ELECTRONIC BANKING SYSTEM IMPLIMENTATION: BENEFITS, CHALLENGES AND DRIVERS, THE CASE OF ETHIOPIA

By

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Declaration

I, Ghenet Bahta, announce that this paper is my original work on the subject "Electronic banking system implimentation: benefits, challenges and drivers, the case of Ethiopia" for the partial fulfillment of the requirements for the Masters of Arts in Business Administration degree at Addis Ababa University, College of Business and Economics. Both origins of materials used in the study have been properly credited. I also confirm that the paper has not been applied to any other institution in order to obtain a degree.

Declared by: Ghenet Bahta

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Date: May, 2022

Confirmed by: Abebe Yitayew (PhD)

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Date: May, 2022

Certification

This is to certify that Ghenet Bahta performed under my guidance on the research project titled " Electronic banking system implimentation: benefits, challenges and drivers, the case of Ethiopia." This thesis is original and can be submitted in partial fulfillment of the qualifications for the award of the Masters of Art in Business Administration degree.

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ABSTRACT

The goal of this study is to look into the challenges and motivators for Ethiopian banks to embrace electronic banking systems. Data was obtained from four private commercial banks and one public bank in Ethiopia;Commercial Bank of Ethiopia*ia,* Dashen Bank, Awash Bank, Zemen Bank and Wegagen Bank in *order to meet the study's objectives. To pick the sample from the target population, a purposive sampling strategy was used using selection criteria of bank familiarity with electronic banking products. This research reveled that lack of ICT infrastructure, lack of legislative and regulatory frameworks, lack of rivalry between local and foreign banks, and security risk were the key impediments to e-banking system adoption in Ethiopian banking. The survey also found that apparent easiness of the use and usefulness are important factors in deciding whether or not to use an E-banking system. Finally, the paper advised that the government support the banking sector by facilitating enough ICT infrastructure development and creating acceptable regulatory frameworks to make E-banking technology deployment and extension easier. Banks, on the other hand, should provide ongoing training for their personnel, improve security for E-banking products, raise community awareness about E-banking technology, instead of typical retail bank competition, they should concentrate on technical innovation and competitiveness.*

Key words: Legal Framwork, NBE, ICT, and E-banking

TABLE OF CONTENT

Acronyms/Abbreviations

ATM:	Automated Teller Machine
AIB:	Awash International Bank
CBE :	Comercial Bank of Ethiopia
DB:	Dashen Bank
E - banking:	Electronic Banking Corporation
ICT	Information Communication Technology
NBE:	National Bank of Ethiopia
TPB :	Theory of Planned Behavior
TOE :	Technology-organization-Environment Framework
TRA :	The Theory of Reasoned Action
WB :	Wegagen bank
ZB :	Zemen bank

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the study

In a rapidly changing and intensely competitive environment, the banking industry's success is largely dependent on the use of appropriate technology, as well as the retention of well-trained and motivated employees who can take advantage of the bank's existing innovation while also striving for better advancement (AbebeZeleke, 2016).

With a few exceptions, many banks in Ethiopia use outdated systems to provide their services which limits financial growth of the country. More so, coustems also spen much time to gate services in different branck bank offices and hence the problem is aggravating. Mattewos (2016) noted that the majority of Ethiopian banks have not adopted e-banking and instead rely on traditional services to connect and serve their customers when evaluating the degrof e-banking adoption in Ethiopia.

According to a comparison performed by Million (2019), Ethiopian E-Banking technology is lagging behind the rest of the world. As a result, cash is still Ethiopia's most extensively utilized medium of exchange. Despite the fast use of e-banking in both the developed and developing nations, Ethiopia's financial sector remains behind in terms of expanding its use of the service. Without a doubt, the banking business is underdeveloped, especially in light of the increasing quantity of foreign trades, client demand, and international relations. The banking sector today faces difficulties in offering efficient and dependable services (Garedachew, 2010).

