**
Doing activities on time	104	3.87	.848
The bank solves problem timely	104	3.62	.896
Provide the right service the first time	104	3.81	.936
Provide service as promised	104	3.69	.956
The bank insists accuracy	104	3.81	.915
Valid N (listwise)	104		

Source: _From field data collected_

The descriptive statistics indicated that electronic banking has substantial contribution to providing customer service on time with mean score of 3.87. Similar to this the statistics also indicated accuracy and rendering the right service at the first time to have equal mean scores, which is 3.81. Adoption of electronic banking also contributed to problem solving and providing promised customer service dimensions, which have mean scores of 3.62 and 3.69

respectively. Table A4 in the appendix part also indicated that 51% of the respondents agreed and 23% strongly agreed that electronic banking service improved the bank's ability in doing activities on time. Similar to this, tables A6 and A8 showed that, providing the right service the first time and accuracy of records also agreed and strongly agreed by 66% and 63% respectively.

Table 4:3 *Descriptive Statistics of Responsiveness*

As a measure of firm's willingness to assist its customers, responsiveness in this study is evaluated by four dimensions. In table 4:3 standard deviation and mean scores of the four measures for responsiveness aspect of customer service quality is described

Descriptive Statistics- Responsiveness			
Dimension	**N**	**Mean**	**Std. Deviation**
Inform specific service time	104	3.89	.812
Employees provide prompt service	104	3.88	.867
Employees always answer to customer request	104	3.92	.759
Willingness to help	104	3.78	.847
Valid N (listwise)	104		

Source: *From field data collected*

The descriptive statistics showed that electronic banking has substantial impact on responsiveness aspect of customer service. Table 4:3 indicated that customer's attitude regarding service quality of the bank is more than average level towards responsiveness aspect. All the dimensions of this parameter are with mean scores of above 3.78 from 5 level

Likert scale. Table A11 in the appendix part indicated that 76% of the respondents believed that electronic banking has improved employees responsiveness to their customers. Table A9, A10 and A12 also indicated that electronic banking has improved other dimensions as well.

This table presents the mean scores and standard deviation computed to measure assurance aspect of service quality. Diverse features that provide confidence to customers are categorized under assurance dimensions.

Table 4:4 *Descriptive Statistics of Assurance*

Descriptive Statistics- Assurance			
Dimension	**N**	**Mean**	**Std. Deviation**
Employee trust worthiness	104	3.96	.902
Transact safely with the bank	104	4.19	.813
Employee politeness	104	3.89	.880
Employee's knowledge for your question	104	3.81	.915
Valid N (listwise)	104		

Source: *From field data collected*

As indicated in table 4:4, the mean scores of all the aspects under assurance are more than avarage level of customer service. In fact, this aspect of customer service satisfies customers beyond any other service quality measures. Especially, the safety that customers feel while transacting with the Bank SCored the highest mean than any other parameter in this study. The frequency table, table A14 also indicated that 35% agreed and 45% strongly agreed on the safety of transacting with Dashen Bank after the adoption of electronic banking. As

shown in table A13, employee trust worthiness is also highly influenced by electronic banking having 35% agree and 35% strongly agreed respondents.

The service firm's readiness to provide each customer with personal attention is evaluated by empathy aspect of customer service quality measure. The table under presents the mean score and standard deviation of empathy.

Table 4:5 *Descriptive Statistics of Empathy*

Descriptive Statistics- Empathy			
Dimension	**N**	**Mean**	**Std. Deviation**
Company attention to customer	104	3.77	.827
Employee's attention to customers	104	3.62	.816
Understanding of customer's specific need	104	3.45	.869
Provide service satisfactorily	104	3.68	.895
Convenient working hour	104	4.02	.870
Valid N (listwise)	104		

Source: *From field data collected*

According to table 4:5, electronic banking has affected the empathy dimension of customer service substantially. While the other empathy parameters identified to be above avarage levels, convenient working hour hits maximum mean score in this regard and the second higher score from the total twenty one parameters. This indicates that, 24/7 feature of electronic banking has significant influence over customer service delivery more than other

aspects in the same category. Table A21 in the appendix part, also indicated that from 104 respondents, 32% agreed and 38% strongly agreed on that electronic banking has improved working hour of the bank. Table A17-A20 also indicated that customers agreed and strongly agreed for all dimensions more than average rate.

Table 4:6*Descriptive Statistics of SERVPERF*

Descriptive Statistics- SERVPERF			
Variables	**N**	**Mean**	**Standard Deviation**
Tangibles	104	3.401	0.856
Reliability	104	3.758	0.912
Responsiveness	104	3.868	0.821
Assurance	104	3.964	0.887
Empathy	104	3.708	0.873
Overall customer service		**3.740**	**0.890**

Source: *From field data collected*

SERVPERF is one of the measures used to evaluate the quality of customer service, which is provided by an organization. The 21-item version of SERVPERF was developed to measure perceptions of five different dimensions of service quality. Table 4:6 shows the mean value representing the overall customer service delivery of Dashen Bank SC. As far as this descriptive statistics is concerned, service delivery on E-Banking is above avarage level (with a mean value of 3.74 on a 5 point Likert scale). The table also suggests that the main factors on which the customers of e-Banking are generally satisfied. To the extent that

the mean values are concerned, customers are fairly satisfied on Tangibles, Reliability, Responsiveness, Assurance and Empathy.

