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St. Mary's University, Ethiopia

School of Graduate Studies

FACTORS AFFECTING CUSTOMERS' INTENTION TO ADOPT ATM BANKING SYSTEM IN ETHIOPIA

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June, 2017

Addis Ababa, Ethiopia

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A THESIS SUBMITTED TO SCHOOL OF GRADUATE STUDIES OF SAINT MARY'S UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MASTERS DEGREE OF ACCOUNTING AND FINANCE

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ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES
FACULTY OF BUSINESS AND ECONOMICS

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APPROVED BY BOARD OF EXAMINERS

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Declaration

I, the undersigned, declare that this thesis entitled "Factors Affecting Customers' Intention to Adopt ATM Banking System in Ethiopian Banking Industry" Submitted by me to undertake a research in partial fulfillment of the requirements for the award of the Degree of Master of Accounting & Finance to the School of Graduate Studies, St. Marry University, is my original work, has not been presented for degree in any other university and that all sources of materials used for the thesis have been duly acknowledged.

Declared by: Asrat Molla Fantaye

Signature_____

Date_____

Place and date of submission: St. Marry University, June, 2017

Endorsement

This is to certify that Asrat Molla Fantaye has carried out his research work on the topic entitled "Factors Affecting Customers' Intention to Adopt ATM Banking System in Ethiopia**"**. The work is original in nature and is suitable for the submission for the award of Masters of Degree in Accounting and Finance.

Advisor: Zemenu Aynadis (Asst. Prof.) **Signature: _____**

St. Mary's university **Date _____**

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Asrat Molla

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Acronyms

ATMs: Automated Tellers Machines

ATT: Attitude

HTTP/HTTPS: Hypertext Transfer Protocol/ Hypertext Transfer Protocol Secure

IDT: Innovation Diffusion Theory

INT: Intention

IT: Information Technology

PBC: Perceived Behavioral Control

PEOU: Perceived Ease of Use

PIN: Personal Identification Number

POS: Point-of-Sale

PU: Perceived Usefulness

SMS: Short Message Service

SN: Subjective Norm

TAM: Technology Acceptance Model

TPB: Theory of Planned Behavior

US: United States

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ABSTRACT

The aim of this paper is to examine the factors affecting customers' intention to adopt ATM banking system in Ethiopian banking industry, the case of Addis Ababa city. The study applied mixed research design and collect data through the use of primary and secondary data sources. The primary data source involved through the use of questionnaire and interview. The secondary data was obtained from reviewing journals and literature relevant to the subject matter of this research. The target population for the study was among the head office customers of seventeen commercial banks located in Addis Ababa. The study was undertaken on 385 customers and used the simple and multiple regressions to see the relationship between the dependent variable intention to adopt ATM banking system and the independent variables, Attitude, Subjective Norm, Perceived Behavioral Control, Perceived Ease of Use and Perceived Usefulness. Thus the paper had come up with result of subjective norm and attitude has significant impact on intention to adopt ATM-banking. The predictive capacity of subjective norm is much higher. The paper also presented preferred banking system among customers' and why they choose between tellers based banking and ATM-banking, customers' preferences for ATM-banking across different educational levels and gender and ATM-banking services used by customers too. The paper showed the existing legal frameworks on ATM-banking. From the respondents', receiving banking products or services through tellers based channel is more preferred than ATM-banking channel. ATM-banking usage with educational level and gender, better results were recorded for ATM-banking with educational level of bachelor degree and above and for male participants'. ATM-banking usage is lower among participants' with lower educational level. Also the paper resulted the multipurpose ATM banking service is used for limited functions of withdrawing money and requesting balance statement. Based on the above findings the paper provides recommendation such as: undertaken awareness creation tasks to improve customers' knowledge on utilizing ATM-banking packages. And also making ATM always functional, secure and privacy keeper as well as frequent monitoring and maintenance is a must. Too the banks should improve ATM features to attract customers.

Key Words: ATM Banking, Simple and Multiple Regression, TPB, TAM, Intention, Attitude, SN, PBC, PEOU, PU, Legal Frameworks.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

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 mortal banking system. 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 (Turban, 2008).

With the introduction of communication and computer technology, and its attendant revolution of information processing, electronic banking has become the order of the day resulting in the emergence of various automated devices enabling the banking industry to improve the speed and quality of service delivery and rapidly changed how banking is done worldwide. The volume and speed of banking transactions have tremendously improved, especially in the developed countries. Its various innovations have brought about reduction in costs, wide range of banking services, and greater convenience for customers (Ayodeji, 2003).

E-banking has become the way for the development of banking system, and the role of electronic banking is increasing in many countries. It offers opportunities to create services processes that demand few internal resources, and therefore, lower cost. As well as it provides wider availability and possibility to reach more customers (Mohammad, 2012). E-banking, a system that enables banks to offer their customers access to their accounts to transact business and obtain information via electronic communication channels such as Automated Tellers Machines (ATMs), Tele-banking, home banking and internet banking is becoming a common practice across the developed world (Pikkarainen et al, 2004).

But the implementation of E-banking system is not likely to be considered successful if users are unmotivated to use that type of technology, and thus it will not bring full benefits to the organization. In order to motivate customers to use electronic banking, banks must make key improvements that address the customers' concerns. Although electronic banking introduces many benefits for banks and customers; customers still fear from the risk of electronic banking services (Mohammad, 2012).

Modern banking in Ethiopia, which was introduced in 1905, is finally making a leap to catch up with innovative banking services and products. One can easily observe that the home grown banks are introducing a new range of banking services based on ATM, Internet Banking, Mobile Banking, POS, SMS and Call Center banking as an extension of their traditional branch services.

Factors affecting customers' intention to adopt e-banking service channels have been at the forefront of several research works in the developed world (Shi Yu 2009, Sung Y.P 2009, Azzaand John, 2015, Lichtenstein & Williamson, 2006). Compared to this there is very much limited published works that investigate the factors influencing the adoption of e-banking from the viewpoint of customers in the context of developing countries like Ethiopia. One of the reasons for the limited empirical studies in Ethiopia is that the introduction of electronics is relatively new in this country. To date there are very few such studies in the country. The study conducted by (Garedachew, 2010) electronic banking practices, opportunities and challenges in Ethiopia and analysis of factors influencing customers' intention to the adoption of e-banking service channels in Bahir Dar city by Yitbarek Takele and Zeleke Sira(2013) are remarkable exceptions. But this study exceptionally tries to address the influencing factors of customers' intention to adopt ATM banking in depth than the general e-banking services. Furthermore, the study investigates the current legal frameworks of ATM banking services.

Hence, in order to help banks improve e-banking adoption in general and ATM banking in particular by their customers, it is necessary to examine factors that influence customers' intention to adopt e-banking service channels. Therefore this paper was carried out to determine factors that influence customer's intention to adopt ATM banking in Addis Ababa city.

1.2 Statement of the problem

In order to encourage further ATM-banking adoption in developing countries, a better understanding of the barriers and drivers impacting ATM-banking adoption is critical (zhao, et al.2008). By gaining an in depth understanding of the factors and conditions that influence developing country's ability to adopt and realize its benefits, strategic implications can be generated for the researchers and practitioners regarding how to promote the growth of ATM-banking in the developing countries. However, even if there are some published works that

investigate the factors influencing customers' intention to the adoption of ATM-banking from the viewpoint of customers in the context of developing countries like Ethiopia, there is also a multiple of newly introduced products of ATM banking like ETSWITCH which allows all bank customers to withdraw money by one ATM card from any bank's ATM.

An integration of Technology Acceptance Model, Theory of Planned Behavior and previous empirical studies", Especial, Theory of Planned Behavior and Technology Acceptance Model are listed factors such attitude, subjective norm, perceived behavioral control, perceived usefulness and perceived ease of use as determinant of intention to accept new technology. But how these theoretical developing factors are practical in current banking industry of Addis Ababa is not answered. Also lack of suitable legal and regulatory framework for e-commerce and e-payment is challenging the banking industry of Ethiopia (Gardachew, 2010). In relation to this, what looks like the current legal framework of E-banking system is another question.

Therefore, to address the above gap in the literature and to investigate the problems in depth, this study mainly focuses on assessing factors influencing customers' intention to adopt ATM-banking. Moreover ATM-banking service is widely distributed E-banking system in Ethiopia as well as in Addis Ababa than other E-banking systems, but banks are continue to conduct most of their banking transactions using traditional tellers based methods (Yitbarek and Zeleke (2013).In this regard, issues related to preference for ATM-banking channels across different educational levels and gender and preferred banking system with customers are unanswered questions. Thus, the paper investigated these issues and producing evidence based result that not only help the banks to make knowledge based decision but also will become input for customers in adopting technology based banking services.

1.3 Research Questions

The research was conducted based on the following major questions.

1. What are the factors that influence customers intention to use ATM banking services in Addis Ababa?
2. Is there a significant difference in customers' preferences for ATM-banking across different educational levels and gender?
3. Which banking system is more preferred among customers and why they preferred?

4. What type of ATM-banking packages does the customers used?
5. What looks like the current legal framework of ATM banking system?

1.4 Objectives of the Study

1.4.1 General Objective

The main objective of the study is to analyze the factors affecting customers' intention to use ATM banking service in Addis Ababa city.

1.4.2 Specific Objectives

Specifically the study will attempt:-

1. To identify the main factors that affect customers' intention to adopt ATM banking.
2. To determine if there is a significant difference in customers' preferences for ATM-banking across different educational levels and gender.
3. To investigate the preferred banking systems among the customers (between tellers based methods and ATM) and what are the rationales behind.
4. To examine the ATM-banking packages used by the customers.
5. To identify the current legal frameworks on the use of ATM banking system.

1.5 Hypothesis

2. Attitude has no impact on intention to use;
3. Subjective Norm has no impact on intention to use;
4. Perceived Behavioral Control has no impact on intention to use;
5. Perceived Usefulness has no impact on intention to use;
6. Perceived Ease of Use has no impact on perceived usefulness;
7. Perceived Usefulness has no influence on Attitude;
8. Perceived Ease of Use has no influence on Attitude;
9. Attitude, Subjective Norm, Perceived Behavioral Control and Perceived Usefulness has no impact on intention to use.

1.6 Significance of the Study

The stakeholders for this study were regulatory bodies, banks and financial institutions. Therefore, the findings of the study have practical importance through providing significant insight and a benchmark for the legislature and regulators to consider and evaluate their stance either to maintain or modify the existing laws and e-payment procedures and for banks to adjust and upgrade their system in order to get customer reliability. As the study pin points specific prospects and factors affecting the customers' intention of ATM payment adoption from different perspectives, the study will also intended to pave the way for various banks to devise appropriate strategy on alleviating the factors and harnessing the opportunities entailed to the customer base diversification. The research also serves as a ground for further studies and the finding of the study will initiate other researchers to perform a better and in-depth study on the area.

1.7 Scope of the study

This research study was with reference to the Ethiopian banking industry, specifically in Addis Ababa City. The study mainly attempts to examine the determinant factors that influence customer's intention to adopt ATM banking. The study was covered all available seventeen (17) commercial banks operating in Ethiopia. The target population for the study was also limited to customers located in Addis Ababa. The study was undertaken on 385 customers and used the simple and multiple regressions to see the relationship between the dependent variable intention to adopt ATM banking system and the independent variables, Attitude, Subjective Norm, Perceived Behavioral Control, Perceived Ease of Use and Perceived Usefulness. The research study tries to get views and opinions from customers who utilize and not utilize ATM services. Customer in this context refers to a holder of individual or corporate account with any of the commercial banks in Ethiopia. The study had critically examined views and opinions from selected commercial banks customers.

