



**Opportunities and Challenges of Implementing Electronics Payment Projects in Bank of
Abyssinia**

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Approval Sheet

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

MA IN PROJECT MMANAGEMENT

**Opportunities and challenges of implementing electronic payment projects in Bank of
Abyssinia**

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Declaration

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Adane Atara (PHD). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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Letter of Certification

This is to certify that this thesis is prepared by *Nardos Kebede*, entitled: *Opportunities and challenges of implementing electronic payment projects in Bank of Abyssinia* submitted in partial fulfillment of the requirements for the Degree of Master of Arts in Project Management complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

The assistance and help received during the course of this investigation have been duly acknowledged. Therefore, I recommend that it can be accepted as fulfilling the project work requirements.

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ABSTRACT

This project work aims to examine implementation of electronic payment project in Bank of Abyssinia with respect to the available opportunities which drive implementation process and challenges which can influence the bank from adopting technological oriented payment system. The study applied exploratory research design and used both questionnaires and semi structured interview as instrument to collect primary data, while secondary data were reviewed from various publications. Purposive sampling was used to gather the data through questionnaire for E-banking and IS support department team members sample size of thirty and Semi structure interview was employed for the director of E-Banking department. A mixed research approach was used to answer the research questions. Quantitative data were analyzed with the use of SPSS version 20 software using statistical tools of frequency, percentage, mean score and standard deviation. The results investigated from the selected respondents and review of secondary data demonstrates that, the opportunities that drive implementation of electronic payment projects are: the market is endowed with huge potential of untapped and unbanked population, development in mobile phone ownership has an immense opportunity to adopt electronic payment technologies, it is a way to minimize cost for the bank and it reduces risks of traditional payment system. The study result also identified insufficient government support, low level of ICT literacy rate, inefficiency of employees of the bank, inadequate telecommunication infrastructure, frequent power interruption and minimum emphasize given to electronic payment system by the bank as challenges of implementation process. On these basis, suggestions are offer to Bank of Abyssinia to empower employees with better technical skill and other necessary skills and developing and improving technological payment methods shall be given the priority.

Keywords: Electronic payment, implementation, TOE framework

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LIST OF ACRONYMS

BOA	Bank of Abyssinia
B2B	Bank to Bank
B2G	Bank to Government
CBE	Commercial Bank of Ethiopia
CPU	Central Processing Unit
EBPP	Electronic Billing Presentment and Payment
EMP	Electronic Mobile Payment System
EPS	Electronic Payment System
G.C	Gregorian Calendar
GDP	Gross Domestic Product
IC	Integrated Circuit
ICT	Information and Communication Technology
IT	Information technology
MPRI	Mobile Payment Readiness Index
NBE	National Bank of Ethiopia
PC	Personal Computer
PDA	Personal Digital Assistance
POS	Point of Sale
RAM	Random Access Memory
SMS	Short Message Service
SPSS	Statistical Package for Social Scientists
TOE	Technological Organizational Environmental frame work

TTP	Trusted Third Party
UNECA	United Nations Economic Commission for Africa
US	United States of America
WAP	Wireless Application Software
WWW	World Wide Web

1. CHAPTER ONE

INTRODUCTION

Most of human history involves trade which encompasses payment. The payment system had moved from bartering, printed paper money and coins, other payment instruments such as cheque and casher payment order and to most recently electronics payment system. An electronic payment is defined as a payment services that utilize information and communications technologies including integrated circuit (IC) card, cryptography, and telecommunications networks (J. Raja et al. 2008).

E-payment systems refer to the automated processes of exchanging monetary value among parties in business transactions and transmitting this value over the Information and Communication Technology (ICT) networks. The need for electronic payment technologies is to respond to fundamental changes in socio-economic trends. The payment system is the infrastructure which comprised of institutions, instruments, rules, procedures, standards, and technical, established to affect the transfer of monetary value between all the parties. An efficient payment system reduces the cost of exchanging goods and services, and is indispensable to the functioning of the inter-bank, money, and capital markets (J. Raja et al., 2008).

In Sub-Sahara African countries developments in information and communication technology (ICT) are radically changing the way business is done. Electronic commerce 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 systems that are compatible with the demands of the electronic market place (Balachadher et al., 2000; cited on Tekabe et al., 2016).

In Ethiopia cash is still the most dominant medium of exchange and electronic-banking is not well known. Certainly the banking industry in Ethiopia is underdeveloped and therefore there is an 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 (Worku, 2010).

Henok, 2015 argued that information technology plays a key role in promoting inclusive financial system as it is the only way to reduce the cost significantly and reach the masses. But, of it doesn't mean that technologies are not suitable for financial inclusion due to affordability, accessibility,

security and privacy. It enhances efficiency, offers access to financial and banking services, generates new opportunities for income generation and improves governance and gives poor people a voice. On the other hand, lack of social awareness/lack of familiarity with different technology and lack of sufficient skills to use and implement E-banking system were considered as barriers to adopt E-banking system in Ethiopia. Electronic payments are not currently covered in Ethiopian legal system. Lack of such legal framework may thus hinder the introduction of cost effective modern electronic payment instrument such as ATMs, credit and debit cards, mobile/telephone/internet banking (Bultum, 2014).

Despite, the importance of the adoption of electronic payment technologies, limited studies are currently available in developing countries, especially in Ethiopia. Therefore, more studies are still required to understand the relevance of E-banking in the country to identify areas in which the country lags behind that inhibit their E-banking adoption and diffusion. Therefore, to address the current gap in the literature, this study was designed to examine the E-banking adoption situation in Ethiopia and focused on the investigation of barriers and drivers of implementation of E-banking project in Bank of Abyssinia and recommended appropriate actions to be taken to promote E-banking system in the country.

1.1 Background of the study

Electronic innovation in banking industry can be traced back to 1970, when the computerization of financial institutions gained momentum (Malak 2007), however; a visible presence of this was evident to the customers since 1980, with the introduction of ATM (Bultum, 2014). E-payment in most African countries is either inexistent or practiced in limited circumstances. Most African countries lack the infrastructure and proper legal and regulatory framework for e-payment. E-payment infrastructure such as Internet is not widely available in Africa. Bank and other financial institutions are not adequately automated to enable e-banking and e-payment. Legal and regulatory framework is also inexistent in most African countries. However, some African countries such as Tunisia and Egypt have adequate infrastructure with proper legal and regulatory framework for e-payment and e-commerce in general (Kidan, 2005).

With the 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 introducing electronic banking system to satisfy their customers and meet the requirements of rapidly

expanding domestic and international trades, and increasing international banking services (Worku, 2010). Commercial banks of all types and sizes have intensified the use of online (internet/web-based) banking in their operations. Online banking is becoming the latest breakthrough development in the ever-growing world of financial services marketing. As the internet becomes more and more popular, the usage of online banking is expected to increase considerably. Online banking offers customers a faster and more convenient way to do business in the convenience of their home or office. Recent survey results indicate that online banking has gone from less than a million people (J. Raja, 2008).

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 (Tekabe, 2016). This study made an effort to give an insight about the opportunities and challenges of electronic payment project implementation which have an important role in financial market.

1.1.1 Background of the Organization

Bank of Abyssinia (BOA) Share Company was founded in 1996 G.C and is based in Addis Ababa, Ethiopia. The present-day Bank of Abyssinia was established on February 15, 1996 (90 years to the day after the first but defunct private bank that was established in 1906 during Emperor Menelik II) in accordance with 1960 Ethiopian commercial code and the Licensing and Supervision of Banking Business Proclamation No. 84/1994. BOA started its operation with an authorized and paid up capital of Birr 50 million, and Birr 17.8 million respectively, and with only 131 shareholders and 32 staff. In two decades since its establishment Bank of Abyssinia has registered a significant growth in paid up capital and total asset (Bank of Abyssinia, 2019).

According to the bank's annual report 2017/2018, authorized and paid up capital of BOA as of 30th June 2018 is Birr 4.24 billion and Birr 2.56 billion, respectively, a total deposit balance of Birr 25.79 Billion and a total loans and advances of Birr 17.99 billion, which in effect enhance the risk absorbing and the lending capacity of the Bank. BOA has more than 5,825 staffs and 1,012,177 account holders and works with known money transfer agents such as Western Union, Express Money, Ria International, Trans-fast, Dahabshiil, MoneyGram, kaah and Ezremit. BOA has 2,176 shareholders who are successful businessmen, intellectuals, celebrities, etc. Bank of Abyssinia, which started banking services with only one branch in 1996, has 331 domestic branch networks, of which 152 branches are in Addis Ababa and the remaining 179 are established in bankable towns all over the country. Following a strong demand for better service and products from all

directions on the one hand, and a ground-breaking development in ICT, on the other, BOA has replaced its in-house IT system with the state-of-the-art technology called T24 and started ATM and POS services with Habesha card and mobile banking services. BOA also provides Internet banking services while Agent banking service will be readily available within the near future.

The implementation and the practice of electronic payment technologies in Ethiopia have not developed as much as developed countries, not even as much as low income countries. The goal of this study was to determine the core opportunities and challenges of implementing electronic payment technologies in Bank of Abyssinia and to put valuable recommendations towards the problem.

1.2 Statement of the Problem

Technology has inarguably made our lives easier. It has cut across distance, space and even time. One of the technological innovations in banking, finance and commerce is Electronic Payments. Electronic Payments (e-payments) refers to the technological breakthrough that enables us to perform financial transactions electronically, thus avoiding long lines and other hassles. Electronic Payments provides greater freedom to individuals in paying their taxes, licenses, fees, fines and purchases at unconventional locations twenty four hours a day and seven days per week (Sumanjeet, 2009). With the rapid growth of mobile phone ownership to facilitate digital payments in the developing world, shifting from cash to digital payments offers high potential payoffs for entrepreneurs worldwide (Klapper, 2017).

Henok (2015) revealed that in 2013/14 there were about 28.3 million mobile phone subscribers in Ethiopia, recording an annual growth rate of 19.2 percent. Mobile phone subscribers' penetration rate is increasing in each year. During the same period the penetration rate reached at 33.3 percent. The author continues electronic banking service in Ethiopia is endowed with huge potential as the sector remains untapped. A study by Kifle (2016) stated that banks in Ethiopia are trailing behind in acquiring the required quality of banking services to effectively compete in global market. Studies made on electronic payment in context of Ethiopia indicated that there is a potential market in the country while banks refrained to utilize the widely available market.

Electronic payment is the most recent delivery channel of banking services in developing nations such as Ethiopia and BOA was not the first to launch those electronic payment systems, among other private banks in Ethiopia BOA was late adopter. Besides, most of the empirical evidences made available on e-banking were outside Ethiopia. In other words, the studies were conducted

out of circumstances where the cultural, geographical, and economic conditions are different from banks in Ethiopia.

Despite, the importance of these adoptions and development of electronics payment technologies, very limited number of research has been done on the opportunities and challenges of implementing electronics payment projects in developing nations like Ethiopia. This implies that, more studies are required to assess opportunities and challenges of electronics payment in the country to identify areas in which banks lags behind and if there is any chance to exploit the opportunities available.

In the study area, there has not yet been detail research works made available to address opportunities and challenges of implementing electronic payment projects in Ethiopian context specifically in BOA. Therefore, the researcher was motivated to fill those aforesaid gaps and tried to conduct a research on e-banking services which will help to support further implementation of E-Banking projects in BOA and adds to the scholarly research literature in the field. Therefore, this study focused on the opportunities and challenges of implementing electronic payment technologies particularly in BOA.