As described in table 4:6, there is positive relationship between the five dimensions of customer service. Accordingly, the table shows the mean score for the five dimensions of service quality. The highest mean is scored by Assurance followed by Responsiveness and Reliability. The least mean score is for Tangibles followed by Empathy.

As a result, the assurance dimension of service quality is carried out superior to other four dimensions with a mean score of 3.964. This indicates Dashen Bank is performing at good level in employee trust worthiness, transaction safety, employee politeness and employee's knowledge for the service provided. The second dimension as per the rating of customers is responsiveness with a mean score of 3.868. The customers perceived that the bank is performing better in having information on specific service time, providing prompt service and employee's willingness to assist customers. The third dimension is reliability with mean score of 3.758. Here also the bank has strong part in doing activities on time, solving problem timely, provide the right service the first time and provide service as promised with accuracy. The last two dimensions of service quality are tangibles and empathy with mean score of 3.401 and 3.708 respectively. Despite the fact that the last two variable appeared in the last rows of the parameters, their mean score found to be more than avarage level of customer service.

4.1.2. Findings from the Interview

The interviewees confirmed that, the adoption of electronic banking has changed the bank's operation. Adoption of e-banking changed even the recording culture of the bank. Prior to the adoption of electronic banking transactions were recorded manually, subject to errors, take relatively longer working time and require more labor force. However, the change from

manual to technology based system brings the bank fast customer service, it makes the service more reliable especially the international transactions require a very less time as compared to the manual banking system.

After the adoption of electronic banking by Dashen Bank, other banks also followed its footsteps to stay in the market. It has also increased the competition and now all the banks tend to provide these services and facilities to their customers. Formerly, the customers had to follow a long and agonizing procedure even for account opening but now, owing to e-banking this procedure has become a "one window operation" where the authority is localized to the customer service agent which serves as convenience for customers. Funds can be transferred from account to account, bank to bank and even internationally in a very less period of time as compared to before which took days for the purpose.

In addition to this, after the adoption of electronic banking, the bank implemented call center for its customers and merchants to get live support. This helps the bank and employees to address its customer's need individually. In fact, the officials indicated that even if the call center is contributing to customer service, they believed the support center should be more equipped. This factor also supports to provide reliable bank service and be responsive service provider.

The main motive for e-banking identified by the bank managers was their customers, to amplify their service quality, to increase customer satisfaction, retention and business expansion which would eventually gain them more profits. E-banking enables banks to achieve efficiency; it has reduced the requirements of manual maintaining as now the transactions and activities are recorded automatically on computers which in turn reduces human errors hence, increasing the accuracy, it saves time, labor costs as now less labor is required to do same amount of work, and it also has resulted in improvement in the services provided. They also mentioned weak parts of electronic banking systems such as, delay on card productions and interruptions caused due to several reasons as parts to be improved.

Another major aim of this study was to examine the impact of e-banking service quality on the performance of the bank. The managers confirmed e-banking as contributing to the profits of their businesses. They added that however, the banks have entertained considerable costs for implementing e-banking; its infrastructure, for the training of their employees and creating the environment which would increase the service quality, image, brand value and goodwill. These implementation costs have been well recovered by the bank within short period of time. The interviewees said that banks do not have to wait for years to cover up their costs rather; these are met in short run.

Managers have shown a positive attitude towards e-banking; they concluded that e-banking is enhancing profitability and financial positions of banks and banks are striving hard to provide more and more services to their customers and to move towards advance and modern e-banking services also developing infrastructure. Moreover, the officials recommended considering the banks financial statements to obtain detail effects of electronic banking.

4.2. Findings of Secondary data

Eighteen years (1997 GC-2014 GC) data is used to compute and come up with findings described below. Multiple regression model is adopted to analyze secondary data collected from Dashen Bank SC.

The test for difference between means were conducted for pre and post adoption of electronic banking for both returns on equity (ROE) and returns on Assets (ROA) at 5 Percent levels of significance.

4.2.1. Finding from Regression analysis of Return on Asset

Regression analysis is computed for dependent analysis return on asset and independent variables NIINCOME, DEPOSIT, FDTA, EBANK, NIM and LOANS. Nine year data is used to work out the regression analysis. Outcomes of the analysis are presented through the following three tables followed by interpretation.

4.2.1.1. Model Summary for ROA

Table 4:7 presents the model summary for regression analysis of Return on Asset. Model summary table helps to measure goodness of the regression model employed. This table provides information about the regression line's ability to account for the total variation in the dependent variable.

Table 4:7 *Model Summary of Regression Analysis for ROA*

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.999[a]	.998	.991	.03251	2.764

a. Predictors: (Constant), NIINCOME, DEPOSIT, FDTA, EBANK, NIM, LOANS

b. Dependent Variable: ROA

Source: *From secondary data collected*

> **Coefficient of Multiple Determination (R2)**

It is used to measure the proportion of variation in the dependent variable that is explained by the explanatory variable(s). The higher 'the' R^2, the greater the proportion of the variation in the independent variable(s). As can be seen from table 4:7 the adjusted R^2 after the adoption of electronic banking is 0.991.

The computed adjusted coefficient of determination ($R^2 = 0.991$) shows that 99.1% of the total variation in ROA in Dashen Bank SC is explained by the variations in FDTA,NIINCOME, NIM, EBANK and DEPOSI,T while 0.9% of the variation in ROA, is attributable to the influence of other factors not included in the regression function. This indicates that the regression line is very good fit to the observed data.

