EFFECT OF ELECTRONIC BANKING SERVICE QUALITY ON CUSTOMER SATISFACTION AND LOYALITY CASE OF DASHEN BANK

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Effect of Electronic Banking service quality on Customer Satisfaction And Loyalty Case of Dashen Bank

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Declaration

I, the under signed, hereby declare that the thesis work entitled “Effect of Electronic Banking service quality on Customer Satisfaction & Loyalty case of Dashen Bank” submitted by me for the award of the degree of Master of Accounting and Finance of Addis Ababa University at Addis Ababa Ethiopia, is original work and it hasn’t been presented for the award of any other Degree, Diploma, Fellowship or other similar titles of any other university or institution.

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Certification

Addis Ababa University

This is to certify that the thesis prepared by Maria G/Mariam entitles: **Effect of Electronic Banking service quality on Customer Satisfaction And Loyalty case of Dashen Bank** and submitted in partial fulfillment of the requirements for the degree of Masters of Science in Accounting and Finance compiles with the regulations of the university and meets the accepted standards with respect to originality and quality.

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ACRONYM

ATM	Automated Teller Machine
CBE	Commercial bank of Ethiopia
E-banking	Electronic banking
POS	Point of Sale
ROA	Return on Asset
ROE	Return on Equity

ABSTRACT

Due to globalization and intense competition between banks, new banking products popped up and banks shifted towards providing advanced electronic banking services and using new technologies. Providing high quality service is the key to attain customer satisfaction and loyalty. The main purpose of the study is to assess the effect of E-banking service quality on customer satisfaction and loyalty of Dashen Bank. The study employed explanatory research design. A total of 177 customers were selected using simple random sampling method and data was obtained using structured questionnaire. Chi-square test was employed to test whether there are statistically significant associations between e-banking service quality and customer satisfaction and loyalty. To identify the effect of e-banking service quality on customer satisfaction and loyalty, inferential statistics such as binary logistic regression analysis method was employed. The finding revealed that assurance, reliability, empathy and responsiveness were found to be significant for both customer satisfaction and loyalty. The positive coefficients of assurance, reliability, empathy and responsiveness showed that improvement in the customer satisfaction and loyalty. Since assurance and reliability are related to skill and ability, to improve both, among other recommendations, the study recommend that the bank should launch a continuous training and development programs i.e., organizing weekly experience sharing programs.

***Key words**: Customer Satisfaction, Customer Loyalty, E-banking service quality.*

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the study

The banking industry is being reformed by globalization, competition and innovation and customer needs. Due to the emergence of a knowledge-based economy and society as information and communication technology advanced, banking services have undergone profound changes during the last 10 years (Driga and Isac, 2014).

The banking sector is considered one of the main pillars of nations economy in terms of growth rates, level of development and technology and information use. In the recent years, the banking sector has witnessed rapid and successive developments in the context of globalization and markets openness, as well as the entering of the foreign banks to the local market and the intensification of the competition between banks. As a result of such changes, new banking products popped up and banks shifted towards providing advanced electronic banking services and using new technologies. Thus, banks are required to maintain a high standard of banking services quality in general and E- services in particular (Abood and Samar, 2017).

Electronic banking is generally defined as using telecommunication networks and electronics to provide different kind of value-added services and products to commercial bank clients (Candelore *et al.,* 2016). E-banking is also defined as a variety of self-service platforms such as internet banking, mobile banking, ATM dispensers, agent banking, point of sale where by customers access these services using electronic devices like personal computer, Automated teller machine (ATM), Point of sale terminals and mobile phones without their physical presence in the bank (business dictionary). The pressure of globalization and rapidly changing technology has made it necessary for banks to re-examine their service delivery systems in order to suitably position them within this dynamism of information technology and users adaptability (Evwiekpaefe, 2011).

Customer satisfaction is a much sought-after phenomenon in today's highly competitive and globalized market place. It refers to the extent to which customers are happy with the products and/or services provided by an organization (Simon and Thomas, 2016). Good customer service

is the main factor that will determine in the future whether the business will survive or fail. Due to rapid technological changes and market competition service quality becomes an increasingly important issue. Therefore, understanding a service quality issue becomes important to satisfy customers (Simon, 2016).

Service quality and customer satisfaction are very important concepts, which must understand by companies that want to grow while keeping their competitive edge. In the modern competitive environments, delivering high service quality is the key for a sustainable competitive advantage. Customer satisfaction has a positive effect on an organization's profitability (Asrat, 2017).

There are several studies that used a variable customer satisfaction and loyalty Those studies include Dimitrios et al (2013); Torabi and Mahmoudi (2016) and Eklof et al (2018) among others. Positive influence of current and lagged customer satisfaction and loyalty on profitability was showed in Fornell et al., (2016) and Luo et al., (2014). Furthermore, Eklof et al (2018) confirmed that customer satisfaction and loyalty have a significant positive influence on banks' profitability.

Dashen Bank S.C was established on September 20, 1995 E.C. the first founding members were 11 businessmen and professional that agreed to combine their ambitions and financial resources and expertise to form this new private bank. As per the annual report of Dashen Bank for the year ended June 30 2019, the paid-up capital of the bank has reached to birr 2.705 billion. Headquartered in Addis Ababa, the Bank is the biggest private Bank in Ethiopia in terms of total Asset it acquired. It operates through a network of 413 Area Banks, five dedicated Forex Bureaus, More than 355 ATMs and 1397 plus Point-of-Sale (POS) terminals spread across the length and breadth of the nation. Regarding E-banking service, the bank currently provides four types of E-banking services i.e., ATM/POS, Internet banking, Amole digital banking, and Agency banking. In 2019 only, its Amole platform, saw additional 846,798 subscribers (www.dashen bank.com & Dashen Bank report, 2019).

1.2. Statement of the problem

In Ethiopia, many scholars have been conducting studies that are related with e-banking service quality and customer satisfaction. Tilahun (2016) investigated the efficacy of electronic banking in the area of automated teller machines, debit cards and point of sale terminals on 10 commercial banks . Assefa (2013) assessed the correlation between e-banking and customer satisfaction. Bayoush (2018) tried to identify factors that affect the adoption of mobile banking in the case of Dashen bank. Dula (2019) assessed the quality of electronic banking services in Ethiopian banking industry. Abebe 2016 The study examined opportunities and challenges within the context of Dashen Bank's E-banking services. Fikerselassie (2017) assessed the effect of electronics banking service quality on the customers' satisfaction in the banking sector of Ethiopia. Sisay (2016) examined the effect of electronic banking service quality on customer satisfaction among saving account customers in six selected branches of west Addis district of the CBE.

Although as described above there are several studies that are related with E-banking Service Quality and Customer Satisfaction & loyalty, the current study is different from the previous studies in the following reasons: -

Firstly, most of the previous studies that examined the impact of e-banking Service Quality on Customer Satisfaction & loyalty were conducted on Banks not on a Bank i.e., (Mohammed, 2018; Tilahun, 2016 and Solomon, 2016). In addition, some also focused on one of e-banking services i.e., (Mohammed, 2018; Bayoush, 2016).

Secondly, most of the previous studies used the number of services provided by the banks as a measurement for E-banking services. However, this study measure E-banking services by the quality of E-banking services delivery. As Ronoh (2015) emphasized that in banking industry the quality of E-banking services delivery does matter more than the number. Ronoh (2015) stated that service-related problems discourage customers and ultimately led to the reduction in profits While using electronic banking, customers have experienced problems like unauthorized access and redirection of websites or emails, credit card fraud or theft, network problems and they need computers connected to the internet of which they must have the knowledge of using the internet. When using Automated Teller Machines, there is a maximum and minimum amount of money

one can withdraw at ago, theft of customer money and capturing of the cards especially when a mistake is made (IBID).

Thirdly, most of the previous studies employed multiple linear regression analysis, however the current study used binary logistic regression analysis. Since most of the previous studies were conducted on Banks. However, this study is conducted in a single Bank or Dashen bank and it is impossible to get large number of observations (n>30) to employ regression. the current study used The Effect of E-banking Service Quality customer satisfaction and loyalty. In this study, both customer satisfaction and loyalty is a variables and hence, binary logistic regression analysis was employed.

In addition, to the best of the researcher knowledge, in Ethiopia, there is only one study that carried out by Leyouager (2015) that looks like or more or less similar to the current study. However, in Leyouager (2015) study, the variable "customer service" was not measured independently and thus, no inferential statistics was employed to examine the effect of E-banking services quality.

Therefore, this study intends to examine the effect of e-banking service quality on customer satisfaction & loyalty.

1.3. Research questions

The research questions of this study are:

1. Does E-banking service provided by Dashen Bank significantly affect customer satisfaction & loyalty?
2. What kind of relationships exist between E-banking service quality delivery dimensions and customer satisfaction?
3. What kind of relationships exist between E-banking service quality delivery dimensions and customer loyalty?
4. Is there problem in either of E-banking service delivery processes (in terms of Assurance, Reliability, Tangibility, Empathy, and Responsiveness).
5. What are the major problems encountered in the E-banking service delivery process of Dashen Bank?

1.4. Objective of the study

1.4.1. General objective

The general objective of the study is to assess the effect of E-banking service quality on customer satisfaction & loyalty of Dashen Bank

Specific objectives

- ✓ To assess whether E-banking service provided by Dashen Bank significantly affect its customer satisfaction & loyalty.
- ✓ To examine the relationships between e-banking service delivery dimensions and customer satisfaction.
- ✓ To examine the relationships between e-banking service delivery dimensions and customer loyalty.
- ✓ To identify the effect of E-banking service delivery processes (in terms of Assurance, Reliability, Tangibility, Empathy, and Responsiveness) on customer satisfaction.
- ✓ To identify the major problems encountered in the E-banking service delivery process of Dashen Bank.

1.5. Significance of the study

This study provides evidences towards the effect of E-banking service on customer satisfaction & loyalty of Dashen Bank. Thus, the findings of this study are vital for the management and any of the concerned department of Dashen Bank to make evidence-based decision relating to improvements on E-banking service delivery. In addition, this study can be used as a reference material for further investigation on issues which are related to this topic.

1.6. Scope of the study

This study was conducted in Dashen Bank. Thus, the findings of the study are valid only for Dashen Bank. In addition, it is desirable if E-banking service and its effect on customer satisfaction & loyalty was studied in each one of the banks in Ethiopian, however; due to time, resource and financial constraints, this study is delimited to Dashen Bank. In order to measure service quality, this study used the five service quality measures namely assurance, reliability, responsiveness, tangibility and empathy.

1.7. Organization of the study

This report included five chapters. Chapter One included: Introduction, Statement of problem, objectives of the study, hypothesis, Scope and Significance of the study and Chapter Two is Literature review. Chapter Three and Chapter Four were Research Methodologies and Data Presentation, Analysis and Interpretation respectively. Final chapter is summary, Conclusions and Recommendations.

1.8. Operational definition of terms

- **E-banking:** Electronic devices to carry out banking transactions such as cash withdrawal through cash dispensers or transfer of funds at point of sale without cash or cheque. E-banking in this study incorporates internet banking/Amole banking, ATM, POS and agent banking.
- **Automated teller machine /ATM**/: An electronic telecommunications device that enables the customers of a financial institution to perform financial transactions without the need for a human cashier, clerk, or bank teller.
- **Point of sale/POS/:** Electronic device used to process card payments at the point at which a customer makes a payment to the merchant in exchange for goods and services. The POS device is a hardware (fixed or mobile) device that runs software to facilitate the transaction.
- **Agent banking**: Providing of limited scale banking and financial service to the undeserved population through engaged agents under a valid agency agreement rather than a teller or

cashier. The conduct of banking business on behalf of a financial institution using various service delivery channels.

- **Internet banking**: An electronic payment system that enables customers to conduct financial transactions on a secure website operated by a Financial Service Providers.
- **Reliability**: the ability to carry out the promised service dependably and accurately.
- **Responsiveness**: the willingness to support or help the customer and provide prompt service. It emphasizes special treatment and promptness in dealing with customer query, complaints and problems. It is communicated to customers according to the length of time they have to stay in order to get support, answer their questions, or special attention to their problems.
- **Tangibility**: referring to the appearance of physical facilities, equipment and appearance of personnel or staffs. It represents the physical image of the service that the customer will use to evaluate service quality.
- **Assurance**: referring to the knowledge and courteousness of the staff and their ability to entertain trust and confidence. Assurance is significant for services that customers perceive as high risk or where they feel doubtful about their ability to measure outcomes.
- **Empathy**: providing individualized attention provided to customers. The essence of empathy is conveying, through personalized or customized or individualized services that customers are unique and special and their needs are specified.
- **Customer satisfaction**: a state of mind that customers have about a company when their expectations have been met or exceeded over the lifetime of the product or service
- **Customer loyalty**: a loyalty of customer for the bank's service and not used other bank's service

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Theoretical literature

2.1.1. Definition of E-Banking

The term “e-banking” refers to a method of banking through which customers are able to carry out their banking transactions electronically without visiting a bank branch (Simpson, 2002). Among other benefits, e-banking saves time, customers need not to visit the bank branch and banks have the opportunity to enhance their customer base thereby experience improved profits (Okibo and Wario, 2014). According to Basel Committee Report on Banking Supervision (2003), e-banking is to include the provision of retail and small value banking products and services through electronic channels as well as a large value electronic payment and other wholesale banking services delivered electronically. With respect to the field of banking and financial services, e-banking has been described as a product of e-commerce. According to Sokolov (2007), financial institutions, in addition to provide traditional banking products and services, can also facilitates a wider array of banking products and services that have been designed or tailored to shore up e-commerce. The most common and popular support services are: Electronic card; Phone and mobile bank; Call center; Home bank; Corporate bank and Internet bank.