1.8 Limitation of the Study

To concentrate on all areas and commercial banks in the entire country up to district level was impossible because of the limited time frame and amount of fund. Getting the total customers was also difficult, as a result of the fact that the population is very large. This made it difficult for the researcher to scientifically determine the required and ideal sample size to use in the research study.

1.9 Outcomes of the Study

The study showed determining factors that influence customer's intention to adopt ATM banking in Ethiopian commercial bank, for the case of Addis Ababa city. Moreover, the output of this research work provided opportunity to see how far customer's intention to adopt ATM-banking is influenced by different factors. Additional the study showed the available legal frameworks related to ATM-banking.

1.10 Outline of the Study

The structure of this research is organized as follows, in to five chapters. Chapter one shows overall introduction of the paper. The second chapter deal with literature review and the third contain methodology, the fourth chapter show data presentation and make analysis. The final one is about summary, conclusion and recommendation.

CHAPTER TWO

THEORETICAL VIEWS AND EMPIRICAL EVIDENCE OF RELATED LITERATURE

In this section some of the related theoretical and empirical research works done are discussed to provide theoretical insight and empirical elaboration to my work and to see its supportive climate and dissimilarity of those research works with that of mine.

2.1 Theoretical views

2.1.1 E-banking Adoption models

There are different types of technology adoption models. Different authors and research publications explain the importance of technology adoption for banking service. Some of these models are such as Technology Acceptance Model, Innovation Diffusion Theory (IDT), Theory of Planned Behavior, Theory of Reasoned Action and so on. In this study Theory of Planned Behavior (Ajzen, 1991), Technology Acceptance Model (TAM) (Davis, 1989) and Innovation Diffusion Theory (IDT) which was developed by Rogers in 1995 was to be discussed.

2.1.2 Theory of Planned Behavior (TPB)

The theory of planned behavior postulates three conceptually independent determinants of intention. The first is the attitude toward the behavior and refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question. The second predictor is a social factor termed subjective norm; it refers to the perceived social pressure to perform or not to perform the behavior. The third antecedent of intention is the degree of perceived behavioral control which refers to the perceived ease or difficulty of performing the behavior and it is assumed to reflect past experience as well as anticipated impediments and obstacles. As a general rule, the more favorable the attitude and subjective norm with respect to a behavior, and the greater the perceived behavioral control, the stronger should be an individual's intention to perform the behavior under consideration. The relative importance of attitude, subjective norm, and perceived behavioral control in the prediction of intention is

expected to vary across behaviors and situations. Thus, in some applications it may be found that only attitudes have a significant impact on intentions, in others that attitudes and perceived behavioral control are sufficient to account for intentions, and in still others that all three predictors make independent contributions (Ajzen, 1991).

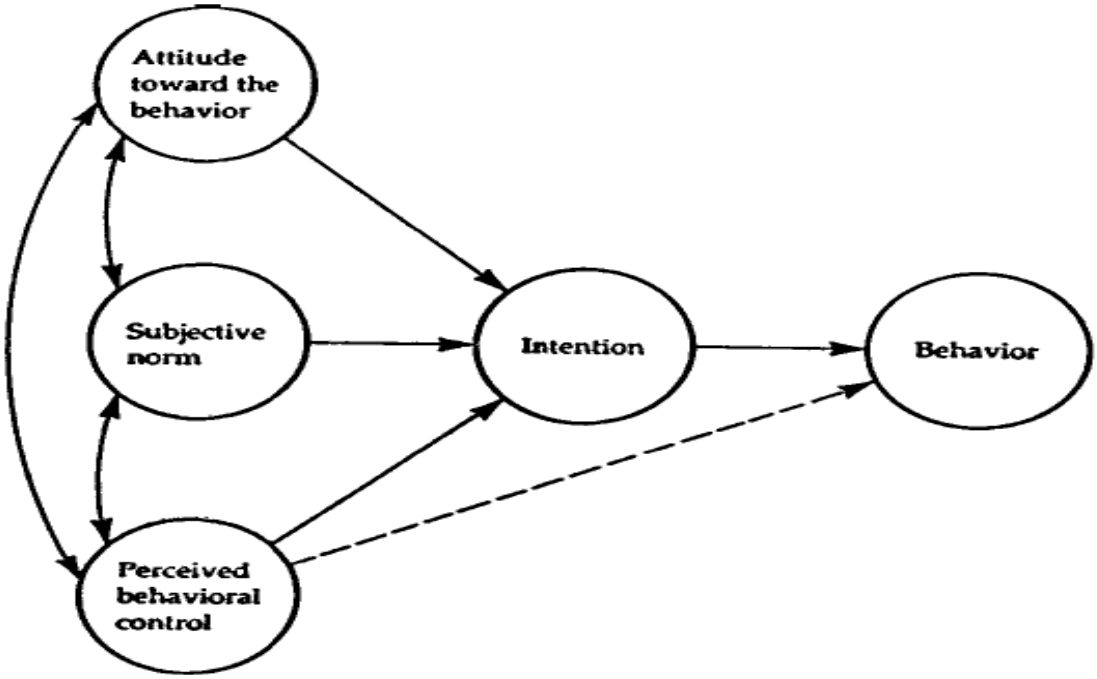


Figure.1. Theory of Planned Behavior

2.1.3 Technology Acceptance Model

Technology Acceptance Model (TAM) has been developed by Davis (1989) is one of the most popular research models to predict use and acceptance of information systems and technology by individual users. TAM is theory used widely to explain information systems usage. TAM has been widely studied and verified by different studies that examine the individual technology acceptance behavior in different information systems constructs (Priyanka, 2012).

Two factors are relevant in the model. These are Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). Davis defines PU as the prospective user's subjective probability that using a specific application system will enhance his or her job or life performance. PEOU can be defined as the degree to which the prospective user expects the target system to be free of effort. These are the most important determinants of intention to use. Davis suggested that using an information system is directly determined by the behavioral intention to use it, which is in turn

influenced by the users' attitudes towards using the system and the perceived usefulness of the system. Attitude and perceived usefulness are also affected by the perceived ease of use. According to TAM, greater perceived usefulness and the perceived ease of use of an information system will positively influence the attitude toward the system. The attitude, in turn leads to a greater intention to use the system, which positively affects one's actual use of the system. In TAM, given other thing, perceived usefulness is influenced by the perceived ease of use because the easier a technology to use, the more useful it can be.

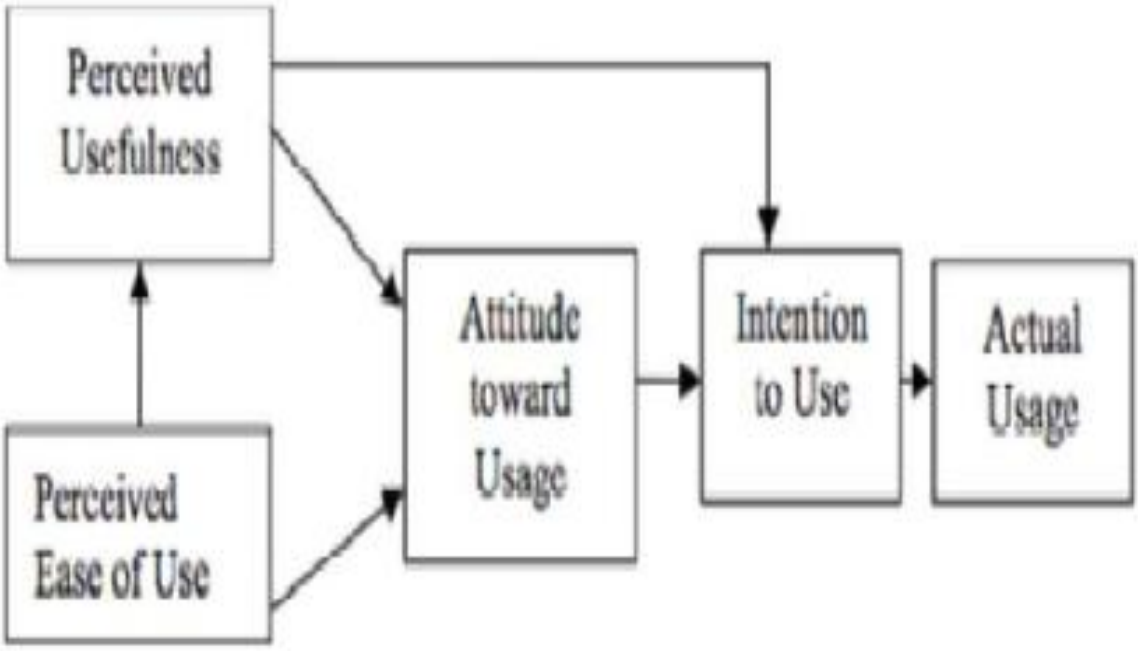


Figure.2. Technology acceptance model (TAM) (Davis et al., 1989)

2.1.4 Innovation Diffusion Theory

Innovation Diffusion Theory (IDT) was developed by Rogers in 1995. Innovation is an idea, process, object, or practice that can be considered to be new, and diffusion is the process by which it gets into the social system (Rogers, 1995).

In this theory, there are five determinants of the rate of innovation that affect adoption and acceptance behavior. They are relative advantage, compatibility, complexity, trialability, and observability. The diffusion process can be visualized as an S-shaped curve (James and Kaiser 2012).

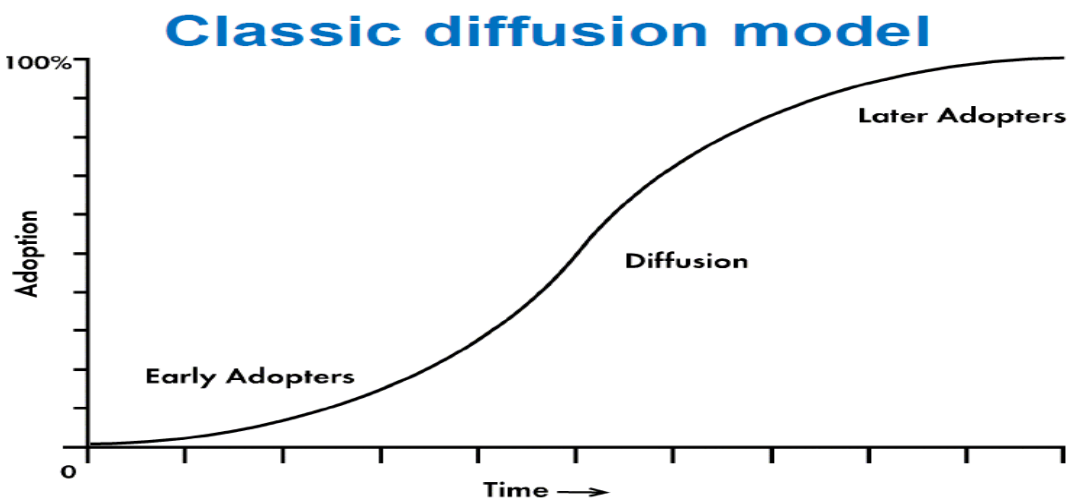


Figure.3. Diffusion of Innovations: Implications for Practice, James and Kaiser 2012.