4.2.1.2. Analysis of Variance

According to Miller and Haden (2006), ANOVA table is used to find out how the average value of numerical dependent variable depends on one or more independent variables.

Table 4:8 *ANOVA table for ROA*

ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.975	6	.162	153.668	.006ᵇ
	Residual	.002	2	.001		
	Total	.977	8			

a. Dependent Variable: ROA

b. Predictors: (Constant), NIINCOME, DEPOSIT, FDTA, EBANK, NIM, LOANS

Source: *From secondary data collected*

➢ **F-Statistics**

F statistics used to test the equality of treatment means or it is the variance of the group statistics. It is found that $F_{0.05; 6, 2}$ is 5.143. Since the test statistics is much larger than the critical value, the null hypothesis is rejected. If the value of F is large, the variation among group means is more than expected to happen by chance. As p is less than 0.05, the model is significant. Thus, the combination of the independent variables significantly predicts the dependent variable (F=153.67; $p < 0.05$).

> ➢ **Significance**

It is the probability that an effect at least as extreme as the current observation has occurred by chance. Therefore, on table 4:8 significance is 0.006, this indicates 99.4% of every difference would not occur by chance alone. This makes 99.4% certainty that the difference did not occur by chance.

4.2.1.3. Coefficients table

Coefficients table contains the individual statistical significance of each of the independent variables.

Table 4:9 *Coefficients table for ROA*

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.071	1.347		-.053	.963
	LOANS	.027	.006	.810	4.639	.043
	DEPOSIT	-.071	.015	-.200	-4.613	.044
	EBANK	.032	.004	.859	8.183	.015
	FDTA	.017	.006	.159	2.939	.099
	NIM	.873	.081	1.786	10.722	.009
	NIINCOME	.083	.007	1.641	12.132	.007

   a.   Dependent Variable: ROA

Source: *From secondary data collected*

$$ROA = \alpha + \beta_i EBANK_t + \beta_i FDTA_{it} + \beta_i LOANS_{it} + \beta_i NIINCOME_{it} + \beta_i DEPOSITS_{it} + \beta_i NIM_{it}$$

ROA= -0.071+0.27*LOANS + -0.071*DEPOSIT + 0.32*EBANK+ 0.17*FDTA + 0.873*NIM+ 0.083*NININCOME

➢ **T test result and P value**

The t test is used in the statistical test to test for the significance of the individual estimated parameter(s). The calculated t-test value for LOANS, DEPOSIT, EBANK, FDTA, NIM and NIINCOME are 4.639, 4.613, 8.183, 2.939, 10.722, and 12.132 respectively while their associated P-values are 0.043, 0.044, 0.015, 0.099, 0.009 and 0.007.

The significance or P-values of the estimated parameters are less than the chosen level of significance 0.05(5%), apart from the p-value of FDTA. This means that the estimated parameters LOANS, DEPOSIT, EBANK, FDTA, NIM and NIINCOME are statistically and individually significant.

From this we can understand that non-interest income ratio (NIINCOME) and net interest margin (NIM) to be the first and second influential variables; whereas, electronic banking is the third significant influential variable ($t= 8.18$, $p< 0.05$) on the Dashen Bank's performance (ROA) within the chosen period of study. The larger t value with corresponding lower than 0.05 p value supports the result to have the highest beta coefficient.

➢ **Standard β**

The above table showed the standardized Beta Coefficients that present the contributions of each variable to the model. It can be inferred that NIM has the highest influential control on Return on Asset ($\beta = 1.79$, $p< 0.05$), while EBANK happened to be the third influential factor with Beta of 0.86 and p=0.015. On the other hand, DEPOSIT has negative relationship with ROA ($\beta = -4.61$, $p < 0.05$). This indicates that the more the amount of deposit, the more it affect return on asset negatively.

4.2.2. Regression analysis of ROE

4.2.2.1. Model Summary for ROE

Regression analysis is computed for dependent analysis return on equity and independent variables NIINCOME, DEPOSIT, EQUITY, EBANK, NIM and LOANS. Nine year data is used to work out the regression analysis. Finding from the analysis is described hereunder.

Table 4:10*Model Summary of Regression Analysis for ROE*

Table 4:10 presents the model summary for regression analysis of Return on Equity. Model summary table helps to measure goodness of the regression model employed. This table provides information about the regression line's ability to account for the total variation in the dependent variable.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.999^a	.997	.989	.49699	2.953

a. Predictors: (Constant), DEPOSIT, EBANK, EQUITY, NIINCOME, LOANS, NIM

b. Dependent Variable: ROE

Source: *From secondary data collected*

> ➤ **Coefficient of Multiple Determination (R2)**

It is used to measure the proportion of variation in the dependent variable that is explained by the explanatory variable(s). The higher 'the' R^2, the greater the proportion of the variation in the independent variable(s). As can be seen from the above table the adjusted R^2 after the adoption of electronic banking is 0.989.

The computed coefficient of determination (R^2= 0. 989) shows that 98.9% of the total variation in ROE in Dashen Bank SC is explained by the variations in EQUITY,NIINCOME, NIM, LOANS, EBANK and DEPOSIT while 1.1% of the variation in ROE, is attributable to the influence of other factors not included in the regression function. This indicates that the regression line is very good fit to the observed data.

4.2.2.2. Analysis of Variance

ANOVA table is used to find out how the average value of numerical dependent variable depends on one or more independent variables.