1.3 Research Objective

1.3.1 General Objective

The general objective of this study was assessing the opportunities and challenges of implementing electronically affiliated payment technologies in Bank of Abyssinia.

1.3.2 Specific Objectives

The specific objectives of the study were:

- ❖ To identify the opportunities encountered while implementing E-payment projects in BOA.
- ❖ To identify the challenges encountered while implementing E-payment projects in BOA.
- ❖ To identify the existing opportunities and challenges for adoption and development of electronic payment technologies in BOA.

1.4 Research Question

Based on the above stated objectives, the following research questions were answered:

1. Which opportunities contributed for the adoption of E-payment technologies?
2. What challenges affected implementation of E-payment technologies
3. What are the existing opportunities and challenges which enhanced and hampered the process of implementing electronic payment technologies?

1.5 Scope and Limitation of the Study

The study is limited both in terms of issues and geographic coverage. Geographically, it would be too difficult to address all branches and districts of BOA; the study was only limited to E- Banking department of the bank. The study is confined to know and relatively analyze opportunities and challenges of implementing electronic payment projects. On the other hand the study is limited by issues. Although there are different socio-economic issues that made introduction and implementation of electronic payment projects easy or difficult, the proposed study focused only technological, organizational and environmental factors.

1.6 Significance of the Study

The primary purpose of this study was an academic purpose (as a partial fulfillment for the requirements of the degree of Master of Arts in Project Management). Although, the study can serve as an input or as a piece of reference for researchers who need to undertake detail study on opportunities and challenges of implementing electronic payment projects in Bank of Abyssinia . Similarly, concerned institutions can use the output of the study to understand the current situation and develop better strategies if needed. The study can support the existing knowledge about opportunities and challenges of implementing electronic payment technologies. The study generated empirical evidence that could serve as a preliminary reference for further and deeper analysis. The study also exposed the writer of this study to the research world and acquires experience as future professional. Furthermore, the major contribution of this paper lies on providing indicative information, which could inspire researchers to undertake in-depth studies on the subject.

1.7 Organization of the Study

This study was constituted of five chapters. The first chapter covered background, background of the organization, statement of the problem, general and specific objectives of the study, research questions, scope and limitation of the study and significance of the study. Chapter two enlightened theoretical literature review and empirical studies elsewhere and in the context of Ethiopia. The research methodology is covered under chapter three. Methodological aspects covered under the chapter include research design, research approach and method, study area, research population and sampling, data collection, data analysis, reliability and validity and ethical consideration analysis. The fourth is about result and discussion. Finally, the last chapter presents summary of the finding, conclusion and recommendations.

2. CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical literature review

2.1.1 Definition of E-Payment

Different scholars have defined electronic payment in different perspectives with a similar meaning. D. Abrazhevich (2004) defined electronic payment as a form of a financial exchange that takes place between the buyer and seller facilitated by means of electronic communications. The author added that electronic payment systems (EPSs) are summoned to facilitate the most important action after the customer's decision to pay for a product or service to deliver payments from customers to vendors in a most effective, efficient and problem-free way.

Alternative definition by Sidek (2015) enlightened that Payment is the act of transferring funds for goods and services. Initiating a payment transaction (i.e., handing over the money, so to speak) is the last chain process in purchasing such products. E-payment is where process such like this is managed electronically using available technology made via face-to-face transactions or online purchases (e-commerce). The role of electronic payment systems is pivotal for future of e-commerce, whose further growth depends on the timely development of EPSs.

2.1.2 Evolution of E-Payment

The astonishing growth and sophistication of information and communication technology (ICT) is changing 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-commerce) possible. E-Commerce in its simplest sense is trading electronically. It offers consumers and merchants convenience and speed. The success and growth of e-commerce, however, depends on efficient electronic payment (e-payment) system. E-payment, the transfer of values electronically, it in turns depend on secure ICT infrastructure, efficient legal and regulatory regime, and widespread awareness among the public and business (Kidān, 2005).

While various large merchants issued their own credit cards in the 1940s and 50s in the US, the history of general purpose payment cards (not limited to use at a single merchant) begins in the US state of California. In 1958, Bank of America, which had a dominant market position in the state, mailed unsolicited credit cards, consisting of a paper card, with a revolving, unsecured \$300

credit line, to several thousand people in a small city outside of San Francisco. It franchised the operations, called BankAmericard, to other banks in the 1960s, and formalized itself as a separate organization called Visa in 1976. A rival group of California banks created a similar card-based network in 1979 which is called MasterCard (J. Raja, 2008).

Electronic banking is the term that describes all transactions that take place among companies, organizations, and individuals and their banking institutions. First conceptualized in the mid-1970s, some banks offered customers electronic banking in 1985. However, the lack of internet users, and costs associated with using online banking, stunted growth. The Internet explosion in the late-1990s made people more comfortable with making transactions over the web. While financial institutions took steps to implement e-banking services in the mid-1990s, many consumers were hesitant to conduct monetary transactions over the web. It took widespread adoption of electronic commerce, based on trailblazing companies such as America Online, Amazon.com and eBay, to make the idea of paying for items online widespread. By 2000, 80 percent of U.S. banks offered e-banking. Customer use grew slowly. At Bank of America, for example, it took 10 years to acquire 2 million e-banking customers. However, in 2001, Bank of America became the first bank to top 3 million online banking customers, more than 20 percent of its customer base (Batchelor, 2017).

Along with this J. Raja (2008) argued 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 e-commerce. 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 online dialogue. Banks will find a demand from their large business clients to effect high value bank mediated transfers of funds easily and efficiently. The emergence of E-banking in Ethiopia goes back to the late 2001, when the largest state owned commercial bank of Ethiopia (CBE) introduced ATM to deliver service to the local users (Tekabe et. al, 2016).

2.1.3 Limitation of Traditional Payment System Relative to Electronic Payment

Given the liquidity and transactional anonymity of cash, cash payments are subjected to “leakage” (payments that do not reach the recipient in full) and “ghost” (fake) recipients, particularly in the context of government transfers. By moving to digital payments, the traceability of the payment process is improved. First, recipients have digital records of the amount of the payments they are to receive. Second, digital payments generally require more strict identification documentation, making it harder for ghost recipients to remain undetected. Given the lack of digital-payment penetration, governments, consumers, and financial providers in Sub-Saharan Africa are still bearing the high cost of cash payments costs associated with manual acceptance, record keeping, counting, storage, security, and transportation (World Bank, 2014).

A study made by Girma (2016) indicated that the bricks and mortar approach (traditional Banking) requires expensive investment and not economically feasible for financial institution. Otherwise, financial inclusion would be a nightmare in Ethiopia unless banks should make strategic shift to alternative channels like E- Banking. Moreover, E-banking technology enhanced accessibility of the bank services to both existing and new customers and also created better relationship among banks and clients. Moreover, cash can easily be stolen and is usually not convenient for large amount of transactions. Cash also does not provide a float (the period of time between a purchase and actual payment for the purchase). It also forces the payer and the payee to physically present themselves. Thus, cash is not a convenient means of payment for e-commerce (Kidan, 2005).

2.1.4 The Need for Electronic Payment

Muche (2010) on her study, mentioned that electronic banking allow banks to expand their markets for traditional deposit taking and credit extension activities, and to offer new products and services or strengthen their competitive position in offering existing payment services. In addition, electronic banking could reduce operating costs for banks. More broadly, the continued development of electronic banking and electronic money may contribute to improving the efficiency of the banking and payment system and to reducing the cost of retail transactions nationally and internationally. Adoption of e-banking service have the benefit of attracting high value customers, enhanced image, larger customer coverage, improvement of organizational efficiency, and load reduction from the view point of the bank

2.1.5 Types of Electronic payment

Tekabe and Gadisie (2016) on their study reviewed common types of electronic payment such as; online credit card payment system, electronic payment based on trusted third party, digital cash, mobile payment, and card based e-payment system, and electronic billing presentment and payment. The detail description about each type of electronic payment on the study is presented below.

I. Online Credit Card Payment System

Online credit card payment system is the most common type of payment system for e-commerce. A customer who wants to use a credit card for e-commerce transaction will be requested to provide his credit card information by the merchant. After the credit card information is received, the merchant's software will contact a clearinghouse. The clearinghouse authenticates the credit card and verifies the account balance by contacting the bank, which issued the credit card. If the credit card is approved to be valid for the transaction, the issuing bank credits the account of the merchant at the merchant's bank. The merchant then notifies the customer that the payment has been made. The actual transfer of money from the credit card issuing bank to the merchant happens in hours or days.

II. Electronic Payment based on Trusted Third Party

Since there is no face-to-face interaction in most ecommerce transactions, the payment system must be strongly secured. Trust is also another important factor that has to be considered. Towards this end, most electronic payment systems used for e-commerce are based on the idea of Trusted Third Party (TTP). TTP provides trust, security, identification and authentication, which are highly desirable in these kinds of payment schemes. The specific role of the TTP varies from one payment system to another. In some payment systems such as Cyber Cash the role of TTP is limited to serving as a channel of communication between the open Internet and closed financial networks. In other systems, such as PayPal and First Virtual, both buyers and sellers have to open account in the TTP and transfer money into their TTP account.

III. Digital Cash

One of the earliest efforts to electronic payment is the concept of digital money or digital cash. Electronic cash or digital cash is an equivalent form of physical cash backed by real money. It enables storage and exchange of values digitally. In digital cash, funds or value is stored in electronic device in a consumer possession. Electronic cash has got some similarities with real

money such as privacy, transferability and convenience. Like real money, digital cash is totally anonymous. However, there is also a type of digital cash called an identified e-money, which reveals the identity of the person who first withdrew the money from the bank. But unlike real cash, digital cash cannot be instantly converted to other form of value without the involvement of a third party like bank. Privacy in digital cash is achieved using blind signature without the involvement of TTP. This is in contrast with other e-payment systems. Digital cash also differs from other e-payment systems in that what is transferred over the network in the case of digital cash is monetary value. In the other e-payment systems what is transmitted over the network is sensitive payment information such as credit card numbers, bank account information or payment authorization. Digital cash can be either online or offline. In the case of online there is a need to interact with the bank, whereas in the offline case transaction can be conducted without having to contact a bank directly.

IV. Mobile Payment

Mobile payment (m-payment) is an electronic payment done using mobile devices. One of the main uses of m-payment is in mobile commerce (m-commerce). M-commerce is the buying and selling of goods and services through mobile devices. These mobile devices include mobile phones, Personal Digital Assistants (PDAs), smart phones, and laptops. M-commerce is actually a subset of e-commerce carried out over wireless networks. SMS (Short Message Service), WAP (Wireless Application Protocol) and Bluetooth application are the technology that enabled m-commerce. Mobile payment is started in Japan and today forms a considerable component of Japan's economy. M-payment is also common in South Korea. It is widespread in Europe compared to North America.

M-payment is used for online payments and for POS (Point of Sale) transactions. Online payment is used for the purchase of digital goods such as mobile phone entertainment (ringtones wallpaper and so on). The purchase of tickets (such as rail tickets, air tickets, etc.) is expected to be a major application area for m-payment. Banks and other financial institutions are also exploring the use of mobile phones to broaden their business by allowing their customers not only to access account information, e.g. bank balances from anywhere, but also to make transactions via mobile phones. This service is often referred to as mobile banking or m-banking.