2.1.5 The Research Model

Since the focus of this study is to find the factors affecting customers' intention in adoption of ATM banking system, which is to show the acceptance of innovated information system applications, the paper was integrated TAM with TPB to develop the research model which was examined factors that affect customers' intentions toward ATM-banking services. Therefore, there are 6 variables in the research model which includes perceived ease of use, perceived usefulness, attitude, subjective norm, perceived behavioral control (independent variables) and intention to use (dependent variable). The research model which is developed with own computation by joining TAM and TPB is presented below.

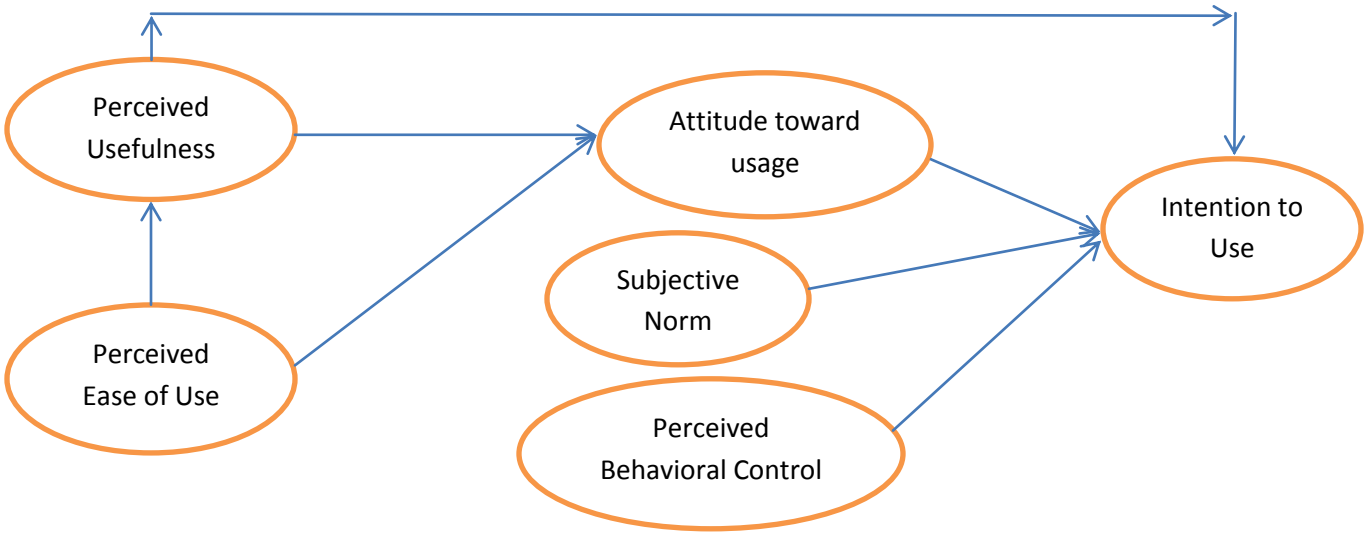


Figure 4. The Research Model (Own Computation by combing TPB and TAM)

2.1.6 Electronic banking (E-banking)

Electronic banking (E-banking) is the means by which the services and products of banks are made available to their customers through the use of internet and electronic digital devices irrespective of the location of the customer and time of carrying out the transaction (Ovia, 2002). E-banking is the provision of banking products and services to banks and customers through the utilization of various electronic delivery channels. The e-banking concept has been in existence for some time although in form of Automated Tellers Machines (ATMs) and telephone banking and that in most recent times due to advancement in IT, it has been carried out through the use of the internet. The internet offers around the clock services irrespective of the customer's location, which gives customers the opportunity with ease and convenience to perform banking transactions such as cash withdrawals, money transfer, payments for goods and services, payment of utility bills, and so on, at any hour of the day Chavan (2013).Elisha (2010) also defines that e-banking is the automated delivery of banking services and products to customers through the use of electronic interactive communication channels. This definition implies that e-banking platforms or channels enable bank customers to perform banking transactions such as funds transfer, cash withdrawals, payment for goods and services, etc through the use of interactive electronic media that allow the customers to carry out transactions by themselves without relying on bank Tellers.

2.1.7 Role of ICT in E-Banking

Information and communication technologies are playing a very important role in the advancements in banking. In fact information and communication technologies (ICT) are enabling banks to make radical changes to the way they operate. According to Consoli (2003), the historical paradigm of IT provides useful insights that opened the way to radical changes in the banking industry such as the reconfiguration of its organizational structure and the diversification of the product line. Banks are essentially intermediaries, which create added value by storing, manipulating and transferring purchasing power between different parties. To achieve this, banks rely on ICT to perform most functions, from book keeping to information storage and from enabling cash withdrawals to communicating with customers (Shah et al., 2009). In

developed countries at least, this high degree of reliance on ICT means that banks spend a large chunk of their budget on acquiring as well as maintaining these technologies. Information Communication Technology provides a very limited return unless accompanied by changes in organizational structures and business processes. These changes also need to be followed by a diversification of service offerings, with many banks introducing new product lines such as credit cards, stock brokerage and investment management services. Thus, ICT has mostly enhanced productivity, as well as increased the choice for customers both in terms of variety of services available and in terms of the ways in which they are able to conduct their financial activities (Shah et al., 2009).

2.1.8 The various E-banking channels

Telephone Banking

Telephone banking (also known as Tele-Banking) is an e-banking service provided by commercial banks for utilization by customers. The telephone banking channel enables customers to carry out banking transactions such as confirmation of account balance and confirmation of other banking information over the telephone (Edemivwaye 2015).

Mobile Banking

Mobile banking (also known as M-banking) is an e-banking platform that allows customers to carry out banking transactions and make enquiries through the use of a digital mobile phone that is connected to a telecommunication network or wireless network. The earliest mobile banking services were offered through sending and receiving Short Message Service (SMS) (Shah et al., 2009).

Online Banking

Online banking (also known as Internet banking) provides a platform for bank customers to carry out financial transactions on their own through the use of a secured internet website operated by the commercial bank, a retail or virtual bank, credit union or building society (Edojariogba,

2014). The internet banking enables customers to access their financial institutions' online banking facility with access details, access codes, and passwords given to them by the financial institutions (Edojariogba, 2014).

Point-of-Sale (POS)

The POS e-banking channel allows customers to make payment for goods and services to clients. A Point Of Sale terminal is a portable device that allows customers with cards (such as ATM cards) to carry out banking transactions outside the bank's environment. This e-banking platform allows bank customers to carry out financial transactions with clients (merchants) who have the device deployed in their premises irrespective of the merchant's bank and the customer's bank (Okechi et al., 2013). The POS services enable customers transacting with merchants to make cashless payments for goods and services directly into the merchant's account (Edemivwaye 2015).

Automated Tellers Machines (ATMs)

An Automated Tellers Machine (ATM) is an electronic banking outlet, which allows customers to complete basic transactions without the aid of a branch representative or tellers. Anyone with a credit card or debit card can access most ATMs. ATM is a computerized telecommunications device that provides the clients of a financial institution with access to financial transactions in a public space without the need for a cashier, human clerk or bank tellers.

ATM transaction typically involves withdrawing cash from a machine. The consumer presents an ATM card, which is issued by the bank holding his or her checking account, at an ATM terminal, which may or may not be owned by the same bank. The consumer enters a personal identification number (PIN) to verify identity, once the PIN is verified, one can easily get the service, such as to withdraw cash, obtain bank statements, effect cash transfers, as he got from cashier or bank tellers (Fumiko, etal).Also called Automated Banking Machine or Automatic Till Machine or remote service unit.

2.1.9 ATM Industry pricing

A guide to ATM and Debit Card Industry divided ATM Industry pricing in to two. ATM Industry pricing are retail fees paid by consumers and wholesale fees, which are exchanged between various members of the ATM infrastructure.

Retail ATM fees

Retail fees paid by ATM cardholders go to the cardholder's bank. Some fees are periodic, while others are assessed on a per-transaction basis. Among the former, the bank may charge an annual fee to depositors who choose to use ATM services or a card fee each time an ATM card is issued. Among the latter, the bank may charge a foreign fee when the cardholder uses an ATM not owned by the bank or an on-us fee when the cardholder uses an ATM owned by the bank. A surcharge is a retail ATM fee that is paid to the owner of the ATM, typically only when the cardholder uses an ATM not owned by the cardholder's bank. The level of a surcharge is set by the ATM owner.

Wholesale ATM fees

Wholesale ATM fees are set by networks. Periodic fees are paid to the network and include membership fees that are paid when a bank joins a network as well as monthly or annual fees that are tied to the sales volume of the bank's card program.

2.1.10 ATM transactions

ATM follows four transactions methods. These are Native transactions, Network on-us transactions, Reciprocal transactions and National bridge transactions. Each of them are discussed below.

Native transactions are not routed through any network switch. In the simplest case, which is called an "owner's on-us" transaction, a cardholder uses an ATM owned by his or her bank. Because the entire transaction is routed only through the issuing bank's systems, there is no need to involve a network switch. A variation is where the cardholder uses an ATM that does not

belong to his or her bank but the card issuing bank and the ATM owner use the same processor. Some networks allow the processor to route transactions among its clients without involving the network switch, even when the ATM owner and the card issuer of the transaction are different institutions. Such transactions are called "processor's on-us" transactions.

Network on-us transactions are routed through only one network switch. The switch can be either a regional network's or a national network's. Typically a network on-us transaction is initiated by a cardholder of one member institution at an ATM of another member institution.

Reciprocal transactions occur when the cardholder uses an ATM of another institution and the card issuer and ATM owners use different regional networks but the networks have a reciprocal-sharing agreement. A reciprocity agreement between regional networks is an arrangement whereby the two networks agree to pass information to one another in transactions involving members of each network. Typically, two network switches are necessary to complete the transaction.

National bridge transactions occur when the cardholder uses an ATM of another institution and the card issuer and ATM owners use different regional networks but the networks do not have a reciprocal sharing agreement. In this case the card issuer and ATM owner must belong to the same national network (Cirrus or Plus) and the regional networks serve as gateways to the national network. The transaction involves three switches, one from the initiating regional network, one from the national network, and one from the other regional network.

2.1.11 Banking Industry History in Ethiopia

The first bank in the country, Bank of Abyssinia was founded during the regime of Emperor Menelik II in February 1905. Due to a foreign domination of its management, the then Bank of Abyssinia was forced to dissolve and in its place was Bank of Ethiopia established in 1931 whose management was still left to foreigners due to the then lack of skilled manpower in the country. The Bank of Ethiopia was later replaced by the State Bank of Ethiopia soon after the war with Italy. The latter was the first bank in the country fully controlled and owned by the Ethiopian government. In the meantime, a number of foreign banks had opened their branches in the country, most of them with an interest to have control over the nation's economy. It was the

State Bank of Ethiopia that gave rise to the present Commercial Bank of Ethiopia (CBE) and National Bank of Ethiopia (NBE). During the Dergue reign, CBE had remained as the only participant in the country's commercial banking sector.