Table 4:11ANOVA table for ROE

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	174.647	6	29.108	117.846	.008^b
	Residual	.494	2	.247		
	Total	175.141	8			

a. Dependent Variable: ROE

b. Predictors: (Constant), DEPOSIT, EBANK, EQUITY, NIINCOME, LOANS, NIM
Source: *From secondary data collected*

> **F-Statistics**

F statistics used to test the equality of treatment means or it is the variance of the group statistics. It is found that $F_{0.05; 6, 2}$ is 5.143. As p is less than 0.05, the model is significant. If the value of F is large, the variation among group means is more than expected to happen by chance. Thus, the combination of the variables significantly predicts the dependent variable, Return on Equity (F=117.85; $p < 0.05$).

> ➤ **Significance**

It is the probability that an effect at least as extreme as the current observation has occurred by chance. Therefore, from the above table significance is 0.008; this indicates 99.2% of every difference would not occur by chance alone. This makes 99.2% certainty that the difference did not occur by chance.

4.2.2.3. Coefficients table

Table 4:12 presents the individual statistical significance of each of the six independent variables.

Table 4:12 *Coefficients table for ROE*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-8.256	20.616		-.400	.963
	NIM	10.850	1.977	1.659	5.488	.043
	NIINCOME	1.223	.094	1.801	13.054	.044
	EQUITY	-2.726	.384	-.588	-7.106	.015
	LOANS	.386	.136	.850	2.842	.099
	EBANK	.200	.053	.401	3.804	.009
	DEPOSIT	-.518	.237	-.109	-2.183	.007

Dependent Variable: ROE
Source: *From secondary data collected*

$$ROE = \alpha + \beta_i EBANK_t + \beta_i EQUITY_{it} + \beta_i LOANS_{it} + \beta_i NIINCOME_{it} + \beta_i DEPOSITS_{it} + \beta_i NIM_{it}$$

ROE= -0.071+0.386*LOANS -0.518*DEPOSIT + 2*EBANK -2.726*EQUITY + 10.85*NIM+ 1.223*NININCOME

➢ **T test result and p value**

The t test is used in the statistical test to test for the significance of the individual estimated parameter(s). The calculated t-test value for NIM, NIINCOME, EQUITY, LOANS, EBANK, and DEPOSIT are 5.488, 13.054, 7.106, 2.842, 3.804 and 2.183 respectively while their associated P-values are 0.032, 0.006, 0.19, 0.105, 0.063 and 0.161. The significance or P-values of the estimated parameters are less than the chosen level of significance 0.05 (5%) apart from the p-value of LOANS, DEPOSIT, and EBANK. This means that the estimated parameters EQUITY, NIM and NIINCOME are statistically and individually significant. From this we can understand that electronic banking has no significant effect on Return on Equity (t= 3.80, p > 0.05).The large t value but corresponding high p value indicates no significant influence on the dependent variable.

➢ **Standard β**

The above table showed the standardized Beta Coefficients that present the contributions of each variable to the model. It can be inferred that NIINCOME has the highest influential control on Return on Equity ($\beta = 1.8$, p< 0.05). Whereas, EBANK has no significant impact on return on equity ($\beta = 0.4$, p > 0.05). This indicates that, even if electronic banking has positive standardized beta, the variable does not influence return on equity significantly.

4.2.3. T-Test for ROA and ROE

Based on the means computed for each bank, the test for difference between means was conducted to test how significant our results are at five percent (5%) level of significance. The test for difference between means is a standard statistical technique for testing independent samples.

Table 4:13_Paired Sample Statistics_

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	ROA After e-banking	3.3515	9	.34940	.11647
	ROA Before e-banking	1.5770	9	.75102	.25034
Pair 2	ROE After e-banking	35.6215	9	4.67895	1.55965
	ROE Before e-banking	21.6082	9	10.95769	3.65256

Source: _From secondary data collected_

As can be seen from table 4:13, the mean score of ROA is maximized from 1.577 to 3.351 and standard deviation reduced from 0.751 to 0.349. Similar to prior findings, t-test also proved that, the adoption of electronic banking has shown an increase in Return on Asset. Similar to return on asset, the mean score of Return on Equity also increased from 21.608 to 35.622 and reduced standard deviation from 10.958 to 4.679 after the adoption of electronic banking.

Even if the above regression result on table 4:12 shown that, electronic banking has no statistically significant influence over Return on Equity, the paired t- test indicated that the adoption of electronic banking contributed to the bank's Return on Equity.

Table 4:14 *Paired Sample Test*

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	ROA After e-banking - ROA Before e-banking	1.77453	.89934	.29978	1.08324	2.46583	5.919	8	.000
Pair 2	ROE After e-banking - ROE Before e-banking	14.01333	13.95090	4.65030	3.28972	24.73694	3.013	8	.017

Source: *From secondary data collected*

The p-value of ROA presented in table 4:14 is p<0.05 and t=5.92. This indicates that there is a statistically significant difference between the mean ROA after electronic banking and before electronic banking. Since the paired sample statistics table, table 4:13 revealed that the mean of ROA after electronic banking was greater than the mean before electronic banking.

Unlike to the findings in regression analysis for ROE on table 4:12, Return on equity shown p value of 0.017, which is less than 0.05. This indicates that there is a statistically significant difference between the mean of return on equity before and after the adoption of electronic banking. Since the paired sample statistics table revealed that the mean of ROE after electronic banking was greater than the mean before electronic banking.