V. Smart Card based E-Payment System

Smart cards are credit card sized plastic cards that have embedded chip with microprocessor and memory capabilities. One application area for smart card is payment. In e-payment smart cards are used either as storage of money or to enhance e-payment security. To use smart card it is necessary to have a smart card reader, a hardware device that communicates with the chip on the smart card. The reader can be attached with PCs, electronic cash register, etc.

Smart cards used for storage of money are actually variations of debit cards that substitute the previous magnetic strip based debit card. These are actually stored-value cards in which prepayment or currency values are electronically stored on the card chips. First the card has to be loaded with specific amount of money. This can be done by downloading cash from the bank account. Once the card is loaded with digital cash then it can be used to pay to the merchant. The card can be recharged with more digital cash when the previous money is used up.

VI. Electronic Billing Presentment and Payment

Bills, particularly monthly bills, are norms of modern life. Electric bills, telephone bills, etc. are some instances. Bill processing is costly. From the time the bills are issued to the time they are paid, a substantial amount of cost is incurred.

Electronic payment systems reduce considerably the cost associated with paying bills. Electronic Billing Presentment and Payment (EBPP) are online payment systems for monthly bills. EBPP enables consumers to pay their bills by electronic means after they view their bills electronically. Actors for EBPP include customers, commercial banks and third party processors. Third party processors facilitate bill presentment and payment. Some third party processors present the bill in web sites and allow their customers to view and pay their bills. Others even go further and allow collecting bill from several sources and presenting all in the web sites for viewing and payment.

VII. Mobile wallets

A mobile wallet is a digital container accessed by the mobile device and allowing customers to store applications and credentials being used for mobile financial and non-financial services. This container may reside on a mobile device owned by the consumer (i.e. the holder of the wallet) or may be remotely hosted on a secured server (or a combination thereof) or on a merchant website. Typically, the mobile wallet provider provides the wallet functionalities but the usage of the mobile wallet is under the control of the consumer.

2.1.6 Benefits of Implementing E-Payment

Technological innovations play a crucial role in banking industry by creating value for banks and customers, that it enables customers to perform banking transactions without visiting a brick and mortar banking system. On the other hand E-banking has enabled banking institutions to compete more effectively in the global environment by extending their products and services beyond the restriction of time and space. However, mirroring the development of E-commerce, the adoption and diffusion of electronic banking system is not well developed in Ethiopia. (Turban 2008; cited in Bultum, 2014).

According to Kidan, 2005 the major benefits of e-commerce include the following among other things,

- Improved response time: communication and flow of information become quick and cost efficient.
- 24/7 World: Round the clock availability of goods and services. Communicating, making order, buying, selling, and paying occurs 24 hours a day, 7 days a week and 365 days a year.
- Extended market reach and revenue potential, and a wide range of choices and convenience for the customer. Geographic barriers or boundaries are removed. A merchant can reach a customer who is physically too far away. The customer on the other hand, can make purchases from a merchant who would otherwise not have been accessible to him.
- Improved competitive positioning: The benefits of e-commerce are not limited to large entities. Small and medium enterprises (SMEs) are also equal participants in the virtual environment.
- Reduced costs for the business firm and reduced price for the consumer. This coupled with the fact that there is increased competition in e-commerce would force businesses to avail their products and services at lower prices but with enhanced quality.

A study by Zandi et.al (2016) which covered 70 countries on the study appealed that card usage plays an outsize role in driving consumption and economic growth in large part because card usage brings more consumption. That, in turn, creates a virtuous economic cycle whereby increased consumption translates into increased production, more jobs, higher incomes and greater economic prosperity. As more cards are issued and more merchants accept cards, transaction volume grows. That is because consumers feel more comfortable using their cards for a larger percentage of their

overall transactions once a critical mass of merchant locations is reached. Electronic payments provide consumers with convenient and secure access to their funds, reduce cash and check handling for merchants, and expand the pool of customers who are guaranteed to pay. Importantly, they also promote greater financial inclusion, giving those without access to the formal banking system an introduction to formal financial services. At the same time, merchants want access to the growing pool of cardholders with guaranteed payment. In other words, a more robust payment ecosystem produces a multiplier effect that can result in significant increases in consumption. In return banks also can retain their market share. Both emerging markets and developed countries experienced gains in consumption due to higher card usage. Increased card usage added 0.2% to consumption in emerging markets, compared with 0.14% in developed countries between 2011 and 2015. The corresponding figures for GDP were 0.11% for emerging economies and 0.08% for the developed countries. All figures are averages weighted by GDP over the countries and the sample period.

Moving from cash payments to digital payments can lead to significant cost savings in the long term. The potential cost savings are especially striking when considering large-scale government-to-public payments, such as social transfers. Digital payments also connect individuals to the broader economy and can strengthen informal insurance networks. Electronic networks allow families to expand their “community,” and can help households smooth unexpected income shocks by accessing money or support from a community wider than those physically proximate. Thus, increased risk management. In contrast to a cash payment that travels at the speed of its carrier, digital payments can be virtually instantaneous, regardless of whether the sender and receiver are in the same town, district, or country. This means that employees are paid on time, which might reduce demand for payday loans and informal loans to meet monthly expenses. Especially in emergency situations that lead to unexpected income shocks such as a health emergency or natural disaster, speed and timely delivery can be of the essence. In digital form, payments can be made without delay when the need is greatest. Other benefits such as, increased security, increased financial inclusion, increases in women’s economic participation and empowerment, Increased credit information and fewer nonperforming loans and so on can be mentioned (World Bank, 2014).

Using online banking system helps to perform banking activities within a short period of time. Clients can simply check their balance, transfer funds and pay their bills on line with just a click

of mouse and a touch of button. On the other hand using internet banking is more convenient in terms of saving time and delivering of bank service to customer 24 hours a day and 7 days a week (Ayana, 2012).

2.1.7 E-Payment Preparedness/ Readiness?

According to MasterCard (2012), the most advanced infrastructures in the world, with responsive legal systems, mature economies, and sophisticated technology networks, may be fertile ground, but until consumers embrace mobile payments, that ground will remain fallow. Consumer familiarity, willingness, and actual usage are necessary conditions for mobile payments to take off. The global average for mobile payments readiness index (MPRI) is 33.2 on a scale of zero to 100. To be ready for mobile payments, markets need to achieve a balance of high scores across the six components that comprise the Index: Environment (economy and scale), Infrastructure (telecommunications and technology), Regulation, Financial Services, Consumer Readiness, and Mobile Commerce Clusters (the degree of integration and partnering among banks, telecoms, and the government).

The increasing popularity of mobile phones, personal digital assistants and other devices for wireless communication might offer potential benefits to users, e.g. as a convenient means of access to online services, including payment solutions. Mobile devices could be well positioned for this, as they are personalized, carried around permanently, designed to be connected, and have a penetration level even higher than that of personal computers or internet usage (European Central Bank, 2004).

2.1.8 Opportunities and challenges of Implementing E-Payment Projects

According to Tekabe (2016) challenges of electronic payment are:

A. language Barriers

Language is one of the most important powerful instruments to communicate with the business partner and conduct a business. All humankind as much as possible it needs to do anything by their own native language because that is much better than to understand things in easy way. Otherwise there is certain impact on the economic activity. On the other side, when it come to the e-payment system instruments such as ATM machine, point of sale (POS) are provide a service only in a limited language. This creates a difficulty to use E-payment System.

B. Network Challenges

E-payment system needs a network to provide services to the user. Most of the machines fails to provide a service because of poor network connection.

C. Frequent Power Interruption

Lack of reliable power supply is a key challenge for smoothly running e-banking in Ethiopia. Because, E-payment system are power dependent.

D. Lack of Awareness

In order to get E-payment service, first it needs to know how to operate the system. Even the user also mentioned to that there is a lack of awareness how to use the systems. Even the banks doesn't confirmed to that at the time of taking the card.

Other challenges of implementing electronic banking

- Lack of skilled human power
- Lack of Unavailability of payment laws and regulations particularly for e-payment: Ethiopian current laws do not accommodate electronic contracts and signatures. Ethiopia has not yet enacted legislation that deals with e-commerce concerns including enforceability of the validity of electronic contracts, digital signatures and intellectual copyright and restrict the use of encryption technologies.
- Low level of internet penetration and poorly developed telecommunication infrastructure: Lack of infrastructure for telecommunications, Internet and online payments impede smooth development and improvements in ecommerce in Ethiopia. Most rural areas of the country, where the majority of small and medium businesses are concentrated, have no Internet facilities and thus are unable to engage in e-commerce activities.
- High rates of illiteracy: Low literacy rate is a serious impediment for the adoption of E-Banking in Ethiopia as it hinders the accessibility of banking services. For citizens to fully enjoy the benefits of E-Banking, they should not only know how to read and write but also possess basic ICT literacy.
- High cost of Internet: The cost of Internet access relative to the developed countries, there are higher costs of entry into the e-commerce market in Ethiopia. These include high start-up investment costs, high costs of computers and telecommunication and licensing requirements

- Low level of financial networks that links different banks (Banks are not yet automated): Most of the banking transactions currently taking place use credit and debit cards supplied by Visa and MasterCard. For conducting e-banking, the use of credit or debit cards is mandatory thus requiring the need for specialized systems which are not currently available.
- Resistance to changes in technology among customers and staff due to:
 - ✓ Lack of awareness on the benefits of new technologies,
 - ✓ Fear of risk,
 - ✓ Lack of trained personnel in key organizations,
 - ✓ Tendency to be comfortable with the existing structures,
 - ✓ People may be resistant to new payment mechanism

On the other hand, with the service provided through ATM, Internet banking, telephone and mobile phone by customers, Lack of technical and managerial skills on the use of technological innovation and Lack of skills to implement E-banking system are considered as barriers for the adoption of E-banking system. Compared with traditional banking system, using different technological innovation in banking industry is used to perform banking activities at lower costs. These issues can be either drivers or barriers. For instance, if a country has managed to achieve a cost reduction greater than the investment made in adoption of new technology, then the cost factor can be considered as a driver rather than as barrier (Bultum, 2014).

According to Tekabe (2016), opportunities of electronic payment are:

- UNECA and the World Bank are helping developing countries to design national e-strategies, including e-commerce, via National Information and Communication Infrastructure plans.
- Commitment of the governments: The Ethiopian government considers ICT as an indispensable tool to alleviate poverty and facilitate a state-transformation aiming an effective and efficient service delivery. It has initiated commendable ICT policy frameworks and several E-Government projects, including the Woreda NET Project.
- Opportunities offered by ICT through e-learning programs. The School Net program introduced in Ethiopia to connect more than 500 Schools creates opportunities to citizens to be familiar with ICT applications and increases the awareness of the public.

- Late adopter opportunities- commercial banks in Ethiopia should take advantage of already developed best and existing software applications.

2.1.9 Determinants of Electronic Payment Technologies Implementation in Ethiopia

As it is stated in different E-banking literature some of the problems related with adoption of E-banking are: Low level of internet penetration and poorly developed telecommunication infrastructure. According to Jensen (2003), most countries in Africa, except South Africa, have Internet infrastructure only in their major cities. Lack of suitable legal and regulatory framework for E-commerce and E-payment is another impediment for the adoption of new technology in banking industry. Ethiopia has not yet enacted legislation that deals with E-commerce concerns including enforceability of the validity of electronic contracts, digital signatures and intellectual copyright and restrict the use of encryption technologies and high rates of illiteracy. Low literacy rate is a serious impediment for the adoption of E-banking in Ethiopia as it hinders the accessibility of banking services. For citizens to fully enjoy the benefits of E-banking, they should not only know how to read and write but also possess basic ICT literacy (Gardachew 2010). Additionally, risks related with security issue, lack of competition among local & foreign banks and social awareness on the E-banking system are also factors that hamper implementation of electronic payment technology (Bultum, 2014).