In order to encourage additional E-banking adoption in developing countries like African nation, it's very important to achieve a deeper information of the barriers and drivers that influence E-banking adoption (Zhao, 2008). As a result, the findings of (Amare, 2020; Saba, 2020; Yabebal, 2020; Yalew, 2015) provide insight into the obstacles or barriers Ethiopian banks have had in accepting the e-banking plan. Lack of compitance, illiteracy, low interent connection, poorly designed ICT equipments, and insufficient government policy enforcement are some of the major barriers to e-banking system implementation, as are frequent power outages, fear of risk, and cultural challenges. Increased market competition, third-party payment

collection, NBE directives, and society's increasing demand for e-banking services, particularly due to the emergence of the Corona or COVID-19 pandemic, are, on the contrary, the primary driving forces for Ethiopian banks to accept alternative channel of bank system.

By recognizing the problem associated with the barriers that may create obstacles; and drivers that might generate opportunities towards the adoption of electronic banking system in Ethiopian, the researcher is motivated to investigate the barrier and drivers towards the adoption of electronic banking system in Ethiopia.

1.2. Statement of the problem

Every company in the world is knocking on the door of rapidly evolving information and communication technology (Booz & Hamilton (2017), cited in Million) (2019). As a result, banks are creating technology to assist them in delivering banking products and services through the most cost-effective channels feasible, including electronic banking. Electronic banking is a strategy used by banks to keep current clients while also recruiting new ones. As the author illustrates, the transaction costs of providing this service are lower than the traditional technique.

Customers are afraid of the disadvantages associated with utilizing electronic banking, despite the numerous benefits it provides for both banks and users. Some clients feel that switching to electronic banking will cost them money. As a result, many clients are still unwilling to employ such a service. And, at the expense of both customers and banks in terms of time, cash is still the most commonly used mode of payment.

As Yabibal (2020) points out, no of a legal and regulatory frameworks for e-banking services is a fundamental barrier discouraging banks from implementing this novel payment instrument. Saba (2020) also mentions lack of skills related to implmentations and
management of technologies related to electronic banking, as well as the high cost of e-banking implementation and upper management's resistance to technological advances, as major barriers to electronic banking acceptance in Ethiopia.

According to Ayana (2012), some of risks of security associated with e-banking are related with the prodcts like ATM, this brings difficulty of using the system of e-banking. Others also

claimed that another barrier to e-banking adoption in the country is a lack of competition among local and foreign banks.

Ayana (2012), Meaza (2013), Yabibal (2020), Million (2019), Meron (2017), Abdulselam (2019), and Saba (2012) studied e-banking services in Ethiopia. However, there is a significant literature gap and limited local research work has been conducted in the field. As per the knowledge of the researcher most of studies conducted in the given topic areas are defined their scope of the study to a certain particular banks in the country. For instance, Yabibal (2020) dis a research on "An Assement of Opprtunities and Challenges of the Adoption of E-banking Service in CBE in the town of Debreberhan." Million (2019) did his study on the assessment of factors affecting usage of e-banking in Wegagen Bank, south Addis Ababa district. Abdulselam (2019) looked at the benefits and drawbacks of the electronic banking system in Ethiopia's commercial bank, with an emphasis on the Gurage zone. As a result, by examining the hurdles and drivers for electronic banking adoption in Ethiopian banks, this research fills the above-mentioned gap. The study fills this gaps, in particular by addressing the following two reasrch questions

What drives or encourages banks in Ethiopia to adopt electronking banking service?

What are the challenges and benefits of adopting e-banking among different banks in Ethiopia?

1.3. Objective of the study

The overall goal of this research is to look into the challenges and motivators for Ethiopian banks to implement an electronic banking system.

Specifically, this study intends

- To determine the elements that drive the Ethiopian banking industry to develop an e-banking system.
- To determine the biggest impediments to Ethiopians adopting an e-banking system.