Contrasting to the findings of Abaenewe et al (2013), which identified electronic banking significantly influence Return on equity but not Return on Asset, the t-test for this study identified the adoption of electronic banking has significant influence over both Return on Asset and Return on Equity.

4.2.4. Correlation Analysis

As it can be seen from table4:15, there was appositive correlation between return on asset and NIM, NIINCOME, and LOANS. Whereas, there is a negative correlation between banks profitability measure; return on asset, and FDTA and DEPOSIT. That means the more the ratio of deposit to total asset, the lesser the ROA is.

When we come to return on equity, NIM, NIINCOME, DEPOSIT, LOANS and EBANK has positive relationship with the dependent variable. On the other hand EQUITY has negative relationship with ROE.

Table 4:15 Correlation analysis

	ROA	ROE	NIM	NIINCOME	EQUITY	LOANS	DEPOSIT	EBANK	FDTA
ROA	1								
ROE	.652	1							
NIM	.287	.707*	1						
NIINCOME	.061	.109	-.934**	1					
EQUITY	.315	-.267	-.313	.461	1				
LOANS	.232	.765*	.943**	-.913**	-.554	1			
DEPOSIT	-.438	.268	-.403	.311	-.229	-.214	1		
EBANK	.429	.396	-.747*	.796*	.638	-.882**	-.010	1	
FDTA	-.008	.023	-.443	.534	-.126	-.314	.336	.081	1

Correlation is significant at the 0.05 level (2-tailed).*

Correlation is significant at the 0.01 level (2-tailed).**

Source: *From secondary data collected*

The findings in table 4:15 indicate that the relationship of electronic banking with return on asset is stronger than the relationship with return on equity. Similar to this EBANK has statistically positive relationship with ROA. On the other hand, DEPOSIT and FDTA has negative relationship with ROA. This result indicates that though the coefficient is small, adopting electronic banking has positive contribution to both return on asset and return on equity.

4.3. Discussion

The objective of this study is to measure the effect of electronic banking on customer service and bank performance. Multi stage cluster sampling was used to come up with the appropriate sample size of customers. Purposive sampling technique is used to gather firsthand information from the bank officials. Secondary data for eighteen years is used to measure the banks performance before and after the adoption of electronic banking.

The finding from questionnaire and interview indicated that, the adoption of electronic banking has influenced service quality positively. The data showed that even though the finding indicates development, there still existed room for improvement especially regarding office facilities and equipment. According to the findings, the adoption of electronic banking has improved safety transacting with bank, convenient working hours, appealing physical facility and relatively better call center. All in all, electronic banking has influenced the five, which are Tangibles, Reliability, Responsiveness, Assurance and Empathy, dimensions of service quality positively.

The finding from the interview also indicated that, the adoption of electronic banking has influenced both the bank's performance and customer service positively. They also mentioned that, it would be even better if minor errors were corrected.

The regression analysis indicated that the adoption of electronic banking significantly influenced ROA, with standard coefficient of 0.859, t-test of 8.183 and P< 0.05. On the other hand the regression analysis showed that, electronic banking does not statistically influenced return on equity.

The paired t-test indicates that, the adoption of electronic banking has influenced both return on equity and return on asset. Even though the regression analysis indicated that electronic banking has no statistically significant effect over return on equity, the paired t-test point out that electronic banking has influence over return on equity. This analysis also indicated that the mean value for both dependent variables, return on equity and return on asset, also improved and at the same time, their variation declined.

CHAPTER FIVE

5. Conclusion and Recommendation

This study tried to analyze the current status of electronic banking in Dashen Bank SC, and its impact on customer service and bank performance since the adoption of electronic banking service starting from 2006 GC. Conclusion drawn from the finding is discussed and suggestion of alternative recommendations is deliberated under this chapter.

5.1. Conclusion from Primary Data

By collecting primary data from customers and employees of the bank, this study examined the impact of electronic banking service quality on customer service. Recently, in Ethiopia, the main goal of financial industry is to create cashless society in the market.

The electronic banking services provided by Dashen Bank includes ATM, POS terminal, debit cards, funds transfer, balance enquiry, mini statement of account, SMS alert, mobile banking, encashment and PC banking.

5.1.1.1. Conclusion from Questionnaire

The result from the questionnaire indicates that electronic banking service of Dashen Bank is more than average level (having mean score of 3.74 from 5 levels Likert scale). In fact, assurance dimension of service quality is carried out superior to the other four dimensions with a mean score of 3.964. Responsiveness, reliability, tangibles and empathy ranked second, third and fourth after assurance, respectively. Despite the fact that the last two variables appeared in the last rows of the parameters, their mean score found to be more than

avarage level of customer service quality measure. Adewoye (2013), also found that empathy and tangibles have the lowest level of significance.

This indicates that electronic banking affected the bank's customer service in a positive way. Dashen Bank is performing at average level in employee trust worthiness, transaction safety, employee politeness and employee's knowledge for the service provided and on other parameters, except for employee neatness and dressing code, which scored the least mean value from the rest 21 service quality dimensions.

The conclusion of primary data collected from customers is similar with finding of Aghaei et al 2013, which investigates the Effect of Electronic Banking Systems on Customer Satisfaction in Tehran. They also found and concluded that, there existed positive relationship between services provided by employees and positive experience of services rendered through electronic banking. Nupur (2010), also found that there is a relation between customer satisfaction in e-banking and reliability, responsiveness, assurance, empathy, and tangibles.