However, following the 1991 takeover by the present government and accompanying encouraging policy for private investment, a number of private banks have emerged in the country. Accordingly, proclamation No.83/1994 (Monetary and Banking proclamation) and the proclamation No.84/1994 (Licensing and Supervision of Banking Business proclamation) laid down the legal basis for investment in the banking sector. Consequently, the first private bank, Awash International Bank was established in 1994 by 486 shareholders. Dashen Bank was established on September 20, 1995 as a share company with an authorized and subscribed capital of Birr 50.0 million. 131 shareholders with subscribed and authorized capital of 25.0 million and 50 million founded bank of Abyssinia. Wegagen Bank with an authorized capital of Birr 60.0 million started operation in 1997. The fifth private bank, United Bank was established on 10th September 1998 by 335 shareholders. Nib International Bank that started operation on May 26, 1999 with an authorized capital of Birr 150 million. Cooperative Bank of Oromia was established on October 29, 2004 with an authorized capital of Birr 22.0 million. Lion International Bank with an authorized capital of Birr 108 million started operation in October 02, 2006. Zemen Bank that started operation on June 17, 2008 with an authorized capital of Birr 87.0 million.Oromia International Bank that started operation on September 18, 2008 with an authorized capital of Birr 91 million.

In addition, recently Buna International Bank, Addis International Bank, Abay Bank, Debub Global Bank and Birhan International Bank are started operation in the country (NBE, 2009). Currently, in the country a total of seventeen banks that provides banking services.

2.1.12 ATM-Banking System in Ethiopian

For the first time ATM-banking system was introduced by Commercial Bank of Ethiopia in 2001. By second rank Dashen bank, a forerunner in introducing e-banking in Ethiopia, has installed ATMs at convenient locations for its own cardholders. The Dashen Bank ATM is available 24 hours a day, seven days a week and 365 days a year providing service to Dashen Debit Cardholders and International Visa Cardholders coming to the country. Available services on Dashen Bank ATMs are: Cash withdrawal, Balance Inquiry, Mini statement, Fund transfer between accounts attached to a single card and PIN change. Next Wegagen Bank has made installation of a network of ATMs on December 30, 2008 (Gardachew, 2010).

By 2015 all over the country 1,412 ATM machines are owned by nine banks (Commercial Bank of Ethiopia, Dashen Bank, Awash International Bank, Abyssinia Bank, Wogagen Bank, Zemen Bank, United Bank, Nib International Bank and Buna International Bank) and about 1,871,755 customers gets the service. It is the second popular access channel to banking services behind branch banking in Ethiopia which offers competitive advantage in the homogenous market of retail banking products and services Gezahegn (2015).

Currently Ethiopian banks have 16 years ATM-banking experience and provide services of cash withdrawal, balance Inquiry, mini-statement, fund transfer between accounts attached to a single card, Foreign exchange, mobile top up, PIN change and PIN Unblock to customers'. By today except Development Bank of Ethiopia all banks have ATM-banking services**.**

2.2 Empirical Evidence

There is no doubt that we live in a world where technology dominates our everyday life choices and decisions. One of the greatest concerns of every business organization is customer satisfaction and their intension about the company's product and services. In the banking industry, most customers are motivated by accuracy of records and timely service delivery they receive. This has not only made the banking industry sophisticated but dynamic and ultimately becoming complex in nature with the introduction and invention of the Automated Tellers Machine (ATM). Thus, many studies have investigated the effect of the ATM payment system on banking industry.

The study conducted by Yitbarek and Zeleke (2013) on Analyzing the factors influencing customers' intention to the adoption of e-banking service channels in Bahir Dar city with integration of Technology Acceptance Model, Theory of Planned Behavior and previous empirical studies identified seven factors; attitude, subjective norm, perceived behavioral control, perceived usefulness, perceived ease of use and perceived risk affecting users' behavioral intention to use E-banking. Results also revealed that the construct perceived behavioral control is the dominant factor followed by perceived ease of use and attitudes in predicting an individual's intention to accept e-banking service channels. The regression result also shows that attitude is jointly predicted by perceived behavioral control, perceived usefulness, perceived ease of use, and perceived risk while perceived ease of use contributed more for the variation in attitude.

The research work done by Edemivwaye (2015) with topic of "Electronic Banking and Customer Satisfaction in the Nigerian Banking Sector" with purpose of finding factors that influence customers' adoption and utilization of e-banking products, and to determine if e-banking has improved customer satisfaction come out with different results. The researcher found some of the factors that influence customers' adoption and utilization of e-banking services in Nigeria. These factors are; availability, accessibility, fees/charges, speed of transaction, security, privacy, and IT knowledge/awareness. He found that there was a significant difference in customers' preferences for e-banking services. He also found that there was no significant difference in customers' preferences for e-banking services across different educational qualifications. He also found that there was no significant difference in customers' preferences for internet banking,

telephone/mobile banking, and POS terminal across gender; while preferences for ATM and smart card showed a statistical significant difference across gender. The researcher also found that there was a significant relationship between utilization of e-banking channels and customer satisfaction in Nigeria. Additionally, he got utilization of e-banking products has significantly improved customers satisfaction in Nigeria.

Adewoye (2013), observes that ATM is an innovative customer delivery service tool that offers diversified services such as cash withdrawals, funds transfer, payment of bills, etc. The use of ATMs as a customer service delivery strategy has enabled bank customers to transact banking business using a coded ATM card, wherever an ATM facility is located, customers can access their accounts at any hour of the day.

According to Adeniran (2014), among the development in the banking services delivery is the introduction of Automated Tellers Machine (ATM) that intends to decongest the banking halls as customers now can go to any nearest ATM outfit to consummate their banking transactions such as: cash withdrawal, cash deposit, bill payments, and transfer of fund between accounts. The research made use of a cross-sectional survey design that questioned respondents on ATM services. The findings revealed that, the impact of ATM services in terms of their perceived ease of use, transaction cost and service security is positive and significant. However, the result also indicates that the impact of ATM services in terms of availability of money is positive but insignificant. In a similar study Idris, (2014), is of the view that Automated Tellers Machine (ATM) among others was one of the services introduced by banks with the objective of providing customers quick access to their finances, as well to reduce cost of such access.

Research done by Gardachew (2010) examines Electronic-Banking in Ethiopia-Practices, Opportunities and Challenges was one of the related works. Low level of infrastructural development, lack of suitable legal and regulatory framework, high rates of illiteracy, frequent power interruption and security issues are found as the main challenges for developing e-banking in Ethiopia.

The other research work related to this paper is the survey study made by Ayana Gemechu Bultum (2012), in which he examined adoption of E-banking in the Ethiopian banking industry with respect to the barriers which can influence firms from taking advantage of E-banking

systems and expected benefits derived by adopting the system. The study was conducted based on the data collected from four banks in Ethiopia; three private banks and one state bank. The result of the study indicated that the major barriers the Ethiopian banking industry faces in the adoption of Electronic banking are mainly Security risk, luck of trust which emanated from security risk, lack of legal and regulatory framework, lack of ICT infrastructure, etc. This study suggested a series of measures which could be taken by the banking industry and by the government to address various challenges identified in the research work. Although the objective of the study was mainly to identify the major barriers that the Ethiopian banking industry is facing in line with adoption of E-banking in which security risk has got focused, this research work can be taken as a reason for the inception of our research ideas.

The research work by Thorsten and Weigoldon Secure Internet Banking Authentication was one of the related works. The purpose of this study was to describe the current authentication threats and two proposed solutions as well as how these solutions can be extended in the face of more complex future attacks. The authentication schemes and attacks introduced in this work represent the standard of knowledge discussed in various publications dealing with user authentication. However, most of them provide an overview of schemes and corresponding attacks and don't attempt to draw a security landscape by relating them to each other in a sensible way. Moreover, this work presents mainly focusing on authentication solutions one based on short time password and one on certificates and then described how easily these solutions can be extended should sophisticated content manipulation attacks arise. Therefore, the focus of the research was on the two challenge response Internet banking authentication solutions rather than showing the basic security landscape like client-side vulnerabilities and its level of risk, so it doesn't satisfy the need of my study. The other research work closely related to this research is the one done by Stawowski. The study aimed at identifying and particularly focusing on the penetration testing guidelines for client-side threats that commonly used security technologies find difficult to mitigate by elaborating web browser attacks conducted in encrypted SSL tunnels, HTTP/HTTPS sessions hijacking and use of dangerous applications. In this research work Metasploit, Apache Tomcat, SSl-explorer and Burp Suite have been suggested as list of testing tools with specific required configuration settings. Since one of my research objectives is to identify the level of client-side vulnerability and its risk level this research work is closer to my research work; however its basic focus was only on penetration testing guidelines for client-side threats.

The other research work reviewed dealt with "threat to online banking "done by Wüeest in which the researcher mainly identified that the number of malicious applications targeting online banking transactions has increased dramatically in recent years. This represents a challenge not only to the customers who use such facilities, but also to the institutions who offer them, as evidenced by an ongoing trail in the US. The researcher described the idea that malicious applications employ two kinds of attack vector-local attacks which occur on the local computer, and remote attacks, which redirect the victim to a remote site. The possibility also exists that both approaches will be combined. The prevalence of malicious applications that steal financial account information has increased dramatically over the last year, often resulting in victims losing hard currency. There are several factors that may have influenced the evolution of this type of malicious applications, but may be the dramatic increase in their prevalence is just because they have a higher chance to succeed than expected.

2.3 Current Legal Framework of E-banking System

2.3.1 E-payment Procedure of Commercial Bank of Ethiopia

The following literature was drawn from the e-payment procedure of Commercial Bank of Ethiopia which is published on November 14, 2012.

2.3.2 Background of the procedure

Electronic banking is spreading quickly in recent years as it leads to much lower costs and greater competition in the financial services. Electronic banking helps to attract unbanked individuals in to the banking system allowing them to improve money management with enhanced financial empowerment. For financial institutions, it draws cash into bank accounts which can be translated into funds for lending and investment. The adoption and growth of E-payment is found very important towards creating a cashless society with its impact on bringing economic transparency, efficiency and growth. From customer perspective, the most recognized drives for growth of e-banking includes the convenience, the reliability, the widely availability, affordability and usefulness of the system.

Electronic payment is mostly referred to automated payment or banking channels that allows delivery of banking services in an effective, efficient and convenient way via electronic channels such as Automatic Tellers Machine (ATM), Point Of Sale (POS) Terminals, Mobile phones, internet and personal computers. The CBE is a pioneer to introduce electronic payment in the country when it launched proprietary ATM system in 2002. However, the bank found it important to set up a new solution for electronic payment services which is capable of supporting its business growth requirements. Accordingly, the bank has implemented card payment services, Mobile payment and Internet banking.