There are currently over 90 million Ethiopians dispersed across 1.2 million square kilometers of land, 80 percent of which are living in the rural areas. Financial institutions have not been able to reach a majority of those people as the bank branch to population ratio is still at 1 to 37,861.8 as of September 30, 2014. Even though the penetration of mobile phones among the population continues to grow in significant numbers year on year, out of 18 fully operating CBs in Ethiopia, there are, currently, six banking institutions that commence m-banking as per the Directive No. FIS /01/2012. Moreover, the overall use of mobile phone banking technology to the rural community is not yet started in the country (Henok, 2015).

2.1.10 TOE Framework

Technological, organizational and environmental framework (TOE) proposes three main facets to explore the factors that affect the organization's acceptance of innovation technology. The technological context includes the characteristics and the usefulness of the innovative technology; the organization context contains the internal issues within the company such as management,

employee, products and services; and the environmental context involves the issues exist in the business related field, such as the competitors and business partners (Chui-Yu, 2017).

The technological context considers the available technologies important to the firm, both internal and external, that might be useful in improving organizational productivity. The organizational context is defined in terms of resources available to support the acceptance of the innovation. These criteria include firm size and scope; the centralization, formalization, interconnectedness, and complexity of the managerial structure; and the quality and availability of the firm's human resources. The environmental context represents the setting in which the firm conducts business, and influenced by the industry itself, its competitors, the firm's ability to access resources supplied by others, and interactions with the government.

Technological knowledge represents the totality of institutional knowledge resident within a specific firm. As a quality of the firm's human resources, this construct provides a mechanism for evaluating whether an organization can adequately address the technological necessities of web services.

2.2 Empirical Literature Review

2.2.1 Previous Studies on Electronics Payment: Opportunities and challenges

As it is stated in different E-banking literature, competitive pressure is considered as driver for the adoption of E-banking in developed country. However, lack of competition in Ethiopia among local and foreign bank hinders Ethiopian banking industries to adopt E-banking system. Lack of competition between Ethiopian banking sector and foreign bank is considered as barrier for the adoption of E-banking system. Ethiopian government did not allow foreign banks to operate in the country, these is due to protecting of local banks from the well-developed foreign bank competition. Therefore, Ethiopian banking industry did not consider about competition with foreign banks and such policies could discourage banking sector of the country from the adoption of E-banking system. Government support is the major driver for the adoption of E-banking. Lack of government support is an inhabiting factor for the adoption of E-banking in Ethiopia (Bultum, 2014).

Yet another research by Tekabe (2016) stated that Ethiopian government considers ICT as an indispensable tool to alleviate poverty and facilitate a state transformation aiming an effective and efficient service delivery. It has initiated creditable ICT policy frameworks and several E-Government projects and the commercial banks in Ethiopia should take advantage of already

developed best and existing software applications are the opportunities of e-banking payment in Ethiopia.

Lack of competition in Ethiopia among local and foreign banks hinders Ethiopian banking industries to adopt E-banking system. Ethiopian government did not allow foreign banks to operate in the country, these is due to protecting of local banks from the well-developed foreign bank competition. Therefore, Ethiopian banking industry did not consider about competition with foreign banks and such policies could discourage banking sector of the country from the adoption of E-banking system (Gemechu, 2012).

The Ethiopian government has given a considerable attention to ICT as expressed in its ICT Draft Policy. Moreover, the State owned Ethiopian Telecommunication Corporation has invested huge fund to implement state-of-the-art telecommunication infrastructure that provides national information link. This has an essential role in laying the foundation for e-payment (Kidan, 2005). Ethiopia's electronic banking system needs suitable legal and regulatory frameworks to make the sector internationally competitive. Despite the industry's rapid progress, it is still at premature stage. E-banking is comparatively new to Ethiopian banking industry and the country's largest commercial bank; Commercial Bank of Ethiopia (CBE) pioneered the introduction of Automated Teller Machine (ATM) in 2001. Electronic banking has brought about commendable results in easing transactions and building institutional and financial capabilities of banks in its short history in Ethiopia's banking industry. The banks aggressive move to introduce and expand electronic banking service is paying them off in enhancing organizational efficiency and profitability. The e-banking practice in the country is growing at a significant level and the government, through National Bank of Ethiopia (NBE), has been playing a pivotal role in supporting the activity by introducing and implementing different electronic payment infrastructures. Capitalizing on the existing e-banking platforms, the state-owned CBE and private banks have continued their high competition in providing services, including ATM, Point- of -Sale (POS), Internet Banking, and Mobile Banking, among others. Poor infrastructure and internet connection, frequent power interruption, absence of financial networks that link different banks as well as lack of skilled human resources are factors contributing to the slow penetration of the technology. Unavailability of legal and regulatory frameworks regarding e-banking at national level is a key challenge the sector has been facing. Electronic payments are not currently incorporated into Ethiopia's legal system and such gaps in legal frame work hinders the expansion of cost effective modern electronic

payment instruments such as ATM, mobile and internet banking, among others. Thus banks show reluctance in implementing e-banking services, paying too much attention instead of competing through traditional ways such as opening new branches (Derso, 2018).

Ethiopia does not have special rule on the use of E-banking system or it is not yet included in the banking regulation. Since there is no legal frame works on the adoption of technological innovation at central bank, Ethiopian banking industry cannot be enforced to implement E-banking system. So lack of legal frame work for the implementation of E-banking system is one basic barrier for Ethiopian banking industry. Despite the recent improvements made by Ethiopian government on the national infrastructure, the overall ICT infrastructure in Ethiopia remains inadequate. Card-based payment systems in Ethiopia have been growing fast in recent years. Four commercial banks in the country including the state owned Commercial Bank of Ethiopia, Dashen bank, Zemen bank and Wegagen bank have introduced wider use of debit or ATM cards. Commercial banks in Ethiopia also cited plans to use new technologies for remittance transfers, including mobile-phone transfers and remittance-linked financial products such as prepaid cards (Bultum, 2014).

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

2.3 Conceptual Framework

The study assumed that the independent variables: *Technology, Organizational and Environmental* factors best describes the conceptual framework for the study. To explore the key drivers and barriers to electronic payment adoption in Bank of Abyssinia, this study is guided by the technology organization and environment (TOE) framework proposed by Tornatzky and Fleischer which is designed for studying the likelihood of adoption success of technology innovations. Technology adoption within an organization is influenced by factors pertaining to the technological context, the organizational context, and the external environment (Mokhtar and Ismail, 2016).

The figure below depicted how technological, environmental and organizational variables adds up to the adoption of electronic payment projects. For each context, various factors have been identified from literatures but only those that are considered relevant for e-payment adoption are included in the framework.

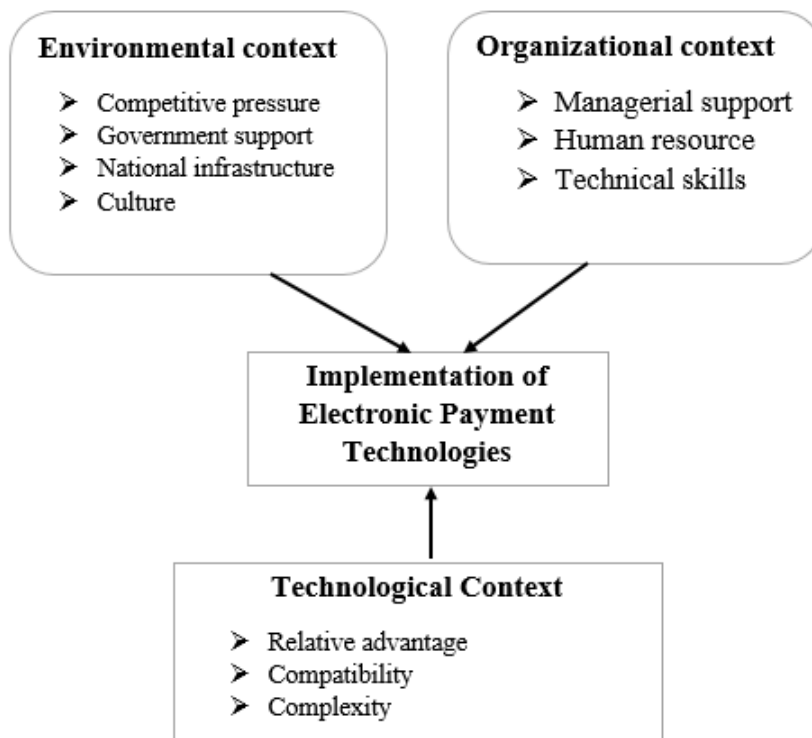


Figure 1: Conceptual Framework

Source: Mokhtar and Ismail (2016) and customized by the researcher

3. CHAPTER THREE

RESEARCH METHODOLOGY

This chapter provides information on the research methodology of the study. The research method has been chosen to determine opportunities and challenges of implementing electronic payment projects. The chapter starts with the description of research design, research approach and methods, and study area. Afterwards, the sample selection, the data collection methods, data analysis and ethical consideration will be presented.

3.1 Research Design

The term ‘research design’ is used in variety of ways by researchers. It is referred as a master plan, blueprint, and even as a sequence of research tasks and activities. A research design is a procedural plan that is adopted by the researcher to answer questions validly, objectively, accurately and economically (Kumar, 2011).

There are numerous types of research design that are appropriate for the different types of research projects. The choice of which design to apply depends on the nature of the problems posed by the research aims. Each type of research design has a range of research methods that are commonly used to collect and analyze the type of data that is generated by the investigations. Consistent with the nature of the problem of this study the researcher will use exploratory research design.

Exploratory research is usually carried out when a researcher wants to explore areas about which has little or no knowledge. A small scale study is undertaken to decide if it is worth carrying out a detailed investigation. Exploratory studies are also conducted to develop, refine and/or test measurement tools and procedures (Kumar, 2011).

According to Reiter (2017), exploratory research seeks to provide new explanations that have been previously overlooked and it can do so through the active involvement of the researcher in the process of amplifying conceptual tools to allow new questions to be raised and provide new explanations of a given reality, from a new angle. The two main aim of exploratory research is to identify the boundaries of the environment in which the problems, opportunities or situations of interest are likely to be reside, and to identify the noticeable factors or variables that might be found there and be of relevance to the research. For this reason exploratory research design is preferred for this study.

3.2 Research Approach and Research Method

Different scholars defines research approaches as, plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation. There are three common types of research approaches; qualitative, quantitative and mixed approaches. In any form of research, it is required to either count things and/ or talk to people. Quantitative as the name suggests, is concerned with trying to quantify things; it asks questions such as ‘how long’, ‘how many’ or ‘the degree to which’. Qualitative research involves the collection, analysis, and interpretation of data that are not easily reduced to numbers. Mixed methods research resides in the middle of this continuum because it incorporates elements of both qualitative and quantitative approaches (Anderson, 2010).

Quantitative research generates statistics through the use of large-scale survey research, using methods such as questionnaires or structured interviews. Qualitative research designs in social science usually involve observing and recording people’s behaviour either in natural settings, for instance via such methods as interviews or focus groups. It attempts to get an in-depth opinion from participants. Neither is better than the other they are just different and both have their strengths and weaknesses (Cropley, 2019).