1.4. Study Significance

The findings obtained from this study contributes to literature in the area by reaffirming the already existing knowledge and it brogought a new finding that the barriers and drivers identified may have a detrimental impact on the adoption of electronic banking systems in Ethiopia. This study assist banks in benefiting from the adoption of this technology by evaluating the many opportunities and obstacles for e-banking system adoption and providing solutions to the identified problems. Furthermore, by providing this important information, this study is likely to support reserchers intending to study the same topic in the near future.

1.5. Scope

Currently, there are eighteen banks in Ethiopia which are fully engaged in commercial banking activity. But to make the study more manageable, comparable and time constraints to compile required data, the scope of the study is delimited to five sample commercial banks, one state owned and four private commercial banks which are engaged in the banking industry. Among staff members of the selected five sample commercial banks the total of 75 bank staffs in e-banking department were chosen as a respondent and 5 managers of e-banking department were also be asked to give their response for enquiries associated the barriers and drivers of E-banking system adoption in Ethiopia

1.6. Limitation of the study

Every research study has its own limitation. With this regars, while conducting this study, the researcher faceed to collect the questionnaire at planned time schedule because the respondents are busy enough that has an adverse impact on the accomplishment of a comprehensive and detailed study by taking large samples. Furthermore, the spread of the pandemic coronavirus at the time of data collection was also a major obstacle in conducting the study.

1.7. Ethical Considerations

Due consideration was given to obtain consent from each participant about their voluntary participation in the study. The researcher respected participant right and their privacy. The findings of the research is presented without any deviation of the reality. The researcher gives full acknowledgements to all the reference materials used for the study.

1.8. Organization of the paper

There are four sections to this study. The first chapter contains the study's background, the problem statement, the investigation's goals, the significance, the scope, and the limitations

Liteature about the definition of e-banking, technological chelleges about e-banking, and the likes are discussed under chapter two. Chpter three reveles exhustvely about the methodology of the study: the design, population and sample, dataprsentation, analysiss, and discussion. The analysis is covered in Chapter four while the summary and recommendations are covered in Chapter five.

CHAPTER TWO

REVIEW OF THE LITERATURE

The theoretical and empirical parts of the investigation are both included in this literature review. Definitions, evolution, and adoption of e-banking are all part of the theoretical framework. This part also includes an empirical appraisal of the work by different scholars from various countries.

2. Theoretical Review

2.1. E-banking Defined

Electronic banking is defined as a set of services that allow bank customers to access information and conduct many retail transactions using mobile phones and/or computers. (Daniel, 1999; Mols, 1998; Sathye, 1999). However, the term "e-banking" is also defined differently in different studies. For example, Muteteri (2015) describes e-banking as an associate degree electronic association between a bank and a client so as to arrange, manage, and manage monetary transactions.

For many years, banks have used electronic channels to connect with and conduct business with domestic and international corporate customers (Addis 2017). As a result of the growth of the Internet and the World Wide Web (WWW) in the second part of the 1990s, banks are increasingly using electronic channels for receiving instructions.

The automated distribution of new and classic banking products and services to the customers via electronic and interactive communication channels is referred to as e-banking. Andrea (2002) defined e-banking as a subset of electronic finance and is defined as the deployment of electronic delivery channels for banking products and services.

According to the author, the Internet, wireless communication networks, automated teller machines (ATMs), and telephone banking are among the most important electronic delivery routes. E-banking is described as the use of a computer to retrieve and process banking data and to conduct transactions unswervingly via finicial services over tele-com networks, according to Yang (1997). These devices allow them to access their accounts, conduct business, and learn

about financial products and services. According to Ayana G (2012), thanks to the internet, banking is no longer bound by time or geography.

Customers can access their accounts from anywhere in the world. "Electronic delivery of services" in the context of electronic banking refers to a consumer doing transactions from a remote place rather than visiting a local branch (Clarke and Shah 2009). This refers to the use of electronic technology to provide financial services to customers at their office or home.