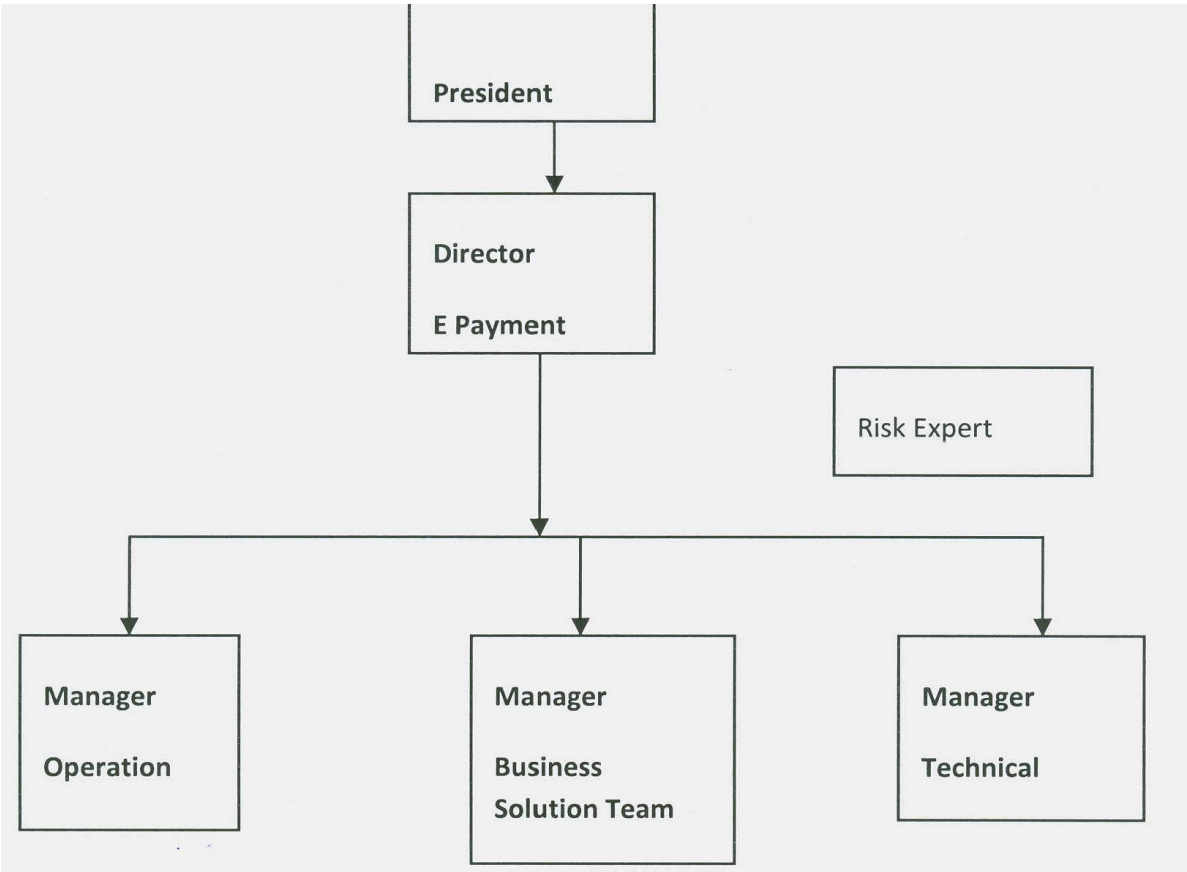
2.3.3 Purposes of the procedure

The E-payment procedure is intended to provide bank employees with complete information and references on in E-payment services with the objective of ensuring awareness, uniformity, and vigilance operations, in areas of E-payment process. The procedure has also the purpose to ensure standardization and uniformity in E-payment process with clearly delineating duties and responsibilities of performers.

2.3.4 ATM Management

- The ATMs installed within the branch premises shall be under the custody and management of the specific branch.
- The ATMs installed at off branch premises (commercial centers, hotels and various entities) in Addis Ababa shall be under the custody and management of the E-payment process.
- The ATMs installed at off branch premises in outlying city shall be under the custody and management of nearby branches.
- Each ATM shall have ATM cash account for ease of reconciliations.

2.3.5 Structure of E-payment Process



2.3.6 Governing Law

This procedure can be governed by

- The relevant director of the National Bank of Ethiopia
- The accounting policy of the bank
- The commercial code of Ethiopia and other related laws and regulations of the country
- National payment system proclamation
- VISA international operating regulation

2.3.7 Domestic Debit Card Issuance Proccess

Application Proccessing at Branches

a. The customer service officer (maker) advices customers to fill Visa Electronic Debit Card Application Form.
b. The Customer Service Officer (maker) verifies if the applicant is account holder of the bank, and if not, will ask the applicant to open account, which shall be linked the card payment products.
c. The customer service officer (maker) verifies and authenticates the customer's signature on the applicant form.
d. The customer service officer (maker) informs the customers to come and collect the card and PIN within a week for branches in Addis Ababa, and two weeks for outlying branches.
e. The customer service officer (maker) forwards all the pertinent documents to the CSO (checker)
f. The customer service officer (checker) checks that all requirements and the detail in the application form have been correctly completed.
g. The customer service officer (checker) completes the application summary form based on customer applications and forwards to the branch controller.
h. The branch controller makes sure that all the details including customer's account in the card application form and applications summary form have been correctly completed before it is delivered to E-payment.

2.3.8 ATM Transactions Reconciliations and Balancing

The procedure assigns the senior customer service accounts to reconcile and balance ATM transactions on daily basis using reports from MAGIX (card payment system), T24 and if necessary electronic journals.

2.3.8.1 ATM cash excess

a. The customer service officer and the senior customer service (cash) posts the excess amount in account payable ATM cash excess. The amount shall be investigated for proper adjustment within 30 days from the date of cash excess identification.
b. The senior customer service accounts recognize the amount as other income in case of failure to identify the cash excess cause or beneficiary within 30 days, after excreting maximum efforts.
c. The controller at branch or E-payment checks for proper and timely adjustment of the cash excess found in an ATM.

2.3.8.2 ATM Cash Shortage

a. The customer service officer (maker) and Senior Customer Service (cash) ensures that the correct denominations are loaded in predefined ATM cassettes to avoid shortage of cash.
b. The customer service officer (maker) and senior customer service (cash) investigates that the cause of the shortage to ensure that it is as a result of wrong posting or system malfunctioning (automatic posting errors).
c. The customer service officer (maker) and senior customer service (cash) are liable for shortage of cash that cannot be traced and the amount is collected from their respective indemnity cash account.
d. The branch /E-payment controller conducts surprise ATM cash count at least once in a month.

CHAPTER THREE

METHODOLOGY

3.1 Research Design

Research Design is the conceptual structure within which research is conducted; it contains the mechanisms of data collection, variable measurement and analysis (Kothari, 2008). The main objective of this study was to investigate the determinants factors affecting customers' intention to adopt ATM banking system in Ethiopia. The data for this study was gathered through the use of primary and secondary data sources. The primary data source involved through the use of questionnaire and interview. The questionnaires was distributed to the randomly selected head office customers of those seventeen commercial banks and key informant interview will be conducted for first-hand information for processing towards answering the research questions. The secondary data was obtained from reviewing journals and literature relevant to the subject matter of this research. This study was designed to analyze factors that influence customer's intention to adopt ATM-banking in Ethiopia. A conceptual framework was designed by integrating variables from theory of Planned Behavior and technology acceptance model.

The data for this study was analyzed by using statistical and descriptive methods. Statistical analysis was done through regression analysis to see the relationship between the independent variables and dependent variable. The research was a single and multiple regression analysis. Single regression carried out on Perceived usefulness, attitude, subjective norm, perceived behavioral control each as individual independent variable and intention to use as dependent variable; Perceived usefulness and perceived ease of use each as a single independent variable and attitude as dependent variable and perceived ease of use as independent variable and Perceived usefulness

3.2 Data Types and Sources

The data for this study was gathered through the use of primary and secondary data sources. The primary data source involved through the use of questionnaire and interview. The questionnaires was distributed to the randomly selected head office customers of those seventeen commercial

banks and key informant interview will be conducted for first-hand information for processing towards answering the research questions. The secondary data was obtained from reviewing journals and literature relevant to the subject matter of this research. Newspaper source and official policy documents of the banks with relevance to the subject were also consult. The electronic search Site: www.google.com will also employ extensively for up-to-date materials on the topic.

3.3 Sampling Procedure, Sampling Technique and Sample Size

3.3.1 Target Populations

There are sixteen (16) private banks and one (1) government commercial bank in Ethiopia. The target population for the study was among the head office customers of seventeen commercial banks located in Addis Ababa. Since the numbers of banks are not as such large consider all of them are better to know the customers view from different point.

3.3.2 Sampling Technique

This study was designed to analyze factors that influence customer's intention to adopt ATM-banking in Ethiopia. A conceptual framework was designed by integrating variables from theory of Planned Behavior and technology acceptance model. The non-probability sampling method was chosen. Additionally it is the most commonly associated with survey based research needs to make inferences from the sample about a population to answer the research questions or to meet research objectives (Saunders et al. 2000). Through this technique, because of large number of bank user population the study was undertaken on 385 customers drawn from seventeen commercial banks, i.e. twenty head office customers of each bank is planned to be included. The research method was a survey method with a descriptive and statistical analysis. In the study regression analysis was conducted to determine the predictive power of the variables.

3.3.3 Sample size

The number of total population for this study is very large and unknown. For populations that are large, Cochran (1963:75) developed the Equation to yield a representative sample for proportions. Which is valid where n0 is the sample size, Z2 is the abscissa of the normal curve that cuts off an area α at the tails (1 – α) equals the desired confidence level, e.g., 95%), e is the desired level of precision, p is the estimated proportion of an attribute that is present in the population, and q is 1- p. The value for Z is found in statistical tables which contain the area under the normal curve.

To illustrate, suppose I wish to evaluate the customers' intention in adoption of ATM banking services in Ethiopian commercial banks, there is a large population but that I do not know the variability in the proportion that will adopt the practice; therefore, assume p=.5 (maximum variability). Furthermore, suppose I desire a 95% confidence level and ±5% precision. The resulting sample size is demonstrated as

$$no = \frac{Z^2 pq}{e^2} = \frac{\mathbf{1.96^{\ 2}\ 0.5\ (0.5)}}{\mathbf{(0.05)^2}} = \mathbf{385\ customers}$$

Therefore, I took 385 respondents for my investigation. But the questionnaires were collected only from 354 customers.

3.3.4 Sampling Procedure

Prior to conducting the study permission was obtained from each banks managers. After permission was granted, the questionnaires which have three parts – background information, closed ended questions and open ended questions was distributed to the respondents. Self administered questions were used to obtain background information of respondents relevant to the study. Participants were asked to furnish information with regard to their sex, age, educational level, occupation and monthly income. Closed ended questions which helps to test the customers attitude, perceived behavioral control, perceived usefulness, perceived ease of use that affects the their intention to adopt new technology and open ended questions were used to

obtain the customers banking service preference and their reasons behind.. For the questionnaire to be easily understandable by respondents, it was translated in to Amharic language.

3.4 Data Collection Techniques

Data for this study was collected through document review, questionnaires and interview:
Document review involved collecting information and data from existing surveys, reports and documents. Questionnaires were used to collect information from bank customers. Questionnaire used was developed by combing questioner developed by Sara (2007) to study "factors influencing the adoption of internet banking" and other questions related to the research objectives. Respondents will participate in the research by rating their view about each question on a five point Likert scale. The five point measurement Likert scales comprised of 1 being equal to 'strongly disagree'; 2 for 'disagree'; 3 for 'no option'; 4 for 'agree' and 5 for 'strongly agree', and filling appropriate answers for the question.

The first section of the questionnaire was structured to collect demographic data on each participant. The second section of the questioner was the main part and contains close-ended questions (structured questions). The third part was close ended and open-ended questions (semi-structured questions) to answer the second, third and fourth objectives of the study. For the fifth objectives the study used **key informant interview** with bank managers, E-payment operation head and officers.

