



Addis Ababa University

School of Business and Economics

Graduate Studies

Department of Business Administration

Challenges and Prospects of E-payment Service: In the Case of Selected Ethiopian Commercial Banks.

**A Research Paper for Partial Fulfillment of Master of Arts in
Financial Service: Banking**

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December,2020

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Acknowledgements

First and for most, I would like to give glory and praise to the Almighty God for his protection, cares and support throughout the course of my life and helped me since the inception of my education to its completion. Next, I am grateful to appreciate my Advisor Sewale (PhD) who has guided and advised me while I was preparing the paper. Especially, his valuable and prompt advice, his tolerance and useful criticisms throughout the course in preparing the paper, constructive corrections and insightful comments, suggestions and encouragement are highly appreciated. Next, I would like to thank to my family to support and encourage me in doing my study. I also thank all my friends Dagmawi Dawit who encouraged and supported me in doing my studies. I am particularly grateful to Addis Ababa University and Commercial Bank Of Ethiopia, Awash Bank, Dashen Bank, Nib Bank and Zemen Bank and staff for their cooperation in providing support and consent for finalizing this study. Great appreciation is also extended to all those who helped me while conducting the study.

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List of Abbreviation & Acronyms

AML	Anti-money laundering
AB	Awash Bank
ATM	Automated teller Machine
CBE	Commercial bank of Ethiopia
ETC	Ethiopia Telecommunication Cooperation
GPRS	General Packet Radio Services
GPS	Global Positioning System
GSM	Global System for Mobile
HCI	Human Computer Interaction
ICT	Information and Communication Technology
ITU	International Telecom Union
KYC	know your customer
NBE	National Bank of Ethiopia
NIB	Nib International Bank
OECD	Organization of Economic cooperation Development
POS	Point of Sale
SWIFT	Society for Worldwide Interbank Financial Teln.
WWW	World Wide Web
WEF	World Economic Forum
WB	World Bank

Abstract

In Ethiopia cash is still the most dominant medium of exchange and electronic payment systems are at an embryonic stage. This study is aimed to assess the challenges and prospects of E-payment in Ethiopian commercial banks. The study was conducted based on the data gathered from five banks in Ethiopia; four private banks (Dashen bank, Zemen bank, Nib International bank and Awash bank) and one state owned bank (commercial bank of Ethiopia). Qualitative and quantitative research approach were used to answer the research questions that emerge through the review of existing literature and the experiences of the researcher in respect of the E-payment system in Ethiopia. The study statistically analyses data obtained from the survey questionnaire and interview. The study used descriptive statistics and Data was analyzed using a statistical package for social sciences (SPSS). The study identified basic benefits of E-payment for the customers and banks, which helps to enhance other banks to engage in such activity. It also indicated that the major challenges Ethiopian banking industry faces in the practice E-payment system are, Organizational related problems (lack of awareness creation and public confidence, lack of system readiness, lack of trust and lack of responsiveness), infrastructure related (lack of network penetration, power disruption and lack of alternative power and network) and socio-cultural challenges include (fear of risk, society perception to emerging technology). Prospects of E-payment system in Ethiopia; Digital Economic policy is the most important opportunity in Ethiopian e-payment system, liberalization of telecom sector, competitive e-payment channel, emerging need and innovation. The study suggests recommendation: the banks should run campaigns, promotions and adverts, which aim at educating their customers on the need to adopt electronic payment services deeply into technical areas to develop confidence and public awareness. Banks also should make their e-payment instruments ready, motivating e-payment support staffs to immediate e-payment users' support and make clear the limit of daily e-payment transaction limit. To overcome network and power challenges, the banks should create better strategic partnership with telecom sector and electric power providers, installing 4G network and generators for e-payment users where e-payment instruments locate. To use the prospects (opportunities), the banks should being prepared for digital economy policy of Ethiopia, emerging need, restructuring of network infrastructure provider (ethiotelecom) and competitive e-payment channels. By drafting bank based (modified) digital policy, identifying and hiring emerging (prospect) e-payment customers, developing criteria to select network provider and e-payment channel provider based on latest e-payment owners and users' criteria.

Key Words: commercial banks, challenges and prospects-payment and Ethiopia

Chapter One

Introduction

1.1 Background of the Study

The astonishing growth and sophistication of information and communication technology (ICT) changes societies' ways of life in various parts of the world. One of the leading areas where this is manifested is the way business is conducted. The growth of the Internet and World Wide Web (WWW) has made electronic commerce (e-payment) possible. E-payment in its simplest sense is trading electronically. It offers consumers and merchants convenience and speed. The success and growth of e-payment, however, depends on efficient electronic payment (e-payment) system. The slogan 'it is no e-payment, if you can't get paid' witnesses the importance of e-payment for e-payment. E-payment, the transfer of value electronically, in turn depends on secure ICT infrastructure, efficient legal and regulatory regime, and widespread awareness among the public and business (Stefan, etal, 2000)

E-Banking refers to electronic banking; it's like e-business in banking industry. It's also called Virtual Banking or online Banking. E-Payment is a financial exchange that takes place online between payer and payee. The content of this exchange is usually some form of digital financial instrument (credit card, debit card, online transfer or electronic money) that is backed by a bank or electronic payment service intermediary. (Teerapat etal, 2012)

Currently information and communication technology (ICT) is radically changing the way business is done. E-payment service is now thought to hold the promise of a new commercial revolution by offering an inexpensive and direct way to exchange information and sell or buy products or services. This revolution in the market place has set in motion a revolution in the banking sector for the provision of payment service systems that are compatible with the demands of the electronic market place (Balachadher etal, 2000).

The development of payment system from barter to cash occurred over several centuries. The change over from cash to account-based paper instruments has also been a long process, taking about one century, and is still in progress. The most recent transformation from paper based to electronic account transfers has been quite rapid, and in many countries the bulk of payments have been transformed in about two decades. Ethiopia seem to be at the start of the next transformation process, in which e-payments will be integrated with the underlying commercial processes, i.e. payments will become an integrated part of the processes of ordering, delivery and invoicing. The integration of e-payment service once again, probably be faster than earlier transformations and could be completely accomplished within two or three decades(Harry, 2008).

Most countries in Africa, except South Africa, have Internet infrastructure only in their major cities.” The slow diffusion of e-payment has been attributed to a number of issues some of which may be unique to the African continent. Recently, several African countries have already made progress in their e-payment links to integrate themselves with the global connectivity roadmap. Existing trading relationships and service provision within the financial sector are undergoing rapid change with the development of new financial soft ware applications. The rapidly growing information and communication technology is knocking the front door of every organization in the world, where Ethiopian banks would never be exceptional (Wambari ,2009).

With a growing number of increased international trades and international relations, the current banking system is short of providing efficient and dependable services and therefore all banks operating in Ethiopia should recognize the need for expend electronic banking system to the level where it reaches today in other parts of the globe to satisfy their customers and meet the requirements of rapidly expanding domestic and international trades, and increasing international banking services. Thus; this study is conducted on five conventionally selected Ethiopian banks such as; Commercial Bank Of Ethiopia (CBE), Awash Bank(AB), Dashen bank, Nib International Bank (NIB) and Zemen Bank.

1.2 Statement of the Problem

Ethiopia, as one of the developing countries, has adopted cash based economy and e-payment was continuing to move at a snail's pace in its turnkey solution. Electronic-banking is not well known, where the major share of the business transactions are undertaken by the direct in person/ cash payment mode and the banking system is one of the most underdeveloped compared to the rest of the world. In the face of rapid expansion of electronic payment systems throughout the developed and the developing world, Ethiopia’s financial sector cannot remain an exception in expanding the use of the system. Therefore; there is an all immediate need to embark on capacity building arrangements and modernize the banking system by employing the state of the art technology being used anywhere in the world.

With a growing number of import-export businesses, and increased international trades and international relations, the current banking system is short of providing efficient and dependable services and therefore all banks operating in Ethiopia should recognize the need for expend electronic banking system to the level where it reaches today in other parts of the globe to satisfy their customers and meet the requirements of rapidly expanding domestic and international trades, and increasing international banking services. The existing traditional cash based payment system has severely ragged the stability and developmental capacity of the economy. The mode of payment results in inefficient use of financial resources, inequitable risk-sharing

among agents, actual losses for participants, and loss of confidence in the financial system. Further the economy has also suffered from high printing cost of currency.

The expansion of branches to satisfy the banking service demand has also come up with the human, capital and other day today running costs associated with processing of transactions. It has also viewed that the huge investment in the infrastructure from the government side is not in use with its full capacity. It can be learnt from other countries experience that huge amount of foreign currency can be gained from tourists, diplomats and other visitors by deploying the various e-payment products like Point of Sale (POS), Automated teller machine(ATM) and Internet banking(NBE,2014).

Previous study on the area shows that currently much of the countries visitors are making their payments in cash. This is due to the unavailability of the required technology on demand to make payments using cards, the existing mode of payment limits the local people and foreign visitors from making additional payments using cards. Currently, tax fees, fines and other service charge collections are dominantly made manually; this traditional service delivery system has ragged the development of the service. It also sheds the benefits that would have achieved if the e-payment system were employed. Information technology is considered as the key driver for the changes taking place around the world (NBE, 2014).

Due to a pervasive and steadily growth of information and communication technology, the world banking industry is entering into new phenomena of unprecedented form of competition supported by modern information and communication infrastructure. E-payment has become a buzzword for companies over a couple of years with increased awareness about the use of computers and internet. The Internet is the driving force for the growth of e-payment. The information and communication applications are paramount concern to the banks in today's business environment and Internet has become the major platform for all financial, banking and commercial transactions in the present scenario. Statistics show that Africa and Ethiopia lagging behind in the adoption of e-payment (NBE, 2014).

Studies conducted on e- payment in Ethiopia, mainly focuses on the adoption and challenges of the e-payment. Kassahun (2016) identified challenges in adoption and development of electronic banking in Ethiopian banking industry in the case of selected private banks. Abebe (2016) also studied opportunities and challenges in the adoption of E- banking service. Seble(2019) then also conducted assessment of customer satisfaction and challenges in electronic banking system. It mainly focused on customer satisfaction related with e-payment service. Mulualem and Lishan(2014) conducted study on challenges and prospects of e-payment in case of Commercial bank and Zemen bank mainly focusing on ATM and identified challenges but did not clearly identified prospects of e-payment. These studies mainly focused

on the adoption of E- banking particularly on the challenges in the adoption. These previous studies did not address the assessment of prospects in e-payment system. Thus the study assesses Challenges and Prospects of e-payment services in Ethiopian banks; such as, Commercial Bank Of Ethiopia (CBE), Awash Bank(AB), Dashen Bank, Nib International Bank (NIB) and Zemen Bank.

1.3 Research Questions:

- What challenges (organizational, infrastructure, socio-culture) do Ethiopian commercial banks face in delivering e-payment service?
- What kind of benefits customers and banks get from e-payment system?
- What are prospects of e-payment system in Ethiopian commercial banks?

1.4 objectives of the study:

The study has both general and specific objectives:

1.4.1 General objectives

The main objective of the study is to assess challenges and prospect of Ethiopian commercial banks.