The strength of qualitative research is that, issues can be examined in detail and in depth, interviews are not restricted to specific questions and can be guided/redirected by the researcher in real time, the research framework and direction can be quickly revised as new information emerges, the data based on human experience that is obtained is powerful and sometimes more compelling than quantitative data. When used along with quantitative methods, qualitative research can help us to interpret and better understand the complex reality of a given situation and the implications of quantitative data (Anderson, 2010).

It is increasingly usual for business research to mix methods of data collection and analysis. This can be done by using different data collection methods which are all quantitative or qualitative, or researchers can use both qualitative and quantitative data collection and analysis methods. One of the reasons for this is “triangulation” where different methods of data collection and analysis will both enrich and confirm the picture you collect of a situation. Often survey results are used to map out broad view of the research question, and to provide themes or areas for investigating in more depth through interviews. Triangulation can also provide a check on findings from a particular method (Greener, 2008).

According to Burke et.al, (2007), the key purpose of conducting a mixed research are provide better understanding, provide a fuller picture and deeper understanding, and enhance description and understanding. Validation was reflected in the definition that focused on providing triangulation of the findings. Besides, the advantages of mixed research approach it has yet draw backs such as; increases the complexity of evaluation, it relies on multidisciplinary team of research and requires increased resources.

Research methods are those tools a researcher uses to gather data, such as questionnaires and interviews. Quantitative research generates statistics through the use of large scale survey research, using methods such as questionnaires or structured interviews. This type of research reaches many more people, but the contact with those people is much quicker than it is in qualitative research. While, Qualitative research explores attitudes, behavior and experiences through such methods as interviews or focus groups. It attempts to get an in-depth opinion from participants. As it is attitudes, behavior and experiences which are important, fewer people take part in the research, but the contact with these people tends to last a lot longer. Since this study used mixed approach, the tools that have been used to collect data were both quantitative and qualitative method such as questionnaire and semi structured interview.

During the data analysis stage, quantitative data can facilitate the assessment of generalizability of the qualitative data and shed new light on qualitative findings. Alternatively, during the data analysis stage, qualitative data can play an important role by interpreting, clarifying, describing, and validating quantitative results, as well as through grounding and modifying (Burke et.al, 2007). Therefore, the study chooses a mixed research approach because; it helps to overcome the weaknesses inherent in each method when used alone. It also increases the credibility of the research findings.

3.3 Study Area

This study focused on Bank of Abyssinia which was established on February 15, 1996 and started banking services with only one branch in 1996, and recently 333 domestic branch networks, of which 153 branches are in Addis Ababa and the remaining 180 are established in bankable towns all over the country. The study focused on E-Banking and IS support department since implementation of electronic payment concerns staffs of the department because of limitation of time.

3.4 Research Population and Sampling

3.4.1 Sample Design

This study targeted BOA's E-Banking and IS support department and took the whole team as a sample. The study used thirty staffs of the department. Purposive sampling method was chosen as a sampling method for the purpose of the study. The study used purposive sampling method for the reason that the samples used can provide the best information to achieve the objectives of the study. Purposive sampling also known as judgmental, selective or subjective sampling, is a type of Non-probability sampling which relies on the judgment of the researcher when it comes to samples of the study. The main goal of purposive sampling is to focus on particular characteristics of population that are of interest which will enable the study to answer research questions. Since, implementation of electronics payment in BOA concerns E-Banking department of the bank particularly the researcher selected staffs from IS support, project teams and E-banking department managers as sample for the purpose of the study.

3.4.2 Sample Size

Because of the small size of E-banking and IS support department in BOA, the population for the study have all been taken as sample. Staffs in the two department counted Thirty Four. Out of the Thirty Four target population four are office assistances/messengers who are not involved in any of electronic payment implementation. Therefore, the study neglected those four office assistances since its concern is to focus on electronic payment project implementation. The table below depicted the target and sample population of the study.

Table1: Sample Size of the Study

No.	Department	Target Population size	Sample size
1	E-Banking	22	20
2	IS support	12	10
Total		34	30

3.5 Data Collection

The study used both primary and secondary data sources in order to meet the research objectives. Primary data were gathered to get responses to a particular problem through interviews and questionnaires. Additionally, secondary data were obtained by examining various documents, including local and international newspaper related with issues of E-banking system, research reports, books and journal articles.

Structured questionnaires and semi-structured interviews are commonly used in mixed method studies to generate confirmatory results despite differences in methods of data collection, analysis, and interpretation. Brown and Harries (2010) discussed that there are issues of consistency while using questioners and interviews. They claimed that questioners took a lesser amount of time to complete than interviewing as a result of interviews give more time to expose the variability and inconsistencies within human thinking. This variability made it difficult to classify some participants' attitudes towards assessment. Beside these, interview data are highly contextualized. Some interview responses seemed highly influenced by the respondent's own context. The main attraction of using mixed method research is that data gained through different methods may complement each other, overcoming weaknesses in individual methods.

According to Zohrabi (2013) commonly there are several ways of data collection methods. The main instruments used in the mixed method researches consist of closed-ended, open-ended questionnaires and interviews. The quantitative data are obtained through closed-ended questionnaires and the qualitative data through open-ended questionnaires and interviews

Questionnaires are doubtless one of the primary sources of obtaining data in any research endeavor. However, the critical point is that when designing a questionnaire, the researcher should ensure that it is "valid, reliable and unambiguous" (Richards & Schmidt, 2002; Zohrabi, 2013).

There are two types of questionnaires based on the answers that the respondents provide. These are close-ended and open-ended questionnaires. Walliman (2011) discussed that in close-ended questionnaires the respondent must choose from a set of given answers. These tend to be quick to answer, easy to code and require no special writing skills from the respondent. However, they do limit the range of possible answers. While, in open ended questionnaires the respondent is free to answer in their own content and style. These tend to permit freedom of expression and allow the respondents to qualify their responses. This freedom leads to a lack of bias but the answers are

more open to researcher interpretation. They are also more demanding and time consuming for respondent and more difficult to code.

Using a questionnaire enables to organize the questions and receive replies without actually having to talk to every respondent. As a method of data collection, the questionnaire is a very flexible tool, which has the advantages of having a structured format, is easy and convenient for respondents, and is cheap and quick to administer to a large number of cases covering large geographical areas. There is also no personal influence of the researcher, and embarrassing questions can be asked with a fair chance of getting a true reply (Walliman, 2011).

Easwaramoorthy & Zarinpous (2006) remarked that interviews are an appropriate method when there is a need to collect in-depth information on people's opinions, thoughts, experiences, and feelings. Interviews are useful when the topic of inquiry relates to issues that require complex questioning and considerable probing.

As stated by Dawson (2002), in social research there are many types of interview. The most common of these are unstructured, semi-structured and structured interviews. Unstructured or in-depth interviews are sometimes called life history interviews. This is because they are the favored approach for life history research. In this type of interview, the researcher attempts to achieve a holistic understanding of the interviewees' point of view or situation. The primary advantage of in-depth interviews is that they provide much more detailed information than what is available through other data collection methods. They also may provide a more relaxed atmosphere in which to collect information people may feel more comfortable. However, it is prone to biases, can be time intensive and not generalizable (Boyce and Neal, 2006). In contrast to unstructured interview, a structured interview, the interviewer asks a set of standard, predetermined questions about particular topics, in a specific order. The respondents need to select their answers from a list of options. The interviewer may provide clarification on some questions. This research method is highly structured hence the name. Structured interviews are used in quantitative research and can be conducted face-to-face or over the telephone, sometimes with the aid of lap-top computers (Easwaramoorthy & Zarinpous, 2006). In Semi-structured interviewing the researcher wants to know specific information. The interviewer uses a set of predetermined questions and the respondents answer in their own words. This study will use close ended questionnaire, open-ended questionnaire and semi structured interview.

3.6 Data Analysis

In this study, descriptive statistics was the major technique of static analysis through using Microsoft Excel spreadsheet and SPSS. The quantitative data collected from sample respondents who are working in E-Banking department was analyzed using averages, percentages, tables and figures to address the opportunities and challenges of implementing electronics payment project currently in Bank of Abyssinia. The qualitative data were gathered from interview and analyzed separately but presented in combination with the quantitative information.

Susanna Loeb (2017) remarked that descriptive analyses are central to almost every research project. Whether the goal is to identify and describe trends and variation in populations, create new measures of key phenomena, or simply describe samples in studies aimed at identifying causal effects, descriptive analyses are part of almost every empirical paper and report. At its core, descriptive analysis is data simplification. This process of simplifying and customizing findings results in presentations that can be easily understandable by audience. Additionally, Thompson (2009) mentioned descriptive statistics are numbers that summarize the data with the purpose of describing what occurred in the sample. Descriptive statistics also help researchers detect sample characteristics that may influence their conclusions.

This research strived to identify the critical technological, organizational and environmental (TOE) factors that influence the adoption of electronic payment projects in BOA. TOE framework proposes three main features to explore the factors that affect the organization's implementation of innovation technology. The technological context includes the characteristics and the usefulness of the innovative technology; the organization context contains the internal issues within the company such as management, employee, products and services; and the environmental context involves the issues exist in the business related field, such as the competitors and business partners (Chui-Yu, 2017).

Therefore, data collected through the aforesaid research tools were organized in a way suitable for analysis using computer software. The study employed a descriptive method of data analysis using Statistical Package for Social Scientists (SPSS) Software.

3.7 Reliability And Validity

Reliability refers to the consistency of a measure. It is a measure of the stability or consistency of test scores. Reliability is how well a test measures what it should. Cronbach's alpha, α (or coefficient alpha), developed by Lee Cronbach in 1951, measures reliability, or internal consistency. Cronbach's alpha tests to see if multiple-question Likert scale surveys are reliable. These questions measure latent variables i.e., hidden or unobservable variables. Cronbach's alpha is a widely used scale of reliability to measure internal consistency. Cronbach's alpha tells if the test that was designed was accurately measuring the variable of interest. Validity is the extent to which the scores from a measure represent the variable they are intended to (Stephanie, 2014). This study started data analysis by investigative reliability and validity of sample data.

The study used sample population from E-Banking department of BOA who are selected based on their experience in electronic banking in general and their specific exposure on e-payment system, while their response expected to be credible which enabled the researcher to inference a valid conclusion. Moreover, the questionnaire has been carefully designed and tested with a few members of participants for further improvement. In this regard, feedback has gathered about clarity of a sentence, correctness of a language and grammar, and also whether the designed instrument can fully assess the research topics prior to distributing the questioner. And based on this, some amendments have been done on the questionnaire. Validation was done so as to ensure if instruments to be used in collecting data enabled to collect the information needed.

Table 2: Reliability for Opportunities and Challenges

Scale: Reliability for Opportunities and Challenge

Case Processing Summary			
		N	%
Cases	Valid	30	100.0
	Excluded ^a	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.810	.800	26

Given all the above facts, the researcher has conducted reliability analysis using Cronbach's coefficient alpha. The above table illustrates Cronbach's coefficient alpha for the entire set of statements and found to be 0.810, which is higher than the acceptable threshold value 0.700. The reliability result for the research topic is presented below which confirms the scale is considered to be reliable.

3.8 Ethical Considerations

Working with human participants in a research always raises ethical issues about how you treat them. People should be treated with respect, which has many implications for how exactly how researcher deals with them before, during and after the research (Headlam, 2010). Honesty was essential, not only to enable straightforward, above-board communication, but to engender a level of trust and credibility in the outcomes of the research.