2.1.1. The evolution of E- banking system

The use of ATMs sparked the development of e-banking, with Finland being the world's first to do so (Mishra, R., and J. Kiranmai (2009), mentioned in Beza (2010)). Customers, on the other hand, have been aware of this since 1980, when ATMs were introduced (Malak, 2007), cited in Anuwar (2015).

In the banking business, electronic innovation dates back to 1970, when the computerization of financial institutions began to gain traction (Malak, 2007; cited in Anuwar, 2015). The introduction of automated voice response (AVR) technology in the early 1990s was a watershed moment. Using AVR technology, banks may offer financial services over the phone.

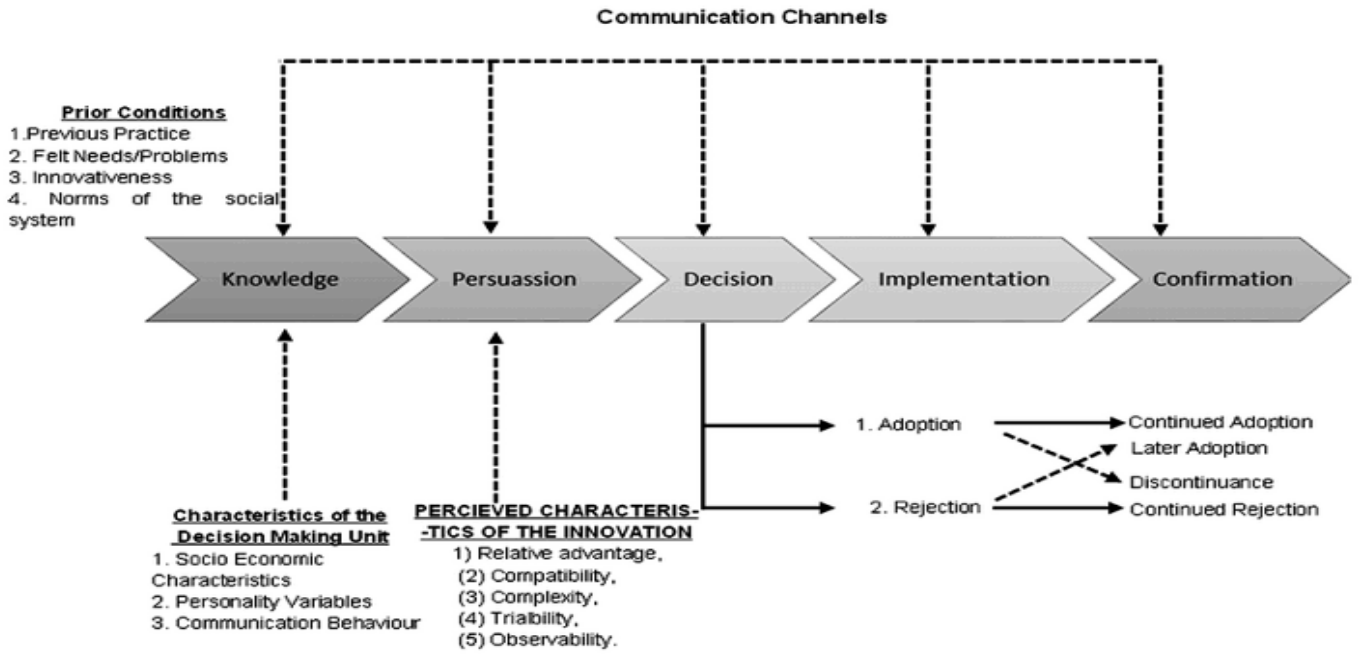
Banks were able to deliver services to consumers via PCs they owned and administered at their leisure, using proprietary intranet software, as technology advanced. However, rather than retail clients, those who used those services were mostly companies (Sohail & Shanmugham, 2003), according to Ayana (2014). The first first network bank, which began in 1995 in the United States, was the world's first Internet banking system. Following that, certain well-known institutions, such as Citibank and Bank of America, began offering net banking services one after the other.