1.4.2 Specific Objectives

In line with the above general objective, this study has the following specific objectives:

- To identify challenges (organizational related, infrastructure, socio-culture) that faces e-payment service of Ethiopian Commercial banks.
- To assess the benefit of e-payment system from both the bank and customer perspective
- To identify the prospect of e-payment system of Ethiopian commercial banks.

1.5 Significance of the Study

Currently, the e-payment service in Ethiopia is found at its infant stage. However, with the emergence of high demand for the service from the government, financial institutions and other organizations the study on the subject is very critical. The Challenges and level of awareness on the advantages and benefits from using the service is not properly assessed so far and as well as prospects. On this regard, in this study the researcher indicates challenges and prospects of the e- payment systems. Moreover, it will be a valuable and helpful reference for further research that can be undertaken on this area.

1.6 Scope of the Study

Due to nature of the research, the study did not cover all customers of the bank and difficulty to find customers that would be selected randomly, this study limits itself only in assessing e-payment challenges and prospects of services in five commercial banks found in Addis Ababa area only: namely: CBE, AIB, Dashen, NIB and Zemen Bank which are selected for the study.

1.7 Limitation of the Study

Regarding e-payment; shortages of adequate secondary data which is lack of related and compiled published literatures in Ethiopian Banks context, the quality of information gathered from various officials, the confidential nature of some information, and the reluctance of some officials to provide the required data had been some of the limitations in conducting the study. Shortage of time and absence of research fund were also other limiting factors which can negatively affect the findings of this study. Predicting the existence of such limitations from the outset, however, the researcher has made necessary precautions so that these limitations will not affect the findings. For example; appropriate sample size, triangulating different data collection methods and referring available and accessible literatures on e-payment can be considered as a precautions.

1.8 Organization of the Study

This study is organized in five chapters. The first chapter consists of the background of the study, statement of the problem associated with research questions, objective, significance, scope, limitation of the study, and organization of the study. The related conceptual, theoretical and empirical review of various literatures and publications will be discussed in the second chapter. The third chapter includes research design and methodology part. The fourth chapter deals with data analysis and interpretation. The last chapter provides conclusions, and possible recommendations

Chapter Two

Literature Review

2.1 Theoretical Review

2.1.1 Definition of E-banking

E-payments can be widely defined as payments that are initiated, processed and received electronically. The scope is on e-payment services that support e-commerce transactions (business to consumer, B2C) or electronic payments between consumers (person to person, P2P) and that constitute new concepts, beyond the basic traditional payment instruments provided by the banking industry. Recent developments in the e-payments market will especially be set into a pan-European context, in order to monitor the development of e-payment services within the euro area other world (Daniel, 1999).

Electronic payment, a delivery of banking services to customers at their office or home with the help of electronic technology is termed as e-banking. Electronic banking as the delivery of bank's information and services by banks to customers via different delivery platforms that can be used with different terminal devices such as a personal computer and a mobile phone with browser or desktop software, telephone or digital e-banking is a brew of services that embody Internet banking, Mobile banking, ATM, electronic funds transfer (EFT), is simply the use of electronic means to transfer funds directly from one account to another, rather than by check or cash (Daniel, 1999).

E-banking often refers to online banking/Internet banking which is the use of the internet as a remote delivery channel for banking services. Electronic banking can be defined as the deployment of banking services and products over electronic and communication networks directly to customers. E-payment (electronic payment) is mostly referred to automated payment or banking channels that allows delivery of banking services in an effective, efficient and convenient way via electronic channels such as Automatic Tellers Machine (ATM), Point of Sale (POS) Terminals, Mobile phones and Internet banking(Alexa Josephine, 2005).

Along with the entrance of Internet and e-business age of the new economy in general, certain fundamental transformations in the socio -economical structure are produced. The development of the interconnectivity of computers in the internet in all segments of society, has led to a more obvious tendency of companies to

use these networks in order to carry out a new type of commerce, the electronic commerce, through the internet. In new economic conditions, managing financial institutions is connected with the change of the ways of services selling, providing information to clients as well as with the change of their function and noticing the key competence. The standard of work in banking area has been related to the usage of solutions based on information, knowledge and new technologies which give the clients access to financial means collected on the bank accounts and the possibility to make different transaction there. (Camelia & Anisoara, 2008).

2.1.2. Evolution of E-banking System

The e-payment service channels of distribution for financial services organizations were established in the mid 1990s, thereafter steadily becoming more important. Over the past decade, many innovations in retail payments have emerged. These may affect the retail payment market – for example, by influencing users in their choice of payment instruments and by significantly reshaping the payment processes. Innovations can potentially cut processing costs and increase social welfare. For central banks, however, they also raise policy issues, as they have implications for the soundness and effectiveness of the retail payment system innovations in retail payments (Compaq, 2001).

Innovation in payments faces some particular challenges. Payment services area special market with strong network effects, specific roles, niches and rules. They are also highly regulated, since they are closely related with money and finance. Nevertheless, payment services are not purely the domain of banks: wherever there are uncovered niches non- and near-banks offer their products and services. However, the road of payments evolution is bumpy: the development track in the payments industry does not automatically lead from low techno high tech. The example of cash indicates that low-tech alternatives can exist for a very long time in parallel with more innovative schemes, due to a specific set of characteristics that seems to be difficult to substitute (Hartmann .E, 2006).

The introduction of new payment systems faces significant barriers given infrastructure; market Characteristics, with high initial investment costs and positive network externalities favoring established incumbents with a wide user base. Electronic payment is a financial exchange that takes place online between payer and payee. The content of this exchange is usually some form of digital financial instrument (credit card debit card online transfer or electronic money) that is backed by a bank or electronic payment service intermediary.

Along with the growth in e-payment, the payment industry has been developing new products and services to capture a share in this growing space. This development provides consumers with more convenience

and security when making online purchases. The choice of payment options is a key consideration for online merchants in order to reduce shopping cart abandonment. Offering payment options that are confusing to consumers that they do not trust or that are simply not in accordance with their banking needs can significantly impact the success of the sales channel (Teerapat et al, 2012)

2.1.3 Types of E-banking

E-banking can be defined as a variety of platforms such as internet banking or (online banking), TV-based banking, mobile phone banking, and PC (personal computer) banking (or offline banking) whereby customers access these services using an intelligent electronic device, like PC, personal digital assistant (PDA), automated teller machine (ATM), point of sale (POS), kiosk, or touch tone telephone (Alagheband, 2006). According to Alagheband, there are different types of E-banking and some of the basic are discussed as follows:

1. Automated Teller Machines (ATM) - It is an electronic terminal which gives consumers the opportunity to get banking service at almost any time. To withdraw cash, make deposits or transfer funds between accounts, a consumer needs an ATM card and a personal identification number (PIN).
2. Point-of-Sale Transfer Terminals (POS) - The system allows consumers to pay for retail purchase with a check card, a new name for debit card. This card looks like a credit card but with a significant difference. The money for the purchase is transferred immediately from account of debit card holder to the store's account (Malak, 2007).
3. Internet banking- It is an electronic home banking system using web technology in which Bank customers are able to conduct their business transactions with the bank through personal computers.
4. Mobile banking- Mobile banking is a service that enables customers to conduct some banking services such as account inquiry and funds transfer, by using of short text message (SMS).

2.1.3.1 ATM

The late 1960s marked the beginning of modern ATM and POS systems, although the concepts of ATMs and debit cards relate to each other. It might be argued that the first ATMs were cash-dispensing machines. England's Barclays Bank, for example, installed the first cash dispenser in 1967. But it did not use magnetic-stripe cards; customers were issued paper vouchers that were fed into the machine, which retained the voucher and dispensed a single £10 note. By the early 1970s, ATM technology advanced to the system we know today. ATMs were first accessed primarily with credit cards, but in 1972, City

National Bank of Cleveland successfully introduced a card with an ATM but not a credit function. ATMs were developed that could take deposits, transfer money from checking to savings or savings to checking, provide cash advances from a credit card, and take payments. ATMs also were connected to computers, allowing real-time access to information about cardholder account balances and activity. By connecting a string of ATMs to a centralized computer, banks established ATM networks. (Fumiko et al, 2003)

ATM and debit card transactions take place within a complex infrastructure. To the consumer and merchant, they appear to be seamless and nearly instantaneous. But, in fact, a highly complex telecommunications infrastructure links consumers, merchants, ATM owners, and banks. The common attribute of all ATM and debit card transactions is that the transaction is directly linked to the consumer's bank account—that is, the amount of a transaction is deducted (debited) against the funds in that account. (Fumiko et al, 2003)

An ATM transaction typically involves withdrawing cash from an ATM machine. The consumer presents an ATM card, which is issued by the bank holding his or her checking account, at an ATM terminal, which may or may not be owned by the same bank. The consumer enters a personal identification number (PIN) to verify identity, the checking account is checked for adequate funds, and if everything is satisfactory, cash is issued. All of this is routed across one or more ATM networks.

A debit card transaction involves the purchase of a good or service. In this case, the consumer presents a debit card (which again was issued by the bank holding the checking account) to a merchant, and the consumer either enters a PIN (online debit) or signs a receipt (offline debit) to verify the consumer's identity. The merchant, in turn, sends information about the transaction across one or more debit card networks, and if the transaction is approved, the consumer receives the good or service and the checking account is correspondingly debited. The merchant is reimbursed by a credit to its bank account. (Fumiko et al, 2003)

2.1.3.2 Internet Banking

Online banking in this study is defined as an internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments. The growing popularity of personal computers, easy access to internet and World Wide Web (WWW), has increased the use of internet by banks as a channel for receiving instructions and also delivering their products and services to the customers. This is generally referred to as 'Internet banking' or I-banking or net Banking. This is one of the newer forms e-banking which is gaining popularity. The other popular name for e-banking is on line banking. Therefore banks' websites that offer only information on their pages without the option to do any

transactions are not qualified as online banking services. The success of internet banking is determined not only by banks or government support but also by customers' acceptance of it. (Hosein, 2010).

Consumer Adoption of Internet Banking

A generic theoretical framework shows that a bank must first attract banking consumer attention to the internet banking service before the consumer will consider internet banking. However, unless the consumer has a high level of internet accessibility at home or at work, they are unlikely to consider using internet banking. The consumer also assesses whether it is convenient to conduct their banking that way (convenience), how usable the application appears (usability), and their perceived competence of internet use and banking application use (self-efficacy). The four factors of accessibility, self-efficacy, convenience and usability are interrelated. The consumer also considers whether the perceived relative advantages of internet banking compared with other banking forms outweigh perceived risks and costs. In addition, the availability of sufficient support and in depth knowledge from the bank and its employees contribute significantly to the adoption decision (Hosein, 2010)

Furthermore, customers who rely on e -banking services may have greater intolerance for a system that is unreliable or one that does not provide accurate and current information. Clearly, the longevity of e-banking depends on its accuracy, reliability and accountability. The challenge for many banks is to ensure that savings from the electronic banking technology more than offset the costs and risks involved in such changes to their systems. While financial institutions have faced difficulties over the years for a multitude of reasons, the major cause of serious banking problems continues to be directly related to lax credit standards for borrowers and counterparties, poor portfolio risk management or a lack of attention to changes in economic or other circumstances that can lead to a deterioration in the credit standing of a bank's counterparties.