The research was designed, reviewed and undertaken to ensure integrity and quality. Respondents was informed fully about the purpose, methods and intended possible uses of the research, what their participation in the research entails and what risks, if any, are involved. The confidentiality of information supplied by research subjects and the anonymity of respondents were respected, research participants were participated in a voluntary way, free from any coercion, and any harm to research participants was avoided. More importantly, however, participants were told that their participation in the interview is entirely voluntary, and that they can withdraw at any time.

4. CHAPTER FOUR

RESULTS AND DISCUSSION

As it has been mentioned in the prior chapters, the main attempt of this study was to investigate opportunities and challenges of electronic payment project implementation. Data was collected from primary and secondary sources in the form of questionnaires and interviews. Hence, this chapter presents the analysis and discussions for research findings obtained from both data collection tools. Furthermore, only employees working on e-banking department and director of the department were specifically chosen.

This chapter begins by presenting discussion by descriptive statistics of the respondents related questions; like gender, age, profession, and level of education followed by the questionnaires' response rate. The first section contains the background and general information of the respondents and the second section presents the analysis and interpretation of the findings obtained from the respondents using open and closed ended questionnaires and interview. The analysis was conducted using SPSS software version 20.

4.1 Demographic characteristics of the respondents

This section presented demographic information of the respondents such as gender, age, educational qualification, job title and banking experience of the respondents.

Table 3: Demographic characteristics and general information of the respondents

No	Item	Categories	Frequency	Percentage
1	Gender	Male	23	76.7
		Female	7	23.3
2	Age Group	25-30 Years	13	43.3
		30-35 Years	10	33.3
		35-40 Years	7	23.3
3	Educational qualification	Firs Degree	22	73.3
		Masters Degree	8	26.7
4	Job title of respondents	Manager	5	16.7
		Senior Officer	9	30
		Officer	16	53.3
5	Banking Experience of respondents	Less than 5 Years	16	53.3
		5 to 10 Years	6	20
		10-15 Years	6	20
		Above 15 Years	2	6.7

4.1.1 Gender of the respondents

As indicated in the above table, it can be said that most of the respondents were Male, which accounts to 76.7% of the total sample size while, 23.3% of the respondents were Female.

4.1.2 Age of the respondents

The above table depicts that the largest number of respondents falls within the range of age 25–30, which accounts to 43.3% of the total sample size. Proportional to the first age category, the second largest portion of the respondents' age was from 30 – 35 which holds 33.3% of the sample population, whereas the rest 23.3% falls within age range of 35 – 40.

4.1.3 Educational Qualification of respondents

With regard to the Education level, it can be said that all of the respondents were either First or second degree holders. Bearing this, most of the respondents were first degree holders which shares 73.3% and the rest 26.7% were second degree holders. Once again five of the respondents studied accounting and finance, fourteen of them studied computer science, three of the respondents studied computer engineering and the remaining eight respondents studied general management and information management at Masters Degree label.

4.1.4 Job title of the respondents

Table 3 shows that majority of the respondents were in the position of Officer and Senior Officer which accounts 83.3% of the total sample size while, the rest 16.7% were Managers.

4.1.5 Respondents banking experience

The above table shows banking experience of the respondents where 53.3% of them have less than 5 years work experience while 20% of them have work experience of from 5– 10 years and proportional to 20% of the sample population have 10 – 15 work experience. Whilst, only 6.7% of them have 15 – 20 years of work experience.

4.2 Answers to specific research questions

In this section, the answers to some specific research questions the study planned to answer have been addressed by using the data acquired. In respect to technological advancement 60% of the respondents agreed that private banks are advanced in technology more than public sector banks. Based on the data collected from questionnaires, 63.3% of the total respondents' value quality services the most from services provided by banks. While 33.3% value technologies used the most and the rest 3.3% value trust the most from services provided by banks. When respondents were asked about their level of satisfaction working with e-payment technology 76.7% of the respondents were satisfied. 20.3% of them were neutral about their level of satisfaction working with e-payment technologies and the rest 3% were dissatisfied. The respondents agreed that the bank created awareness about available technological oriented payment methods through news media, social Medias, banks publication and other advertising mechanisms.

4.3 Assessment of Opportunities and Challenges of implementing Electronic Payment Projects in BOA

The main objective of the study is to assess the opportunities and challenges associated with the adoption of electronic payment projects in BOA. The researcher assumed that three variables best describes the opportunities and challenges of the implementation process. Furthermore, the researcher left a blank space to capture other variables which might have been left or truncated. Under this section, the respondents' opinion about the overall opportunities of implementing electronic payment technologies is presented given the five variables and their opinion was based on five point Likert scale. According to Fernandez, (2014: 103-121) the interpretation of mean scores of each variable shall be represented accordingly. Scale 5 of the likert scale used to represent "strongly agree", 4 "Agree", 3 "Undecided", 2 "Disagree" and 1 "Strongly disagree". The score

"Strongly disagree" was taken to be equivalent to mean score ranging from 1 to 1.80, "Disagree" represented mean score ranging from 1.81 to 2.60, "Undecided" represented mean score ranging from 2.61 to 3.40, "Agree" mean score ranging from 3.41 to 4.20 and "strongly agree" represented mean score of 4.21 to 5. Moreover, standard deviation of greater than one (>1) represent a significant difference (dispersion) in the response given.

4.3.1 Assessment of Opportunities of implementing Electronic Payment Projects in BOA

Table 4: Opportunities of implementation of electronic payment projects

Opportunities of implementation of electronic payment projects			
	N	Mean	Std. Deviation
1. Implementing technology oriented products improve competitive advantage/positioning of the bank	30	1.30	.47
2. Being late adopter gave BOA to take advantage of already developed best and existing experience of other banks	30	1.83	.59
3. The growth of mobile phone ownership will create a great deal of market for electronic payment technologies.	30	1.57	.57
4. Reduce paper work and improves service quality by overcoming geographical limitations and reduce queues/lines in the banking hall.	30	1.57	.50
5. E-banking improves customers' satisfaction	30	1.47	.51
6. Electronic payment technologies have the potential of overcoming disadvantage of traditional payment instruments such as, cash and check	30	1.63	.77
7. E-payment has positive impact on the way business is to be conducted in banking industry and it will increase productivity and profitability	30	1.70	.84
8. Reduce cost of transaction, the risk of carrying cash, quick and ease of access; increase reliability and reducing errors	30	1.40	.56

Based on the above table 4 item number 1, staffs of E-Banking department were asked if implementing technology oriented products improve competitive advantage/positioning of the bank. As indicated on the above table, implementing technological oriented products improve competitive advantage of the BOA which can be considered as one of the opportunities of implementing electronics payment technologies with a mean score value of 1.3 and standard deviation of 0.47.

According to team member's responses on the item number 2 which was stated as being late adopter gave BOA to take advantage of already developed best and existing experience of other banks and the respondents has similar opinion regarding being late adopter with a very minimal dispersion of 0.59 and mean score value of 1.83. This shows that BOA was not required reinventing the wheel. Yet, an interview with E-banking director made it clear that BOA lost the greatest market share while other banks like Dashen Bank S.C. and Hibret Bank S.C. take great deal of market share for debit card and electronic air ticket for Ethiopian Airline respectively.

The above table 4 shows that the item number 3 respondents have agreed to the point that the growth rate of mobile ownership created an opportunity and a great deal of potential market for BOA. The mean score value 1.6 chains the same. Mobile phones can act as an access channel through which transactions can be initiated and authenticated. Again the interview result added that there is an abundant potential customer which is uncovered by the market. Even the largest public bank of the country, Commercial Bank of Ethiopia, could not address most of potential customers.

In addition to these, members of the department were asked to express their level of agreement whether implementation of electronic payment technologies reduce paper work and improve service quality by overcoming geographical limitations and reduce queues/lines in the banking hall could be considered as opportunity for the implementation process and the study result shows that respondents agree with mean score and standard deviation value of 1.6 & 0.5 respectively.

As of this very moment, BOA provides ATM, POS, mobile banking, internet banking and recently wallet account and from the response, it can be said that these services are easy to use which can be inferred that it increases customer satisfaction considering the mean score value of 1.47 and a variance of 0.51. Added to this an interview result shows that number of customers using more than one payment channels such as ATM, POS and mobile banking increase in an increasing rate which illustrates there is a situation where customers are satisfied with services provided.

According to item number 6 respondents were asked if electronic payment technologies have the potential of overcoming the disadvantages of traditional payment instruments such as, cash and check and the result has proved that the introduction of electronic payment technologies has not only increase customer satisfaction, but also overcame disadvantage of traditional payment instruments by reducing the risk of carrying cash, ease of access, convenience, time saving and other related outcomes of using technologically advanced instruments. This is because, customers are not required to perform processes in traditional payment system which otherwise would have been time taking and exhaustive. This is supported by mean score value of 1.63 and standard deviation value of 0.77.

Related to question number 7 the study result showed that increased productivity and profitability is one of the opportunities brought by electronic payment technology to the bank. This result is supported by a Mean score value of 1.70 and the standard deviation value of 0.84. This showed that the response was highly dispersed. As indicated by Uvaneswaran et.al (2017) e-banking does have an impact on profitability of Commercial Banks in Ethiopia. Since the introduction of e-banking by the bank through Core banking system, there have clearly been modifications in all the profitability ratios of the bank.

Regarding the question using technological tools such as internet and ATM resulted in performing of banking duties at lower price, quick and ease of access and reduction of risk which leads to increase in reliability most of the respondents agreed with the mean score value 1.4. Gemechu (2012) took cost minimization as an advantage of using e-payment technologies from the bank perspectives on his study, by using E-banking system like, ATM, internet banking, mobile banking and others, banks save a lot of costs and reduce errors caused by humans. He added that the long run a bank can save money by not paying for tellers or for managing branches. This way of cutting transaction cost results in higher profit margin for the banks.

4.3.2 Assessment of Technological, Organizational and Environmental Challenges of
Implementing Electronic payment project in BOA

Table 5: Technological, Organizational and Environmental Challenges of implementation of electronic payment projects

Technological, Organizational and Environmental Challenges of implementation of electronic payment projects			
	N	Mean	Std. Deviation
Technological factors			
1. Implementation of E-banking projects was difficult owing to lack of adequate telecommunication infrastructure	30	2.03	.89
2. Frequent power interruption affected the practice of e-payment technologies.	30	2.03	.99
3. Low level of internet penetration hinders the implementation of e-payment technologies.	30	2.00	.40
4. Low level of ICT literacy rate of customers hamper the implementation process	30	1.83	.53
5. Employees are not empowered with better access to information, which hinders creativity and capacity to contribute in research & development activities	30	1.43	.50
Organizational factors			
6. Employees resist change due to the perceived complexity of new technologies compared to manual banking.	30	1.47	.51
7. BOA doesn't have adequate human resources to implement e-payment projects.	30	1.53	.68
8. Employees lack knowledge and expertise on e-payment relationships, business process, policies and industry structure.	30	1.37	.49

9. The organization doesn't have the necessary technical, managerial and other skills to support e-payment implementation.	30	1.40	.49
10. BOA is not aggressive in experimenting new technologies and capable of dealing with rapid changes in business process.	30	1.67	.61
11. Lack of skills to implement E-banking system.	30	1.33	.48
12. Lack of sufficient government support will affect customers' willingness to use technological innovation and it will make the bank to lag behind.	30	1.37	.49
13. Customers of the bank were not familiar with service provided though ATM, Internet banking, telephone and mobile phone.	30	1.50	.51
14. Relatively Mobile application for banking service is expensive for customers.	30	1.40	.49
Environmental factors			
15. High rates of illiteracy affect the easy practice of E-banking service.	30	2.03	.89
16. The cultures of the society also affect customers to not use E-banking products easily.	30	1.87	.57
17. Lack of competition among local bank and non-involvement of foreign banks made implementation process to walk in a snail pace.	30	1.37	.49
18. Lack of confidence with the security aspects considered as obstacle for the practice of E- banking system.	30	1.57	.57

From the above table 5 item number 1 respondents equally agreed on the point that inadequate telecommunication infrastructure is a barrier to implementation process of electronic payment technologies. This result is supported by Mean score value of 2.03 and a standard deviation value of 0.89. Additionally, the finding goes with Tekabe and Gadise (2016) where they have argued, lack of infrastructure for telecommunications, Internet and online payments impede smooth

development and improvements in ecommerce in Ethiopia. Most rural areas of the country, where the majority of small and medium businesses are concentrated, have no Internet facilities.