Pikkarainen *et al* (2004) defines electronic banking as an "internet portal, by which customers can use different kinds of banking services ranging from bill payment to making investments". In fact, the use of electronic banking as an opportunity for the spreading of financial institutions has revolved into a good tool rather than only an approach to accomplish competitive advantage of preference with the presence of globalization and violent rivalry.

According to (Abdi, 2006) electronic banking defined as any use of information and communication technology and electronic means by a bank to conduct transactions and have interaction with stakeholders.

According to, Timothy (2012) also defines that electronic banking alludes to the utilization of the Internet as a remote conveyance channel for giving administrations, for example, opening a bank account, transferring funds among diverse accounts and electronic bill presentment and payment. This can be offered in two principle ways. A bank with physical offices can build up a Website and offer these services to its clients notwithstanding its customary conveyance channels. Second, is to set up a virtual bank, where the PC server is housed in an office that serves as the lawful location of such a bank. The banks offer their clients the capacity to make deposits and withdraw funds by means of ATMs (Automated Teller Machines) or other remote conveyance channels claimed by different foundations, for which an administration expense is acquired. Electronic banking is modern delivery channel of banking services (Ahasanul, 2009).

2.1.2. The History of e-banking

Bank of Scotland is the forerunner of the ATM or cash machine in 1968, allowing customers to withdraw cash 24 hours a day and allowing when their branch was closed in (Bank of Scotland, 2017). In addition, by the year 1985 the revolutionary home and office banking (HOBS) was launched. Electronic data inter change (EDI) and electronic fund transfers (EFT) were introduced in the end of 1970s to transfer commercial documents like purchase orders or invoices electronically (Seokumar, 2013).

The evolution of online banking started in the 1980s when the definition and the practice of internet banking were far different than what exists today. In 1981 New York City was the first place in the US to test out the innovative way of doing business by providing remote service as four of its major banks Citibank chase Manhattan, chemical bank and manufacturers Hanover made home banking access available to their customers. In 1983 bank of Scotland institutes first UK internet banking service named homelink through TVs and telephone to pay bills and transfer money. In 1994 Stanford federal credit union becomes the first financial institution in the U.S to offer internet banking to all of its customers.

E-banking provides higher degree of convenience that enables customers to access internet bank at all times and places. Apart from that, the accessibility of computers is perceived as a measure of relative advantage (Daniel, 1999). The early decade of the 1990s witnessed the emergence of automated voice response (AVR) technology. By using the automated voice response Technology, banks could offer telephone banking facilities for financial services. E-commerce precedes other

electronic based services like e-finance, electronic money and e-banking**.** With further advancements in technology, banks were able to offer services, through PC owned and operated by costumers at their convenience, through the use of intranet propriety software. The users of these services were, however, mainly corporate customers rather than retail ones (Sohail and shanmugham, 2003). For instance, banks using internet through providing online banking service since 1999. The service of e-banking incorporates balance inquiry, information to locate ATMs, fund transfer between own account and other third party, exchange rate enquiry, utility and bill payments, check status enquiry and mini statement, check book request, pin password change, alerts on accounts and mobile recharging services.

2.1.3. Types of E-banking

There are many electronic banking delivery channels to provide banking service to customers. The most widely used electronic banking includes ATM, POS, Mobile banking, internet banking/Amole banking and agency banking. Here some of the E-banking services are discussed.

2.1.3.1. Automated Teller Machines (ATMs)

Automated Teller Machine (ATM) is a machine where cash withdrawal can be made over the machine without going in to the banking hall. It also sells recharge cards and transfer funds; it can be accessed 24 hours/7 days with account balance enquiry (Fenuga, 2010).

An automated teller machine (ATM), also known as a automated banking machine (ABM) or Cash Machine is a computerized telecommunications device that provides the clients of a financial institution with access to financial transactions in a public space without the need for a cashier, human clerk or bank teller. On most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smart card with a chip that contains a unique card number and some security information such as an expiration date. According to Thompson (1997), Authentication is provided by the customer entering a personal identification number (PIN). Using an ATM, customers can access their bank accounts in order to make cash withdrawals, credit card cash advances, and check their account balances as well as purchase prepaid cell phone credit.

2.1.3.2. Point-of-Sale Transfer Terminals (POS)

Point of sale (POS) also sometimes referred to as point of purchase (POP) or checkout is the location where a transaction occurs. A "checkout" refers to a POS terminal or more generally to the hardware and software used for checkouts, the equivalent of an electronic cash register. A POS terminal manages the selling process by a salesperson accessible interface. The same system allows the creation and printing of the receipt. Because of the expense involved with a POS system, the eBay guide recommends that if annual revenue exceeds the threshold of $700,000, investment in a POS system will be advantageous. POS systems record sales for business and tax purposes. Illegal software dubbed "zappers" is increasingly used on them to falsify these records with a view to evading the payment of taxes (Shittu, 2010).

2.1.3.3. Internet Banking

Internet banking allows customers of a financial institution to conduct financial transactions on a secure website operated by the institution, which can be a retail or virtual bank, credit union or society. It may include of any transactions related to online usage. Banks increasingly operate websites through which customers are able not only to inquire about account balances, interest and exchange rates but also to conduct a range of transactions. Unfortunately, data on Internet banking are scarce, and differences in definitions make cross-country comparisons difficult (Alabar, 2010).

2.1.3.4. Mobile Banking

Recently in addition to the electronic banking products in Ethiopia mobile banking is adapted widely. Literally this is getting banking service on the mobile phone. Based on, Clottey (2008) Mobile banking is a system or platform in which customers are automatically updated on any changes in their account. These changes are may come in the form of account debits and credits or any charges to the account. All it needs for mobile banking is a mobile phone with a well-functioning text messaging system. SMS banking falls under this category. This system uses short text messaging system to inform customers of their account (Clottey and Collier, 2008).

Mobile Banking refers to provision and availing of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized

information. According to Meute (2010), mobile Banking consists of three inter-related concepts: mobile accounting, mobile brokerage and mobile financial information services. With mobile technology banks can offer a variety of services to their customers such as doing funds transfer while traveling, receiving online updates of stock price or even performing stock trading while being stuck in traffic. Smart phones and 3G connectivity provide some capabilities that older text message-only phones do not (Shan, 2006).

2.1.4. Benefits of E-Banking

The benefits of electronic banking cannot be over emphasized. This is to say that it provides a lot of benefits both to the customer and the bank itself. To begin with a foremost benefit e-banking service is competitive branding and as well as better appreciation to the market demands. As indicated by perspectives communicated by Jen and Michael (2006), electronic-banking has made common open doors for banks and businesses around the world, and that is clear in the way they sort out financial transaction.

Through electronic banking, banks have the capacity to draw in versatile clients which give to a great degree huge profit by giving portable money related services. Wind (2001), demonstrated that numerous banks are roused to actualize E-banking by components identifying with augmenting their profit through expansion market scope.

The increase use in credit card is attributable to electronic banking. Customers are able to shop worldwide without the need of carrying paper money.

The benefits of having electronic banking system can be seen from different perspectives as follows.

- **Benefits to Customers**

E-Banking offers substantial advantage to customers in the form of convenience, time saving and easy access to the banking services. The customers can transact in their account at any time and any where throughout the country or outside the country. There is no time and place restriction. The customers need not visit a branch for each and every transaction and no need to wait in the long queue. By this they can save the time. The customers can avail 24 hours a day and 7 days a week access to banking services at anywhere. With the help of e-banking, the easy access to the

banks will be another advantage to the customers. Thus the e-banking provides sophisticated services to the customers (Devamohan, 2002).

Dawd (2004) also argued that cardholders can be benefited from the safe and convenient nature of using cards for payment. Moreover, payment cards can make life easy for people who want to travel abroad as it minimizes the volume of cash one needs to carry and the associated risk of theft. From merchants' point of view, those merchants who accept cards enable to increase their sales as card holders prefer merchants who can accept their card for payment. Moreover, by reducing the amount of cash on hand, merchants can manage to reduce risks as well as costs related to cash management.

- **Benefits to Banks**

The first benefits for the banks offering electronic banking services is better branding and better responsiveness to the market. In this competitive world, E-banking helps the banks to attract more number of customers and tackle the competition from other banks. According to Olga (2003), those banks that would offer such services would be perceived as leaders in technology implementation. Therefore, those banks that provide the service can enhance the customer satisfaction through sophisticated services.

By providing secured e-Banking services, the banks can also avoid fraudulent activities. With the help of e-banking, banks can save time and hence they can increase the number of transactions and business (Devamohan, 2002). The other benefits of e-banking are possible to measure in monetary terms. The main goal of every company is to maximize profits for its owners and banks are not an exception. In this regard, automated e-banking services offer a perfect opportunity for maximizing profits (Olga, 2003).

- **Benefits to the Economy**

As e-banking provide opportunity to banking sector to enlarge their customer base, it has a consequence to increase the volume of credit creation which in turn results in better economic condition. The positive impacts of electronic banking are immense for economic development of a nation. Some of the economic benefits of e-banking as identified by Dawd (2009) are as follow:

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

In a cash based economy, governments are required to invest a great deal of fund on printing of cash notes and distributing same to the public. Due to manual transfer of currency between individuals, the life of cash notes is very minimal. As a result of this frequent wear and tear, the magnitude and frequency of the investment on cash note printing as well as its related distribution is significant. In the case of electronic payment systems the transaction values are transferred from one account to another using electronic means, reducing the need for cash note distribution. Thus, by encouraging acceptance of payment cards, governments can achieve huge cost saving for their economy in terms of reducing cash note printing and related expenditure (Dawd, 2009)

B. Enhancement of Aggregate Deposit

When people start to increase the proportion of their saving compared to their daily consumption, the saved money can be utilized for investment purposes that in turn will create employment opportunities. This is a great benefit for the economy as a whole.

However, individual savings could not bring this kind of impact. The benefit can only be obtained when savings are made in a banking system whereby the saved fund can be deployed to the economy in the form of loan to encourage the required investment (Dawd, 2009).

In an electronic payment card infrastructure people do not need to carry cash notes for their day to day expenditures as well as contingencies. They rather are encouraged to deposit their fund in the banking system and obtain a single plastic to access this fund at any time of the day when the need arises. This implies that unused funds are always in the banking system that helps to facilitate economic growth (Ibid, 2004).

C. Banking the un-banked

While the electronic payment card infrastructure is diversified, payroll for employees can be handled through this system. Besides creating ease and convenience, both for the employer as well as the employee, it enables individuals to enter into the banking system which they may not be interested otherwise (Dawd, 2009). Such impact of banking the unbanked population also has a benefit in increasing aggregate deposits as indicated above.

D. Increasing the potential for hard currency generation

Especially in developing economies, earning of hard currency is very essential to manage a country's balance of payment. The payment card system can bring a good potential of enabling economies to earn more foreign currency. This can be realized by attracting tourists and by encouraging them to spend more. In today's world, availability of payment card infrastructure is one of the criteria that tourists set while they decide which country to visit. As a result countries that maintain a developed electronic payment card system has a better potential of being visited by tourists than those which do not establish the infrastructure. Hence, more tourists and increased hard currency as a result of diversifying payment card business (Dawd, 2009).

2.1.5. Challenges of e-banking

Electronic banking despite its numerous benefits, there are challenges in the implementation of e-banking applications. Some of the identified challenges as revealed by previous research works include security, infrastructure, regulatory and legal issues and Socio-Cultural challenges.

One of the biggest challenges and the basic requirements of e-banking is ensuring its security. Securing the process in e-banking involves authenticating data of the customer and banker and protecting the information to be transmitted from interception. This authentication can be done using user ID and passwords. In addition a means must be provided that prevent repudiation both by the merchant and customer once the payment process has taken place (Barnes and Hunt, 2001).

According to Worku (2010), e-banking systems must also take into account the need of multilateral security keys i.e. security needs of all participating parties in the e-banking system. An e-payment system that is not secured may not get trust from its users. Trust is one of the crucial factors to ensure the acceptance of e-banking system by users. Martina (2005) also indicated that e-banking applications represent a security challenge as they highly depend on critical ICT systems that create vulnerabilities in financial institutions, businesses and potentially harm customers. It is imperative for banks to understand and address security concerns in order to leverage the potential of ICTs in delivering e-banking applications. Software failures can also be considered as security challenges as it destroy entire portions of a network and bring huge

losses. According to Tadesse and Kidan (2005), some of the major security challenges include the following.

A. Disclosure of private information

In e-payment there are many ways in which private information may be accessed by attackers. For instance, hackers may intercept network traffic to get confidential data. It is also possible to access private data stored on a computer connected to the internet. This data could be used to make fraudulent transactions that could lead to a loss of money.