An increase in social expectations in relation to subjects rendering financial services, dissemination of new technologies, more developing technical culture of society, an increase in importance on information technology in economy, business globalization, consolidation of banks and an increase in competitiveness are only a few reasons which had an influence on a type and quality of services rendered by banks. It leads to a necessity of bank strategies modification imposed by cost s reduction, change of clients, consumption patterns, dynamic development of new technologies, and polarization of clients because of their ability to use the Internet and positive attitude towards electronic media. As a result, clients will gradually change their perception of bank sector institutions. A new quality of bank services is being provided, where a client becomes a subject and not an object as it used to be in traditional banking (Camelia & Anisoara, 2008)

2.1.3.3 Mobile Banking, Payments

The cell phone stands at the center of many innovative developments in the field of electronic payments. In 2011, 141 million people worldwide are expected to pay via their mobile phones. According to a study by US analyst Gartner, 38% increase is in store for so-called mobile payments. This extreme growth is largely driven by developing countries, where a large percentage of the population owns a mobile phone, but no bank account. For the developing countries, mobile payments and mobile banking are a welcome chance to participate in methods of commerce that other countries have long taken for granted. Major global companies like Google are also banking on payments via cell phone. Cooperating with other global players such as the payment specialist Ingenico, their payment scheme “Google Wallet” embraces much more than payments alone (Ingenico, 2012).

Over the last 20 years, cell phones have become mass products; in the same time span, the entire way we live has changed. Cell phone technology has found its way into payment terminals. Based on GSM or GPRS technology, state-of-the-art terminals allow merchants to move their point of sale wherever they want. Especially merchants who engage in seasonal activities benefit from increased opportunities: Card-based payments at markets, fairs and other events make collecting payment and bookkeeping easier than ever and minimize the necessity for cash handling. As an additional benefit, card payments are proven to attract new customer groups. But even stationary merchants – traditionally not a target group for mobile payment – can benefit from them. They allow new check-outs to be quickly set up, and can thus function as queue busters during rush-hour shopping. Dwindling costs make this an ever more attractive option (Ingenico, 2012)

The main role of a payment system is to provide a way of transferring value between different parties in the economy. As such, it determines partly economic transaction costs. Its design will be optimal if organized to allow quick and effective value transfers while imposing a minimum of additional costs and risks. High costs of the payment process may seriously affect economic activity in that transactions are rendered too expensive and, as a consequence, reduced. Conversely, lower costs through efficient payment systems could have a positive impact on economic growth. The use of any payment system involves direct and indirect costs. Direct costs are the fees charged by financial payment service providers. Indirect costs include those related to the complexity of transaction processes, speed of transactions, risk and uncertainty, and opportunity costs for the buyers and sellers involved. The modalities of the payment system also affect the cost structure as they determine the financial loss to both parties in case either one of them defaults on the terms of the contract. For the reasons described above, online payment services involve a complex set of practical and analytical challenges. These include the technological capabilities of service providers,

commercial relationships, issues of regulation and law (buyer and seller protection), security considerations including identification issues, such as authentication and verification, and co-ordination among a variety of parties with different and sometimes competing interests (OECD, 2008)

Mechanisms for deposit making, transfers and cash withdrawal

The effectiveness of these operations is vital in turning a mobile payment system into a transformational mobile system. Without a convenient way to deposit and withdraw cash, any mobile system is bound to fail in mostly cash-based societies. This makes ensuring the trustworthiness of collection agents pivotal in establishing the integrity of the mobile banking product. The integrity and the efficacy of agents in managing the deposit making process, transfers and cash distribution is critical to managing some of the range of risks inherent in a mobile banking product, including reputational risk. There is a variety of ways to comply with both know your customer (KYC) and anti-money laundering (AML) regulations. For example AML tools might be applied only when transactions exceed specific limits in terms of both frequency and amount. The migration from mobile customer to mobile bank customer offers significant potential to reduce the costly information asymmetries between customer and bank, as mobile operators of payments schemes hold useful information about customers' usage patterns. The user experience of the various mobile systems depends on how well specific products correspond to customer needs in different countries. The demand for banking services in developing countries, especially by the unbanked, is relatively poorly understood (Wambari, 2009).

2.1.3.4 POS

A point of sale (POS) terminal is a computerized replacement for a cash register much more complex than the cash register. The POS system can include the ability to record and track customer orders, process credit and debit cards, connect to other systems in a network, and manage inventory. Generally, a POS terminal has as its core a personal computer, which is provided with application-specific programs. Formerly known as cash registers, a POS system's hardware may be as basic as a computer, operator display, receipt printer and cash drawer. Input devices include a touch screen and magnetic stripe reader for cards. However, it is the software that will drive the operation and provide the detailed reports that you need to make informed business decisions.

POS system saves money by helping to improve productivity and reduce the time spent away from other key areas of business. This guide is intended to help educate users on the process, to make a more informed decision.

POS can drastically cut down on shrink, the inventory that disappears due to theft, waste, and misuse by employees. The difference between honesty and dishonesty is two steps: Need & Opportunity. You cannot control the need to steal, but you can control the opportunity to steal, by keeping your eye on what was sold as reported by a POS system. POS will insure every item is sold for the correct price when ringing items using a touch screen with preset price keys. Staffs will stop charging the wrong price (and/or stop guessing), and you can change those prices easily.

You can focus on selling higher-margin items by reviewing detailed sales reports. Then boost the sales of those high-profit items by promoting both those and any under-performing dishes in your restaurant setting. Eliminate separate credit authorization terminals (and reduce the extra phone lines). Integrated credit makes every terminal a credit card authorization center, for faster, easier server access. This eliminates manual fund reconciliation because register and credit card totals are automatically balanced. And it will consolidate daily transactions for single batch transmission to the bank, and yield cost savings through reduced credit card fees (Santaclara, 2014).

2.1.4 Need for E-banking

One has to approach the branch in person, to withdraw cash or deposit a cheque or request a statement of accounts. In true e-banking, any inquiry or transaction is processed online without any reference to the branch (anywhere banking) at any time. Providing e-banking is increasingly becoming a need to have than a nice to have service. The net banking, thus, now is more of a norm rather than an exception in many developed countries due to the fact that it is the cheapest way of providing banking services. Banks have traditionally been in the forefront of harnessing technology to improve their products, services and efficiency. They have over a long time been using electronic and telecommunication networks for delivering a wide range of value added products and services. The delivery channels include direct dial-up connections, private networks; public networks etc. and the devices include telephone, Personal Computers including the Automated Teller Machines (Daniel, 1999).

2.2. Challenges of E- Payment System

It is hypothesized that many of the factors affecting the successful adoption of new technologies such as e-commerce and E-banking are generic in nature and that the successful adoption of internet technologies in part depends on how these are used in conjunction with the other technologies and management practices that form a technology cluster. However, the most critical challenges can be ascribed to the very limited information and communication infrastructure available in most developing countries. Reasons vary widely among sectors and countries and are most commonly related to lack of applicability to the business,

preferences for established business models. Common challenges includes; enabling factors (availability of ICT skills, qualified personnel, network infrastructure); cost factors (ICT equipment and networks, software and re-organization); security and trust factors (security and reliability of e-commerce systems, uncertainty of payment methods, legal frameworks and intellectual property right); and challenges in areas of management skills, technological capability, productivity and competitiveness. Lack of reliable trust and redress systems and cross country legal and regulatory differences was also impede e-commerce adoption (OECD, 2008).

It is however important to note that challenge to e-commerce adoption work differently according to organizational type and culture. Areas of training and people development need to be addressed in concise with the challenges for the adoption of E banking in Africa are Organization related challenges, infrastructure and socio-cultural challenges (Isaac, 2005).

2.2.1 Organizational challenges

The challenges for the adoption of E-banking in Africa are security, human face i.e. customers still value personalized and responsive services from their bankers, individuals and organizations like inadequate awareness, knowledge, skills, and confidence; a lack of awareness and understanding of potential opportunities; lack of confidence in service providers, system readiness, security issues. New technologies will not dominate the market until customers are confident, feel secured, trust over technology, aware and privacy will be protected and adequate assurance of security is guaranteed (Isaac, 2005).

Public Awareness and Confidence

The other challenge is in developing and sustaining user's confidence and inculcating a change among the customers, apart from increasing public awareness and acceptance of the various payment channels available in the market. Consumers need to be continuously educated and motivated to change their payment habits by promoting the benefits of the use of e-payments. Promotional activities and change management program should be put in place and continuously improved to increase public awareness and acceptance (Adnan, 2008).

System Readiness

Currently, the existing e-payment services and products are limited, inconvenient and not meeting customers' expectation thus requires continuous enhancements. The reach of payment systems also limited

and should be enhanced to allow payments to be made on a wider scale to reach the public. The scope of use of the point of-sale terminals should be extended further to cover wider sectors to encourage greater use of payment cards especially e-debit cards. Existing electronic channels such as ATM should be enhanced to include additional and attractive fund transfer and payment functionalities. Robust technology and strong internal control should be put in place to deter and prevent fraud and to protect and safeguard integrity of the systems. There is also lack of common technology standards between service providers to promote interoperability (Adnan, 2008).

Lack of Security

Online payment systems for the internet are an easy target for stealing money and personal information. Customers have to provide credit card and payment account details and other personal information online. This data is sometimes transmitted in an un-secured way providing these details by mail or over the telephone also entails security risks (Mattewos, 2012).

Lack of Trust

Electronic payments have a long history of fraud, misuse and low reliability as well as it is new system without established positive reputation. Potential customers often mention this risk as the key reason why they do not trust a payment services and therefore do not make internet purchases (Mattewos, 2012).

Responsiveness

According to the resistant to change for e-payment products while making merchandise is associated with lack of responsive to support the system, fear of uncertainty of the performance of the system and the required effort and influence of people who are important to others (Faruq Muhammad Abubakar, 2013).

Regulatory compliance there is a variety of ways to comply with both know your customer (KYC) and anti-money laundering (AML) regulations. For example AML tools might be applied only when transactions exceed specific limits in terms of both frequency and amount. The migration from mobile customer to mobile bank customer offers significant potential to reduce the costly information asymmetries between customer and bank, as mobile operators of payments schemes hold useful information about customers usage patterns. Tariff structures for consumers –The user experience of the various mobile systems depends on how well specific products correspond to customer needs in different countries. (Wambari, 2009)

2.2.2 Lack of adequate Infrastructure

For the effective deployment of e-banking, it is necessary to have a reliable, sustainable and cost effective infrastructure that can be accessible to the majority of the population. The most common communication

infrastructure for E-banking is computer network such as Internet. Most e-banking systems use internet to communicate with their customers. The other communication infrastructure available for E-banking users is the mobile network used for mobile phone. Automating the banking activities is another prerequisite for E-banking system. Closed financial network that links banks and other financial institutions is necessary. This network is usually used between banks or other financial institution for clearing and payment confirmation. Low level of internet penetration and poorly developed telecommunication infrastructure impede smooth development and improvements in e-commerce in developing countries. Frequent electric power disruption creates a lot of problems in e-banking activities which are basically depending on power supply. It will force the banks to depend on generators resulting in high operational cost. These problems are considered as obstacles for the expansion of e-banking services (Kumaga, 2010).