3.5 Data Analysis

Data was analyzed by using statistical and descriptive methods. Statistical analysis was done through regression analysis to see the relationship between the independent variables and dependent variable. The research was a single and multiple regression analysis. Single regression carried out on Perceived usefulness, attitude, subjective norm, perceived behavioral control each as individual independent variable and intention to use as dependent variable; Perceived usefulness and perceived ease of use each as a single independent variable and attitude as dependent variable and perceived ease of use as independent variable and Perceived usefulness as dependent variable. Multiple regressions applied to see the influence of perceived usefulness, attitude, subjective norm and perceived behavioral control (together independent variables) on

intention to use (dependent variable).Also data that are presented in the form of frequencies, mean average and percentages, so as to establish the relationship of variables too correlation coefficients are used to quantify the strength of association between the variables as well as testing the significance of relationships. Additionally qualitative data were analyzed by description.

3.6 The Research Model

Since the focus of this study is to find the factors affecting customers' intention in adoption of ATM banking system, which is to show the acceptance of innovated information system applications, the paper was integrated TAM with TPB to develop the research model which was examined factors that affect customers' intentions toward ATM-banking services. Therefore, there are 6 variables in the research model which includes perceived ease of use, perceived usefulness, attitude, subjective norm, perceived behavioral control (independent variables) and intention to use (dependent variable). The research model which is developed with own computation by joining TAM and TPB is presented below.

3.7 Econometric Model

In the above the research model was developed based on the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB). Based on the above developed research model, the following empirical models are developed, which are used in analyzing the data. Thus, the empirical models are:

$$INT = \beta 0+\beta 1Att+\varepsilon$$

$$INT = \beta 0 + \beta 1SN +\varepsilon$$

$$INT = \beta 0 + \beta 1PBC +\varepsilon$$

$$INT = \beta 0 + \beta 1PU + \varepsilon$$

$$PU = \beta 0 + \beta 1PEOU+\varepsilon$$

$$Att= \beta 0+ \beta 1PU + \varepsilon$$

$$Att = \beta 0 + \beta 5PEOU+\varepsilon$$

INT = β0+β1Att+ β2SN + β3PBC + β4PU + ε

Where: INT = customers' intention to accept ATM banking, Att = attitude toward usage, SN = subjective norms, PBC = perceived behavioral control, PU = perceived usefulness, PEOU = perceived ease of use and ε = is the error term.

CHAPTER FOUR
DATA PRESENTATION AND ANALYSIS

For this study 385 questionnaires were distributed and 354 were collected from bank customers. From the collected questionnaires (343 (96.8%) of them were found to be useable for analysis and 11 were not filled correctly and as result not used for analysis purpose. Thus, descriptive analysis is done on the gathered data through STATA.

Table 1: Demographic characteristics of the respondents

Educational level	**Total**	**Percentage**
Primary	45	13.1
Secondary	104	30.2
College Diploma	99	28.8
Bachelor	70	20.4
Masters' and above	25	7.2
Total	**343**	**100**
Gender	**Total**	**Percentage**
Male	172	50.1
Female	171	49.9
Total	343	100
Age level	**Total**	**Percentage**
Less than 20 years old	21	6.1
20 - 30 years old	111	32.4
Less than 30	**132**	**38.5**
30 - 40 years old	96	28
40 - 50 years old	82	23.9
Older than 50 years old	33	9.6
Above 30	**211**	**61.5**

Participant with primary education were 13.1 percent, secondary education were 30.2 percent, with college diploma were 28.8 percent, with bachelor degree were 20.4 and those with master's degree and above were 7.2 percent out of 343 respondents.

In relation to sex and age; from total participants 172 were male and 171 were females. These figures are about 50.1 and 49.9 percentage share for male and female respectively. With age the

paper used five ageing scales. Less than 20 years old, 20 - 30 years old, 30 - 40 years old, 40 - 50 years old and Older than 50 years old. With these ageing scales out of 343 respondents the larger share is goes to age group of 20 - 30 years old. This ageing category holds 32.4 percentages out of total participants. The second better shareholder in ageing category is 30 - 40 years old and the third category with better share is ageing scale between 40 - 50 years old. The ageing scale of 30 - 40 years old have percentage share of 28 and those aged between 40 up to 50 were 23.9. The lowest percentage share for ageing category is goes to age of less than 20 years old; which about 6.1 percent out of 343 valuable respondents. The reaming 9.6 percentage shares are belongs to those with age of older than 50 years old.

4.1 Analysis and Discussion Related to factors that affects customers' intention to adopt ATM banking.

In this section both simple and multiple regressions analysis are presented to test the hypothesis and to know the influence of independent variable/variables on the dependent variable. The simple regression analysis is applied to show how individual independent variables affect intention to adopt ATM-Banking, how attitude is influence by perceived usefulness and perceived ease of use and how perceived usefulness influenced by perceived ease of use. And the multiple regressions is for discussing how perceived ease of use, perceived usefulness, attitude, subjective norm, perceived behavioral control together affects intention to adopt ATM-Banking.

4.1.1 The relation between Attitude and Intention to adopt ATM banking

The hypothesises established was:

Attitude has no impact on intention to use;

The data employed in this paper shows the existing effect of attitude on intention to use ATM. The P-value for the model is $P<0.0000$; show how attitude affects the intention to adopt ATM.

INT = 1.99+0.46Att

Where, INT is intention to adopt ATM-banking

Att is Attitude

Table 2 STATA output for The relation between Attitude and Intention to adopt ATM banking

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. reg i a
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Source	SS	df	MS		
Model	16.5156597	1	16.5156597	Number of obs =	343
Residual	76.8118685	341	.225254746	F(1, 341) =	73.32
				Prob > F =	0.0000
Total	93.3275282	342	.272887509	R-squared =	0.1770
				Adj R-squared =	0.1746
				Root MSE =	.47461

i	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
a	.4581124	.0535009	8.56	0.000	.352879	.5633457
_cons	1.992173	.1600101	12.45	0.000	1.677442	2.306904

Were i is intention to adopt ATM and a is attitude.

The R square for this model is 17.7 percent. That means about almost 18 percent of intention to ATM usage is determined by attitude and the remaining 72 percent is by other variables. Moreover, the relationship observed from the linear regression equation reflects a one unit increase in attitude leads to an increase of intention to use ATM banking by 2.45. The large t value (t=8.56) and corresponding low p value (p< 0.0000) supports the result for attitude which had the highest beta coefficient. This implies that, attitude has positive impact in customers' intention. Thus, based on the results, attitude has impact on intention to use ATM banking. Therefore, we reject the hypothesis of attitude has no impact on intention to use.

4.2 The relation between Subjective Norm and intention to adopt ATM banking

The hypothesises established was:

Subjective Norm has no impact on intention to use;

The STATA output shows the existing effect of Subjective Norm on intention to use ATM. The P-value for the model is P<0.0000; Subjective Norm has significant effect on intention to adopt ATM. The software generated values and the corresponding relationship formula between the variables is:

INT = 1.36 + 0.62SN

Where, INT is intention to adopt ATM-banking

SN is Subjective Norm

Table 3 STATA output for the relation between Subjective Norm and Intention to adopt ATM banking

```
. reg i s

      Source |       SS       df       MS              Number of obs =     343
-------------+------------------------------           F(  1,   341) =  325.84
       Model |  45.6032329     1  45.6032329            Prob > F      =  0.0000
    Residual |  47.7242953   341  .139953945           R-squared     =  0.4886
-------------+------------------------------           Adj R-squared =  0.4871
       Total |  93.3275282   342  .272887509           Root MSE      =   .3741

------------------------------------------------------------------------------
           i |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           s |   .6240147   .0345692    18.05   0.000     .5560189    .6920105
       _cons |   1.364497   .1115386    12.23   0.000     1.145106    1.583887
------------------------------------------------------------------------------
```

Where i is intention to adopt ATM and s is subjective norm

The R square for this model is 48.9 percent. i.e., about 49 percent of intention to ATM usage is determined by Subjective Norm. The large t value (t=18.05) and the corresponding low p value ($p< 0.0000$) supports the result for subjective norm which had the highest beta coefficient. Also the relationship observed from the linear regression equation reflects a unit increase in Subjective Norm leads to an increase of intention to use ATM banking by 1.98. This implies that, Subjective Norm has positive impact in customers' intention. Therefore, we reject the hypothesis of Subjective Norm has no impact on intention to use, since it has impact on.

4.3 The relation between Perceived Behavioral Control and intention to adopt ATM banking

The hypothesises established was:

Perceived Behavioral Control has no impact on intention to use;

The data collected from the participants' shows the existing effect of Perceived Behavioral Control on intention to use ATM. The P-value for the model is P<0.0000; show how Perceived Behavioral Control affects the intention to adopt ATM.

Table 4 STATA output for the relation between Perceived behavioral control and Intention to adopt ATM banking

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. reg i b
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Source	SS	df	MS	Number of obs =	343
				F(1, 341) =	27.22
Model	6.90006236	1	6.90006236	Prob > F =	0.0000
Residual	86.4274658	341	.253452979	R-squared =	0.0739
				Adj R-squared =	0.0712
Total	93.3275282	342	.272887509	Root MSE =	.50344

i	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
b	.1666812	.0319454	5.22	0.000	.1038463	.2295161
_cons	2.878191	.0934331	30.80	0.000	2.694413	3.061968

Where i stand for Intention to adopt ATM banking and b is for Perceived behavioral control

The mathematical relationship is:-

INT = 2.9 + 0.17PBC

Where INT is intention to adopt ATM-banking

PBC is Perceived Behavioral Control

The R square for this model is 7.4 percent. That means about 7 percent of intention to ATM usage is determined by Perceived Behavioral Control. The large t value (t=5.22) and the corresponding low p value (p< 0.0000) supports the result for perceived behavioral control.

This implies that, Perceived Behavioral Control has impact in customers' intention to use ATM banking. Therefore, we reject the hypothesis of Perceived Behavioral Control has no impact on intention to use.

4.4 The relation between Perceived Usefulness and intention to adopt ATM banking

The hypothesises established was:

Perceived Usefulness has no impact on intention to use;

The mathematical formula of the model is:-

INT = 2.2 + 0.4PU

Where, INT is intention to adopt ATM-banking

PU is Perceived Usefulness

From the STATA output we get P-value of P<0.0000; which shows Perceived Usefulness has effect on intention to adopt ATM.

Table 5 STATA output for the relation between Perceived Usefulness and Intention to adopt ATM banking

```
. reg i u
```

Source	SS	df	MS	Number of obs =	343
				F(1, 341) =	44.43
Model	10.758135	1	10.758135	Prob > F =	0.0000
Residual	82.5693931	341	.242138983	R-squared =	0.1153
				Adj R-squared =	0.1127
Total	93.3275282	342	.272887509	Root MSE =	.49208

i	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
u	.3926101	.0589014	6.67	0.000	.2767544	.5084658
_cons	2.162198	.1793697	12.05	0.000	1.809387	2.515008

Where i stand for Intention to adopt ATM banking and U is for Perceived Usefulness

The R square for this model is 11.5 percent. Which shows 11.5 percentage point of intention to adopt ATM-banking is determined by Perceived Usefulness. The large t value (t=6.67) and the corresponding low p value (p< 0.0000) supports the result for perceived usefulness. Additionally, from the above linear regression equation we see a unit increase in Perceived Usefulness leads to an

increase of intention to use ATM-banking by 2.6. Thus, Perceived Usefulness has positive impact on intention to adopt ATM-banking. Therefore, we reject the hypothesis and accept Perceived Usefulness has impact on intention to use ATM banking.