2.1.2. E-banking Adoption

Adoption refers to a product's, service's, or concept's adoption and continued use (Raphael & Machimu, 2021). Before they are ready to embrace a product or service, consumers go through a learning, persuasion, decision-making, implementation, and confirmation phase (Rogers, 1995). Customers must go through a series of processes before deciding whether to accept or reject an invention.

Rogers (1995) defines the innovation process as the progression of a person or other decision-making unit from learning about innovation to establishing an attitude toward it, determining whether to adopt or reject it, putting the new concept into action, and finally confirming the decision. These stages usually follow one another in chronological succession. Figure 2.1 depicts this procedure.

Fig 2.1. Model of 5-Stages in Innovation Decsicion Process



Source: Rogers, 1995

1. Knowledge; socioeconomic factors, psychological traits, and communication behaviors are all linked to innovation. Innovativeness is the degree at which an individual or other adoption unit is comparatively early in adopting new ideas when compared to other members of a system (Rogers, 2015).
2. Persuasion: This is when a potential adopter's attitude toward the innovation is developed. Potential adopters acquire positive or negative attitudes about the innovation by anticipating and projecting future usage satisfaction and adoption risk, which play a crucial role in changing the final judgement. In this instance, opinions of an innovation's relative advantage, compatibility, and complexity are very important (Rogers, 1995).

3. Decision:an individual is in the decision stage when they engage in behaviors that lead to the adoption or rejection of a new idea. At this point, the adopter starts actively looking for infor mation on the innovation that will assist them in making better decisions.

4. Implementation: This stage sees the conclusion of mental information processing and decision-making, but the start of behavioural or attitudinal change.

5. Confirmation: Tthe adopter continues to assess the outcomes of his or her decisionwith the use of innovation that is high enough.

However, it's possible that you'll be rejected after you've been accepted.
Discontinuance refers to the reversal of a previous judgement in the latter case. Acceptance of ne w technologies might take a very short or very lengthy time. For example, a person may become aware of an idea months or years before deciding to put it into practice.

2.1.3. Technology Acceptance Model Framework

Academic studies on electronic banking adoption have garnered a lot of interest in recent years as academics dig at the factors that impact acceptance. Many scholars have looked at how new technological breakthroughs get embraced using a number of frameworks. Among the frameworks that have been built based on previous investigations are the following:

I. The Theory of Reasoned Action (TRA)

One of the most widely held views about human behavior is the Theory of Reasoned Action. According to this theory, the attitude toward conduct and the subjective norm might explain behavioral intention. The intention of engaging in a particular conduct is the immediate antecedent.

As a result, the more ambitious the goal, the more likely the person is to achieve it, and thus the more often the action will be carried out. Rehman et al. (2003) note that a person's intention to behave in a given way is based on their attitude toward the behavior in question as well as their sense of the societal pressures on them to behave in this way, which is based on subjective conventions. According to the authors, "subjective norm" refers to a person's opinion that the

majority of the people who matter to him believe he should or should not engage in the behavior in question.

II. Theory of Planned Behavior (TPB)

Ajzen (1991) introduced the concept of reasoned action for situations in which people's volitional power is constrained. This demonstrates that behavioral intention, which is impacted by attitudes toward conduct, subjective norms, and perceived behavioral control, is a crucial factor in human behavior (Ajzen, 1991).

The idea assumes that when a person's intention is linked with their perception of behavioral control, they can better predict behavior than earlier models. This construct describes how people view their behavior's internal and external constraints. It refers to people's perceptions of how easy or difficult it would be to undertake specific acts (Ajzen, 1985).

According to Ajzen (1991), asstated in Knabe (2012), both theoriesassume that behavior is the result of a deliberate decision to act in a certain way. There is, however, a substantial distinc tion between the two hypotheses. Unlike the Theory of Reasoned Action, which only considers ac tivities that a person can influence, the Theory of Planned Behavior considers volitional control.