Lack of technological infrastructure the implementation of e-payment is being impeded by unavailability of IT infrastructure. Most rural areas where majority of small and medium scale industries are concentrated have no access to internet facilities. IT equipment costs where available, the cost of IT is a critical factor relative to per capita income. This makes the cost of entry higher compared to developed countries. As noted earlier, the E-Payment system is being partially implemented. If it is to be fully implemented, a number of IT infrastructures will have to be put in place. These include but not limited to Laptop, desktop, scanners, good internet connectivity, training and global software.

Organizations that run e-payment system also face power problem. The frequent electric power disturbance has forced these organizations to buy generators. This has increased their operational cost. The above problems are some of the reasons that hinder e-payment expansion in the country. But, this condition is currently changing. Both the government and the private sector are in the process of expanding their ICT infrastructure.

2.2.3 Socio-Cultural Challenges

Cultural and historical differences in attitudes and the use of different forms of money (e.g. use of credit card in North America and use of debit cards in Europe) complicate the task of developing an electronic payment system that is applicable at international level. Difference in the degree of the required security and efficiency among peoples of different cultures and level of development aggravates the problem. Consumer's confidence and trust in the traditional payment system has made customers less likely to adopt new technologies. New technologies will not dominate the market until customers are confident that their privacy will be protected and adequate assurance of security is guaranteed. New technology also requires

the test of time in order to earn the confidence of the people, even if it is easier to use and cheaper than older methods (Adnan, 2008)

Resistance to changes in technology among customers

- Fear of risk
- Tendency to be content with the existing structures,
- People are resistant to new payment mechanisms
- Security- where disclosed of private information, counterfeiting and illegal alteration of Payment data may be rampant

2.3 Benefit of E-payment

Understanding e-banking service is important for several stakeholders, since it helps them to derive benefits from it. Many banks and other organizations have already implemented or are planning to implement e-banking because of the numerous potential benefits associated with it. Some of these major benefits according to are briefly described below. Let see it from two perspectives, that is from customer perspective and banks perspective (Shah & Clarke, 1997)

2.3.1 Banks Point of View

Attracting High Value Customers: E-payment often attracts high profit customers with higher than average income and education levels, which helps to increase the size of revenue streams. For a retail bank, e-banking customers are therefore of particular interest, and such customers are likely to have a higher demand for banking products. Most of them are using online channels regularly for a variety of purposes, and for some there is no need for regular personal contacts with the bank's branch network, which is an expensive channel for banks to run (Berger & Gensler, 2007).

Some research suggests that adding the Internet delivery channel to an existing portfolio of service delivery channels results in nontrivial increases in bank profitability. These extra revenues mainly come from increases in noninterest income from service charges on deposit/current accounts. These customers also tend to be of high-income earners with greater profit potential (Young, 2007).

Enhanced Image: E-banking helps to enhance the image of the organization as a customer focused innovative organization. This was especially true in early days when only the most innovative organizations were implementing this channel. Despite its common availability today, an attractive

banking website with a large portfolio of innovative products still enhances a bank's image. This image also helps in becoming effective at e-marketing and attracting young/professional customer base

Increased Revenues: Increased revenues as a result of offering e-channels are often reported, because of possible increases in the number of customers, retention of existing customers, and cross selling opportunities. Whether these revenues are enough for reasonable return on investment (ROI) from these channels is an ongoing debate. It has also allowed banks to diversify their value creation activities. E-banking has changed the traditional retail banking business model in many ways, for example by making it possible for banks to allow the production and delivery of financial services to be separated into different businesses. This means that banks can sell and manage services offered by other banks (often-foreign banks) to increase their revenues. This is an especially attractive possibility for smaller banks with a limited product range. E-banking has also resulted in increased credit card lending as it is a sort of transactional loan that is most easily deliverable over the internet. Electronic bill payment is also on rapid rise which suggests that electronic bill payment and other related capabilities of e-banking have a real impact on retail banking practices and rapidly expanded revenue streams (Young, 2007).

Easier Expansion: Traditionally, when a bank wanted to expand geographically it had to open new branches, thereby incurring high start up and maintenance costs. E-channels, such as the Internet, have made this unnecessary in many circumstances. Now banks with a traditional customer base in one part of the country or world can attract customers from other parts, as most of the financial transactions do not require a physical presence near customers living/working place.

Load Reduction on Other Channels: E-Channels are largely automatic, and most of the routine activity such as account checking or bill payment may be carried out using these channels. This usually results in load reduction on other delivery channels, such as branches.

This trend is likely to continue as more sophisticated services such as mortgages or asset finance are offered using e-Banking channels. In some countries, routine branch transactions such as cash/cheque deposit related activities are also being automated, further reducing the workload of branch staff, and enabling the time to be used for providing better quality customer services.

Cost Reduction: The main economic argument of e-banking so far has been reduction of overhead costs of other channels such as branches, which require expensive buildings and a staff presence. It also seems that the cost per transaction of e-banking often falls more rapidly than that of traditional banks once a critical mass of customers is achieved. The research in this area is still inconclusive, and often-contradicting reports appear in different parts of the world. The general consensus is that fixed costs of e-

banking are much greater than variable costs, so the larger the customer base of a bank, the lower the cost per transaction would be. Whilst this implies that cost per transaction for smaller banks would in most cases be greater than those of larger banks, even in small banks it is seen as likely that the cost per transaction will be below that of other banking channels.

Organizational Efficiency: To implement e-banking, organizations often have to re-engineer their business processes, integrate systems and promote agile working practices. These steps, which are often pushed to the top of the agenda by the desire to achieve e-banking, often result in greater efficiency and agility in organizations. However, radical organizational changes are also often linked to risks such as low employee morale, or the collapse of traditional services or the customer base. In addition, Electronic banking has also helped banks in proper documentation of their records and transactions.

2.3.2 Benefits from the Customers' Point of View

The main benefit of E- banking from the bank customers' point of view is significant saving of time by the automation of banking services processing and also enabling the customers to access the banking service any time at anywhere. The major benefit of e banking from customer's point of view is summarized as follows (Gurau, 2002),

- Increased comfort and timesaving transactions can be made 7/24, without requiring the physical interaction with the bank.
- Quick and continuous access to information
- Better cash management
- Quick and continuous access to information

2.4 Prospects of e-Banking

The prospect of both scaling e-commerce opportunities and driving financial inclusion makes a compelling case for examining the steps towards an enabling environment for e-payments. Efforts to date have been variable and knowledge exists between policy communities. The technical details of trade frameworks may prove too forbidding or complex for many e-payment actors particularly those involved on the operational side. It may be unclear how trade frameworks can address any of the e-payment supply and demand challenges faced. The landscape of global e-payment talks also remains highly uncertain and complex.

E-commerce is undergoing huge growth in terms of the volume of goods and services that are being traded on-line. New areas such as B2B and the related business to government (B2G) e-commerce are

developing as well as the potential for large numbers of people engaging in m-commerce from wireless handsets are increasing. Even the most optimistic estimations of e-commerce still place the goods value at less than 1% of the total value of goods and service traded in the conventional economy, so as larger numbers of people come on-line, there is plenty of scope for growth. In order to bring an on-line transaction to completion, payment must be fully integrated into the on-line dialogue Banks will find a demand from their large business clients to effect high-value bank mediated transfers of funds easily and efficiently. Similar demand will be experienced in Europe and Asia and, to a lesser extent, the developing world. It may be that developments such as Worldwide Automated Clearing House (WATCH) may eventually lead to a situation in which individuals and organizations transacting on the Internet can easily move funds to and from any country in the world. It may be that these new payment systems providers can be more agile in responding to customer needs and may supplant banks for certain classes of payments(Raja.etal,2018)

This is particularly appropriate in countries whose banking infrastructure is less developed than advanced countries. A large number of companies have developed universal payment portal offering a whole host of ostensibly free information and services to consumers; the use of real micro payments, though, is clearly more flexible and allows a much clearer link between the content delivered and the amount paid. M-commerce is undoubtedly the most active area in electronic payments. As telecommunications manufacturers and network operators seek to define the shape of the mobile Internet, startup companies are busy coming up with new ways to make payments on-line. One very large area of uncertainty is the degree to which the mobile Internet will resemble the fixed-line Internet.. With the advent of modern technologies in telecommunications, infrastructure and protocols, future payments will be made through e-payments by Business to Business, Business to Customer, Customer to Government((Raja.etal,2018).

The extent to which policies allow the deployment of new technologies and new suppliers, improve the domestic regulatory framework and encourage the necessary infrastructure development may bring benefits for both home-grown and foreign payment services suppliers alike. Doing so would require examining market access commitments for e-payment services, as well as market access for underpinning ICT and other infrastructure services, complemented by common principles on e-payments-friendly regulatory frameworks – including eventually rules on cross border data flows, transparency of regulation and licensing of suppliers .Concerning e-payment-related market entry and discriminatory regulations, such as rules that create local monopolies, improve their specific commitments and initiate dialogue with stakeholders both domestic and international to identify apparent market access barriers and discriminatory measures with a view to addressing these or affirming current coverage where appropriate(WEF ,2018).

The goal of regulatory cooperation on e-payments should not necessarily be harmonization, but rather enhancing trust and confidence around global e-commerce, as well as promoting the ease of doing business. additional obligations were primarily designed to prevent the erosion of market access commitments, these in turn helped promote and consolidate domestic telecommunications governance processes widely considered best practice from a competitiveness standpoint by both industry and governments. The approach used drafting of a common text while allowing governments the flexibility to draw selectively from it might serve as a model for e-payment services (Kommerskollegium, 2012).

At a time when many economies were making the transition from a monopoly-based to a market-based model in telecommunications instrumental in supporting the successful introduction of competition and in enabling the telecommunications sector to grow on a sound basis. Competition safeguards introduced include obligations imposed on major suppliers to avoid anti competitive practices and to provide interconnection to their networks under non-discriminatory, transparent and reasonable terms and rates, among other conditions (Lee Tuthill, 1997).

2.5 Empirical review of E-payment Challenges and Prospects

Some related studies are conducted by different researchers in different parts of the world. Abdulsalam.etal(2015) e-payment: prospects, challenges and solutions in Kurdistan Regional government public sector. They found the following obstacles in the way of implementing an e-payment system that can be used in all areas of life in Kurdistan region of Iraq are: Lack of adequate information technology infrastructure, the current communication and network infrastructure is not well established to permit the implementation of a fully inclusive e-payment system, Lack of banking infrastructure, most of the public banks use paper-based processing techniques to manage their operation and they don't have adequate networks between their branches, Cultural attendance to use cash instead of e-money, traditionally people tend to keep their money with them and very few are prepared to deposit it in a bank and Lack of customer's awareness: banks so far have not advertised effectively for the services they can offer; this has limited the awareness level of people regarding available banking services but not clearly stated the prospects. The study conducted by Daghfous and Toufaily (2007) on the success and critical factors in adoption of E-banking by Lebanese banks. The research was conducted on the factors that can lead to success the adoption of E-banking and the other factors that can constitute as barrier to its adoption, it focus on the organizational, structural and strategic factors which can accelerate or, on the contrary, slow the adoption of this electronic mode of distribution and communication by the banks, through analyzing the case of the Lebanese market. In order to test the validity of the theoretical framework, structured survey was used, interview questionnaire that was given to E-banking managers or to information technology managers of all the banks on the official list of institutions operating on the Lebanese market,

with a total of 57 banks, 31 of them operate internationally and 26 are strictly local were used to gather data. Research conducted by Peter M and Babatunde(2015) E-payment: prospects and challenges Nigerian public sector, argued that the e-payment system is faced with challenges, like public acceptability, lack of uniform platform being operated by the banks, lack of adequate infrastructure and issues of security, with the proper use of the E-payment system, corruption which is a cancer in the public sector will be adequately addressed but not differentiated benefits and prospects of e-payment. Alhaji Ibrahim H. (2009) using exploratory study, the among the critical challenges for the adoption of e-banking in Nigeria are: not readiness of banks and other stake holders (acceptability) even though some have shown impressive willingness, some banks are still not fully ready to for this new payment regime and lack of trust due to awareness creation to use the benefits of new technologies for customers.