B. Counterfeiting

Counterfeiting is the creation of new data or duplication of existing data, which are technically valid but not legally admissible. Cloning of e-money for double spending and creation of fake accounts are example of counterfeiting. One popular form counterfeiting attacks is duplication of electronic data from a payment cards (e.g. ATM card) is creating duplicate cards and withdraw money from the accounts.

C. Illegal alteration of payment data

Illegal modification of payment information may result in loss of money. This may again results in the loss of customer confidence. Alterations could be made to the transaction account numbers resulting in misdirected payments, to the payment amounts or to electronic balances on electronic. Another challenge in e-payment includes usage of a fraudulent web site by an attacker to collect credit card number and other personal and/or financial information.

According to Taddesse and Kidan (2005), the most common method of securing e-banking services is using cryptographic based technologies such as encryption and digital signatures. However, applying these technologies will reduce its efficiency by making it slower and as a result some sort of compromising has to be made between security and efficiency.

2.1.6. Definition of services

According to Kotler and Armstrong (2006), service is any activity or benefit that one party can offer to another that is essentially intangible and does not result in the ownership of anything. From customer's perspective, Johnston and Clark (2008), define service as the combination of

customers' experience and their perception of the outcome of the service. The customer experience is the customers' direct experience of the service process and concerns the way the customer is dealt with by the service provider. It includes the customer's personal interaction with the organization, its customer facing staff, technology and facilities.

The experience results in a set of outcomes. The outcomes for a service will include benefits provided, the resulting emotions, judgments and intentions as noted by Johnston and Clark (2008).

2.1.7. Service delivery

Martin (2005) said the concept of service delivery can be defined as a structured and synthesized approach to achieving a sustainable service delivery within an organization. Service delivery cannot be performed in an adhoc manner, but is a structured process of managing the people, business processes and technology so as to align business strategies to the environment and enhance competitiveness in the market. Service delivery is a factor in which most leaders and managers need to be enhanced.

Auerbach (2003) argued that when an organization tries to offer service to customers, it is time for management to exercise leadership. Leaders should become the role models for the rest of the staff and exhibit behaviors that demonstrate what is expected from employees in relation to the service delivery. Also during a time of service delivery, management needs to send positive messages about the service itself.

Costa (2011) emphasizes the fact that some sort of reinforcement is necessary to produce service delivery. Management needs to be very active to institute reinforcement tactics. One method to use that does not cost money is verbal reinforcement. An organization can alter its structure and policy by simply writing new rules and procedures. That is where the link between learning theories and organizational service delivery really is and where reinforcement comes in as a vital part of service delivery. Whether it is negative or positive, some reinforcement is going to have to be put into place for employees to successfully offer good service delivery in the organization.

2.1.8. Service quality

In a user-based approach, quality corresponds to satisfaction: the highest quality means the best satisfaction of consumers' preferences (Yarimoglu, 2014). Organizations have realized that service quality brings a sustainable and competitive advantage. Service quality and customer satisfaction are critical success factors for companies that are thinking about competitiveness, development and growth in the market (Angelova and Zekiri, 2011). Different definitions of service quality have been proposed by researchers; they state that it involves conforming to requirements.

According to Rauch *et al* (2015), in order to conduct a comprehensive evaluation of a company, the management has to compare its performance with its customers' expectations and with the performance of other companies in the same industry. Service quality is briefly defined as how companies meet or exceed customer expectations. Researchers agree on the definition of service quality, saying that service delivery can coordinate with, match, or override the desires of shoppers.

Parasuraman et al (1988) recommended SERVQUAL, a service quality model to measure the scale of difference between what consumers expect and their perceptions. Service quality in the SERVQUAL model consists of five dimensions: reliability, responsiveness, assurance, empathy, and tangibles. These dimensions are used in service quality gap, which implies that there is a difference between the expectations of customers and perception of services (Parasuraman *et al*. 1991). Yarimoglu (2014) highlighted the characteristics of services. Intangibility means that services are invisible, cannot be touched, tasted and/or smelled, and it becomes difficult for the customer to evaluate their quality. Customer satisfaction is affected by the intangible side through service performance. Heterogeneity implies that no services will be the same, which is a challenge for the quality of services. Simultaneity indicates that services are produced and consumed at the same time, and are thus formed in the interaction of employees and customers.

Mauri *et al* (2013) define service quality as "a multidimensional concept, assessed and perceived by consumers, according to a set of essential parts, grouped in five categories, namely: tangibility, reliability, responsiveness, assurance and empathy". Siddiqi (2011) states that the SERVQUAL model is an appropriate assessment tool to measure service quality perceptions.

Service quality has been defined as a breach between the customer's prospect of a service and the customer's perception of the service providers (Parasuraman, Berry, and Zeithaml, 1985). Now, there is no practical, worldwide, or all-inclusive definition of service quality. Grooroos (2007) defines it as "the result of an evaluation process where the user compares his expectations with the service he perceived he has consumed". Definitions of quality incorporated: (a) satisfying the customer or exceeding expectations; (b) product of service features that please declared needs; (c) conformance to obviously specific necessities; and (d) robustness for use, whereby the product meets the customers' needs and is free of deficiency (Toyin, David, and Stodnick, 2008).

2.1.9. Dimensions of service quality

The conceptualization of service quality includes both the service outcome and service delivery process. The service outcome is a consumer's evaluation concerning the result of a service production process (Lehtinen and Lehtinen, 1991). The service delivery process concerns how the end result of the process is transferred to the customer (Parasuraman *et al.,* 1985). Parasuraman *et al.* (1985) define service quality as a form of attitude that results from the comparison of service expectation and performance. Previous studies may agree that service quality forms a multidimensional construct but there is no firm agreement regarding the generic dimensions. For example, Leblanc and Nguyen (1988) identify three dimensions of service quality (physical, corporate, and interactive). However, the measure introduced by Parasuraman et al. (1985; 1988) known as SERVQUAL consists of five dimensions (tangibles, empathy, reliability, responsiveness, and assurance).

2.1.9.1. Reliability

Parasuraman et al (1988) and Parasuraman et al (1994) found that reliability means organizations perform a service correctly the first time. Moreover, it shows that organizations strive to fulfill promises and pay attention to the results. Reliability has been classed as the first dimension of the SERVQUAL service quality model. Studies of Lam (2002) ranked reliability as first in the dimensions of the service quality model.

Reliability – the ability to perform the promised service dependably and accurately. This dimension is critical as all customers want to deal with firms that keep their promises and this is generally implicitly communicated to the firm's customers (Zeithaml, Bitner, and Gremler, 2006).

2.1.9.2. Assurance

Assurance has been defined as employees' courtesy and knowledge, and their capacity to transfer confidence and trust to customers (Parasuraman *et al.* 1994). The opinions of researchers on the ranking of assurance among service quality dimensions is varied. Assurance is ranked first according to Gronroos (1988), while the author of (Parasuraman *et al.* 1994) ranked it in fourth place. Assurance means keeping customers informed in their native language and listening to them, regardless of their educational level, age, and nationality. Parasuraman *et al* (1994) states that assurance indicates the attitudes of the employees and their behavior, and the staff's ability to provide friendly, confidential, courteous, and competent services.

Assurance: - the Knowledge and courtesy of employees and their ability to convey trust and confidence. The trust and confidence may be represented in the personnel who link the customer to the organization (Bolton and Saxena-Iyer, 2009).

2.1.9.3. Responsiveness

Parasuraman *et al* (1994) highlighted that the responsiveness of willing employees involves telling customers exactly when things will be done, giving them undivided attention, promoting services, and responding in accordance with their requests.

Responsiveness: -willingness to help customers and provide prompt service. This dimension is concerned about dealing with the customer's questions, requests, and complaints attentively and promptly (Andaleeb and Conway, 2006).

2.1.9.4. Tangibles

Parasuraman *et al* (1988) and Parasuraman *et al* (1994) identify tangibles as physical facilities (equipment, personnel, and communications materials). It is the physical image of the service that customers will use to assess quality. Tangibles are associated with the physical facilities,

tools, and machines used in order to provide the service, as well as representations of the services, such as statements, cards (debit and credit), speed, and efficiency of transactions.

Tangibles: - the appearance of equipment, physical facilities, personal and communication materials. It translates to the restaurant's the appearance and condition of the cutlery, interiors, uniform of the staff, the appearance and tableware, and design of the menu, restaurant signage and promotion system (Andaleeb and Conway, 2006).

Parasuraman *et al* (1988) stated that tangibles have the same importance as empathy. The authors argued that it is advisable to consider including opening hours of operations under the empathy dimension; furthermore, the reliability dimension may include overdraft privileges (Agbor, 2011). Sharmin *et al* (2016) consider tangibles as a distinct element, showing consistency across cultures.

2.1.9.5. Empathy

Customers need to feel that they are made priority by the organization providing services. Empathy means caring, paying personal attention, and providing services to customers (Parasuraman *et al.,* 1994). The core of empathy is conveying the feeling that the customer is unique and special. Parasuraman *et al* (1994) stated that quantitative studies that have identified service quality model dimensions have used security, credibility, and access to measure empathy.

Empathy: - the provision of individualized attention and caring to customers. There are numerous ways that empathy can be provided: knowing the customer's preference, his name, and his needs. Many small companies use this approach to render customized services as a competitive advantage over the larger firms (Zeithaml *et al*, 2006).

2.1.10. Customer Satisfaction

A customer is a person who maintains an account with the bank. One view of this question is that a person does not become a bank customer unless and until he opens an account with a bank (Adebayo, 2013).

Customer satisfaction is defined as the number of customers, or percentage of total customers, whose reported experience with a firm, its products or its services (ratings) exceeds specified satisfaction goals (Farris *et al.*, 2010). Customer satisfaction is a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance or outcome in

relation to his or her expectations (Musiime and Biyaki, 2010). Based on this study, customer satisfaction will be defined as the measure of how a product or service given to a customer meets the expectations of that particular customer.

Although there are numerous articles on customers' satisfaction, there is no unique or common definition in theoretical literature. According to Jamal, (2004) noted that during the last four decades, satisfaction was considered as one of the most important theoretical and practical subject for most of the marketers in this field.

Generally, there are two different perceptions for customers' satisfaction: cumulative satisfaction and exchange satisfaction (Olsen and Johnson 2003). Cumulative satisfaction means that customers' satisfaction is not only based on recent shopping experiences, but also customer evaluation on all of his/her shopping experiences (Johnson and Fornell, 1991). Exchange satisfaction refers to customers' satisfaction of product evaluation based on recent experiences (Oliver 1997). Today, cumulative satisfaction is used in most customers' satisfaction research (Gupta and Zeithaml, 2006).

2.1.11. Customer loyalty

Customer loyalty is defined as a commitment to continue purchasing a preferred product or service consistently regardless of situational factors and marketing efforts which might result in switching behavior (Chiguvi, 2016). According to Mellroy and Barnett (2000) loyalty is a customer's commitment to do business with a given organization, to purchase its goods or services repeatedly and to recommend them to colleagues. The relationship was argued to continue as long as customers feel they are receiving better value than they would obtain from rival suppliers (Mellroy and Barnett, 2000). Customer loyalty is formed by sustained satisfaction of the customer accompanied by emotional attachment formed with the service provider that generates willingness and consistence in the relationship with preference, patronage and premium (Rai and Medha, 2013).

Customer loyalty can also be defined as the closest step to the repurchasing behavior of customers. Customer loyalty has usually been referred to as a consequence of all the experiences that a customer has with a service/product provider (Mascarenhas, Kesavan and Bernacchi, 2006). The experiences might include physical interactions, emotional involvements, and value

chain moments, according to Mascarenhas *et al.* (2006). In term of loyalty's consequences, a shift to a loyalty strategy from an only-satisfaction strategy can substantially increase customer retention and reduce marketing costs (Stan, Caemmerer, and Cattan-Jallet, 2013). Camarero *et al.* (2005) found from a Spanish case study that customer loyalty has positive impacts on both a firm's market performance and its economic performance. Generally, customer loyalty has been referred to as the link between customer attitude, repeat purchasing, (Heskett et al., 2008). In terms of the antecedents of customer loyalty, a number of constructs have been proposed by previous studies. Yee, Yeung, and Cheng (2010) found that employee loyalty, service quality, and customer satisfaction have a positive influence on customer loyalty in a high-contact service industry. In addition, according to Oliver (1999), loyalty can be developed through different phases, which are cognitive sense, affective sense, conative manner, and finally behavioral manner.

2.1.12. Relationship between customer satisfaction and service quality dimensions

Customer satisfaction is becoming one of the most essential objective which any firm seeking for long-term relationship with customer considers as the top priority. In retail banking context where the contacts with customers are one of the most core business processes, customer satisfaction is becoming the key for successful (Belas and Gabcova, 2014; Belas, Cipovova and Demjan, 2014; Chavan and Ahmad, 2013). One of the main elements determining customer satisfaction is the customer's perception of service quality. Customer satisfaction is described as the result of a comparison of the customers' expectations and his or her subsequent perceived performance of service quality (Herington and Weaven, 2009). According to this conceptualization, perceived service quality is one of the antecedents to overall customer satisfaction. Previous studies showed the evidence support this relationship between customer satisfaction and service quality (Yee, Yeung, and Cheng, 2011).