III. The Technology Acceptance Model introduced by Davis (1985)

Davis' Technology Acceptance Model is one of the most extensively used theoretical frameworks for forecasting how new information technology will be accepted and employed in organizations. This paradigm was motivated by the Theory of Reasoned Action (Knabe, 2012). The Technology Acceptance Model assumes that system utilization is influenced by users' attitudes about using the system and the system's perceived utility. According to the authors, perceived usefulness and perceived ease of use are critical features in the Technology Acceptance Model, which are used to predict an individual's acceptance of information system technology.

IV. Technology-organization-Environment framework (TOE)

Three important elements for technological innovation adoption are highlighted by the technology-organization-environment framework: technological, organizational, and environmental aspects. The TOE framework was created by Tornatzky and Fleischerit to look into the likelihood of technological discoveries being successfully adopted (Ayana, 2012). This paradigm has been utilized in numerous research and is a thorough and well-received approach in the context of organizational innovation adoption (Ayana, 2012; Anuwar, 2015; Zhu, Kraemer & Xu, 2003). According to Tornatzky et al., aspects linked to the technological context and the organizational context adoption within an organization (1983).

2.1.4. Factors influencing Banks to adopt E-banking system

2.1.4.1. Environmental factors

Environmental variables play an essential impact in technology adoption, according to study, and some of these attributes are arguably more important than others, especially in countries with strong government leadership. This study looked at four key factors that influence E-banking adoption. These are;

- The development of e-commerce legal fraweorks (Martinsion and Trappey 2001
  The following findings refer only to the LDCs surveyed. The general findings (at the country level) are categorized under the following:
  • The physical e-commerce infrastructure which addresses the physical environment needed for
  an enterprise to carry out an e-commerce strategy. This would include Internet-related services,
  telecommunications and electronic payment systems;
  • The policy and regulatory environment which addresses those policies or regulations which most
  hinder enterprises from engaging in e-commerce.
  • Institutional and human resources which address the national skills base and resource and development capabilities necessary for enterprises engaging in e-commerce strategies.

- ICT Infrustructure at National Level (Kuan, 2001; Anuwar, 2015). South Africa

  The focus is on technology usage and the extent to which it affects or helps members of the society achieve their developmental objectives. Addressing the impact of ICT on development from a national perspective on macroeconomic would ensure the importance of proper planning and strategies that reflect national interventions.
- Pressure of Compition
- Support from Government

NB: The government can have a direct or indirect impact on e-banking adoption by creating a conducive climate and providing incentives for financial institutions and their clients to expand their services to the general public (Kuan, 2001).

2.1.4.2. Organizational Factors

The firm's qualities and resources, such as staff link structures, intra-firm communication systems, firm size, and the amount of slack resources, are referred to as the organizational context.

Adoption and implementation decisions are influenced by the environment in a variety of ways (Baker, 2011). Concerns raised about the cost of by means of instruments of banking to set up an e-banking system were among the concerns raised in this study.

The researcher utilizes one essential organizing component in the framework for this investigatio n, which is detailed below.

Financial and human resources: financial resources are a critical component of any organization's ability to adopt innovation, and they are typically linked to the size of the company (Anuwar, 2015). As a result, the financial resources available inside adopting businesses are likely to be significant for accepting electronic banking.

2.1.4.3. Factors related to Technology

There does not appear to be agreement on which components belong in this context. Other research (Chang 2007 and Ellis 2009) cited in Ayana (2012) analyzes some relevant technological features, while others (Chang 2007 and Ellis 2009) consider some significant

technological characteristics. To avoid technical and organizational contexts colliding, the researcher identified two key technological competency attributes that are equally important for organizational elements.

This study considers the perceived benefits and risks associated with technology elements.