5.1.2. Conclusion from Interview

The interview from various officials in the bank has given a number of findings about the impact of electronic banking service quality on customer service and bank performance.

The adoption of electronic banking has considerably changed the existing banking environment. The previous banking system was very lengthy, costly, time taking and less accurate comparing with the current electronic system.

The main motive for the bank to switch towards electronic means is to increase its customer base, to serve the customers with best of the services, to facilitate them and to boost bank's

efficiency. After the launching of electronic banking, the efficiency of Dashen Bank has been improved, the labor costs have decreased the accuracy of transactions and maintenance has been also supported by computer. Furthermore, the introduction of electronic system also brought call center facilities to provide support for customers individually.

Even if the conversion of the system from manual to electronic banking requires huge amount of investment, the transition from traditional to electronic means has not affected the bank negatively. In fact, decreasing human errors, the procedures, processes and services are now fast and reliable which saves time, efforts and costs. The customers are more satisfied with the services, their accuracy and timeliness. This has in turn improved the performance of the bank. The Bank is also earning from these services in a way of commission and transaction charges. Dashen Bank charge certain amount on products and services like ATMs and POS services.

All in all, the finding of the interview is inconsistent with the findings of a research made by Sumra et al (2011) except for few rectifications needed to be made. The result indicated that, in spite of the fact that electronic banking is in its early stage in our country, the bank officials have confirmed that electronic banking has considerable impact on the profitability of the bank. Efficiency has risen as the labor cost have been reduced, time saved, accuracy, reliability and quality of services has improved.

5.2. Conclusion from Secondary Data

In addition to collecting questionnaires and conducting interview to measure the effects of electronic banking on customer service, this study gathered secondary data from consecutive annual reports of the bank to evaluate its effect on bank performance through ROA and ROE. Eighteen years data was taken (1997 GC-2014 GC) to measure financial performance of the bank.

5.2.1. Conclusion for Regression Analysis

The regression analysis indicated that the adoption of electronic banking significantly influenced ROA, with standard β coefficient of 0.859, t-test of 8.183 and $P < 0.05$. The implication of the finding is that electronic banking has statistically significant contribution to return on asset. Actually all explanatory variables has significant impact over ROA except for foreign deposit to total asset (FDTA) ratio.

With regard to return on equity, unlike to the findings of Hernando and Nieto (2006) as cited by Abaenewe (2013), Okiro and Ndungu (2013), and the finding shown; ROE is not significantly influenced by electronic banking ($P > 0.05$). From regression analysis's perspective, it can be said that ROE is not statistically significantly influenced by electronic banking.

5.2.2. Conclusion for Paired T-Test

Unlike the regression analysis, the paired t-test indicated that after the adoption of electronic banking, both the bank's ROA and ROE has shown improvement. The paired sample statistics table also indicated the mean scores of Return on Asset and Return on Equity has shown improvement after the adoption of electronic banking, and indicated lower variation.

Contrasting the findings of Malhotra and Singh (2009), which concludes no significant association between adoption of Internet banking and bank performance and also negative relationship between internet banking and profitability, this study concludes that there exist a positive relationship between the independent variables (EBANK, NIINCOME, NIM, LOAN, EQUITY, DEPOSITS and FDTA) and the dependent variables (return on asset and return on equity) within the period of study.

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In general the adoption of electronic banking has influenced performance of Dashen Bank positively. On the contrary, the study made by Al-Smadi (2011) indicated that the adoption of electronic banking affects bank performance negatively.

5.3. Recommendation

Implementing electronic banking system is a core issue in the financial market of Ethiopia. Since all banks are migrating from manual banking to technology based financial system, the bank needs to be efficient and effective to proceed as the leading bank in technological advancement. Based on the above findings and conclusion, the following recommendations are forwarded

➢ Machine down times affect the productivity of a business organization, and it also affects the customer service adversely. For successful operation of electronic banking system, the bank should repair problems regarding ATM and POS machines, and minimize downtimes as much as possible. In fact rectifying this problem has impact on tangibles aspects of customer service quality.

➢ In order to have as many card holders as possible, the bank should fasten production of debit cards. Issuing more cards leads to higher transaction rate, which leads to higher income generation.

➢ Customers prefer service provider with sufficient support system. Therefore, the bank should strengthen its call center to be more responsive for its customers, both merchant stations and card holders who are in need of live support.

➢ In order to win first impression of its customers and to have good working area for employees, preparing appropriate office layout and providing suitable equipment is an ideal

solution. Hence Dashen Bank should improve its office equipment and facilities to enjoy the benefits such as employee motivation and wining customers' affection, obtained as a result of the conducive environment created for customers and employees.

➢ The bank should use mechanisms that will help to increase usage of cards. Usually electronic banking service generates its income from service charges collected from both card holders and merchants. As the usage of cards increased, the income generated from the transaction also increase. Therefore, it is better to design some instrument to increase the usage which will help to have more return on asset and equity.

➢ Customers prefer to have as many alternatives as much, to make their choice. The bank should also adopt additional electronic banking service features like, mobile banking and telephone banking, to deliver its service properly and maximize its transactions; which in turn accelerates the improvement in performance or profit.

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Appendix A: Frequency Tables for Descriptive Statistics

Appendix A encloses frequency tables for twenty one customers' service quality dimensions from field data collected from customers.