However, there are limited numbers of studies conducted in Ethiopia on the implementation of technological innovation. Research conducted on the opportunities and challenges of E-banking in Ethiopia. The aim of his study was focused on analyzing the status of electronic banking in Ethiopia and investigates the main challenges and opportunities of implementing E-banking system. The author conducted a survey on the existing operating style of banks and identifies some challenges of using E-banking system, such as, lack of suitable legal and regulatory frame works for e-commerce and E-payments, political instability in neighboring countries, high rates of illiteracy and absence of financial networks that links different banks. Accordingly Gardachew(2010) opportunities offered by ICT through e- learning programs and commitment of the governments on development of ICT infrastructures is considered as drivers of using E-commerce and E-payment systems. Wondwossen and Tsegai(2005) conducted on the challenges and opportunities of E-payments in Ethiopia; its objective was studying of E-payment practices in developing countries, Africa and Ethiopia. The author's employees interview and on site observation to investigate challenges to E-payment in Ethiopia and found that, the main obstacles to the development of E-payments are, lack of customers trust in the initiatives, Unavailability of payment laws and regulations particularly for E-payment, Lack of skilled manpower and Frequent power disruption. Accordingly, an adequate legal structure and security framework could foster the use of e-payment. This was contradicting with the finding of the previous study conducted by Gardachew.

Regarding the prospects, According to (Rahman, 2008).in Bangladesh e-banking is now a global phenomenon. Apart from the developed countries, the developing countries are experiencing strong growth in e-banking. The government's emphasis on setting up ICT Park, raising allocation for developing IT infrastructure, waiving taxes on computer peripherals and other measures including the

automation program of banking sector and competition among the scheduled banks in improving customer services have accelerated the prospects of e-payment

In addition to the above factors, According to (Sherah.etal,2005) study conducted in china suggests that the government support is also a strong driver for e-banking adoption. The government support is manifested in two ways. Firstly, the Government is establishing an electronic commerce friendly environment in the country. The government in recent years to revamp the national ICT and logistic infrastructures has committed heavy investments. New laws and regulations have also been passed and adjusted to provide legal protections for e-payment activities in general. Secondly, the government also directly offers financial incentives to promote e-banking adoption. Drive forces towards e-Banking adoption in Africa is include rapidly changing customers' needs and preferences, Competitive forces and product differentiation strategies and Pressure to reduce transactional and operation costs.

According to WB (2019), Project Information Document, Ethiopia Digital Foundations Project strengthening the regulatory authority, there are a number of other tasks associated with creating a vibrant, inclusive and safe digital economy in Ethiopia, and where the project can provide support or act as a complement. These include: creating, strengthening and regulating digital platforms, in both the public and private spheres, to enable the efficient functioning of the economy. This would include, for instance, developing regulations to support the development of e-commerce, developing a citizen-facing platform for digital government and providing guidelines on data protection, cyber security and privacy. where Ethiopia is currently lagging well behind other countries of the region. While the extension of digital financial inclusion is likely to be the subject of a parallel international development assistance lending program on financial sector strengthening and access with the Ministry of Finance and the National Bank of Ethiopia (NBE) in the regulation of operators on mobile money services.

Chapter Three

3. Research Methodology

3.1 Research Design

This research presents descriptive analysis of assessing e-payment service in Ethiopia commercial banks with most recent available data. It is a descriptive research and has employed a quantitative and qualitative method. Interview had been used as a technique to gather a type of data's that has qualitative by their very nature. Whereas, quantitative research method also undertaken by delivering questionnaires to the respondents. Based on the outputs, analysis of the result was made and analyses are presented by using descriptive approach.

3.2 Sampling Design

The total number of Commercial Banks which is operated in the year 2020 is 16 private banks and 2 state-owned banks. However, to undertake this research paper, the researcher purposely sampled five banks, because, which are currently practiced some technological innovation, the earliest banks that started operation in the country, and also young and having small customers bank is selected. According to the information obtained from NBE; CBE, AB, Dashen Bank and NIB are among the earliest banks that started operation in the country and they have possessed more customer. And from banks that are young having small customers Zemen bank is selected.

3.3 Sample Size Determination

Strategies for Determining Sample Size

There are several approaches to determining the sample size. These include using a census for small populations, imitating a sample size of similar studies, using published tables, and applying formulas to calculate a sample size.

Using Published Tables

A third way to determine sample size is to rely on published tables which provide the sample size for a given set of criteria. **Refer statistical table at annex** sample sizes that would be necessary for given combinations of precision, confidence levels, and variability. Please note two things. First, these sample sizes reflect the number of obtained responses, and not necessarily the number of surveys mailed or interviews planned (this number is often increased to compensate for nonresponsive). Since total

population of e-payment users in a five banks are very large and difficult to manage. The researcher used according to statistical table. If the population (N) is >100,000 the sample size (n) is 400 is made on 95% confidence level (Isaac and Michael, 1981; Smith, M. F., 1983)

The researcher clustered into four geographic districts North Addis, South Addis, West Addis and East Addis District. The researcher selected five different bank's branches from each district. The researcher distributed standard questionnaire to twenty e-payment users in twenty different branches, when e-payment users visit the bank. It is proportional for five different banks. The researcher prepared semi-structured interview for 44 e-payment (district manager, branch or deputy manager). The researcher also interviewed 4 district level e-payment managers, 20 branches level e-payment managers and 20 branch deputy e-payment managers.

3.4 Data Source and Collection

The study was conducted by using both primary and secondary sources. Primary data was collected from the respondents based on a structurally designed questionnaire. Questionnaires were distributed to e-payment users of the selected branches. Those respondents were select simple random sample and could provide important perspectives on its implementation. In addition, semi structured interview with the managers of the E-payment department was used to collect primary data. The questionnaires were structured in close-ended type and responses to the questions were measured on a five Likert rating scale where: Strongly Agree (SA) = 1; Agree (A) = 2; Neutral (N) =3, Disagree (D) = 4; and Strongly Disagree (SD) = 5; the use of Likert scale is to make it easier for respondents to answer question in a simple way.

Secondary source of data are those which are made available and collected from the websites of the bank, from books, report and published articles and existent information, collected by researchers for different purposes.

3.5 Data Analysis Tools

In order to meet the stated research objectives, the collected data was analyzed based on the nature of the objective. A descriptive analysis was used to present and interpret the data collected on various variables of factors affecting the implementation of E-payment service. Using percentages and tables was employ to analyze each objective. The student researcher analyzed the data collected through survey to statistical population concerning the implementation of E-payment system. The data collected via questionnaires were analyzed with descriptive statistics using statistical package for social scientists (SPSS). The data that was collected from the interview and reviews of documents interpreted qualitatively. The analysis of quantitative data and interpretation of qualitative data combines to seek convergence among the results (Creswell, 2003).

3.6 Ethical Considerations

Before starting the actual data collection the purpose of the study, the right to participate and refuse will be told to the study subjects. Verbal consent from the study subjects will be obtained. Confidentiality of the information will be guaranteed by not writing their name and anything that enables to identify study participants. In addition to that, a respondent's answer will be kept in a confidential place.

The researcher acted responsibly according to ethical standards to ensure that the information gathered will not be brought to disrepute. All respondents had a right to privacy, to safety, to know the true purpose of the research, to obtain research results and to abstain from answering questions.

Chapter Four

4.1. Data Presentation and Analysis

The preceding chapters discussed the introduction, literature review and the research methodology adopted in the study. This chapter presents results of data analysis and discusses implication of the results. As it is indicated in chapter three of this study, 5 Ethiopian commercial banks that are operating in Addis Ababa area are selected to conduct this study. From these banks, a total of 400 sample (e-payment service users) populations are drawn. Of this total figure, 300 e-payment users' respondents filled the standard questionnaire and returned back. Semi structured interview are prepared to the 44 e-payment management regarding challenge, benefit and prospect of e-payment. The questionnaires have three parts. The first part covers the demographic; the second part challenges of e-payment, the third part the perceived benefit of using e-payment ideas. This is done in order to avoid over lapping of responses from different group.

4.1.1 Profile of respondents

Personal profiles such as sex, age, educational qualification are presented for product user respondents of the questionnaire. Further, the type of account they use also requested and presented for the users of e-payment service.

Table 4.1 Frequency Table

		Sex	Age	Educ.	ACT
N	Valid	300	300	300	300
	Missing	0	0	0	0

Source: survey,2020

As it is indicated in the statistical table in the previous page, all of the questionnaires distributed were collected and analyzed. All questions regarding gender, age, education and type of account provided for the sample population have properly answered.

Table 4.2 Gender of the respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	157	72.3	72.3	72.3

Female	143	27.7	27.7	100.0
Total	300	100.0	100.0	

Source :survey,2020

According to table 4.2, out of 300 respondents 157 were male and they represent 52.3% of the total respondents. Female respondents were 143 and it is 47.7% of the total respondents. The numbers shows that currently female users of the service are dominated by male with little percentages.

Table 4.3 Age Distribution of the Respondents

age distribution	Frequency	Percent	Valid Percent	Cumulative Percent
18-28	93	31	31	31
29-39	89	29.7	29.7	60.7
40-50	73	24.3	24.3	85
51-60	45	15	15	100
Above 60	0	0	0	0
Total	300	100	100	100

Source: Survey, 2020

Note: *E-payment policy of these banks prohibit e-payment service below the age of 18.*

As shown in Table 4.3, of those 300 respondents 93 are found between the age range of 18-28 and it represents for about 31%, these number holds the largest portion than the other range of respondents. The other second group respondent is found between the ranges of 29-39 these range holds for about 89 in number, and these accounts for 29.7% of the respondents. The 51-60 above accounts for 45 and in percentage 15%. The age groups above 60 are accounts for 0%. This represents stated age limit customers are not actively participate in E-payment service. In opposite, the youngsters (18-28) are actively using e-payment service.

Table 4.4 Educational Qualification of respondents

Qualification	Frequency	Percent	Valid Percent	Cumulative %
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Valid	Certificate or less	17	5.7	5.7	5.7
	Diploma	73	24.3	24.3	30.0
	First degree	195	65.0	65.0	95.0
	Masters and above	15	5.0	5.0	100.0
	Total	300	100.0	100.0	

Source:survey,2020

As it is depicted in table 4.4 above, Out of the 300 respondents 195 or 65% were first degree holders and 24.3% or 73 respondents were diploma graduates. The remaining, 5.7% and 5% accounts for either certificate or less and Masters and above respectively. According to the e-payment service procedure of these banks, Customers who can write and read are termed as eligible to use e-payment services. However, as it can be seen from table 4.4 above; the number of e-payment service users with less educational qualification is very small. This implies that the service is not yet introduced well or appropriate awareness does not crated amongst these customer segments, which the service is provided for.