Akhtar *et al.* (2011) tested the effect of service quality of Islamic banking on customer satisfaction in terms of assurance, compliance, empathy and representativeness and concluded that their relationship is positive. Ladhari, Ladhari and Morales (2011) compared the differences in perceptions of service quality in the banking sector, using the SERVQUAL instrument, between Tunisians and Canadians and found that tangibles had no significant effect in both countries. Empathy was found to be the most important factor that affected both satisfaction and

loyalty in Canada while in Tunisia reliability and responsiveness were found to be the most influential factors (Ladhari, Ladhari and Morales. 2011). Baumann *et al.* (2007) found that empathy, overall satisfaction and affective attitude can help predict customer loyalty.

Furthermore, Hossain and Leo's (2009) findings in Qatar, Sohail and Shaikh's (2008) findings in Saudi Arabia and Jamal and Ananstasiadou's (2009) findings in Greece, suggest that the tangibles factor is a significant predictor of customer satisfaction. On the other hand, Kheng *et al.* (2010) tested the SERVQUAL model on customer satisfaction and loyalty and found that tangibles had no effect on neither satisfaction, nor loyalty. Also, responsiveness was found to be insignificant regarding loyalty, while reliability was found not to contribute in the creation of customer satisfaction.

Korda and Snoj, (2010) examined the relations among service quality, value and satisfaction and found that both service quality and value strongly affect satisfaction. Arun Kumar *et al.* (2010 examined the effect of overall service quality on attitudinal loyalty in the context of private banking and found positive results. Lai, Giffin and Babin (2009) examined the various interrelationships among service quality, value, satisfaction, image and loyalty in the context of telecommunications. Their results showed customer satisfaction and perceived value have a direct positive effect on loyalty.

In the banking sector, it can be said that there is a significant influence of tangibility on customer satisfaction (Kant and Jaiswal, 2017). Similarly, many researchers have found a meaningful influence. Parasuraman *et al* (1985) have defined tangibility as the appearance of physical facilities, equipment, personnel, and communication materials. It may also be defined as the clear visibility of resources necessary for providing a service to customers, the appearance of the management team and professional employees, brochures and booklets, which will have an effect on customer satisfaction. Furthermore, various researchers have found that there is a positive effect on the relationship between customer satisfaction and tangibility in the banking sector (Munusamy et al 2010).

Researchers have demonstrated that the reliability dimension of service quality has a positive impact on customer satisfaction (Parasuraman *et al,* 1985). (Parasuraman *et al,* 1988) has defined reliability as the organization's capability to tool up the service, dependently and independently. As a standard of service quality, reliability has a significant impact on customer satisfaction.

Ennew *et al* (2013) defined reliability as the ability to do and perform the required service for customers dependably, accurately and as promised, and the capacity to treat problems faced by customers. Taking actions to solve problems, performing the required services right from the first occasion, or providing services at the proper time are critical. Maintaining an error-free record is the paradigm of reliability in terms of service quality, and has an important impact on customer satisfaction. The extant literature has also revealed that reliability has a positive relationship with customer satisfaction.

The assurance dimension of service quality indicates employees' competence, knowledge and courtesy, and the ability to build bridges of trust with customers (Parasuraman *et al,* 1988). Assurance is defined as the knowledge and good manners or courtesy of employees. Further, it is defined as the ability of employees, with the help of the knowledge they possess, to inspire the trust and confidence that will strongly influence the level of customer satisfaction Ennew *et al* (2013). There is a positive relationship between assurance and customer satisfaction (Krishnamurthy et al, 2010 and Selvakumar, 2016).

The responsiveness dimension of service quality is related to the organization's willingness and ability to help customers, and to provide quick service with proper timeliness (Parasuraman *et al,* 1988). The willingness of employees to provide the required service at any time without any inconvenience will have an impact on customer satisfaction.

Responsiveness is primarily concerned with how service firms respond to customers via their personnel. Individual attention will increase the customer's satisfaction and so will the attention paid by employees to the problems that face customers; when this happens, a radical shift occurs in their satisfaction. Studies showed a positive impact of responsiveness on customer satisfaction (Krishnamurthy et al, 2010 and Selvakumar, 2016).

Ennew *et al* (2013) point out that the empathy dimension of service quality means being attentive in communicative situations, understanding customer needs, showing friendly behavior, and taking care of a customer's needs individually. Parasuraman *et al* (1985) argued that understanding customer expectations better than competitors and the provision of care and customized attention to customers strongly influences the level of customer satisfaction. Ananth *et al* (2010) revealed that a positive impact on customer satisfaction is brought about by

convenient working hours, individualized attention, a better understanding of customer's specific needs in the banking sector and the empathy dimension, all of which play a crucial role in customer satisfaction.

2.2. Empirical literature

Fikerselassie (2017) assessed the effect of electronics banking service quality on the customers' satisfaction in the banking sector of Ethiopia. The study used explanatory research design. Qualitative and quantitative research approach was used. A sample of 100 customers of CBE was included in the study and information was obtained using structured questionnaires. The major findings of this study were service quality and privacy of e-banking has been significant factor on customer satisfaction. The researcher concludes that there was a linear relationship between e-banking service quality and customer satisfaction.

Sisay (2016) examined the effect of electronic banking service quality on customer satisfaction among saving account customers in six selected branches of west Addis district (Habtegiorgis, Geja sefer, Teklehaymanot, pawlos, sumaletera and Anwar mesgid) of the CBE. A survey research was conducted that primarily used quantitative data. A total of 190 bank customers from all selected branches responded to the questionnaire items that measured the research variables. A descriptive ANOVA and correlation analysis was carried out and revealed that service quality dimensions are significant predictors of customer satisfaction. More over logistic regression analysis carried out and the result; Speedy and Quick service, adequate Amount of cash limit to be withdrawn in a day, Employees readiness to response quickly, easiness to regain the captured, expired and lost cards, simplicity and clear language, Appearance of the ATM facility and its Attractiveness, availability of statement printing were identified as a determining factors of Customer satisfaction. The effects of demographic and personal banking detail indicators of service quality perception, and customer satisfaction were also examined. The result revealed that saving account customers' perception of service quality influenced by differences in age, level of education, occupation and average re-patronage per month. Age and sex were the demographic variables influencing customers' satisfaction.

Dula (2019) assessed the quality of electronic banking services in Ethiopian banking industry. To conduct the study, the researcher collected data from the active electronic banking service users for the past consecutive two months. A mixed approach was used to answer the research questions that obtained from the existing literature and gathered data. A Purposive sampling technique was employed to recruit 150 of respondents representing the target criteria (age, duration of usage, and technology-know-how). The study statistically analyzed data obtained from respondents using SPSS version 20 (Statistical Package for Social Sciences). The electronic banking service was represented by security, system availability, ease of use, reliability and responsiveness. The result of the study indicates that a significant proportion of the sample respondents e-banking services like POS and Internet banking services potential were not adequately used by customers and the major problem that customers experienced on mobile banking was the lengthy steps in processing transactions. Based on the overall score value, the researcher concludes that the Internet banking service, which was used by very small proportion of customers, was moderately satisfactory to the customers using the service.

Girum (2019) assessed E- Banking Service Quality in the selected district of commercial bank of Ethiopia in Addis Ababa area. Purposive sampling was used to select branches. Moreover, random sampling was applied to select respondents. Data collection instrument which was used in this study was questionnaire and interviews. The research design was mixed approach and various statistical tools like chi- square test, frequency, percentage, Cronbach's Alpha was applied and the following findings were identified. The respondents confirmed the presence of trust in E-banking services. E-banking was reliable with CBE. E-banking has impact on customer satisfaction. Moreover, assessment was made on quality service of e-banking in the context of five dimensions of service quality which are reliability, responsiveness, assurance, empathy and tangibles. In order to describe further the researcher designed hypothetical statement to be tested by chi- square and
all the hypothetical statements failed to be accepted and alternative hypothetical statements were accepted.

Abebe Zeleke (2016) conducted a research with the title "Opportunities and challenges in the adoption of E-banking services: The case of Dashen Bank S. C". The research shows that only 26% of the banks customers enjoy the card system while the other E-banking services are at an

infant stage. It is known that Dashen Bank is one among the other banks which starts primary experiencing electronic banking services. The researcher conducts a research to investigate opportunity and challenges in the adoption e-banking with respect to Dashen bank. The study followed survey method and sample were taken from only clerical staffs. The research also revealed that the relative effects of variables such as perceived risk, perceived ease of use and perceived usefulness toward adoption of e-banking services are determined.

Ayana Gemechu (2014) studied the case of three private and one state owned bank on the title "Factors affecting adoption of electronic banking system in Ethiopian Banking industry". He used a mixed research approach to answer the research questions that emerged through the review of existing literature an experience of others in respect of the e-banking system in Ethiopia. The result of his study shows that security risk and lack of trust on the use of technological adoption are the major barriers for the system. The level of security risk associated with e-banking products or services, such as ATM, internet banking, mobile banking and others pose different challenges to different banks.

Asrat (2017) assessed the quality of service that United Bank S.C is providing to its Online (Internet) Banking customers and evaluated their satisfaction level with the bank's service delivery and try to see whether the introduction of Online (Internet) Banking services has significantly contributed in increasing the bank's service quality and customers satisfaction. A questionnaire was designed based on the SERVQUAL approach (perceptions and expectations), which includes five major categories of service quality dimensions and are subdivided into 21 items. Moreover, additional questions were prepared for measuring the overall customer satisfaction. To analyze the data, gap analysis, regression analysis and correlation analysis were used. The results of the research showed that in all aspects, United Bank customers' expectation was higher than their perceptions on the Online (Internet) Banking service quality offered by the bank. The research finding also revealed that service quality dimensions (Reliability, Responsiveness, Security, Empathy, and Tangibility) had significant impact on customer's satisfaction of United Bank S.C. The major finding of the hypothesis showed that all the service quality determinants were positively correlated to the customer satisfaction.

Ermias (2016) assessed the effect of e-banking service on customer satisfaction the case of selected commercial banks in Addis Ababa. The prime objective of this study was to investigate

the electronic banking service dimensions that have effect on customer satisfaction at Dashen bank and Wegagen bank. The study used both quantitative and qualitative research approach using Chi-square and linear regression model for customer satisfaction in electronic banking. The researcher designed and used questionnaire and distributed to 450 respondents. This study used both primary and secondary data to conduct the research. Five-point Likert scale questionnaire and interview questions were used to collect primary data of the research selected commercial banks. The secondary data was obtained from published documents such as reports of each bank, related websites, research articles, and organization's publications relevant to this study of the selected commercial banks. The empirical result shows that service quality dimensions have strong influence on e-banking user's satisfaction level in the selected commercial banks in Addis Ababa. Challenges of electronic banking operations: national poorly developed telecommunication infrastructure and Lack of infrastructure for telecommunications, internet and online payments impede smooth development and improvements electronic banking operations of the banks.

Omodele (2019) critically examined the impact of electronic banking service on customer satisfaction, the study specifically probed on the various dimensions of electronic banking service quality. Also on the relationship between customer satisfaction and the various electronic banking

service quality dimensions. A descriptive survey research design was adopted. The sample size was 93 respondents. The main research instrument used was questionnaire. Data collected were analyzed using descriptive statistic followed by Pearson correlation, and regression analysis to test the hypotheses. The findings revealed that there is a significant relationship between customer satisfaction and the various electronic banking service quality dimensions and electronic banking service quality has significant impact on customer satisfaction. Hence, the study concluded that banks have and still are putting in massive investments into electronic banking infrastructure and as such customer satisfaction is turning into one of the most crucial factor for the success of electronic banking service meaning that the generation of positive customer value on the electronic banking requires the establishment and maintenance of longstanding customer relationship.

Hammoud *et al.* 2018 examined the relationship between the dimensions of E-Banking service quality and customer satisfaction to determine which dimension can potentially have the strongest influence on customer satisfaction. Data were gathered using a survey instrument, which was distributed among bank clients in the Lebanese banking sector. The data were statistically analyzed using structural equation modeling with SPSS and Amos (20). The findings show that reliability, efficiency, and ease of use; responsiveness and communication; and security and privacy all have a significant impact on customer satisfaction, with reliability being the dimension with the strongest impact. E-Banking has become one of the essential banking services that can, if properly implemented, increase customer satisfaction, and give banks a competitive advantage. Knowing
the relative importance of service quality dimensions can help the banking industry focus on what satisfies customers the most.

Leninkumar (2016) attempted to find the relationship between service quality dimensions and customer loyalty in the Commercial Banks of Sri Lanka. The data collected from 300 customers of four leading commercial banks through questionnaires. Further, five hypotheses were formulated for the study. The findings revealed that three dimensions of service quality namely tangibles, reliability and empathy have significant positive effect on customer loyalty. Further service quality dimensions alone explain 43.9% of the variance in customer loyalty.

Chia-Ming and Tsung-Yuan (2017) in Taiwan showed the dimensions of tangibles, reliability, responsiveness, assurance, and empathy in service quality could enhance the dimensions of repurchase intention, primary behavior, and secondary behavior in customer loyalty. As a result, it is confirmed that customer loyalty to the product or service provided by the enterprise could be effectively reinforced and promoted after the practice of service quality, and it presents positive correlations.