Table A1: Use of modern equipment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	7	6.7	6.7	6.7
	Neutral	28	26.9	26.9	33.7
	Agree	43	41.3	41.3	75.0
	Strongly Agree	26	25.0	25.0	100.0
	Total	104	100.0	100.0	

Table A2: Appealing physical facility

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	10	9.6	9.6	9.6
	Neutral	39	37.5	37.5	47.1
	Agree	41	39.4	39.4	86.5
	Strongly Agree	14	13.5	13.5	100.0
	Total	104	100.0	100.0	

Table A3: Dressing code & neatness of employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.0	1.0	1.0
	Disagree	22	21.2	21.2	22.1
	Neutral	64	61.5	61.5	83.7
	Agree	16	15.4	15.4	99.0
	Strongly Agree	1	1.0	1.0	100.0
	Total	104	100.0	100.0	

Table A4: Doing activities on time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.0	1.0	1.0
	Disagree	5	4.8	4.8	5.8
	Neutral	24	23.1	23.1	28.8
	Agree	51	49.0	49.0	77.9
	Strongly Agree	23	22.1	22.1	100.0
	Total	104	100.0	100.0	

Table A5: The bank solves problem timely

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.0	1.0	1.0
	Disagree	9	8.7	8.7	9.6
	Neutral	36	34.6	34.6	44.2
	Agree	41	39.4	39.4	83.7
	Strongly Agree	17	16.3	16.3	100.0
	Total	104	100.0	100.0	

Table A6: Provide the right service the first time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.0	1.0	1.0
	Disagree	7	6.7	6.7	7.7
	Neutral	30	28.8	28.8	36.5
	Agree	39	37.5	37.5	74.0
	Strongly Agree	27	26.0	26.0	100.0
	Total	104	100.0	100.0	

Table A7: Provide service as promised

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	1.9	1.9	1.9
	Disagree	7	6.7	6.7	8.7
	Neutral	35	33.7	33.7	42.3
	Agree	37	35.6	35.6	77.9
	Strongly Agree	23	22.1	22.1	100.0
	Total	104	100.0	100.0	

Table A8: The bank insists accuracy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	7	6.7	6.7	6.7
	Neutral	34	32.7	32.7	39.4
	Agree	35	33.7	33.7	73.1
	Strongly Agree	28	26.9	26.9	100.0
	Total	104	100.0	100.0	

Table A9: Inform specific service time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	1.9	1.9	1.9
	Neutral	34	32.7	32.7	34.6
	Agree	41	39.4	39.4	74.0
	Strongly Agree	27	26.0	26.0	100.0
	Total	104	100.0	100.0	

Table A10: Employees provide prompt service

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.0	1.0	1.0
	Disagree	3	2.9	2.9	3.8
	Neutral	31	29.8	29.8	33.7
	Agree	42	40.4	40.4	74.0
	Strongly Agree	27	26.0	26.0	100.0
	Total	104	100.0	100.0	

Table A11: Employees always answer to your request

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	3	2.9	2.9	2.9
	Neutral	25	24.0	24.0	26.9
	Agree	53	51.0	51.0	77.9
	Strongly Agree	23	22.1	22.1	100.0
	Total	104	100.0	100.0	

Table A12: Willingness to help

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	4	3.8	3.8	3.8
	Neutral	39	37.5	37.5	41.3
	Agree	37	35.6	35.6	76.9
	Strongly Agree	24	23.1	23.1	100.0
	Total	104	100.0	100.0	

Table A13: Employee trust worthiness

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	5	4.8	4.8	4.8
	Neutral	29	27.9	27.9	32.7
	Agree	35	33.7	33.7	66.3
	Strongly Agree	35	33.7	33.7	100.0
	Total	104	100.0	100.0	

Table A14: Transact safely with the bank

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	1.0	1.0	1.0
	Neutral	23	22.1	22.1	23.1
	Agree	35	33.7	33.7	56.7
	Strongly Agree	45	43.3	43.3	100.0
	Total	104	100.0	100.0	

Table A15: Employee politeness

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	5	4.8	4.8	4.8
	Neutral	31	29.8	29.8	34.6
	Agree	38	36.5	36.5	71.2
	Strongly Agree	30	28.8	28.8	100.0
	Total	104	100.0	100.0	

Table A16: Employee's knowledge for your question

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.0	1.0	1.0
	Disagree	6	5.8	5.8	6.7
	Neutral	31	29.8	29.8	36.5
	Agree	40	38.5	38.5	75.0
	Strongly Agree	26	25.0	25.0	100.0
	Total	104	100.0	100.0	

Table A17: Company attention to customer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	5	4.8	4.8	4.8
	Neutral	35	33.7	33.7	38.5
	Agree	43	41.3	41.3	79.8
	Strongly Agree	21	20.2	20.2	100.0
	Total	104	100.0	100.0	

Table A18: Employee's attention to customers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	6	5.8	5.8	5.8
	Neutral	44	42.3	42.3	48.1
	Agree	38	36.5	36.5	84.6
	Strongly Agree	16	15.4	15.4	100.0
	Total	104	100.0	100.0	

Table A19: Understanding of customer's specific need

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	13	12.5	12.5	12.5
	Neutral	44	42.3	42.3	54.8
	Agree	34	32.7	32.7	87.5
	Strongly Agree	13	12.5	12.5	100.0
	Total	104	100.0	100.0	

Table A20: Provide service satisfactorily

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	8	7.7	7.7	7.7
	Neutral	39	37.5	37.5	45.2
	Agree	35	33.7	33.7	78.8
	Strongly Agree	22	21.2	21.2	100.0
	Total	104	100.0	100.0	