With reference to table 5 item number 2 respondents have partially agreed that frequent power interruption affected the practice and implementation of electronic payment projects since they can use power generating apparatuses as a solution this may not be the major problem. A highly dispersed response was also noticed with a standard deviation value of 0.999. Among the respondents 16% of them disagree, while 83.33% of them agreed that power interruption is challenge for implementation process.

Respondents has similar opinion regarding low internet penetration hinders both the implementation and operation of electronic payment technologies with a very minimal dispersion of 0.40 and mean score value of 2.00. This shows that the level of internet penetration indeed hindered the implementation process of electronic payment project.

From item 4 of the above table 5 the study result indicate that low literacy rate affected implementation of electronic payment projects. This is supported by mean score value 1.83 and standard deviation value 0.53 reveals the same. Though most of the population has got mobile telephone most of them do not use it for further application except for dialing and receiving call frequently. Especially most of the population rarely used telephone for making daily transaction as a result of low literacy rate. Moreover, the result is supported by the findings of Henok (2015) as he stated mostly cell phone applications are designed in foreign language and the majority of unbanked societies, who have cell phone, live in rural areas, where illiteracy rate is high; there exist language barriers to execute financial transactions through mobile telephones. However, from the interview result, most of the population own mobile phone and use it properly despite the language barrier. Furthermore, an interview with E-Banking manager showed that low level of ICT literacy wouldn't brought much challenge on implementation process since applications for e-payment can be easily learned and can make them user friendly. Yet language barrier is not an issue because ATMs and other mobile banking and wallet account applications got an option for choosing language.

A mean score value of 4.26 and standard deviation value of 0.68 from item 5 of the above table shows that the respondents strongly agreed on the statement that employees lack information which would have helped them to contribute in research and development activities. The staffs from E-banking were also asked if employees resist to change as a result of perceived complexity

of new technologies can be considered as an additional challenge hindering the effective delivery of e-banking services. The study result indicate employees resist to the changing technological environment with calculated mean 1.47 variance of 0.51.

In addition to, employees resistance for change, lack of support from the bank and employees lack important skills, respondents were asked that if the implementation process lacked adequate human resource and from the above table item number 7 most of the respondents agreed there was lack of adequate human resource with mean score value of 1.53. The interview result also reveals that the organization has a separate project office but only comprised a few permanent project team members and includes project manager, project team leaders and planning officer. Others were temporal team members organized from branches for the aim of achieving the project objective and when the project ends they return to their normal activities. As indicated by Brown (1998), the success of a project depends on human factors. Thus, project manager and team member competency have great effect on the success of project implementation.

According to the response for item number 8 of the above table, technological knowledge of employees can be considered as a challenge as respondents have agreed that employees have a gap on their knowledge. This is supported by a mean score value of 1.37 and standard deviation of 0.49. Mean score value calculated from item number 9 of table 5 the response from the respondents, which is 1.40 and variance of 0.49, shows that BOA's employees lack necessary technical and managerial skills which can be considered as a challenge for implementation of e-payment projects.

According to the respondents, the other big challenge is that BOA did not experiment new technologies as a result of this the organization couldn't deal with rapid change in business process. The result is supported by a mean score and standard deviation value of 1.67 and 0.61 simultaneously. According to Tadesse and G. Kidan (2005) African banks are very conservative; they use very few innovative products and marketing techniques. In addition to this interview result reveals that technologically advanced payment methods were not priority until very recently. However, from the interview it is understood that lately it is one of the top priorities regarding the current situation where the world runs in to the most advanced electronic payment technologies. Respondents were also asked if employees lack the necessary skills for implementing electronic payment technologies in this regard, employees of BOA are not fully aware of the electronic payment services given by the bank. This contributes to the challenge as bankers should be on the

first line to use and promote new services for customers. As a result, it will boost customers' awareness and initiation to transact with electronic payment technologies. The mean score value and the variance 1.33 & 0.48 respectively supports the same.

From the above table 5 item number 12 for the idea that there is lack of government support the study outcome showed that a mean score value of 1.50. This confirms government support is one of the challenges for implementing electronic payment projects as it may lead to inefficient and inadequate service delivery since it is confined with restrictive laws and regulations. From an interview with the E-banking director it can be said that regulatory requirements, including regulation of Internet and mobile banking services, auctioneering, privacy and data protection, banking and money transmitting limit, that may bound or prevent the bank from offering such services in the influences of national bank directives and regulations which prevent enforceability of electronic payment technologies.

Unfamiliarity with services provided by the bank is another challenge hindering e-payment technologies to function better. This can be considered as one of the many reasons why utilization of electronic payment methods was not widely used. The outcome from table 5 of item number 13, a mean score value of 3.79 is a testimony for the above statement. This finding is supported by Bultum (2014). He stated that, lack of social awareness/ lack of familiarity with different technology and lack of sufficient skills to use and implement e-banking system were considered as barriers to adopt e-banking system in Ethiopia.

From item number 14 of the above table respondents were asked if mobile application for banking service is expensive for customers. According to the respondents, expensive transaction cost influence customers not to use the electronic payment services provided by BOA. Mean score value was 1.40 and variance of 0.498 support the statement.

Respondents agreed that customers lack basic IT and E-banking knowledge to transact through electronic payment technologies regarding item number 15 of the above table. This is supported by a mean score and standard deviation value of 2.03 and 0.89 simultaneously. Lack of familiarity with different technology and lack of sufficient skills are also the points supported by Bultum (2014). However, the interview result contradicts the above finding.

A mean score value of 1.87 and standard deviation value of 0.57 from the above table of item number 16 indicates that the respondents have neither agreed on the statement. This shows that society's culture where target customers are living in holds those potential markets to exploit what

has been provided. From interview result it can be inferred, the fact that the Ethiopian Society is cash-based, people are accustomed to use cash for most of their transactions. This result is supported by Tadesse and G. Kidan (2005). The authors indicated that customers' 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. Added to this there is resistance to changes among customers, and to some extent staff members. This is attributed to lack of awareness on the benefits of new technologies, fear of risk, lack of training, and tendency to be content with the existing structure instead of looking for better opportunities.

Respondents were asked whether lack of competition among local banks and non-involvement of foreign banks can be considered as another challenge for implementing technologically affiliated payment methods. The result presented a mean score value of 1.37. Furthermore, Bultum (2015) has also argued that lack of competition in Ethiopia among local and foreign bank hinders Ethiopian banking industries to adopt E-banking system.

Issues of trust and acceptance play a more significant role in the e-commerce world than in traditional businesses as far as payment systems are concerned. Chances of risk is inevitable and customers may feel uncertain regarding security issues since electronic payment technology is introduced recently and the greatest number of the population use the traditional payment methods such as cash and respondents were asked if lack of confidence with the security aspects can be considered as obstacle for the practice of E- banking system. The result is supported by a mean score value of 1.57 and variance of 0.568. According to Tadesse and G. Kidan (2015) the most common method of securing e-payment involves the use of technological means such as information security functions (cryptographic-based technologies like encryption, digital signature, etc.). Since securing the payment system will reduce its efficiency by making it slower, compromise has to be made between security and efficiency.

5. CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study anticipated to examine the opportunities and challenges of implementing electronic payment project in Bank of Abyssinia, through adopting mixed research approach which is appropriate to exploratory research design. Prior to these chapter theoretical and empirical studies were reviewed to get in depth insight about the topic area. The researcher employed both questionnaire and interview as a data collection instruments. The collected data were analyzed using descriptive statistical tools such as standard deviation, mean, frequencies and percentage by using SPSS version 20. Based on the results of the study discussed in the previous chapter, the following key findings are made:

5.2 Summary of Major Findings

The study attempted to identify opportunities that drive implementation process of e-payment in BOA with research objective that answered and complement the understanding level of what opportunities had and would drive the implementation process and made an effort to detect challenges of implementing electronic payment projects in BOA based on technological-organizational-environmental (TOE) framework. In line with the research question, ‘which opportunities and challenges contributed and affected the implementation process of electronic payment and determining the existing opportunities and challenges of implementation process the following findings are derived from the study.

Based on the analysis of the questionnaires and interview results on opportunities of implementing e-payment technologies point out that, in order to survive in the market and to take a competitive advantage over other competitive banks implementing technological oriented products and services is inevitable and being late adopter of electronic payment projects made the bank to learn from the existed experience of banks who adopted these products earlier. Yet, being late adopter made the bank to lose the potential market available at the first phase of entry. The study has also found that there are plenty of available potential unbanked customers which made a reasonable opportunity for implementing electronic payment technologies. It is unambiguous that implementing electronic payment method brought opportunities such as reduction in paperwork and improved service quality by overcoming geographical limitations and reduces long lines in the

banking hall. In line with this, implementing electronic payment projects once again improves customers' satisfaction considering the conveniences and ease of access. Thus, productivity and profitability of the bank as a result of the aforesaid opportunities is unquestionable and the results from the study confirm the same. Furthermore, results indicate that e-payment technologies have the potential to replace traditional payment system with all the disadvantages such as the risk of carrying cash, time consuming, inconvenience, unreliability, fake recipients, human error and other disadvantages.

Based on technological-organizational-environmental frame work (TOE) this study has identified a number of challenges for E-banking product implementation. The technological barriers identified in this study were lack of adequate telecommunication infrastructure, frequent power interruption, low level of internet penetration which hinder smooth developments and improvements in implementation and operation stages of e-payment technologies. Nonetheless, most of the population including the illiterate acquired and use their mobile phone which are designed in foreign language it can be said that language barrier is insignificant to be considered as challenge for implementing e-payment technology and even instruments to make payment instructions have an option to change language. While the finding from this study shows that low level of ICT literacy of customers hamper implementation process. At the same time this findings of the study are supported by Henok (2015) and Tekabe and Gadise (2016). Furthermore, employees are not empowered with better access to information, which hinders creativity and capacity to contribute in research & development activities which in turn leads to implementation process to hold back.

In the case of organizational factor, factors like employees skill, knowledge, resistance to change, government support and the organization effort to support implementation of electronic payment was considered as challenges to adopt electronic payment projects. Regarding employee knowledge, necessary technical, managerial and other skills, the majority of the respondents agreed employees' lack necessary skills and knowledge to implement electronic payment technologies in BOA. This induces employees' resistance to change due to perceived complexity of new technologies compared to manual traditional banking. Additionally, the result pointed out employees were not empowered with better access to information which is inversely related to contribution in research and development activities. The respondents agreed that BOA doesn't have adequate human resource for implementing electronic payment products and services.