4.5 The relation between Perceived Ease of Use and perceived usefulness

The hypothesises established was Perceived Ease of Use no impact on perceived usefulness. The STATA output for this relation shows the existing effect of Perceived Ease of Use on perceived usefulness. The P-value for the model is P<0.0000; shows the existing impact of Perceived Ease of Use on perceived usefulness.

Table 6STATA output for the relation between Perceived Usefulness and Perceived Ease of Use

```
. reg u e
```

Source	SS	df	MS	Number of obs	=	343
				F(1, 341)	=	33.08
Model	6.17266654	1	6.17266654	Prob > F	=	0.0000
Residual	63.6206872	341	.18657093	R-squared	=	0.0884
				Adj R-squared	=	0.0858
Total	69.7933537	342	.204074134	Root MSE	=	.43194

u	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
e	.312487	.0543272	5.75	0.000	.2056283	.4193457
_cons	2.070557	.1652691	12.53	0.000	1.745481	2.395632

Where u stands for Perceived Usefulness and e stands for Perceived Ease of Use

The mathematical relationship between the variables is:

PU = 2.1 + 0.3PEOU

Where PU is Perceived Usefulness

PEOU is Perceived Ease of Use

From the above equation we drive a conclusion of a one unit increase in Perceived Ease of Use leads to an increase of perceived usefulness by 2.4. The R square of the relation is 0.0884. That means about almost 9 percent of perceived usefulness is determined by Perceived Ease of Use and the remaining percentage is by other variables.

The large t value (t=5.75) and the corresponding low p value (p< 0.0000) supports the result for perceived ease of use. Thus, Perceived Ease of Use has impact on perceived usefulness. Therefore, we reject the hypothesis and accept Perceived Ease of Use has impact on perceived usefulness.

4.6 The relation between Perceived Usefulness and Attitude

The hypothesises established was:

Perceived Usefulness has no influence on Attitude;

The data employed in this paper shows there is no effect of Perceived Usefulness on Attitude. The P-value for the model is 0.0751, which is greater than 0.05; show Attitude is not predicted by Perceived Usefulness.

Table 7 STATA output for the relation between Perceived Usefulness and Attitude

```
. reg a u
```

Source	SS	df	MS	Number of obs	=	343
				F(1, 341)	=	3.19
Model	.728647847	1	.728647847	Prob > F	=	0.0751
Residual	77.9672129	341	.228642853	R-squared	=	0.0093
				Adj R-squared	=	0.0064
Total	78.6958607	342	.230104856	Root MSE	=	.47817

a	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
u	.1021767	.0572363	1.79	0.075	-.010404	.2147574
_cons	2.644465	.1742993	15.17	0.000	2.301628	2.987302

Where u stands for Perceived Usefulness and a stands for Attitude

The relationship between the variables is:

Att = 2.64 + 0.1PU

Where Att is Attitude

PU is Perceived Usefulness

The R square for this model is 0.009 percent. That means about nearly zero percent of Attitude is determined by Perceived Usefulness. This implies that, Perceived Usefulness has no impact on

Attitude. Therefore, we accept the hypothesis which is Perceived Usefulness has no influence on Attitude.

4.7 The relation between Perceived Ease of Use and Attitude

The hypothesises established was:

Perceived Ease of Use has no influence on Attitude;

The data employed in this paper shows the existing effect of Perceived Ease of Use on Attitude. This because of the P-value for the model is 0.0000 which is less than the binding rule of 0.05. The mathematical relationship between the variables is:

Att = 1.98 + 0.3PEOU

Where Att is Attitude

PEOU is Perceived Ease of Use

Table 8 STATA output for the relation between Perceived Ease of Use and Attitude

```
. reg a e
```

Source	SS	df	MS		
Model	6.60360675	1	6.60360675	Number of obs	= 343
Residual	72.092254	341	.211414234	F(1, 341)	= 31.24
				Prob > F	= 0.0000
Total	78.6958607	342	.230104856	R-squared	= 0.0839
				Adj R-squared	= 0.0812
				Root MSE	= .4598

a	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
e	.323211	.0578313	5.59	0.000	.2094601	.436962
_cons	1.978784	.1759288	11.25	0.000	1.632742	2.324826

Where e stands for Perceived Ease of Use and a for Attitude

The R square for this model is 8.4 percent. That means about 8 percent of Attitude is determined by Perceived Ease of Use and the remaining percentage is determined by other variables. The relationship observed from the linear regression equation reflects a one unit increase in Perceived Ease of Use leads to an increase of Attitude by 2.28. Thus, Perceived Ease of Use has impact on

Attitude. Therefore, we reject the hypothesis and accept Perceived Ease of Use has impact on Attitude.

4.8 The relation between perceived ease of use, perceived usefulness, attitude, subjective norm, perceived behavioral control and Intention to adopt ATM-Banking

The hypothesises established was:

Attitude, Subjective Norm, Perceived Behavioral Control and Perceived Usefulness has no impact on intention to use.

The multiple regression result of our data is:

Table 9 STATA output for the relation between perceived ease of use, perceived usefulness, attitude, subjective norm, perceived behavioral control and Intention to adopt ATM-Banking

```
. reg i a b u s
```

Source	SS	df	MS		
Model	48.1649738	4	12.0412434	Number of obs	= 343
Residual	45.1625544	338	.133617025	F(4, 338)	= 90.12
				Prob > F	= 0.0000
Total	93.3275282	342	.272887509	R-squared	= 0.5161
				Adj R-squared	= 0.5104
				Root MSE	= .36554

i	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
a	.1875632	.0451934	4.15	0.000	.0986675	.2764588
b	.025918	.0245537	1.06	0.292	-.0223794	.0742154
u	.0525169	.0493944	1.06	0.288	-.0446422	.1496759
s	.5321683	.0427498	12.45	0.000	.4480791	.6162576
_cons	.8715321	.1748472	4.98	0.000	.5276065	1.215458

Where e,u,s,b and i stands for perceived ease of use, perceived usefulness, attitude, subjective norm, perceived behavioral control and Intention to adopt ATM-Banking.

INT = 0.87+0.18Att+ 0.53SN +0.02PBC + 0.05PU

Where INT is intention to adopt ATM-banking

Att is Attitude

SN is Subjective Norm

PBC is Perceived Behavioral Control

PU is Perceived Usefulness

The STATA result for multiple regression show; together Attitude, Subjective Norm, Perceived Behavioral Control and Perceived Usefulness significantly affect Intention to adopt ATM-Banking. The P-value of the result is less than the alpha value of 0.05. Our P value is 0.000. The R square is about 51.6 percent. That shows 52 percent of Intention to adopt ATM-Banking for the data is determined by Attitude, Subjective Norm, Perceived Behavioral Control and Perceived Usefulness. The remaining percentage is determined by other variables. The large t value for attitude and subjective norm (t=4.15) and (t=12.48) than other variables and the corresponding low p value (p< 0.0000) revealed that attitude and subjective norm are significant predictable factors but subjective norm is the dominant one. When we look the significance of individual independent variables, the P-value of Attitude is 0.0000, Subjective Norm is 0.000, Perceived Behavioral Control is 0.28 and Perceived Usefulness is 0.28. As we saw in simple regression analysis, Attitude and Subjective Norm affect Intention to adopt ATM-Banking. But Perceived Behavioral Control and Perceived Usefulness has no influence in multiple regression model. From the result it is also possible to say a unit increase in Attitude, Subjective Norm, Perceived Behavioral Control and Perceived Usefulness makes Intention to adopt ATM-Banking to increase by 1.65. Thus, the overall effect of Attitude, Subjective Norm, Perceived Behavioral Control and Perceived Usefulness on Intention to adopt ATM-Banking is significant and we reject our previous hypothesis (Attitude, Subjective Norm, Perceived Behavioral Control and Perceived Usefulness have no impact on intention to use) since we assure that Attitude, Subjective Norm, Perceived Behavioral Control and Perceived Usefulness have impact on Intention to adopt ATM-Banking.

In general, most of the findings of this study are similar with previously undertaken studies. The findings shows that, attitude, subjective norm, perceived behavioral control, perceived usefulness and perceived ease of use significantly affect users' intention to adopt ATM-banking. Results also revealed that attitude and subjective norm are significant predictable factors but subjective norm is the dominant one. The regression result also shows that attitude is predicted by perceived usefulness and perceived ease of use separately, and perceived ease of use affects significantly and perceived usefulness contribution nil.

4.9 Analysis and Discussion Related to customers' preferences for Teller based method and ATM-banking across different educational levels and gender

As reported in the below table, from 343 participants of the study, 205 participants answered as they prefer tellers based banking method for the question of "which banking service do you prefer more?".The figure is almost 60 percent.

Table.10. Preferred banking system among Customer

		Tellers Based Method	ATM
Total Customer	343	205	138
	Percentage out of total customer	59.8	40.2

There are also respondents' who answered as they prefer ATM-banking than tellers based banking method. Out of the total participants in the study 40 percent of them more prefer ATM-banking than tellers method.

Table.11. Summarized Customers' reasons for choosing between Tellers based banking and ATM-banking

	Tellers based	**ATM-banking**
Reasons	More secured and better confidence	Time Saving
	No Knowledge of ATM-banking	Easy banking anytime and anywhere
	ATM Machine problem (frequent problem with ATM machine)	Faster Transaction
	Fear of fraud of ATM card and password loss	To minimize the risk of carrying cash
	ATM-banking needs expertise and training	
	Tellers based banking provides opportunity help from bankers	

In general, according to the respondents' response as presented in the tables above, it is possible to conclude that receiving banking products or services through tellers based channel is more preferable than ATM-banking channel.

In relation to educational background influence on banking system; from total participants' 45 have primary educational level, 104 have secondary educational level, 99 have college diploma, 70 have bachelor degree and 25 have masters' degree and above educational achievement.

Table.12. Customers' Preferences for ATM-banking across different Educational Levels

Educational level	Total	ATM	Percentage
Primary	45	2	4.4
Secondary	104	23	22.1
College Diploma	99	46	46.5
Bachelor	70	46	65.7
Masters' and above	25	22	88

Out of 45 participants with primary educational level only 4.4 percent of them are use ATM-banking. Better ATM-banking service utilization is seen for participants with bachelor and above educational accomplishment. As shown in the table above from 70 participants with bachelor degree 46 were uses ATM-banking service and for master and above educational background the figure is 22 out of 25 respondents. ATM-Banking usage with secondary and college diploma educational level is relatively lower than compared to those with bachelor degree and above educational background. Only 23 respondents use ATM-banking out of 104 participants' with secondary education. Which is about 22 percent from total figure of the secondary educational level participants'. From those with college diploma 46.5 percent uses ATM-banking.

Table.13. Customers' Preferences for ATM-banking based on Gender

Gender	Total	ATM	Percentage
Male	172	77	44.8
Female	171	61	35.7

Gender based ATM-banking usage shows better performance for male than female. In study, the number of male and female participants are almost equal. From total 343 appropriate responses for the questioner 172 were male and 171 were females. These figures are about 50.1 and 49.9 percentage share for male and female respectively. Out of 172 males 77 (44.8 percent) use ATM-banking. In the females side out of 171 females 61 (35.7 percent) uses ATM-banking.

In general, ATM-banking usage with educational level and gender, better results were recorded for ATM-banking usage with educational achievements of bachelor and above degree and for male participants'. Female participants have showed lower ATM-banking usage than men. Too ATM-banking usage is lower among participants' with lower educational level. This might be because of the reasons mentioned in table 3.