Naeem *et al.* 2009 investigated the impact of service quality on customer satisfaction in the Pakistani banking sector. Hypothesis developed for the study was “higher level of service quality leads to higher level of customer satisfaction”. A sample of two hundred respondents, (one hundred from a foreign bank and one hundred from a public sector / nationalized bank located in the twin cities of Rawalpindi and Islamabad) was drawn on the basis of simple random sampling. Various constructs of SERVQUAL model developed by Zeithaml and Bitner (1996) and five

point customer satisfaction tool developed by Taylor and Baker (1994) were adopted and used for data collection. Data were analyzed through SPSS version 14. Results of the regression analysis indicated that service quality was proved to be a strong predictor of customer satisfaction in case of the foreign bank with the R2 value of 0.644 accepting research hypothesis and rejecting null hypothesis as compared value R2 of 0.156 that does not support the research hypothesis in case of public sector bank. The study concluded that service quality, if managed effectively, can contribute significantly towards customer satisfaction.

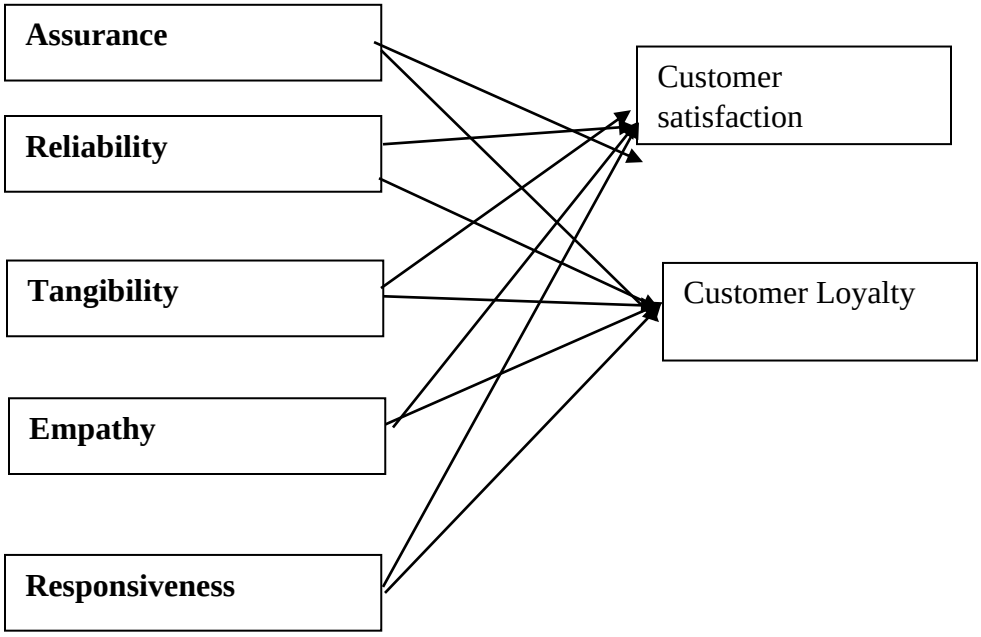
Kheng *et al.* (2010) assessed the changing role of the banking system and its dynamic financial market. The underlying model of SERVQUAL (Parasuraman et al., 1988) with five dimensions was used by this research to evaluate the impact of service quality on customer loyalty among bank customers in Penang, Malaysia with customer satisfaction mediating these variables. The findings showed that improvement in service quality can enhance customer loyalty. The service quality dimensions that play a significant role in this equation are reliability, empathy, and assurance.

Minh, and Huu, (2016) developed and empirically tests the interrelationships between service quality, customer satisfaction, and customer loyalty in a retail banking context. The study, first, a research model about the interrelationships between service quality, customer satisfaction, and customer loyalty was suggested. Then a survey was conducted with retail banking customers about these constructs, which results in 261 valid respondents. The hypotheses are then proposed and tested using confirmatory factor analysis (CFA) and the structural equation modelling technique (SME). The analysis revealed that service quality and customer satisfaction are important antecedents of customer loyalty and customer satisfaction mediates the effects of service quality on customer loyalty.

2.3. Conceptual framework

In this study, the dependent variable is customer satisfaction and loyalty which is supposed to be affected by several independent variables.

INDEPENDENT VARIABLE DEPENDENT VARIABLE



Source: Adopted from Torabi and Mahmoudi (2016) and Keisidou *et al* (2013).

CHAPTER THREE

3. RESEARCH METHODOLOGY AND DESIGN

3.1. Research Approach

The study used quantitative research approach. Quantitative research involves large samples and planned questionnaire that is then numerically and statistically analyzed (Areeba *et al.*, 2016). The quantitative data enables the researcher to analyze objectively by using descriptive and inferential statistics.

3.2. Research Design

This study employed an explanatory research design. This design helps the researcher to identify the nature of the relationship between the E-banking service quality (independent variables) and customer satisfaction and loyalty (dependent variables).

3.3. Sample Design

3.3.1. Study Population

The population of this study were all E-banking service users or customers of Dashen Bank who reside in Addis Ababa. The total number of Dashen bank customers who use E-banking service in Addis Ababa were more than 500 thousand in 2019.

3.3.2. Sampling technique

In this study, data was collected from E-banking service users or customers of Dashen Bank who reside in Addis Ababa. It is possible that E-banking service customer satisfaction varied in different E-banking service. In other words, it is possible that ATM users satisfaction on the service delivery differ from the satisfaction of Agency banking users. Thus, for the sake of precision, the researcher planned to employ Stratified Random sampling method using the four types of e-banking services provided by Dashen bank as strata. However, it was difficult to obtain the exact number of customers using the four types of e-banking services. In addition, most of the e-banking services customers used at least one e-banking services. Thus, the researcher employed simple random sampling method to select sample unit. Although the

researcher believes it is less likely that E-banking service customer satisfaction varied in different branches of the bank, in data collection the researcher tried its best to guarantee representativeness and randomness by selecting sample units from a number of branches.

3.3.3. Sample size

To determine sample size for this study, the sample size determination formula given in (Cochran, 1997) was used. The expression is given as follows:-

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

where: $n_0 = \left(P \times (1 - P)\right)\left(\frac{Z_{\alpha/2}}{d}\right)^2$

N is the population size and n is the sample size.

d is the maximum allowable error that the researcher tolerate.

P is the proportion of E-banking service customers of Dashen bank who are satisfied by the service

α is the level of significance usually α = 0.05 is taken.

$Z_{\alpha/2}$– is the standard normal value associated with the degree of confidence selected.

Since, there is no preliminary information about the proportion of E-banking service customers who are satisfied by the service delivery of Dashen Bank, to maximize sample size, p = 0.5 is used.

Since, the population of the study is too large $\frac{(n_0-1)}{N}$ is approximately zero and thus, using α=0.05, $Z_{\alpha/2} = 1.96$, and $d = 0.07$ the sample size of this study is:

$$n = n_0 = \left(P \times (1 - P)\right)\left(\frac{Z_{\alpha/2}}{d}\right)^2 = (0.5 \times 0.5)\left(\frac{1.96}{0.07}\right)^2 = 196$$

Thus, the sample size of the study is 196 customers.

3.4. Sources of Data

This study used both primary and secondary sources of data.

3.4.1. Primary Data Source

Primary data was collected from selected E-banking service users or customers of Dashen bank who reside in Addis Ababa.

3.4.2. Secondary Data Source

Secondary data was obtained from reports of the Bank, published and unpublished articles or thesis, books and organizational brochures.

3.5. Data collection instruments

To obtain relevant data for this study, questionnaire was used. Questionnaire is one of the most important research instruments which are highly preferred by researchers. It is easier for the respondents in minimizing difficulties of anonymity and reducing the effect of biased conclusion and interpretations that could happen in other methods. Besides, it enables researchers to collect information from a large number of informants. Consequently, questionnaire was used to collect data in this study. A self-administered questionnaire that addresses several issues related to e-banking service was prepared and administered to the sample respondents. Questionnaire was translated in to Amharic language.

In order to test the validity and reliability of the questionnaires, a pilot test was carried out. According to Kothari (2004), testing the data collection instruments for their understandability in terms of clarity, validity, readability and completeness has paramount importance. Accordingly, this process allows checking whether sample respondents understand instructions and the meaning of each question and if they get difficulties in responding for questions. Subsequently, 15 questionnaires were distributed for pilot testing and it was found that, there were few problems in understanding the intent of the questions. Thus, accordingly correction and adjustments were made.

3.6. Data Presentation

Presentation of data helps to point out special features in the collected data. Based on this study's data type, descriptive statistics tools such as frequency and percentage were used to present the collected data. Since all of the variables of this study were categorical variables, it is appropriate to present such variables using frequency and percentage.

3.7. Data Analysis and Interpretation

After presentation of the data, analysis was carried out using inferential statistics. Chi-square test was employed to test whether there are statistically significant associations between e-banking service quality and customer satisfaction and loyalty .

To identify the effect of e-banking service delivery processes (in terms of Assurance, Reliability, Tangibility, Empathy, and Responsiveness) on customer satisfaction and loyalty inferential statistics such as binary logistic regression analysis method was employed. Analysis was conducted using the Statistical package for Social Science SPSS version 24.

3.8. Ethical Considerations

This study is conducted in professional manner and in a way that it maintains the basic research ethics. The researcher would not been identified or present the respondents personal details and response without their consent and agreement. Ethical issues grouped into informed consent procedures, dishonesty, confidentiality towards participants and protecting the anonymity and privacy of research participants (Creswell, 2003). Based on the basic principles, the researcher proposed a set of ethical and moral procedure and informed the participants just before filling out the questionnaire. The participants were informed that information obtained from them remains confidential. Besides the respondents were further informed that their names will not be written or exposed on report and would never been used in connection with any of the information they revealed.

CHAPTER FOUR

4. RESULT AND DISCUSSION

In this chapter the data collected through self-administered questionnaire are presented, analyzed and interpreted. The general objective of the study is to assess the effect of E-banking service quality on customer satisfaction and loyalty of Dashen Bank.

As per the sample size, a total of 196 questionnaires were distributed to the respondents and all questionnaires were filled and returned. However, due to missing information, 19 questionnaires were discarded. This makes the response rate 90.3% Hence, in the analysis information obtained from 177 e-banking service customers of Dashen bank are presented.

4.1. Demographic characteristics of the respondents

The demographic characteristics of sample respondents such as respondent's sex, age, educational level, and occupation are given in Table 1. As can be seen from Table 1, out of the total respondents of the study, the majority 68.4% of them were males and the remaining 31.6% of the respondents were females.

Regarding the age distribution of respondents, 44.6% of them were aged between 18 to 30 years and 46.3% of them were aged between 31 to 45 years. Out of the total study respondents. 8.5% of them were between the age of 46 to 60 years and the remaining 0.6% of them were 61 or above 61 years old.

Table 1 also showed the educational distribution of respondents. Out of the total respondent customers, the majority 59.3% of them were degree holders and 8.5% of them have master's degree or above. The percentages of respondents who enrolled or completed TVET and High school (grade 9 &10 or below) were 5.6% and 4% respectively. Out of the total respondent customers, 22.6% of them were diploma holders.

As far as the occupations of respondents were concerned, the majority of respondents (53.7%) of them were private employees. Whereas (23.3%) of them were government-employees, (9.6%) of them were students and (11.3%) of them were self-employed.

Table 1 : Demographic Characteristics of the Respondents

Independent Variables	Category	Frequency	Percentage
Sex	Female	56	31.6
	Male	121	68.4
Age	18-30 years	79	44.6
	31-45 years	82	46.3
	46-60 years	15	8.5
	61 or above	1	0.6
Educational Level	High school (grade 9 &10 or below	7	4.0
	TVET	10	5.6
	Diploma	40	22.6
	Degree	105	59.3
	Masters or above	15	8.5
Employment Status	Student	17	9.6
	Private employee	95	53.7
	Government employee	42	23.7
	Self employed	20	11.3
	Other	3	1.7

Source: Survey result (2020)

4.2. Types of E-banking respondent used

Table 2 : Types of E-banking service respondents used

Types of E-banking used	Frequency	Percentage
ATM/ POS	64	36.1
Internet Banking/ Amole digital Banking	58	32.8
All	55	31.1
Total	177	100

Source: Survey result (2020)

Out of the total respondent customers, 36.1% of them used either ATM/ POS or used both e-banking services. The percentage of respondents who used Internet Banking/ Amole digital Banking or both were 32.8%. The remaining 31.1% of respondent customers reported that they used all of the e-banking service provided by Dashen bank.

4.3. Experience in using E-banking

The number of years that respondents used E-banking service in Dashen bank is given in Table 3.

Table 3: experience in using E-banking service

How long do you use E-banking in Dashen bank?	Frequency	Percentage
Less than one year	31	17.5
1-2 years	62	35.0
3-4 years	56	31.6
5 or more than 5 years	28	15.8
Total	177	100.0

Source: Survey result (2020)

As showed in the Table 3, the majorities of the respondents (35.0%) of them indicated that they used E-banking service in Dashen bank one to two years and (17.5%) of them reported that they have used E-banking service in Dashen bank for less than one year duration. Whereas out of the total study respondents, a total of 84 (47.4%) of them have an experience of using E-banking service in Dashen bank for at least three years.