Perceived risks: Customers' reluctance to use e-banking services is one of the major dangers that banks face while providing these services, and this has slowed the growth of e-banking and the technology (Zhao et al. 2008, quoted in Besufekad 2017). According to Polatoglu and Ekin (2001), cited in Pandey, Mayya, and Joshi (2015), perceived risk, as well as satisfaction, is a crucial element that determines customers' adoption of internet banking. Uncertainty and insecurity are other sources of perceived risk, according to the authors.

To develop consumer trust, adequate customer security towards trsust or confidence, lose of privacy and services are the most common factors for the growth of any branchless banking model. As a result, the public's perception of the hazards associated with electronic banking is likely to influence its adoption and growth.

Perceived benefits: both the banking system and consumers benefit directly and indirectly through e-perceived banking. Cost reductions, higher organizational functionality, increased productivity, improved efficiency, and increased profitability are all direct benefits (Ayana, 2012).

2.1.5. Benefits of E-banking for Banks and customers

According to Robinson (2000), cited in Ayana (2012), the relevant expenses of making a banking transaction online are significantly lower than those of conducting a transaction in a brick-and-mortar branch. Cunsumer Behaviour Theory accepts all this kind of assertions, which claims sawpping costs are hign interms of effoert and time. Robinson also highlighted that in today's highly competitive banking market, deploying e-banking can provide institutions with a variety of competitive advantages.

According to Knabe (2012), e-banking can help improve cross-selling and pricing differentiation. E-banking can help banks deliver a variety of services to their consumers throufg out all days in the week.

Clients have quick access to their bank accounts around the world, 24 hours a day, seven days a week. Customers can take advantage of a wide range of services, including those that aren't offered at regular banks (Pham 2010). Clients can utilize E-banking products and services at no cost or even for free, which is one of the most significant advantages of E-banking. However, some experts say that one impediment to e-banking adoption is cost (Anuwar, 2015). E-banking can boost consumer happiness and loyalty by providing convenience and accessibility (Ayana 2012). Customers benefit from E-banking, according to Knabe (2012), since it saves money, gives them more time and space, responds quickly to customer concerns, and provides better service and products. Benefits like this are expected to improve consumer happiness.

2.2. Empirical Literature Review

2.2.1. Empirical study in case of developed country

With 165 business and 687 customer data points, Sidek (2015) utilized partial least squares structural equation modeling to study the drivers of e-payment adoption by businesses and consumers in Malaysia. As a result, her findings show that nine organizational and external factors influenced corporate adoption of electronic payments. The level of e-readiness of the government was minimal. Her analysis, on the other hand, discovered that three client behavioral factors were important predictors of the easiness of e-payment technologies.

As the author points out, switching from a wholly paper-based to a fully electronic-based payment system can save a country up to 1% of its GDP annually. As a result, both developed and developing countries have aggressively advocated and migrated to e-payment. E-payments have been gradually gaining traction in payment markets around the world. Countries have witnessed a general drop in paper-based cheque usage and a large increase in card usage as a result of this migration, displacing both cash and cheques at the point-of-sale. In addition, new

goods, like smart cards with noticeable stored value, began to gain traction and began to connect with other payment instruments and channels (Tan 2004) in Sidekick (2015).

Despite the fact that cash usage has decreased around the world, the McKinsey Global Payments Map shows that cash is still the most widely used payment instrument in most countries, according to Denecker et al. (2009), cited in Sidek (2015), and it is especially strong in several of the world's largest developing economies, such as China, India, Brazil, and Russia. In many industrialized economies, such as Japan and Germany, cash is also commonly used.

Indeed, the Netherlands, Germany, and Switzerland have nearly entirely abandoned the use of paper instruments in favor of non-cash payment processes in recent decades (Celent 2002). Cheques have effectively disappeared in nations like Finland and the Netherlands, according to Denecker et al. (2009). They predict that the same thing will happen in the majority of northwest Europe soon. The United Kingdom Payment Council, which determines the country's payment strategy, has set a deadline of October 31st, 2018 to close the country's central cheque-clearing system. As a result, the use of cheques for both retail and business payments in the UK will be phased out. (2011, PC).