Moreover, BOA refrain experimenting new technologies where coping up with changes that exists in the dynamic financial environment was challenging. According to the study result lack of sufficient government support was another challenge for implementing electronic payment technologies which will affect customer willingness to use products and services provided by the bank. The other big organizational challenges indicated by the study finding was that customers were unfamiliar with electronic payment products and services and service charges required by the bank is expensive. To end with, results revealed that high illiteracy rate adds to challenges of implementing process.

Finally, the finding of the study offered other challenges for the adoption of E-banking, such as investment in technology involves significant start-up costs, perceived complexity, customers are unaware of benefit they gain by using e-payment services and lack of genuine support to customer is unavailable.

5.3 Conclusion

The main objective of the research was to assess the opportunities and challenges associated with the adoption of electronic payment projects in Bank of Abyssinia. Bearing this in mind, basic research questions were developed and respondents' opinions were collected from E-Banking department of the bank. Based on the objective of the study and problem statement, the following conclusions were made

- Implementation of electronic payment technologies in BOA possibly increased customer satisfaction which in turn leads to greater volume of productivity and profitability. Additionally, it brought the bank an opportunity of being competitive in local market.
- Though, being late adopter got its own advantage but for BOA it could be said that being late adopter didn't work for the reason that the bank could have utilize and leverage first entry expertise and customers if adoption took place earlier. This is probably because the bank is not aggressive in experimenting new technologies. BOA refrain experimenting new technologies where coping up with existing changes was difficult.
- There are plenty of available potential unbanked customers which made a reasonable opportunity for implementing electronic payment technologies. Yet, it can be said that customers are unfamiliar with services provided by the bank.
- Insufficient government support and bottleneck procedures and regulations could be the biggest challenge for BOA while implementing electronic payment projects and also

technological factors such as lack of adequate telecommunication infrastructure, frequent power interruption, low level of internet penetration, low literacy and ICT literacy rate might contribute to the retrograde development and practice of electronic payment technology. However, results contradict that literacy could not be an issue since most of the population use their mobile phones properly which is designed by foreign language.

- It could be said that employees' lack necessary skills and knowledge to implement electronic payment technologies in BOA. Additional to these employees doesn't have the necessary technical, managerial and other skills to support e-payment implementation. This in turn contributes that employees may resist to the changing technological environment due to the perceived complexity of electronic payment technologies.

5.4 Recommendations

Based on the above mentioned findings and conclusions, the researcher recommends the following points:

- BOA need to focus on empowering employees with better knowledge, technical skill and other necessary skills in order to improve complexity of those technological oriented payment methods. And also, the bank shall assess the available market to understand competitors' intention regarding advanced technology to take advantage of early adopter to cover the unbanked potential customers by introducing user friendly applications in order to overcome the challenge brought by low level of illiteracy rate which is a way to improve the level of customer satisfaction.
- Government have to support implementation and practice of electronic payment technologies not only by lifting crippling regulations but also by making the financial environment free from exhaustive government control since digitalization and technological advancement is the top prioritized policy of the government. Additional to this the government needs to provide infrastructural facilities to ease implementation process.
- Regarding cost minimization consequently developing and improving technological payment methods should be given priority to increase the profit margin of the bank.

5.5 Suggestion for further study

This research assessed opportunities and challenges of electronic payment project implementation in BOA. The study centered on technology-organizational-environmental factors to examine opportunities and challenges. To allow for generalization, the researcher recommends that further studies on the same subject shall be conducted to other banks taking other project management factors under consideration. Researchers are also recommended to identify other variables that affect project implementation process. The research is conducted with a constraint of sample size and it is assumed that conducting a regression analysis was not optimal. Therefore, the researcher suggests further studies on project implementation factors to be supported by regression analysis.

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APPENDICES

Appendix I

ADDIS ABABA UNIVERSITY

School of commerce

Department of Project Management

Opportunities and challenges of implementing electronic payment projects in Bank of Abyssinia

Dear Participant

This MBA thesis research questionnaire is designed to assess the opportunities and challenges of implementing various electronic payment projects in Bank of Abyssinia. The results of the study anticipated to supply the understanding of the basic opportunities and challenges of adopting various electronic payment projects in Bank of Abyssinia in delivering of service to customers.

The information obtained will be used for academic purpose only; all information and feedbacks will be kept strictly confidential. Your experience and educational background in the banking industry will greatly contribute to the success of my study and I believe this kind of study will be an input for the development of the growing electronics payment technologies. Your involvement is regarded as a great input to the quality of the research results. Hence, I believe that you will amplify your assistance by participating in the study. Your honest and thoughtful response is priceless. So, I am kindly requesting you to respond each and every question.

Thank you,

Nardos Kebede

Email: nardosk2016@gmail.com

Part I. Demographics and personal data (Please indicate your answer by ticking (✓) in the appropriate category inside the given box)

1. Gender

A. Male ☐

B. Female ☐

2. Please indicate your age

A. Less than 25 ☐

C. 30-35 years ☐

B. 25-30 years ☐

D. 35-40 years ☐

E. above 40 years

3. Please indicate your educational qualification

A. Up to diploma ☐

C. Masters Degree ☐

B. First degree ☐

D. Professional ☐

Please indicate your field of Study _____

4. Please specify your responsibility at the department

A. Manager ☐

C. Officer ☐

D. Clerk ☐

B. Executive ☐

E. Others (specify) _____

5. Years of experience in Bank of Abyssinia

A. Less than 5 years ☐

C. 10 to 15 years ☐

B. 5 to 10 years ☐

D. Above 15years ☐

6. Please pick your monthly income currently

A. Less than 7,000 ☐

C. 10,000-15,000 ☐

B. 7,000-10,000 ☐

D. 15,000-20,000 ☐

E. Above 20,000 ☐

Part II: Specific questions (Please indicate your answer by ticking (✓) in the appropriate category)

7. Which category of the banks do you consider as most technologically advanced?
- A. Public Sector bank ☐ B. Private Sector bank ☐
8. Which attribute of services your bank provides do you value the most?
- A. Quality of Service ☐ C. Trust ☐
- B. Technology used ☐ D. Location ☐ E. Type of the bank ☐
9. What was the reason behind introduction of electronic payment banking technologies?
- A. Competition from banks ☐ C. Qualitative customer service ☐
- B. Man power shortage ☐ D. Faster transactions & Time saving ☐
- E. Any other _____
10. How satisfied are you with Working through e-channels?
- A. Highly Satisfied ☐ C. Neutral ☐
- B. Satisfied ☐ D. Dissatisfied ☐ E. Highly Dissatisfied ☐
11. How do you make your potential customer aware of your technology products especially for electronic payment products?
- A. Advertising on the Net ☐ C. Banks publications ☐
- B. News media ☐ D. Any other (Please specify) _____

Part III: Questions related with opportunities and challenges of adopting Electronic banking payment technology.

Instruction: Below are lists of statements concerning the implementation of E-payment projects in two sections. Please indicate to what extent you agree or disagree with each statement by ticking (✓) on the spaces provided. Each choice are identified by numbers ranged from 1 to 5.

Note: SA- Strongly Agree, A- Agree, DA- Disagree, N- Neutral, SD- Strongly Disagree

The following section of this survey will attempt to weigh the existed opportunities while implementing e-payment technologies in BOA.

The subsequent are opportunities that the bank might exploit while implementing electronics payment projects.		SA	A	N	D	SD
		1	2	3	4	5
12	Implementing technology oriented products improve competitive advantage/positioning of the bank.					
13	Being late adopter gave our bank to take advantage of already developed best and existing experience of other banks.					
14	The growth of mobile phone ownership will create a great deal of market for electronic payment technologies.					
15	Reduce paper work and improves service quality by overcoming geographical limitations and reduce queues/lines in the banking hall.					
16	E-banking improves customers' satisfaction					
17	Electronic payment technologies have the potential of overcoming disadvantage of traditional payment instruments such as, cash and check.					
18	We consider that e-payment has positive impact on the way business is to be conducted in banking industry and it will increase productivity and profitability.					

19	Reduce cost of transaction, the risk of carrying cash, quick and ease of access; increase reliability and reducing errors.					
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Please kindly state any other benefits that the bank gained from the implementing E-banking technologies?

The final section of this survey tries to address factors that hinder implementing electronic payment technologies in your bank.

The subsequent are challenges that the bank might face while implementing electronics payment projects.		SA	A	N	D	SD
		1	2	3	4	5
	I. Technological factors					
20.	Implementation of E-banking projects was difficult owing to lack of adequate telecommunication infrastructure.					
21.	Frequent power interruption affected the practice of e-payment technologies.					
22.	Low level of internet penetration hinders the implementation of e-payment technologies.					
23.	Low level of ICT literacy rate of customers hampered the implementation process.					
24.	Employees are not empowered with better access to information, which hinders creativity and capacity to contribute in research & development activities.					
25.	Employees resist change due to the perceived complexity of new technologies compared to manual banking.					
	II Organizational factors					

26.	BOA doesn't have adequate human resources to implement e-payment projects.					
27.	Employees lack knowledge and expertise on e-payment relationships, business process, policies and industry structure.					
28.	The organization doesn't have the necessary technical, managerial and other skills to support e-payment implementation.					
29.	BOA is not aggressive in experimenting new technologies and capable of dealing with rapid changes in business process.					
30.	Lack of skills to implement E-banking system.					
31.	Lack of sufficient government support will affect customers' willingness to use technological innovation and it will make the bank to lag behind.					
32.	Customers of the bank were not familiar with service provided though ATM, Internet banking, telephone and mobile phone.					
33.	Relatively Mobile application for banking service is expensive for customers.					
III Environmental factors						
34.	High rates of illiteracy affect the easy practice of E-banking service.					
35.	The culture of the society also affects customers to not use E-banking products easily.					
36.	Lack of competition among local bank and non-involvement of foreign banks made implementation process to walk in a snail pace.					
37.	Lack of confidence with the security aspects considered as obstacle for the practice of E-banking system.					

Please kindly specify below any other challenges?

Appendix II

Interview questions designed for E-banking department director of Bank of Abyssinia

Date_____

Profession_____

Name_____

1. What is the views/perspective of the bank for E-Banking development projects? What are the available opportunities to implement electronic payment projects?
2. What difficulties/challenges do you face the most often while implementing electronic payment technology products? How these issues affect performance of implementation?
3. Is the following factors considered in your institution as barriers for the adoption of technological innovation?
 - a) Security risk
 - b) Customers and employees resistance for change
 - c) Lack of social awareness and high illiteracy (including ICT illiteracy)
 - d) Cost incurred in the purchase of technological instruments
 - e) Lack of competition among local banks
 - f) Inadequate ICT infrastructure
 - g) Lack of skilled professionals in the bank
 - h) Laws and regulations to operate are not well developed
 - i) Frequent power interruptions
 - j) Language barriers
4. How flexible and customizable is your existing system in incorporating e-payment facility to meet your customers' needs? How much is your business strategy is clear, communicated and understood through your organization especially in your department?
5. What do you think about the legal environment for the development of electronic payment projects?
6. Do you think efforts made by the bank are enough for the development of such technological products? Does it have to be prioritized before anything? If it is not prioritized currently, what is your plan to boost the performance of this payment technology recently and for a long period of time?

7. Do you think the bank took advantage of late adopter opportunity? And does the bank weigh the existing market opportunity in the whole country? Since, mobile telephone penetration rate is increasing tremendously.
8. What's in it for the bank, adopting electronic payment technology projects?
9. In your opinion what are the key factors that drives BOA to adopt electronic payment technology projects?