4.4. E-banking service quality dimensions

Respondent customers were asked to rate Dashen bank's e-banking services quality in terms of the five service quality measures namely assurance, reliability, responsiveness, tangibility and empathy. Rating scales were "Very Poor", "Poor", "Fair", "Good" and "Very Good". The following questions were given to respondents: -

Responsiveness: How do you rate Dashen Bank's E-banking service immediate response to client's request or if any problem occurred?

Empathy: How do you rate Dashen Bank's E-banking service delivery in giving individual attention and serve with kind heat?

Tangibility: How do you rate Dashen Bank's E-banking service in providing tangible service with modern equipment and attractive professional employees?

Reliability: How do you rate Dashen Bank's E-banking service reliability and dependability?

Assurance: How do you rate Dashen Bank's E-banking service safety and trust worthiness?

The summary results are given in Table 4.

Note that: - Results on the rating category "Very Poor" is omitted due to absence of frequency. In addition, due to the presences of zero frequencies and very small frequencies such as one and two in the rating category "Poor", the researcher forced to combined the category "Poor" with "Fair".

Table 4: Response on the service quality dimensions

Dimensions	**Rate**	**Frequency**	**Percentage**
Assurance	Fair	77	43.5
	Good	62	35.0
	V. Good	38	21.5
Reliability	Fair	78	44.1
	Good	59	33.3
	V. Good	40	22.6
Tangibility	Fair	85	48.0
	Good	58	32.8
	V. Good	34	19.2
Empathy	Fair	73	41.2
	Good	70	39.6
	V. Good	34	19.2
Responsiveness	Fair	86	48.6
	Good	54	30.5
	V. Good	37	20.9

Source: Survey result (2020)

As shown in Table 4, out of the total study respondent customers, 35% and 21.5% of them rate Dashen bank's e-banking service assurance as good and very good respectively. Whereas, 43.5% of respondent customers rated Dashen Bank's e-banking service assurance as fair.

Regarding reliability of Dashen bank's e-banking service, out of the total study respondent customers, 33.3% and 22.6% of respondent customers rated as good and very good respectively. Whereas, 44.1% of respondent customers rated Dashen Bank's e-banking service reliability as fair.

Table 4 also showed that out of the total study respondent customers, the majority 48% respondent customers rated Dashen bank's e-banking service tangibility as fair. The remaining 32.8% and 19.2% of them rated the bank's e-banking service tangibility as good and very good respectively.

Regarding empathy of Dashen bank's e-banking service, out of the total study respondent customers, 39.6% and 19.2% of respondent customers rated the bank's e-banking service empathy as good and very good respectively. Whereas, 41.2% of respondent customers rated Dashen Bank's e-banking service empathy as fair.

Table 4 also showed that out of the total study respondent customers, 30.5% and 20.9% of them rated Dashen bank's e-banking service responsiveness as good and very good respectively. However, the majority 48.6% of them rated Dashen Bank's e-banking service responsiveness as fair.

Overall, it is vivid that in each one of the service quality measure the number of respondent customers who rated the corresponding service quality as fair is larger. This imply that the bank needs to done a lot to improve its e-banking service quality in terms of assurance, reliability, responsiveness, tangibility and empathy.

4.5. Respondents satisfaction in E-banking service delivery of Dashen bank

According to Zeritu (2010), for service organization or service providers, satisfying or fulfilling the expectation of its customer is one of the major goals. High satisfaction of service seekers toward the service provider/organization may shows that the organization properly delivers its service. Respondents were asked whether they are satisfied in E-banking service delivery of Dashen bank and the result is given in Table 5.

Table 5: Respondents satisfaction by e-banking service delivery

Item	Response	Frequency	Percentage
Are you satisfied by Dashen Bank's E-banking service delivery?	No	90	50.8
	Yes	87	49.2
	Total	177	100.0

Source: Survey result (2020)

As showed in the Table 5, out of the total respondent customers, 50.8% of them reported that they are not satisfied with Dashen bank's E-banking service delivery. Whereas, 49.2% of them replied that they are satisfied. This imply that Dashen bank needs to exert effort to satisfy its E-banking service customers. This result is more or less consistent with Dula (2019). Dula (2019) indicated that in Ethiopian banking industry the satisfaction of customers on internet banking service is moderate.

4.6. Respondents loyalty for Dashen bank E-banking service

Respondent customers were asked whether they are loyal to Dashen bank e-banking service. The results are given in Table 6.

Table 6: Respondents loyalty for Dashen bank e-banking service

Item	**Response**	**Frequency**	**Percentage**
Are you Loyal to Dashen Bank's E-banking?	No	96	54.2
	Yes	81	45.8
	Total	177	100.0

Source: Survey result (2020)

As can be seen from Table 6, out of the total respondent customers, 54.2% of them reported that they are not loyal to Dashen bank's E-banking service. Whereas, 45.8% of them replied that they are loyal. Since loyalty plays significant role in luring other customers, a lot is expected from the bank to have loyal customers.

4.7. Results of Chi-square Test of Associations

Chi-square test of association was employed to test whether there are statistically significant association between E-banking service delivery dimensions and customer satisfaction and loyalty separately.

Table 7: Chi-square test of association between E-banking service and satisfaction

Dimensions	**Rate**	Are you satisfied by Dashen Bank's E-banking service delivery?			Pearson χ^2_{cal}	df	Asymp. Sig. (2-sided)
		No	Yes	Total			
Assurance	Fair	58	19	77	33.247	2	<0.001*
	Good	18	44	62			
	V. Good	14	24	38			
Reliability	Fair	61	17	78	41.848	2	<0.001*
	Good	18	41	59			
	V. Good	11	29	40			
Tangibility	Fair	63	22	85	35.432	2	<0.001*
	Good	17	41	58			
	V. Good	10	24	34			
Empathy	Fair	59	14	73	45.272	2	<0.001*
	Good	19	51	70			
	V. Good	12	22	34			
Responsiveness	Fair	66	20	86	44.896	2	<0.001*
	Good	14	40	54			
	V. Good	10	27	37			

*significant at 0.01 level of significance

Source: Survey result (2020)

For example, to check the presence of statistically significant association between Assurance and customer satisfaction, the hypothesis is given by: -

H_0: There is no association between assurance and customer satisfaction

H_1: There is association between assurance and customer satisfaction

Rejection of the null hypothesis (if p value < 0.05) imply that there is statistically significant association between assurance and customer satisfaction. Failing to reject the null hypothesis (if p value > 0.05) implying that there is no association between assurance and customer satisfaction.

As can be seen from Table 7, the Chi-square test result depicted that all the p values were less than 0.001 i.e., 0.001<0.05, indicating that there are statistically significant association between customer satisfaction and E-banking service delivery dimensions namely, assurance, reliability, tangibility, empathy and responsiveness at 1% level of significance. This implies that improvement on the service delivery dimensions will result in increase in customer satisfaction.

Table 8: Chi-square test of association between E-banking service and loyalty

Dimensions	**Rate**	Do you think you are Loyal to Dashen Bank's E-banking?			Pearson χ^2_{cal}	df	Asymp. Sig. (2-sided)
		No	Yes	Total			
Assurance	Fair	60	17	77	31.101	2	0.001*
	Good	21	41	62			
	V. Good	15	23	38			
Reliability	Fair	61	17	78	33.051	2	0.001*
	Good	23	36	59			
	V. Good	12	28	40			
Tangibility	Fair	63	22	85	26.309	2	0.001*
	Good	22	36	58			
	V. Good	11	23	34			
Empathy	Fair	61	12	73	43.098	2	0.001*
	Good	23	47	70			
	V. Good	12	22	34			
Responsiveness	Fair	69	17	86	45.542	2	0.001*
	Good	16	38	54			
	V. Good	11	26	37			

*significant at 0.01 level of significance

Source: Survey result (2020)

Chi-square test of association was also employed to assess the presence of association between E-banking service delivery dimensions and customer loyalty.

As can be seen from Table 8, the Chi-square test result depicted that all the p values were less than 0.001 i.e., 0.001<0.05, indicating that there are statistically significant association between customer loyalty and E-banking service delivery dimensions at 1% level of significance.

4.8. Results of Binary Logistic Regression

Binary Logistic Regression model was also fitted to see the significance of service delivery dimensions such as assurance, reliability, tangibility, empathy and responsiveness in predicting customer satisfaction and loyalty separately. These analyses also helpful to see the direction of associations between the variables.

4.8.1. Results of binary logit regression model for customer satisfaction

The results of the Binary Logit Regression model are given in Table 11.

Table 9: Dependent Variable Encoding

Satisfaction	Internal Value
No	0
Yes	1

Source: Survey result (2020)

Hosmer and lemeshow test was used for checking goodness of the fitted model. As can be seen from the results of the hosmer and lemeshow test, the p-value is 0.093. This p-value 0.093 is greater than the level of significance 0.05 implying that there is no significant difference between the observed and expected value. Therefore, the model is good fitted model.

Table 10:Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	11.400	7	.093

Source: Survey result (2020)

Table 11: Results of Binary Logistic Regression model for customer satisfaction

Independent Variables	β	S.E	Wald	df	p-value	Exp(β)
Assurance						
Fair						1
Good	1.027	.485	4.491	1	.034*	2.793
V. Good	.736	.580	1.613	1	.204	2.088
Reliability						
Fair						1
Good	1.162	.483	5.784	1	.016*	3.196
V. Good	1.632	.595	7.529	1	.006*	5.116
Tangibility						
Fair						1
Good	.526	.493	1.139	1	.286	1.692
V. Good	-.056	.672	.007	1	.934	.946
Empathy						1
Fair						1
Good	1.077	.523	4.239	1	.040*	2.936
V. Good	.778	.610	1.623	1	.203	2.176
Responsiveness						
Fair						1
Good	1.157	.506	5.222	1	.022*	3.180
V. Good	1.238	.550	5.059	1	.025*	3.448
constant	-2.735	.444	37.960	1	.000*	.065

*significant at 0.05 level of significance

Source: Survey result (2020)

As the results of the binary logistic regression model that include all independent variables such as assurance, reliability, tangibility, empathy and responsiveness given in Table 4.11 showed, except tangibility all service quality dimension were found to be significant predictors of customer satisfaction at 5% level of significance. The positive coefficients of assurance, reliability, empathy

and responsiveness showed that improvement in the variables results improvement on customer satisfaction.

The result doesn't imply that tangibility of service delivery has insignificant effect on customer satisfaction. In other words, to satisfy the customers, priorities should be given to improve the assurance, reliability, empathy and responsiveness.

As can be seen from Table 11, the estimated odd ratio of customer who rate Dashen bank's e-banking service assurance as good is 2.793. This imply that the probability of satisfaction to Dashen bank's e-banking service for a customer who rate Dashen bank's e-banking service assurance as good is 2.793 times higher than customer who rate Dashen bank's e-banking service assurance as fair (reference group) controlling for the other covariates in the model.

The estimated odd ratio of a customer who rate Dashen bank's e-banking service reliability as good and very good are 3.196 and 5.116 respectively. These imply that the probability of satisfaction to Dashen bank's e-banking service for a customer who rate Dashen bank's e-banking service reliability as good and very good are 3.196 and 5.116 times higher than customer who rate Dashen bank's e-banking service reliability as fair (reference group) controlling for the other covariates in the model.

The estimated odd ratio of customer who rate Dashen bank's e-banking service empathy as good is 2.936. This imply that a customer who rate Dashen bank's e-banking service empathy as good is 193.6% more likely to be satisfied by Dashen bank's e-banking service than a customer who rate Dashen bank's e-banking service empathy as fair (reference group) controlling for the other covariates in the model.

The estimated odd ratio of customer who rate Dashen bank's e-banking service responsiveness as good and very good are 3.180 and 3.448 respectively. These imply that the probability of having satisfaction to Dashen bank's e-banking service for customer who rate Dashen bank's e-banking service responsiveness as good and very good are 3.180 and 3.448 times higher than customer who rate Dashen bank's e-banking service responsiveness as fair (reference group) controlling for the other covariates in the model.

Except on the insignificance of tangibility, the results of this study are in agreement with several studies that includes Ermias (2016), Fikerselassie (2017), Krishnamurthy et al, (2010), Selvakumar (2016) and Ladhari and Morales (2011) among others. However, this study showed that tangibility is found to be insignificant in predicting customer satisfaction. This result disagreed with Hossain and Leo's (2009) findings in Qatar, Sohail and Shaikh's (2008) findings in Saudi Arabia and Jamal and Ananstasiadou's (2009) findings in Greece, who suggested that tangibility is a significant predictor of customer satisfaction. Whereas, the result is consistent with Kheng *et al.* (2010) that tested the SERVQUAL model on customer satisfaction and loyalty and found that tangibility had no effect on neither satisfaction, nor loyalty.

4.8.2. Results of binary logit regression model for customer loyalty

In similar manner, to identify the statistical significance of e-banking service quality on customer loyalty, binary logit regression model was fit. The results of the model fit are given in Table 14.