Table 4.5 Type of Account of E-payment users

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Current/Cheque deposit	30	10.0	10.0	10.0
	Saving deposit	270	90.0	90.0	100.0
	Total	300	100.0	100.0	

Source: survey,2020

In table 4.5 above, the researcher shows that 270 or 90% are saving account holders and the rest 30 or 10% are current account holders. Although the number of saving account holders of the bank is significantly larger than demand account holders, saving account holders are largely enjoying from the benefit of e-payment services. As we will see later on this chapter, the finding of the research asserts due to the fear of risk that current account business transaction are made not through using e-payment products. Especially, big amount transactions are not processing through it. On the other hand, the number of current account holders is very small relative to the mobile and card banking users due to lack of awareness on the benefits of the service and capacity of banks to provide service.

4.1.2 Reliability and validity Tests

Testing for reliability construct is indirectly achieved by testing the reliability of the scale measurements used in data collection. Scale reliability test methods available to researches include test-retest, equivalent form, and internal consistency (Hair Bush Ortinanu, 2002). Among the 300 e-payment user's respondents only 30 were selected for the Cronbach's Alpha reliability test and the final test on the 51 items shows .872 and it shows reliability of the questionnaire presented for data collection. The Cronbach alpha reliability tests each bank.

Table 4.6 E-payment Case Processing Summary

e-payment users Case Processing Summary			
		N	%
Cases	Valid		100
	Excluded		0
	Total		100

Reliability Statistics			
Cases		Cronbach's Alpha	No. of Items
	e-payment users	0.872	51

Source: survey:2020

As the results are closer to 1, it shows that the nature of questionnaire is reliable and consistent.

4.2 Challenges of E-payment

Different literature stated that the challenges of e-banking practice are absence of organizational related challenges, lack of adequate infrastructure and socio-cultural perception of the society in general. The result obtained from survey, interview and questionnaires are presented in the following sections

4.2.1 Organizational related challenges

Some of the basic issue related with organizational related challenges includes; trustworthiness, awareness creation, public confidence, responsiveness and readiness of material and human resource are considered as organizational related challenges.

Table 4.7 Organizational related challenges of e-payment

Organizational related challenges of e-payment			Strongly disagree	disagree	neutral	Agree	Strongly agree
1	I applied for the service E-payment because I believe it is trust worthy.	N	34	100	50	100	16
		%	11.3	33.3	16.6	33.3	5.3
2	I have got E-payment service working continuously without any system interruption.	N	74	152	39	35	-
		%	24.7	50.7	13	11.7	-
3	I am aware and feel confident on banks e-payment services that it deals without any alteration and fraud on my money.	N	-	13	45	142	100
		%	-	4.3	15	47.3	33.3
4	I get immediate support upon call to the e-payment call center.	N	98	116	86	-	-
		%	32.7	38.7	28.7	-	-
5	I believe the bank e-payment service is secured from hackers and crackers.	N	-	40	-	130	130
		%	-	13.3	-	43.3	43.3
6	The e-payment limit that settled by financial law do not barrier daily transaction my account.	N	-	173	127	-	-
		%	-	57.7	42.3	-	-

Source: survey, 2020

According to above table 4.7, 34(11.3%) of the respondents strongly disagree, 100 (33.3%) disagree, 50(16.6%) neutral, 100(33.3) agree and 16(5.3%) agree that whether the respondents trustworthy on e-

payment service. This shows that majority of the respondents (44.6%) not trust on the e-payment service of the banks.

Regarding system readiness 74(27.4%) of the respondents strongly disagree, 152 (50.7%) disagree, 39(13%) neutral and 35(11.7) agree. This shows that majority of the respondents (78%) not agree with the system readiness of the e-payment service of the banks.

Concerning with the confidence on there is no fraud or alteration occur on their e-payment system, 13 (4.3%) disagree, 45(15%) neutral, 142(47.3%) agree and 100(33.3%) agree. This shows that majority of the respondents (62%) are confident on the fraud or alteration not occur on their e-payment system.

Regarding the responsiveness of call center, 98(32.7%) of the respondents are strongly disagree, 116(38.7%) disagree, 86(28.7%) neutral. This shows that majority of the respondents (71%) not agree with the immediate response of call center of the e-payment service.

Concerning with the security of the e-payment system from the hackers, 40(13.3%) of the respondents disagree, 130 (43.3%) agree, 130(43.3%) strongly agree, payment service. This shows that majority of the respondents (86%) of the respondents feel secured their e-payment system from the hackers.

Regarding legal limit of daily transaction on e-payment system, 173(57.7) disagree and 127(42.3) are neutral. This shows that majority (58%) of the respondents perceives that daily limit on e-payment system barriers their business transaction.

In general, organizational related challenges like lack of trust, lack of e-payment system readiness, responsiveness to e-payment user and e-payment transaction limit levied by banks challenges affect e-payment system according to the e-payment user responses. This result is supported by the managers of e-payment service of the bank. The interview script supports challenges like responsiveness and awareness creation from the organizations (banks) challenges the e-payment service. This result supports the finding investigated by Alhaji Ibrahim H. (2009) using exploratory study, the among the critical challenges for the adoption of e-banking in Nigeria are: not readiness of banks and other stake holders (acceptability) even though some have shown impressive willingness, some banks are still not fully ready to for this new payment regime and lack of trust due to awareness creation to use the benefits of new technologies for customers

4.2.2 Infrastructure related challenges

Infrastructure is the other obstacle to implement E-banking in the banking industry. For the effective deployment of e-banking, it is necessary to have a reliable, sustainable and cost effective infrastructure

that can be accessible to the majority of the population. The most common communication infrastructure for E-banking is computer network such as Internet. Most e-banking systems use internet to communicate with their customers and reliable power supply that do not make interruption when process and payment deal. (Kumaga 2010).

Table 4.8 Challenges related with infrastructure of e-payment service

challenges related with infrastructure: e-payment service			Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	The existing infrastructure on the e-payment service is adequate enough to deliver efficient service.	N	122	119	39	20	-
		%	40.6	39.6	13.3	6.6	-
	The failure of network affects e-payment system while I dealing the transaction	N	-	-	56	120	124
		%	-	-	18.6	40	41.3
3	The bank has provided alternative source of power.	N	120	126	8	46	-
		%	40	42	2.7	15.3	-
4	I can make transaction by using e-payment every remote area I needed	N	120	136	7	19	18
		%	40	45.3	2.3	6.4	6
5	I think the bank uses latest software that contains all menus for e-payment service.	N	22	22	9	125	122
		%	7.3	7.3	3	41.6	40.7

Source: survey, 2020

Above table 4.8 shows, 122(40.6%) of the respondents strongly disagree, 119(39.6%) are disagree 39(13.3) are neutral and 20(6.6%) of the respondents are agree. This show that majority (81%) of the respondents perceives that existing infrastructures of the bank is not enough to deliver efficient service.

Regarding with problem related with network, 56(18.6%) of the respondents are neutral, 120(40%) of the respondents strongly agrees and 124(41.3%) of the respondents agrees that network failure while dealing transaction of e-payment. This shows that majority (81%) of the respondents agrees that failure of the network connection affects their e-payment transaction.

Concerning power breakdown whether the bank avails alternative power, 120(40%) of the respondents strongly disagree, 126(42%) of the respondents disagree, 8(2.7%) of the respondents neutral and 46(15.3%) the respondents agree. This shows that majority (82%) agrees that the bank not avails alternative power when the regular power line breakdown.

Regarding the accessibility of e-payment system in remote area, 120(40%) strongly disagree, 136(45.3%) disagree, 7(2.3%) neutral, 19(15.3%) agree and 18(6%) strongly agree. This shows majority (85%) of the respondents cannot access e-payment system at remote area due to network infrastructure.

Concerning e-payment system software and inclusiveness of all necessary menus, 22(7.3%) strongly disagree, 22(7.3%) disagree, 9(3%) neutral, 125(41.6%) agree and 122(40.7%) strongly agree. This respondent's feedback shows that a majority (82%) respondent agrees that, software are latest and include all necessary menu to complete e-payment transaction in single view.

In general, low level of internet penetration in remote area where customer moves and poorly developed telecommunication infrastructure ,frequent electric power disruption, which are basically depending on power supply, unavailability of alternative power where e-payment instruments locate are problems are considered as infrastructure challenge for the expansion of e-banking services according to the users response. This finding is consistent with the finding Kumaga (2010) other communication infrastructure available for E-banking users is the mobile network used for mobile phone. Automating the banking activities is another prerequisite for E -banking system. Closed financial network that links banks and other financial institutions is necessary. This network is usually used between banks or other financial institution for clearing and payment confirmation low level of internet penetration and poorly developed telecommunication infrastructure impede smooth development and improvements in ecommerce in developing countries. Frequent electric power disruption this create lot of problems in e-banking activities which are basically depending on power supply. It will force the banks to depend on generators results in high operational cost. These problems are considered as obstacles for the expansion of e-banking services.

4.2.3 Socio-cultural Challenges

Consumer's confidence and trust in the traditional payment system has made customers less likely to adopt new technologies. New technologies will not dominate the market until customers are confident that their privacy will be protected and adequate assurance of security is guaranteed. New technology also requires the test of time in order to earn the confidence of the people, even if it is easier to use and cheaper than older methods and fear of risk (Kumaga, 2010).

Table 4.9 Challenges related with socio-culture of the society

challenges related with socio-culture of the customers			Strongly disagree	Disagree	Neutral	agree	Strongly agree
1	The bank keeps my private information I provide for e-payment service.	N	-	-	-	59	241
		%	-	-	-	19.7	80.3
2	I am ready to use new technology .e-payment the bank announces	N	113	150	-	37	-
		%	37.7	50		12.3	-
3	still I prefer for cash payment rather than e-payment	N	-	29	87	120	64
		%	-	9.7	29	40	21.3
4	I fear the alteration or fraud on my e-payment account by the e-payment operators.	N	21	1	69	209	-
		%	7	0.3	23	69.7	-

Source: survey,2020

Above table 4.9 shows that, 59(19.3%) of the respondents agrees and 241(81.7%) strongly agrees. This shows that all respondents perceive that the bank keep confidentiality of information that customers availed for e-payment service.

Regarding customer's readiness to use emerging e-payment technology, 113(37.7%) strongly disagree, 150(50%) disagree and 37(12.3%) agree. This shows that majority (88%) of the respondents are not ready to use emerging technology of e-payment.

Whether the respondents prefer cash payments rather than e-payments, 29(9.7%) disagree, 87(29%) agree neutral, 120(40%) agree and 64(21.3%) strongly agree. This shows that majority of the respondents (61%) agrees they prefer for cash payment rather than e-payments.

Regarding the fear of alteration or fraud by e-payment operators, 21(7%) strongly disagree, 1(0.3%) agree 69(23%) are neutral and 209(69.7%) are agrees. This shows that majority (70%) of the respondents fears the risk of alteration or fraud their e-payment account by operators.