4.10 Analysis and Discussion Related to ATM-banking packages used by the customers.

Table.14. ATM-Banking Services

	ATM-Banking Services							
	Cash withdrawal	fund Transfer	Balance Statement	Mini Statement	Water and Electricity Payment	Cheek Book Requite	PIN Change	Appointment
Service Open For	343	343	343	343	343	343	343	343
Service users	294	126	264	0	29	0	27	0
Percentage	**85.7**	**36.7**	**76.9**	**0**	**8.5**	**0**	**7.8**	**0**

Here the participants of the study were asked to choose type of service they get through ATM card from the bank and their responses are as presented in table above. Since the customers are given chance of choosing more than one answer because of the services provided by ATM machine is more than one, the analysis also follows the question way. From the total respondents 85.7 percent of them use ATM card for withdrawing money from their accounts, 76.9 percent use ATM card for checking their account balance (use ATM to have balance statement) and126 respondents' (36.7 percent)out of 343uses ATM for transferring fund to others accounts. From respondents' 29 (8.5 percentage out of 343) were answered as they use ATM for paying Water and Electricity Payment and 27 (7.8 percentage out of 343) were replayed as they use ATM machine to PIN change. From option provided to the respondents' service such as mini statement (this is weekly or short period financial statement service provided by the ATM machine), cheek book requite (this service helps customers to have new cheek book) and appointment scheduling (this is service of appointment to make schedule with bank for future contact) services are not utilized by the customers. The implications of the results are majority of the ATM users are using the multipurpose ATM banking service to only limited functions especially for withdrawing money and requesting balance statement. This might have been because of awareness problem with customers.

4.11 Analysis and Discussion Related to the current legal frameworks on using E-banking industry

The E-payment procedure of Commercial bank of Ethiopia shows that in some cases ATM fails to dispense cash to customers after deducting the amount from their accounts. The ATMs may also deduct from customers account without making the requested top up or bill payments. This exception mostly happens in events of incomplete and time out transactions. Under normal conditions, such transactions are automatically reversed. But there are exceptional cases where such transactions fail to be automatically adjusted, which requires manual intervention.

Currently almost all banks have a lot of excess cash on ATM accounts. But the banks procedure for excess cash guides to recognize the amount as other income in case of failure to identify the cash excess cause or the beneficiary within 30 days.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary of Key Findings

The result of the regression analysis shows that intention is individually and co-jointly predicted by attitude ($\beta = 0.46$, $p<0.0000$) subjective norm ($\beta = 0.62$, $P < 0.0000$), perceived behavioral control ($\beta = 0.17$, $P < 0.0000$), perceived usefulness ($\beta = 0.4$, $P < 0.0000$), and perceived ease of use ($\beta = 0.3$, $P < 0.0000$). The P-value of the result is less than the alpha value of 0.05. Our P value is 0.000. The R square is about 51.6 percent. That shows 52 percent of Intention to adopt ATM-Banking for the data is determined by Attitude, Subjective Norm, Perceived Behavioral Control and Perceived Usefulness.

Thus, the overall effect of Attitude, Subjective Norm, Perceived Behavioral Control and Perceived Usefulness on Intention to adopt ATM-Banking is significant and we reject our previous hypothesis (Attitude, Subjective Norm, Perceived Behavioral Control and Perceived Usefulness have no impact on intention to use) since we assure that Attitude, Subjective Norm, Perceived Behavioral Control and Perceived Usefulness have impact on Intention to adopt ATM-Banking.

5.2 Conclusion

E-banking has become the way for the development of banking system, and the role of electronic banking is increasing in many countries. It offers opportunities to create service processes that demand few internal resources, and therefore, lower cost (Mohammad 2012). E-banking, a system that enables banks to offer their customers access to their accounts to transact business and obtain information via electronic communication channels. Hence, in order to help banks to improve e-banking adoption in general and ATM banking in particular by their customers, it is necessary to examine factors that influence customers' intention to adopt e-banking service channels. Therefore examining the determinant factors that influence customer's intention to adopt ATM banking in Addis Ababa city is the main objective of this thesis.

Different authors and research publications explain the importance of technology adoption for banking service. Also there are model such technology acceptance model, innovation diffusion

theory, theory of planned behavior, theory of reasoned action and so on which explains how technology acceptance is affected by different factors. In this paper the research used the combination of technology acceptance model and theory of planned behavior for model development and analysis.

Based on different research outputs, the paper disclosed the empirical evidence on the existing relationship between dependent variables and independent variables. Research works with topics of factors affecting customers' intention in adoption of ATM banking system shows existing association between the dependent variable intention to adopt ATM banking system and the independent variables, Attitude, Subjective Norm, Perceived Behavioral Control, Perceived Ease of Use and Perceived Usefulness. Results revealed that attitude and subjective norm are significant predicting factors but subjective norm is the dominant one. The regression result also shows that attitude is predicted by perceived usefulness and perceived ease of use separately, and perceived ease of use affects significantly and perceived usefulness contribution nil.

The paper also presented preferred banking system among customers', why they choose between tellers based banking and ATM-banking, customers' preferences for ATM-banking across different educational levels and gender and ATM-banking services used by customers.
From the respondents', receiving banking products or services through tellers based channel is more prepared than ATM-banking channel. ATM-banking usage for educational level and gender result showed that better results were recorded for ATM-banking with educational level of bachelor degree and above and for male participants'. ATM-banking usage is lower among participants' with lower educational level. Also the paper resulted the multipurpose ATM banking service is used for limited functions of withdrawing money and requesting balance statement.

In sum, the relationship between intention to adopt ATM banking system and Attitude, Subjective Norm, Perceived Behavioral Control, Perceived Ease of Use and Perceived Usefulness affiliation is decent. But the effect of subjective norm is the dominant one. Concerning ATM-banking preference with education level and gender, those with better educational background and male participants' have resulted better results.

The study also shows the e-payment procedures of Commercial Bank of Ethiopia and tried to address some parts of the procedure like the background, purposes, governing laws and ATM reconciliation and balancing process and also the paper tried to see the measures that will be taken during cash excess and shortage on ATM.

5.3 Recommendation

The study has provided empirical findings on determining factors that influence customer's intention to adopt ATM banking in general and related specific objectives. These empirical findings highlight some useful policy and theoretical implications for better performance of the sector in the future.

One immediate implication of the analysis is that; it is better to do awareness creation tasks to improve customers' knowledge on utilizing ATM-banking packages. Since the subjective norm (influence of media, friend and family) is the major factor that predicts intention to adopt ATM-banking, following strategic direction in advertising ATM-banking necessary.

The reconciliation procedure by itself shows the weakness of the ATM transaction data reporting system. There is no clear gap between successful and unsuccessful ATM transaction. And it causes a challenge for the authorized person to reconcile effectively. As a result almost all banks have a lot of excess cash on ATM accounts. But the banks e-payment procedure for excess cash guides to recognize the amount as other income in case of failure to identify the cash excess cause or the beneficiary within 30 days. So the e- payment procedure allows taking the customers money rather than rising further solutions. And this is unethical and affects the customer's intention to use ATM services.

Therefore, the banks ought to have to upgrade their ATM reporting and reconciliation systems. And the reporting system must be very strong and can differentiate successful and unsuccessful transactions easily. And the reconciliation process must be handled by a separate person who have no other additional duty. So that this study recommend the banks to set a new job position which is E-payment officer and to assign on each branches that have ATM services

Banks should be focus on attracting users, making ATM always functional, secure and privacy keeper as well as frequent monitoring and maintenance of is a must. Even though, ATM-banking is recent phenomena for the country, it is in way of widely acceptance by customers, especial by youths. Hence, banks should improve ATM features to attract customers.

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List of Annex

Appendix-Questioner

Data collecting Questionnaire

Project Title:-The factors affecting customers' intention in adoption of ATM banking system in Ethiopian banking industry, the case of Addis Ababa city.

I am a Master student at St. Mary's University who is doing this particular research. The main objective of this research is to find out the factors which influence the use of ATM banking in Addis Ababa city administration. You are being invited to take part in a research by answering the questions. Since your idea and contribution on the study will be quite significant, please take a time and give appropriate answer that fill for the questions.

Part 1 Personal Information

1. Gender ☐ Female ☐ male
2. Age
   - ☐ Less than 20 years old
   - ☐ 20-30 years old
   - ☐ 30-40 years old
   - ☐ 40-50 years old
   - ☐ Older than 50 years old
3. Education
   - ☐ Primary school
   - ☐ High school
   - ☐ College diploma
   - ☐ Bachelor
   - ☐ Master or above
4. Occupation
   - ☐ Government employee
   - ☐ Private Sector employee
   - ☐ Self-employed
   - ☐ Other
5. Income
   - ☐ Less than 5,000 Birr per month
   - ☐ Between 5,000 – 10,000 Birr per month
   - ☐ Between 10,000 – 15,000 Birr per month
   - ☐ Between 15,000 – 20,000 Birr per month
   - ☐ Between 20,000 – 25,000 Birr per month
   - ☐ More than 25,000 Birr per month

Part 2 main questions

Please answer questions below by putting **(√)** symbol on the appropriate blank cell. 1 for 'strongly disagree',2 for 'disagree', 3 for 'no option' 4 for 'agree 'and 5 for 'strongly agree'.

		Scale				
Symbol	**Questions**	**1**	**2**	**3**	**4**	**5**
INT1	I intend to use ATM banking within near future.					
INT2	I plan to use ATM banking.					
INT3	I expect to use ATM banking in near future.					
INT4	I am determined to use ATM banking soon.					
ATT1	I feel using ATM banking is a wise idea.					
ATT2	I feel using ATM banking is a good idea.					
ATT3	I like to use ATM banking.					
ATT4	Using ATM banking site is a pleasant idea.					
PBC1	I would be able to operate ATM banking.					
PBC2	I have the resource to use ATM banking.					
PU1	Using the ATM banking site improves my performance of banking activities.					
PU2	Using the ATM banking site makes it easier to do my banking activities.					
PU3	Using the ATM banking site enables me to accomplish banking activities more quickly.					
PU4	Using ATM banking would increase the quality or output of banking transaction.					
PU5	I find ATM banking site useful for my banking activities.					
PEOU 1	My interaction with the ATM banking is clear and understandable.					
PEOU 2	Interaction with the ATM banking does not require a lot of mental effort.					
PEOU 3	It is easy to use ATM banking.					
PEOU 4	Learning to use ATM banking is easy for me.					
PEOU 5	I find it easy to do what I want to do with ATM banking.					
PEOU 6	I find ATM banking flexible to interact with.					
SN1	My decision to adopt ATM banking is influenced by friends					
SN2	My decision to adopt ATM banking is influenced by media					
SN3	My decision to adopt ATM banking is influenced by family					

Part 3 main questions

1. Which banking service do you prefer more?

☐ Teller based methods ☐ ATM banking

2. If you prefer teller based methods, why you choose this banking service?

3. If you prefer ATM-banking, why you choose this banking service?

4. Which ATM-banking packages do you use? (it is possible to give more than one answer)

- ☐ Cash withdrawal
- ☐ Fund transfer
- ☐ Balance statement
- ☐ Mini statement
- ☐ Water & Electricity payment
- ☐ Cheek Book request
- ☐ PIN change
- ☐ Appointment

Thank you for your cooperation!!!