Table 12: Customer loyalty Encoding

Loyal	Internal Value
No	0
Yes	1

Source: Survey result (2020)

Hosmer and lemeshow test was used for checking goodness of the fitted model. As can be seen from the results of the hosmer and lemeshow test, the p-value is 0.891. This p-value 0.891 is greater than the level of significance 0.05 implying that there is no significant difference between the observed and expected value. Therefore, the model is good fitted model.

Table 13:Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	2.940	7	.891

Source: Survey result (2020)

As the results of the binary logistic regression model that include all independent variables such as assurance, reliability, tangibility, empathy and responsiveness given in Table 14 showed, except tangibility all service quality dimension were found to be significant predictors of customer loyalty at 5% level of significance.

Table 14: Results of Binary Logistic Regression model for customer loyalty

Independent Variables	β	S.E	Wald	df	p-value	Exp(β)
Assurance						
Fair						1
Good	1.119	.479	5.455	1	.020*	3.063
V. Good	.753	.570	1.746	1	.186	2.124
Reliability						
Fair						1
Good	0.759	.482	2.475	1	.116	2.136
V. Good	1.498	.595	6.326	1	.012*	4.471
Tangibility						
Fair						1
Good	.022	.500	0.002	1	.965	1.022
V. Good	-.327	.668	.240	1	.624	.721
Empathy						1
Fair						1
Good	1.094	.524	4.362	1	.037*	2.986
V. Good	1.039	.604	2.960	1	.085	2.828
Responsiveness						
Fair						1
Good	1.342	.497	7.293	1	.007*	3.826
V. Good	1.400	.533	6.894	1	.009*	4.057
constant	-2.742	.444	38.206	1	.000*	.064

*significant at 0.05 level of significance

Source: Survey result (2020)

The estimated odd ratio of customer who rate Dashen bank e-banking service assurance as good is 3.063. This imply that a customer who rate Dashen bank e-banking service assurance as good is 206.3% more likely to be loyal for Dashen bank e-banking service than a customer who rate Dashen bank e-banking service assurance as fair (reference group) controlling for the other covariates in the model.

Table 14 also showed that the estimated odd ratio of customer who rate Dashen bank's e-banking service reliability as good is 4.471. This imply that a customer who rate Dashen bank's e-banking service reliability as good is 347.1% more likely to be loyal for Dashen bank's e-banking service than a customer who rate Dashen bank's e-banking service reliability as fair (reference group) controlling for the other covariates in the model.

The estimated odd ratio of customer who rate Dashen bank's e-banking service empathy as good is 2.986. This imply that the probability of being loyal for Dashen bank's e-banking service for customer who rate Dashen bank's e-banking service empathy as good is 2.986 times higher than customer who rate Dashen bank's e-banking service empathy as fair (reference group) controlling for the other covariates in the model.

The estimated odd ratio of customer who rate Dashen bank e-banking service responsiveness as good and very good are 3.826 and 4.057 respectively. These imply that the probability of being loyal for Dashen bank's e-banking service for customer who rate Dashen bank's e-banking service responsiveness as good and very good are 3.826 and 4.057 times higher than customer who rate Dashen bank's e-banking service responsiveness as fair (reference group) controlling for the other covariates in the model.

This study showed the significances of assurance, reliability, empathy and responsiveness in predicting customer loyalty. This study also found that tangibility had no effect on customer loyalty. Regarding the significances of assurance, reliability, tangibility, empathy and responsiveness in predicting customer loyalty, the findings are consistent with Ladhari and Morales (2011), Leninkumar (2016) and Chia-Ming and Tsung-Yuan (2017). However, regarding the tangibility, this study disagreed with Leninkumar (2016) and Chia-Ming and Tsung-Yuan (2017) findings that indicated the significance of tangibility in predicting customer loyalty. Whereas, the result is consistent with Kheng *et al.* (2010) that tested the SERVQUAL model on

customer satisfaction and loyalty and found that tangibility had no effect on neither satisfaction, nor loyalty.

4.9. Results on problems encounter in Dashen bank's E-banking service

Out of the 177 respondents 81 respondents respond to the question. The summary of problems that users encounter in E-banking service are given in Table 15. Note that respondents were allowed to list more than one problem they encounter.

As can be seen from Table 15, out of the 81 responses, the majority (i.e. 76 of them) mentioned that among other problems, network problem is one of the main problems they faced while using E-banking. Among other problems Cards get blocked /jammed was listed as one of the problem by 28 respondent customers. Cards get blocked /jammed was listed as one of the problem by 28 respondent customers. Machine out of cash was also mentioned by 13 of the respondent customers out of those 81 customers who listed problems. As respondent customers indicated machine out of cash usually occurred on Sunday. Out of the 81 respondents, 24 of them mentioned that among other problems reduction in balance without cash payment is also one of the problems they faced.

Table 15: Problems encounter while using E-banking service

Problems encounter while using E-banking service	**Frequency**
Network problem	76
Machine out of cash	13
Reduction in balance without cash payment	24
Cards get blocked /jammed	28

Source: Survey result (2020)

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Summary

This study showed that in each one of the service quality measure, the number of respondent customers who rated the corresponding service quality as fair is larger than who rated as good and very good. This imply that the bank needs to done a lot to improve its e-banking service quality in terms of assurance, reliability, responsiveness, tangibility and empathy.

The study also showed that out of the total respondent customers, 50.8% of them reported that they are not satisfied with Dashen bank's e-banking service delivery. Whereas, 49.2% of them replied that they are satisfied. Similarly, out of the total respondent customers, 54.2% of them reported that they are not loyal to Dashen bank's e-banking service delivery. These findings imply that Dashen bank needs to exert effort to satisfy its e-banking service customers and to have loyal customers. This result is more or less consistent with Dula (2019). Dula (2019) indicated that in Ethiopian banking industry the satisfaction of customers on internet banking service is moderate.

The findings of this study revealed that Dashen bank e-banking customers faced problems while using e-banking services such as network problem, blocked/jammed cards, machine out of cash and reduction in balance without cash payment.

The results of chi-square test showed that there is statistically significant association between customer satisfaction and e-banking service delivery dimension such as assurance, reliability, tangibility, empathy and responsiveness at 1% level of significance. This implies that customer satisfaction is depends on e-banking service delivery dimension such as assurance, reliability, tangibility, empathy and responsiveness.

The results of chi-square test on customer loyalty also showed that there is statistically significant association between customer loyalty and e-banking service delivery dimension such as assurance, reliability, tangibility, empathy and responsiveness at 1% level of significance. This implies that customer loyalty is depends on e-banking service delivery dimension such as assurance, reliability, tangibility, empathy and responsiveness.

As the results of binary logistic regression model fit using customer satisfaction as dependent variable showed, independent variables such as assurance, reliability, empathy and responsiveness were found to be significant predictors of customer satisfaction at 5% level of significance. However, tangibility was found to be insignificant at 5% level of significance. Except on the insignificance of tangibility, this result is in agreement with several studies that includes Ermias (2016), Fikerselassie (2017), Krishnamurthy et al, (2010), Selvakumar (2016) and Ladhari and Morales (2011) among others. However, this study showed that tangibility is found to be insignificant in predicting customer satisfaction. This result disagreed with Hossain and Leo's (2009) findings in Qatar, Sohail and Shaikh's (2008) findings in Saudi Arabia and Jamal and Ananstasiadou's (2009) findings in Greece, who suggested that tangibility is a significant predictor of customer satisfaction. Whereas, the result is consistent with Kheng *et al.* (2010) that tested the SERVQUAL model on customer satisfaction and loyalty and found that tangibility had no effect on neither satisfaction, nor loyalty.

The results of binary logistic regression model fit using customer loyalty as dependent variable showed that independent variables such as assurance, reliability, empathy and responsiveness were found to be significant predictors of customer loyalty at 5% level of significance. However, tangibility was found to be insignificant at 5% level of significance. Except on the insignificance of tangibility, this result is consistent with Ladhari and Morales (2011), Leninkumar (2016) and Chia-Ming and Tsung-Yuan (2017). However, this study showed that tangibility is found to be insignificant in predicting customer loyalty. This result disagreed with Leninkumar (2016) and Chia-Ming and Tsung-Yuan (2017) findings that indicated the significance of tangibility in predicting customer loyalty. Whereas, the result is consistent with Kheng *et al.* (2010) that tested the SERVQUAL model on customer satisfaction and loyalty and found that tangibility had no effect on neither satisfaction, nor loyalty.

From the results of both models, it is possible to deduce that independent variables such as assurance, reliability, empathy and responsiveness were found to be significant indicator of customer satisfaction and loyalty. Hence, independent variables such as assurance, reliability, empathy and responsiveness were found to be significant. The positive coefficients of assurance, reliability, empathy and responsiveness showed that improvement in the variable's results. This finding is in agreement with Torabi and Mahmoudi (2016).

However, tangibility was found to be insignificant at 5% level of significance. This shows that the effect of tangibility is insignificant in predicting customer satisfaction & loyalty. compared to the remaining service quality dimension such as assurance, reliability, empathy and responsiveness. In other words, to improve customer satisfaction & loyalty, priorities should be given to improve the assurance, reliability, empathy and responsiveness.

5.2. Conclusion

The finding revealed that Dashen bank e-banking service delivery cannot be regarded as very good in each of the five-service delivery quality dimension such as assurance, reliability, tangibility, empathy and responsiveness.

The results also showed that only near 50% of Dashen bank e-banking service customers are satisfied and loyal to the bank.

The findings of this study revealed that Dashen bank e-banking customers faced problems such as network problem, blocked/jammed cards, machine out of cash and reduction in balance without cash payment.

The results of chi-square test showed that there is statistically significant association between service delivery dimension (such as assurance, reliability, tangibility, empathy and responsiveness) and customer satisfaction and loyalty and The results of binary logistic regression model showed assurance, reliability, empathy and responsiveness were found to be significant for customer satisfaction and loyalty. Hence, independent variables such as assurance, reliability, empathy and responsiveness were found to be significant indicator of customer satisfaction & loyality. The positive coefficients of assurance, reliability, empathy and

responsiveness showed that improvement in the variables results improvement on customer satisfaction & loyalty Recommendations.

Based on the findings of this study, the following recommendations are forwarded:

The findings of this study showed that empathy and responsiveness are significant predictors of customer satisfaction and loyalty. The positive coefficients indicate that improvement in empathy and responsiveness improves customer satisfaction & loyalty. Thus, Dashen bank should improve empathy and responsiveness while deliver e-banking services to its customers. Since, showing responsiveness and empathy for customers doesn't require skill or knowledge both can be improved by improving employee control and monitoring mechanisms of the bank. This can be possible if the bank first prepares a well-organized and easy form that to be filled by customers. The form should contain the service provider's name and easy questions in choose form about the two issues. Then, let each service seeking customers fill the form without the interruption of the service provider. The presence of the form by itself will have its own effect and evaluation of the form will reveal important issues that can possibly help to improve empathy and responsiveness.

The study also revealed assurance and reliability are significant. Thus, to improve customer satisfaction & loyalty, Dashen bank should improve its services delivery assurance and reliability. Since assurance and reliability are related to skill and ability, to improve both, the bank should launch a continuous training and development programs to the concerned department employees. Organizing weekly experience sharing programs can help the bank.

In addition, the bank should give attention to alleviate or ease the problems of as network, blocked/jammed cards, machine out of cash and reduction in balance without cash payment.

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Appendix

Appendix A: Questionnaire

ADDIS ABABA UNVERSTIY

COLLEGE OF BUSINESS AND ECONOMICS

Dear Respondent,

I am a student at Addis Ababa University of pursuing a Masters degree. This study is entitled as "**Effect of Electronic Banking service quality on Customer Satisfaction & Loyality of Dashen Bank** to be carried out for research paper as a requirement in partial fulfillment of masters degree. I respectfully request your kind cooperation in answering all questions given in the questionnaire as accurately and frankly as possible. Your responses will be treated strictly confidential and it is going to be used only for academic purpose. You don't need to write your name.

Thank you in advance!!

Instructions: please select the appropriate answer and put '√ 'sign on the given choice.

Part one: Personal Information

1. Age: ☐ 18-30 years ☐ 31-45 ☐ 46-60 ☐ 61 or above 61 years
2. Gender: ☐ Female ☐ Male
3. Level of education

   ☐ High school (grade 9 &10 or below) ☐ TVET

   ☐ Diploma ☐ BA/B.Sc. Degree ☐ Masters Degree and above

4. Marital status:

   ☐ Single ☐ Married ☐ Divorced ☐ other:_____

5. Occupation:

   ☐ Student ☐ Government employee

☐ Private employee ☐ Self employed

Other_____

Part two: Questions related to type of e-banking used and duration of usage

1. Types of E-banking you used as a customer of Dashen bank? More than one answer is possible

☐ ATM ☐ POS

☐ Internet Banking ☐ Amole digital Banking

☐ Agency Banking ☐ All

2. How long did you use E-banking in Dashen bank?

☐ Less than one year

☐ 1-2 years

☐ 3-4 years

☐ 5 years or more

Part three: Questions related to Dashen bank's e-banking service quality

1. How do you rate Dashen Bank's E-banking service immediate response to client's request or if any problem occurred?

☐ Very Poor ☐ Poor ☐ Fair ☐ Good ☐ Very Good

2. How do you rate Dashen Bank's E-banking service delivery in giving individual attention and serve with kind heat?

☐ Very Poor ☐ Poor ☐ Fair ☐ Good ☐ Very Good

3. How do you rate Dashen Bank's E-banking service in providing tangible service with modern equipment and attractive professional employees?