Generally, regarding socio-cultural challenges; the respondents not ready to use emerging e-payment technology, fear of risk of alteration by e-payment operators and preferences of cash transaction are major socio-cultural related e-payment challenges as e-payment users perception. This finding is backed by Isaac Awuondo (2005), indicated that the constraints of the adoptions of e-banking in Africa are; fear of risk: majority of the shy away from e-Banking services due to security concerns. Human face: According to some analysts, customers still value personalized and responsive services from their bankers and preference to paper money, as opposed to virtual cash in transactions.

Challenges of e-payment service from the interview response, mouth of five banks managers summarized as follows:

“the basic challenges of E-banking after introduction are high rates of illiteracy, low level of internet penetration, poorly developed infrastructure, lack of suitable legal and regulatory framework for e-banking, frequent power interruption, fear of risk and unavailability of competent , skilled employee, fear of security and lack of responsiveness and awareness creation from banks side.”

4.4 Benefit of E-payment

Understanding e-banking service is important for several stakeholders, since it helps them to derive benefits from it. Many banks and other organizations have already implemented or are planning to implement e-banking because of the numerous potential benefits associated with it. Some of these major benefits are from two perspectives, that is from customer perspective and banks perspective (Shah & Clarke, 1997).

4.4.1 Benefits of E-banking for customers

The benefit of E-banking for customers can be seen in respect with its easiness to use, convenience, accessibility, using the service with low price or cheap, speed, and getting information in real time base and easily and improve the service quality which they get from banks.

Table 4.10 Benefits of E-payment by the Customer Perspective

Regarding Benefits of E-payment by the Customers perspective			Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	E- payment makes it easier for customers to do banking activities	N		-	-	59	241
		%		-	-	19.7	80.3
2	E-payment is highly convenient for customers than traditional banking	N	-	-	-	187	113
		%	-	-		62.3	37.7
3	E-payment increase information access to customers by providing real time information on the money in account.	N	-	29	87	120	64
		%	-	9.7	29	40	21.3
4	E-payment services are enables users to complete banking activities quickly	N	21	1	69	209	-
		%	7	0.3	23	69.7	-
5	E-payment is more accessible to users than visiting a bank	N	248	52	-	-	-
		%	82.7	17.3	-	-	-

Source:survey:2020

Above table 4.10 shows that, whether e-payment makes easier banking activities; 59(19.7%) agrees and 241(80.3%) strongly agrees. This shows that all the respondents agree e-payment makes banking activities easy.

Regarding convenience of e-payment comparing with traditional banking, 187(62.3%) agrees and 113(37.7%) strongly agrees. From this we can understand that all the respondents agrees that e-payment is convenient than using traditional payment.

Concerning information access to customer account, 29(9.7%) disagree, 87(29%) neutral, 120(40%) agrees and 64(21.3%) strongly agrees. This states that majority of the respondents (61%) perceives that e-payment system increases information access to customer account.

Regarding e-payment makes transaction quickness, 21(7%) of the respondents strongly disagree, 1(0.3%) disagree, 69(23%) neutral and 209(69.7%) agree. From this we can understand majority (70%) of e-payment user respondents agree that e-payment service makes transaction quickly.

Concerning accessibility of e-payment rather than visiting bank, 248(82.7%) are strongly disagree and 52(17.3%) are disagree. This shows that all of the respondents do not agree the accessibility of e-payment in all area.

Generally, almost all respondents agreed that the basic benefit of E-banking for customers are convince accessibility, ease of use, providing real time information and getting quality service but there problem with accessibility of e-payment system due to e-payment infrastructure challenge. Except accessibility; This finding in line with the study of Karjaluoto et al. (2002), which identifies time saving as a major benefit of E-banking. Regarding time saving as a benefit of E-banking system for customers. The largest number of respondents agreed that E-banking services are enables users to complete banking activities quickly.

4.4.2 Benefit from bank perspective

E-banking can bring about various benefits for banks as well. According to some literature the basic benefit of E-banking for the bank are cost savings, efficiency, gaining new segments of customers, improvement of the banks reputation and better customer services and satisfaction are primary benefits to banks (Jayawardhena& Foley, 2000).

When analyzing benefit of e-payment from bank perspective the interview made with CBE, Zemen, ,Dashen, Awash and Nib e-Payment and virtual department manager, summarized from the mouth of managers as follows:

“Banks have got different kinds of benefits by using E-banking such as it simplify works of employees, reduce costs, reduce long queue, improve customer satisfaction and gain new segment of market. This implies that the benefit which recognizes internationally is also applicable for the case of Ethiopia. The basic benefit of the bank from E-banking are increase customer bases and satisfaction, additional revenue stream, good image building, minimize service delivery time, helps the bank to concentrate on corporate customers which is 20% of customers that helps the bank to generate 80% of profit. “

4.5 Prospect of the E-payment system

The prospect of both scaling e-commerce opportunities and driving financial inclusion makes a compelling case for examining the steps towards an enabling environment for e-payments. Efforts to date have been variable and knowledge gap exist between policy communities. The extent to which policies allow the deployment of new technologies and new suppliers, improve the domestic regulatory framework and encourage the necessary infrastructure development may bring benefits for both home grown and foreign payment services suppliers alike. Doing so would require examining market access

commitments for e-payment services, as well as market access for underpinning ICT and other infrastructure services, complemented by common principles on e-payments friendly regulatory frameworks (WEF,2018). Drive forces towards e-Banking adoption in Africa is include rapidly changing customers' needs and preferences, Competitive forces and product differentiation strategies and Pressure to reduce transactional and operation costs(Sherah etal,2005).

Interview script summarized from the mouth of e-payment managers as follows:

“Digital Economy regulation is most important opportunity of in Ethiopian e-payment system, enabling legal and regulatory environment. The aim of this is to strengthen the analog foundations of the digital economy, in particular policymaking, and regulation for the telecommunications sector and for the development of digital entrepreneurship. A strong telecommunications sector is built on market competition, private sector participation and independent regulation all of which have been lacking in Ethiopia to date. Indeed, Ethiopia was one of the last countries in the world to open its telecom market to competition, to permit private or foreign ownership, and to transition away from state control to arms length regulation of the sector.

This puts Ethiopia at a disadvantage as it is not yet able to reap the benefits of the digital economy emerging in other parts of the continent. Now it is time to efficiently use the need of emerging generation.

Ethiotelcom, is an integrated telecommunications services provider in Ethiopia. which providing, internet, mobile communications and telephony services. Ethiotel is fully owned by the government of Ethiopia and maintains a monopoly over all telecommunication services. Restructuring Ethiotelcom is in moving towards a more liberalized telecom market in Ethiopia. At a time when many economies were making the transition from a monopoly-based to a market-based model in telecommunications, in supporting the successful introduction of competition and in enabling the telecommunications sector to grow on a sound basis. Competition safeguards introduced include obligations imposed on major suppliers to avoid anti-competitive practices and to provide interconnection to their networks under non-discriminatory, transparent and reasonable terms and rates, among other conditions.

Encouraging a competitive e-payments environment could improve their specific commitments and initiate dialogue with stakeholders both domestic and international to identify apparent market access barriers and discriminatory measures with a view to addressing these or affirming current coverage where appropriate. More creative thinking may be needed to effectively target regulatory challenges. The goal of regulatory cooperation on e-payments should not necessarily be harmonization, but rather

enhancing trust and confidence around global e-payment, as well as promoting the ease of doing business.”

This interview script of managers in line with the finding of Raja.etal(2018) modern technological developments have altered the way consumers interact with financial institutions, disrupting the payments system. The rise of the internet, digitization, shifting consumer preferences and, in some but not all cases, regulatory reform, has accelerated the uptake and use of electronic payments (e-payments). Once dominated by banks, the sector is witnessing both increasing competition from new entrants and the emergence of e-payment methods that involve partnerships among different players, from telecom operators to express delivery companies and retail agents.

E-commerce opportunities can also be boosted by particular innovations in e-payments that have eased or revolutionized access to financial services for the billions of adults who lack them. According to the World Bank, formal banking reaches about 40% of the population in emerging markets, compared with a 90% penetration rate for mobile phones(SDG,2015). Providing payment options via mobiles (m-payments) allows easier market access for consumers, and possibly merchants, who would not qualify for bank accounts and would have previously been unable to engage in e-payments. In the face of technological change, it has become increasingly common practice to enable innovation by creating regulatory safe zones. These regulatory sandboxes are controlled environments in which certain requirements are temporarily suspended or additional support measures are provided to allow experimentation with new products, most likely with a limited number of consumers. The approach enables technology firms and financial institutions to collaborate in a less regulated, closed marketplace, with the end result being more effective technology that benefits both business and consumers. It also enables regulators to better understand the benefits and impacts of a potential technology or payment method being applied more widely(WEF,2018). E-payments should not necessarily be harmonization, but rather enhancing trust and confidence around global e-commerce, as well as promoting the ease of doing business. additional obligations were primarily designed to prevent the erosion of market access commitments, these in turn helped promote and consolidate domestic telecommunications governance processes widely considered best practice from a competitiveness standpoint by both industry and governments. The approach used drafting of a common text while allowing governments the flexibility to draw selectively from it might serve as a model for e-payment services (Kommerskollegium, 2012).

Chapter Five

5. Summary of Major Findings, Conclusions and Recommendations

This chapter presents summary of findings, the conclusion of the findings as well as possible important recommendations.

5.1 Summary of Major Findings

This study aims at assessing challenges and prospects of E-payment service in Ethiopian Commercial Banks (five commercial Banks operating Addis Ababa). Challenges face e-payment systems are categorized into: Organizational, infrastructural and socio-cultural challenges. Perceived benefits using e-payment system also categorized into: Banks perspective and customer perspective. Prospects of E-payment system are: Emerging enabling e-payment policies, emerging needs, Liberalization of telecom sector, Competitive e-payment channel and creative thinking (innovation).

5.2 Conclusion

Organizational related challenges like lack of trust, lack of e-payment system readiness, responsiveness to e-payment user and e-payment transaction limit levied by banks challenges affect e-payment system according to the e-payment user responses. This result is supported by the managers of e-payment service of the bank. The interview script supports challenges like responsiveness and awareness creation from the organizations (banks) challenges the e-payment service. This result supports the finding investigated by Alhaji Ibrahim H. (2009) using exploratory study, the among the critical challenges for the adoption of e-banking in Nigeria are: not readiness of banks and other stake holders (acceptability) even though some have shown impressive willingness, some banks are still not fully ready to for this new payment regime and lack of trust due to awareness creation to use the benefits of new technologies for customers.

Low level of internet penetration in remote area where customer moves and poorly developed telecommunication infrastructure ,frequent electric power disruption, which are basically depending on power supply, unavailability of alternative power where e-payment instruments locate are problems are considered as infrastructure challenge for the expansion of e-banking services according to the users response. This finding is consistent with the finding Kumaga (2010) other communication infrastructure available for E-banking users is the mobile network used for mobile phone. Automating the banking

activities is another prerequisite for E -banking system. Closed financial network that links banks and other financial institutions is necessary. This network is usually used between banks or other financial institution for clearing and payment confirmation low level of internet penetration and poorly developed telecommunication infrastructure impede smooth development and improvements in ecommerce in developing countries. Frequent electric power disruption this create lot of problems in e-banking activities which are basically depending on power supply. It will force the banks to depend on generators results in high operational cost. These problems are considered as obstacles for the expansion of e-banking services.