X

Table A21: Convenient working hour

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	1.9	1.9	1.9
	Neutral	32	30.8	30.8	32.7
	Agree	32	30.8	30.8	63.5
	Strongly Agree	38	36.5	36.5	100.0
	Total	104	100.0	100.0	

Appendix B: Questionnaire

ቅድስት ማሪያም ዩኒቨርስቲ

ድህረ ምረቃ ትምህርት ቤት

የዚህ መጠይቅ አላማ በቢዝነስ አድሚኒስትሬሽን (MBA- General) የመመረቂያ ጽሁፍ፤ በዳሸን ባንክ ኢ.ማ የኢ-ባንኪንግ አገልግሎት (E-banking Services) ላይ ለሚደረገው ጥናት በግብአትነት የሚውል መረጃ ለማሰባሰብ ነው፡ ፡ በመሆኑም መጠይቁን በመሙላት ለሚደረገልኝ ትብብር በቅድሚያ አመሰግናለሁ፡፡

ማሳሰቢያ፡-

  ➢ ምርጫዎ ትክከል ✓ ምልከት ያድርጉ፤
  ➢ በከፍል 2 ለተዘረዘሩት ጥያዎች ምላሽ ትርጉም ፡- 1. በጣም አልስማማም 2. አልስማማም 3. ገለልተኛ
    4. እስማማለሁ   5. በጣም እስማማለሁ

ክፍል አንድ

1. የኢ-ባንኪንግ አገልግሎት ተጠቃሚ ኖት?
        አዎ ☐   አይደለሁም ☐

ክፍል ሁለት

ተ.ቁ	መለኪያ	ጥያቄ	1	2	3	4	5
1	ተጨባጭነት	ባንኩ ዘመናዊ መሳሪያ ይጠቀማል					
2		የባንኩ የውስጥ ገጽታ ማራኪ ነው					
3		የሰራተኞች አለባበስና ንጽህና ማራኪ ነው					
4	ተአማኒነት	ቃል በተገባው መሰረት ሰራቸውን በሰዓቱ ያከናውናሉ					
5		ለሚያጋጥሙ ችግሮች በወቀቱ አስተማማኝ ምላሽ ይሰጣሉ					
6		ተአማኒ(አስተማማኝ) ናቸው					
7		በቃላቸው መሰረት አገልግሎት ይሰጣሉ					
8		በተገቢው መንገድ የሂሳብ ምዝገባ ያካሂዳሉ					
9	ምላሽሰጪነት	አገልግሎት የሚያገኙበትን ትክከለኛ ሰዓት ያሳውቃሉ					
10		ከባንኩ የጠበቁትን አገልግሎት አግኝተዋል					
11		የባንኩ ሰራተኞች ድጋፍ ለመስጠት ፍቃደኛ ናቸው					
12		አራተኞች በስራ ላይ እያሉ ተገቢውን ምላሽ ይሰጥዋታል					
13	አስተማማኝነት	የባንኩ ሰራተኞች ታማኝ ናቸው					
14		ከባንኩ ጋር የሚያካሂዱት ስራ አስተማማኝ ነው					
15		የባንኩ ሰራተኞች በስነምግባር የታነፁ ናቸው					
16		የባንኩ ሰራተኞች በቂ ድጋፍ ይደረግላቸዋል					
17	ግንዛቤ /መረዳት/	ባንኩ የተለየ ትኩረት ይሰጥዋታል					
18		ሰራተኞቹ ለየት ያለ ትኩረት ይሰጥዋታል					
19		ሰራተኞቹ ፍላጎትዎን ጠንቅቀው ይረዳሉ					
20		ሰራተኞቹ የልብ አድራስ ናቸው					
21		የባንኩ የስራ ሰዓት ምቹ ነው					

አመሰግናለሁ!

Appendix C: Interview

<div align="center">

ቅድስት ማሪያም ዩኒቨርሲቲ

ድህረ ምረቃ ትምህርት ቤት

</div>

የስራ ክፍል_____

የስራ ሓላፊነት_____

1. ዳሽን ባንክ አ.ማ የ ኢ-ባንኪንግ አገልግሎት መስጠት መጀመሩ በባንኩ ትርፍ ላይ ለውጥ አሳይቷል?

   _____
   _____
   _____.

2. የ ኢ-ባንኪንግ አገልግሎት በደንበኞች አገልግሎት ላይ ሥላለው አስተዋጾ ቢገልጹልኝ?

   _____
   _____
   _____ .

3. ዳሽን ባንክ ኢ-ባንኪንግ አገልግሎት መስጠት በመጀመሩ በውስጥ አሰራር ላይ ምን አስተዋጾ አድርጓል?

   _____
   _____
   _____.

4. የ ኢ-ባንኪንግ አገልግሎትን ተግባራዊ በማድረጉ ያጋጠሙ ችግሮች ካሉ ቢያብራሩልን?

   _____
   _____
   _____ .

5. ባንኩ ኢ-ባንኪንግ አገልግሎት ተጠቃሚዎች ምን አይነት የጥሪ ማእከል አገልግሎት እየሰጠ ይገኛል?

   _____
   _____
   _____ .

6. የባንኩን ኢ-ባንኪንግ አገልግሎት አስመልከቶ የሚጨምሩት ወይም ቢሻሻል ብለው የሚያነሱት ሃሳብ ካለ፤

   _____
   _____
   _____ .