☐ Very Poor ☐ Poor ☐ Fair ☐ Good ☐ Very Good

4. How do you rate Dashen Bank's E-banking service reliability and dependability?

☐ Very Poor ☐ Poor ☐ Fair ☐ Good ☐ Very Good

5. How do you rate Dashen Bank's E-banking service safety and trust worthiness?

☐ Very Poor ☐ Poor ☐ Fair ☐ Good ☐ Very Good

Part four: Questions related to satisfaction and loyalty

1. Are you satisfied by Dashen Bank's E-banking service delivery?

   ☐ Yes ☐ No

2. Are you Loyal to Dashen Bank's E-banking?

   ☐ Yes ☐ No

Part five: Open ended questions

Instruction: read the questions and write your own suggestions for the following questions.

1. Which of the following problem that you encounter most of the time while using e-banking service in Dashen Bank?

   ☐ Network problem

   ☐ Machine out of cash

   ☐ Reduction in balance without cash payment

   ☐ Cards get blocked /jammed

2. State any problem that you encounter while using e-banking service in Dashen Bank?

   _____

   _____

   _____

Thank You!!!!

Appendix B: SPSS Output

Demographic characteristics

Gender of respodents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	56	31.6	31.6	31.6
	Male	121	68.4	68.4	100.0
	Total	177	100.0	100.0	

Age of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-30	79	44.6	44.6	44.6
	31-45	82	46.3	46.3	91.0
	46-60	15	8.5	8.5	99.4
	61 or above	1	.6	.6	100.0
	Total	177	100.0	100.0	

Educational status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	high school (grade 9&10) or below	7	4.0	4.0	4.0
	TVET	10	5.6	5.6	9.6
	Diploma	40	22.6	22.6	32.2
	Degree	105	59.3	59.3	91.5
	Masters degree and above	15	8.5	8.5	100.0
	Total	177	100.0	100.0	

employment status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	17	9.6	9.6	9.6
	Private employee	95	53.7	53.7	63.3
	Government employee	42	23.7	23.7	87.0
	Self employeed	20	11.3	11.3	98.3
	other	3	1.7	1.7	100.0
	Total	177	100.0	100.0	

Type of E banking used and for how long

type E-banking service used?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Atm/pos	64	36.1	36.1	36.1
	Amole or inter	58	32.8	32.8	68.9
	all	55	31.1	31.1	100.0
	Total	177	100.0	100.0	

how long do you use E-banking in Dashen bank?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than one year	31	17.5	17.5	17.5
	1-2 years	62	35.0	35.0	52.5
	3-4 years	56	31.6	31.6	84.2
	5 or more than	28	15.8	15.8	100.0
	Total	177	100.0	100.0	

Response on Service Quality

how do you rate DB E-banking service safety and trust worthiness?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	77	43.5	43.5	43.5
	good	62	35.0	35.0	78.5
	vgood	38	21.5	21.5	100.0
	Total	177	100.0	100.0	

how do you rate DB E-banking service reliability and dependability?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	78	44.1	44.1	44.1
	good	59	33.3	33.3	77.4
	vgood	40	22.6	22.6	100.0
	Total	177	100.0	100.0	

how do you rate DB E-banking service in providing tangible service with modern equipment and attractive professional employees?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	85	48.0	48.0	48.0
	good	58	32.8	32.8	80.8
	vgood	34	19.2	19.2	100.0
	Total	177	100.0	100.0	

how do you rate DB E-banking service delivery in giving individual attention and serve with kind heat?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	73	41.2	41.2	41.2
	good	70	39.5	39.5	80.8
	vgood	34	19.2	19.2	100.0
	Total	177	100.0	100.0	

how do you rate DB E-banking service immediate response to client's request or if any problem occured?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fair	86	48.6	48.6	48.6
	good	54	30.5	30.5	79.1
	vgood	37	20.9	20.9	100.0
	Total	177	100.0	100.0	

Response on Satisfaction and loyalty

Are you satisfied by DB E-banking service delivery?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	90	50.8	50.8	50.8
	Satisfied	87	49.2	49.2	100.0
	Total	177	100.0	100.0	

Are you Loyal to DB E-banking?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	96	54.2	54.2	54.2
	Yes	81	45.8	45.8	100.0
	Total	177	100.0	100.0	

Cross tabulation and chi-square results Service quality Vs. Satisfaction

Crosstab

Count

		Are you satisfied by DB E-banking service delivery?		Total
		Not satisfied	Satisfied	
how do you rate DB E-banking service safety and trust worthiness?	Fair	58	19	77
	good	18	44	62
	vgood	14	24	38
Total		90	87	177

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.247[a]	2	.000
Likelihood Ratio	34.558	2	.000
Linear-by-Linear Association	21.842	1	.000
N of Valid Cases	177		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 18.68.

Crosstab

Count

		Are you satisfied by DB E-banking service delivery?		Total
		Not satisfied	Satisfied	
how do you rate DB E-banking service reliabilty and dependebility?	Fair	61	17	78
	good	18	41	59
	vgood	11	29	40
Total		90	87	177

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41.848[a]	2	.000
Likelihood Ratio	43.896	2	.000
Linear-by-Linear Association	34.089	1	.000
N of Valid Cases	177		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 19.66.

Crosstab

Count

		Are you satisfied by DB E-banking service delivery?		Total
		Not satisfied	Satisfied	
how do you rate DB E-banking service in providing tangible service with modern equipment and attractive professional employees?	Fair	63	22	85
	good	17	41	58
	vgood	10	24	34
Total		90	87	177

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35.432[a]	2	.000
Likelihood Ratio	36.750	2	.000
Linear-by-Linear Association	27.946	1	.000
N of Valid Cases	177		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.71.

Crosstab

Count

		Are you satisfied by DB E-banking service delivery?		Total
		Not satisfied	Satisfied	
how do you rate DB E-banking service delivery in giving individual attention and serve with kind heat?	Fair	59	14	73
	good	19	51	70
	vgood	12	22	34
Total		90	87	177

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	45.272[a]	2	.000
Likelihood Ratio	47.956	2	.000
Linear-by-Linear Association	29.844	1	.000
N of Valid Cases	177		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.71.

Crosstab

Count

		Are you satisfied by DB E-banking service delivery?		Total
		Not satisfied	Satisfied	
how do you rate DB E-banking service immediate response to client's request or if any problem occured?	Fair	66	20	86
	good	14	40	54
	vgood	10	27	37
Total		90	87	177

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	44.896[a]	2	.000
Likelihood Ratio	47.052	2	.000
Linear-by-Linear Association	35.129	1	.000
N of Valid Cases	177		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 18.19.

Cross tabulation and chi-square results Service quality Vs. Loyalty

Crosstab

Count

		Do you think you are Loyal to DB E-banking?		Total
		No	Yes	
how do you rate DB E-banking service safety and trust worthiness?	Fair	60	17	77
	good	21	41	62
	vgood	15	23	38
Total		96	81	177

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	31.101[a]	2	.000
Likelihood Ratio	32.442	2	.000
Linear-by-Linear Association	21.411	1	.000
N of Valid Cases	177		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 17.39.

Crosstab

Count

		Do you think you are Loyal to DB E-banking?		Total
		No	Yes	
how do you rate DB E-banking service reliabilty and dependebility?	Fair	61	17	78
	good	23	36	59
	vgood	12	28	40
Total		96	81	177

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.051[a]	2	.000
Likelihood Ratio	34.538	2	.000
Linear-by-Linear Association	29.396	1	.000
N of Valid Cases	177		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 18.31.

Crosstab

Count

		Do you think you are Loyal to DB E-banking?		Total
		No	Yes	
how do you rate DB E-banking service in providing tangible service with modern equipment and attractive professional employees?	Fair	63	22	85
	good	22	36	58
	vgood	11	23	34
Total		96	81	177

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.309[a]	2	.000
Likelihood Ratio	27.093	2	.000
Linear-by-Linear Association	22.752	1	.000
N of Valid Cases	177		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 15.56.

Crosstab

Count

		Do you think you are Loyal to DB E-banking?		Total
		No	Yes	
how do you rate DB E-banking service delivery in giving individual attention and serve with kind heat?	Fair	61	12	73
	good	23	47	70
	vgood	12	22	34
Total		96	81	177

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	43.098[a]	2	.000
Likelihood Ratio	46.067	2	.000
Linear-by-Linear Association	31.570	1	.000
N of Valid Cases	177		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 15.56.

Crosstab

Count

		Do you think you are Loyal to DB E-banking?		Total
		No	Yes	
how do you rate DB E-banking service immediate response to client's request or if any problem occured?	Fair	69	17	86
	good	16	38	54
	vgood	11	26	37
Total		96	81	177

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	45.542[a]	2	.000
Likelihood Ratio	47.926	2	.000
Linear-by-Linear Association	36.148	1	.000
N of Valid Cases	177		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.93.

Binary logistic regression with dependent variable Customer satisfaction

Categorical Variables Codings

		Frequency	Parameter coding	
			(1)	(2)
how do you rate DB E-banking service immediate response to client's request or if any problem occured?	Fair	86	.000	.000
	good	54	1.000	.000
	vgood	37	.000	1.000
how do you rate DB E-banking service reliabilty and dependebility?	Fair	78	.000	.000
	good	59	1.000	.000
	vgood	40	.000	1.000
how do you rate DB E-banking service in providing tangible service with modern equipment and attractive professional employees?	Fair	85	.000	.000
	good	58	1.000	.000
	vgood	34	.000	1.000
how do you rate DB E-banking service delivery in giving individual attention and serve with kind heat?	Fair	73	.000	.000
	good	70	1.000	.000
	vgood	34	.000	1.000
how do you rate DB E-banking service safety and trust worthiness?	Fair	77	.000	.000
	good	62	1.000	.000
	vgood	38	.000	1.000

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	85.101	10	.000
	Block	85.101	10	.000
	Model	85.101	10	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	160.222[a]	.382	.509

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	11.400	7	.093

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	asur			4.649	2	.098	
	asur(1)	1.027	.485	4.491	1	.034	2.793
	asur(2)	.736	.580	1.613	1	.204	2.088
	reliab			9.466	2	.009	
	reliab(1)	1.162	.483	5.784	1	.016	3.196
	reliab(2)	1.632	.595	7.529	1	.006	5.116
	tangeb			1.451	2	.484	
	tangeb(1)	.526	.493	1.139	1	.286	1.692
	tangeb(2)	-.056	.672	.007	1	.934	.946
	empat			4.351	2	.114	
	empat(1)	1.077	.523	4.239	1	.040	2.936
	empat(2)	.778	.610	1.623	1	.203	2.176
	responsi			7.589	2	.022	
	responsi(1)	1.157	.506	5.222	1	.022	3.180
	responsi(2)	1.238	.550	5.059	1	.025	3.448
	Constant	-2.735	.444	37.960	1	.000	.065

a. Variable(s) entered on step 1: asur, reliab, tangeb, empat, responsi.

Binary logistic regression with dependent variable Customer loyalty

Categorical Variables Codings

		Frequency	Parameter coding	
			(1)	(2)
how do you rate DB E-banking service immediate response to client's request or if any problem occured?	Fair	86	.000	.000
	good	54	1.000	.000
	vgood	37	.000	1.000
how do you rate DB E-banking service reliabilty and dependebility?	Fair	78	.000	.000
	good	59	1.000	.000
	vgood	40	.000	1.000
how do you rate DB E-banking service in providing tangible service with modern equipment and attractive professional employees?	Fair	85	.000	.000
	good	58	1.000	.000
	vgood	34	.000	1.000
how do you rate DB E-banking service delivery in giving individual attention and serve with kind heat?	Fair	73	.000	.000
	good	70	1.000	.000
	vgood	34	.000	1.000
how do you rate DB E-banking service safety and trust worthiness?	Fair	77	.000	.000
	good	62	1.000	.000
	vgood	38	.000	1.000

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	77.481	10	.000
	Block	77.481	10	.000
	Model	77.481	10	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	166.620[a]	.355	.474

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	2.940	7	.891

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	asur			5.550	2	.062	
	asur(1)	1.119	.479	5.455	1	.020	3.063
	asur(2)	.753	.570	1.746	1	.186	2.124
	reliab			6.618	2	.037	
	reliab(1)	.759	.482	2.475	1	.116	2.136
	reliab(2)	1.498	.595	6.326	1	.012	4.471
	tangeb			.325	2	.850	
	tangeb(1)	.022	.500	.002	1	.965	1.022
	tangeb(2)	-.327	.668	.240	1	.624	.721
	empat			4.979	2	.083	
	empat(1)	1.094	.524	4.362	1	.037	2.986
	empat(2)	1.039	.604	2.960	1	.085	2.828
	responsi			10.063	2	.007	
	responsi(1)	1.342	.497	7.293	1	.007	3.826
	responsi(2)	1.400	.533	6.894	1	.009	4.057
	Constant	-2.742	.444	38.206	1	.000	.064

a. Variable(s) entered on step 1: asur, reliab, tangeb, empat, responsi.