Regarding socio-cultural challenges; the respondents not ready to use emerging e-payment technology, fear of risk of alteration by e-payment operators and preferences of cash transaction are major socio-cultural related e-payment challenges as e-payment users perception. This finding is backed by Isaac Awuondo (2005), indicated that the constraints of the adoptions of e-banking in Africa are; fear of risk: majority of the shy away from e-Banking services due to security concerns. Human face: According to some analysts, customers still value personalized and responsive services from their bankers and preference to paper money, as opposed to virtual cash in transactions.

All respondents agreed that the basic benefit of E-banking for customers are convince accessibility, ease of use, providing real time information and getting quality service but there problem with accessibility of e-payment system due to e-payment infrastructure challenge. Except accessibility; This finding in line with the study of Karjaluoto et al. (2002), which identifies time saving as a major benefit of E-banking. The largest number of respondents agreed that E-banking services are enables users to complete banking activities quickly and convenience

From bank perspective benefit: the script of interview, banks have got different kinds of benefits by using E-banking such as it simplify works of employees, reduce costs, reduce long queue, improve customer satisfaction and gain new segment of market. This implies that the benefit which recognizes internationally is also applicable for the case of Ethiopia. The basic benefit of the bank from E-banking are increase customer bases and satisfaction, additional revenue stream, good image building, minimize service delivery time, helps the bank to concentrate on corporate customers which is 20% of customers that helps the bank to generate 80% of profit. This script is supported by Jayawardhena& Foley (2000) E-payment can bring about various benefits for banks as well. According to some literature the basic benefit of E-banking for the bank are cost savings, efficiency, gaining new segments of customers, improvement of the banks reputation and better customer services and satisfaction are primary benefits to banks.

Prospects of E-payment system in Ethiopia; Digital Economy policy is most important opportunity of in Ethiopian e-payment system, enabling legal and regulatory environment. The aim of this is to strengthen the analog foundations of the digital economy, in particular policymaking. This puts Ethiopia at a disadvantage as it is not yet able to reap the benefits of the digital economy emerging in other parts of the continent. Now it is time to efficiently use the need of emerging generation. Ethio telecom is fully owned by the government of Ethiopia and maintains a monopoly over all telecommunication services. Restructuring Ethio telecom is in moving towards a more liberalized telecom market in Ethiopia. At a time when many economies were making the transition from a monopoly-based to a market-based model in telecommunications, in supporting the successful introduction of competition and in enabling the telecommunications sector to grow on a sound basis. Encouraging a competitive e-payments environment could improve their specific commitments and initiate dialogue with stakeholders both domestic and international to identify apparent market access barriers and discriminatory measures with a view to addressing these or affirming current coverage where appropriate. More creative thinking may be needed to effectively target regulatory challenges.

This finding is supported by Raja.etal (2018) modern technological developments have altered the way consumers interact with financial institutions, disrupting the payments system. The rise of the internet, digitization, shifting consumer preferences and, in some but not all cases, regulatory reform, has accelerated the uptake and use of electronic payments (e-payments). Once dominated by banks, the sector is witnessing both increasing competition from new entrants and the emergence of e-payment methods that involve partnerships among different players, from telecom operators to express delivery companies and retail agents.

E-commerce opportunities can also be boosted by particular innovations in e-payments that have eased or revolutionized access to financial services for the billions of adults who lack them. According to the World Bank, formal banking reaches about 40% of the population in emerging markets, compared with a 90% penetration rate for mobile phones (SDG, 2015). Providing payment options via mobiles (m-payments) allows easier market access for consumers, and possibly merchants, who would not qualify for bank accounts and would have previously been unable to engage in e-payments

In the face of technological change, it has become increasingly common practice to enable innovation by creating regulatory safe zones. These regulatory sandboxes are controlled environments in which certain requirements are temporarily suspended or additional support measures are provided to allow experimentation with new products, most likely with a limited number of consumers. The approach enables technology firms and financial institutions to collaborate in a less regulated, closed marketplace,

with the end result being more effective technology that benefits both business and consumers. It also enables regulators to better understand the benefits and impacts of a potential technology or payment method being applied more widely(WEF,2018). E-payments should not necessarily be harmonization, but rather enhancing trust and confidence around global e-commerce, as well as promoting the ease of doing business. additional obligations were primarily designed to prevent the erosion of market access commitments, these in turn helped promote and consolidate domestic telecommunications governance processes widely considered best practice from a competitiveness standpoint by both industry and governments. The approach used drafting of a common text while allowing governments the flexibility to draw selectively from it might serve as a model for e-payment services (Kommerskollegium, 2012).

5.3 Recommendations

The student researcher recommends the following possible solutions that can help to mitigate the identified challenges of E-payment services:

The banks should run campaigns, promotions and adverts, which aim at educating their customers on the need to adopt electronic payment services deeply into technical areas to develop confidence and public awareness. In addition, the campaign must aim at boosting customer confidence in the e- payment services they provide and assure them of the security and privacy for the need to patronize these services. This will encourage more customers to adopt the e-payment platform. Banks also should make its e-payment instruments ready, restructuring e-payment support staffs to immediate e-payment users' support and enough and stable limit of daily e-payment transaction.

To minimize network failures and power disruption, the banks should create better strategic partnership with telecom sector and electric power providers, installing 4G network and generators for e-payment users where e-payment instruments locates.

To minimize socio-cultural challenge of fear of risk, preference for cash based payment and barrier to use emerging e-payment technology; maximize the staff's (organizational) awareness creation through different management mechanisms.

To use the prospects (opportunities), the banks should being prepared for digital economy policy of Ethiopia, emerging need, restructuring of network infrastructure provider (ethiotelecom) and competitive e-payment channels. By drafting bank based (modified) digital policy, identifying and hiring emerging (prospect)e-payment customers, developing criteria to select network provider and e-payment channel provider based on latest e-payment owners and users criteria.

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Appendix A:
Questionnaire



Addis Ababa University
School of Business and Economics
Graduate Studies
Department of Business Administration.

Dear all respondents; first of all I would like to forward my heartily gratitude for taking your precious time to handle and respond all questions honestly.

The researcher is undertaking a study on challenges and prospect of Ethiopian Commercial Banks as a partial fulfillment of the requirements for the Degree of Master in Business Administration. Therefore, your genuine, frank and timely responses are quite vital to determine the success of this study. So, I kindly request your cooperation in filling the questionnaire honestly and responsibly.

As the study focuses on challenges and prospect Ethiopian Commercial Banks. It is therefore expected to provide valuable suggestions for both banks and e-payment users.

Finally, I would like to confirm you that all the information you are providing in this questionnaire will be strictly confidential and intended to be used for academic purpose only. I further confirm you that, name, position and department of the respondents will not be revealed specifically. Once again, I greatly appreciate your kind co-operation. *(No need of writing your name)*

Finally if you have any questions, comment or suggestions regarding this study, please do not hesitate contacting me using the following address.

*Geda Mulatu Wakgari, Tel: 0900295881 E-mail:
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Electronic (e) - payment is mostly referred to as automated payment or banking channels that allows delivery of banking services in an effective, efficient and convenient way via electronic channels such as Automatic Tellers Machine (ATM), Point of Sale (POS) Terminals, Mobile phones, Internet, and Personal Computers.

SDA) indicates **strongly disagree**, **(DA)** indicates **disagree**, **(N)** indicates **neutral** **(A)** indicates **Agree** and **(SA)** indicates **strongly agree**

Part I: Demographic Characteristics /personal profile/ of the Respondent: Put a [√] mark for the questions you choose and some questions may be selected more than once.

1. Sex : Male [] Female []
2. Age (Years): 18-28 [] 29-39 [] 40-50 [] 51 -60 [] >60[]
3. Educational qualification:
 Certificate or less [] Diploma [] First Degree [] Masters and above []
4. Do you have bank account with? CBE [] AB [] NIB [] HB [] ZB []
5. What type of Account do you have?
 Current Account [] Time deposit Account [] saving deposit Account [] All []

Part II: challenges of E-payment service

<i>Organizational related challenges of e-payment</i>			<i>Strongly disagree</i>	<i>disagree</i>	<i>neutral</i>	<i>Agree</i>	<i>Strongly agree</i>
1	I applied for the service E-payment because I believe it is trust worthy.	N					
		%					
2	I have got E-payment service working continuously without any system interruption.	N					
		%					
3	I am aware and feel confident on banks e-payment services that it deals without any alteration and fraud on my money.	N					
		%					

4	I get immediate support upon call to the e-payment call center.	N					
		%					
5	I believe the bank e-payment service is secured from hackers and crackers.	N					
		%					
6	The e-payment limit that settled by financial law do not barrier daily transaction my account.	N					
		%					

Part III. Benefit of E-payment

Regarding Benefits of E-payment by the Customers perspective			Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	E- payment makes it easier for customers to do banking activities	N					
		%					
2	E-payment is highly convenient for customers than traditional banking	N					
		%					
3	E-payment increase information access to customers by providing real time information on the money in account.	N					
		%					
4	E-payment services are enables users to complete banking activities quickly	N					
		%					
5	E-payment is more accessible to users than visiting a bank	N					
		%					

Appendix B:

Interview



Addis Ababa University
School of Business and Economics
Graduate Studies
Department of Business Administration.

This Interview is prepared to be answered by the technical and managerial staffs of the bank.

The researcher is undertaking a study on challenges and prospect of Ethiopian Commercial Banks as a partial fulfillment of the requirements for the Degree of Master in Business Administration. Therefore, your genuine, frank and timely responses are quite vital to determine the success of this study.

Your genuine, frank and timely responses are quite vital to determine the success of this study. So, I kindly request you to answer the interview honestly and responsibly.

1. What do you think the e-payment service challenges in the case of your bank in Addis Ababa?
Organizational related?(awareness creation and public confidence, trustworthiness,responsiveness,security,legal barrier and system readiness)-----

Infrastructure? Network failure, ICT, power breakdown-----

Socio-culture(fear of risk, against new technology, confidentiality of information)-----

How each challenge affect your bank?

-
- This image shows a blank sheet of white paper with horizontal dashed lines, typical of primary-ruled notebook paper. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

- [illegible]

- Do you agree this is as prospects of e-payment system? If yes why?
- Emerging of Policies towards an enabling environment for e-payments
 - Competition in e-payments environment
 - More creative thinking (Innovation) in e-payment channels.
 - Competition in telecom sector

Recommended sample sizes for two different precision levels

Population Size	+5%	10%	Population size	5%	10%
10	10		275	163	74
15	14		300	172	76
20	19		325	180	77
25	24		350	187	78
30	28		375	194	80
35	32		400	201	81
40	36		425	207	82
45	40		450	212	82
50	44		475	218	83
55	48		500	222	83
60	52		1000	286	91
65	56		2000	333	95
70	59		3000	353	97
75	63		4000	364	98
80	66		5000	370	98
85	70		6000	375	98
90	73		7000	378	99
95	76		8000	381	99
100	81	51	9000	383	99
125	96	56	10,000	385	99
150	110	61	15,000	390	99
175	122	64	20,000	392	100
200	134	67	25,000	394	100
225	144	70	50,000	397	100
250	154	72	100,000	398	100
			>100000	400	100

Source: Isaac and Michael, 1981; Smith, M. F., 1983