2.2.2. Empirical study in case of developing country

Aliyu, Younus, and Tasmin (2012) study the factors that influence consumer adoption of electronic banking in Nigeria using empirical data from a questionnaire survey of 125 students at Bayero University Kano (BUK) in northern Nigeria. The authors look into the relationship between electronic banking adoption and key success factors in Nigerian electronic banking.

As a result, the findings of their study demonstrate that the level of six significant criteria, including knowledge, simplicity of use, security, cost, unwillingness to change, and accessibility, influenced the adoption of electronic banking in Nigeria. According to the findings of their research, four criteria are critical to the adoption of Internet banking in Nigeria. However, perceived ease of use and reluctance to change are found to be insignificant in determining e-banking adoption.

In Zimbabwe, Musa S. Makosana (2014) analyzes how sociocultural influences, comprehension, customer perceptions, and attitudes toward electronic banking influence adoption. Because electronic banking in Zimbabwe is still in its infancy, nothing is known about its roots. As a result, electronic banking's adoption and utilization among customers remains low. This study looked at the existing literature and opinions on factors influencing electronic banking, as well as customer perceptions of electronic banking characteristics and societal issues that influence consumer acceptance of this sort of banking.

This paper includes figures that indicate how the elements evaluated influence client adoption of electronic banking, as well as the findings of the interviews and the analysis of the data. The psychological factors that influence the adoption of electronic banking include compatibility, complexity, hazard, convenience, security, privacy, and cost.

2.2.3. Related empirical studies in Ethiopia

There is little research on technological innovation uptake in Ethiopia. Gardachew (2010) focused his study on chllenges and benefits of e-banking in Ethiopia. The author conducted a survey of current bank operating styles and discovered a number of barriers to using e-banking. These barrires includes; lack of the existence of legal framework on e-payments, high illiteracy level in the country, and lack of systems that coonects different banks. Gardachew also climed that e-payement and e-commerce systemes are drived by opportunites related to ICT infrastructure as well as government commitment to the development of ICT infrastructures.

Wondwossen and Tsegai (2005) investigated challenges to e-payment development in Ethiopia using interviews and on-site observation. Customers' lack of trust in the efforts, a lack of payment laws and regulations, notably for E-payment, a paucity of experienced labor, and frequent power outages were identified to be the key impediments to E-payment development. An effective regulatory structure and a secure environment, according to Wondwossen and Tsegai (2005), could promote the adoption of E-payments, contradicting the findings of the previous study.

Ayana (2014) suggests establishing a clear legal framework on the use of technology in banking by conducting a survey, interviews, and document analysis. An effective regulatory structure and a secure environment, according to Wondwossen and Tsegai (2005), could promote the adoption of E-payments, contradicting the findings of the previous study. According to their results, another impediment to the adoption of electronic commerce technologies is a lack of senior management support. Similarly, Ghazi and Khalid (2012) discovered that technology challenges such as security risk, internet quality, and implementation cost are the most significant barriers to E-business growth.

On the other hand, Daisy Kanini (2011) did a descriptive study to determine the factors influencing the adoption of agent banking across Kenyan commercial banks. The author utilized a census survey design in which respondents were sent questionnaires. According to the conclusions of the study, the primary factors influencing commercial banks' adoption of agent banking in Kenya are (I) cost reduction, (ii) improved customer service, and (iii) increased bank presence, particularly in remote places. Additional significant feature is the likelness of improved customer service as a result of the increased convenience that comes with the existence of retail agent shops. The coming in to being existence of the third-party retail mediators positions a number of risks to effective bank regulation and supervision and suggests that the regulator keep a close eye on the bank sector.

Because of its capacity to cut bank expenses and serve low-income workers where they reside, this technique can be especially effective for servicing the unbanked poor. A variety of stakeholders profit from the combination of agent banking gand e-banking. In their own communities, the poor have easy access to financial services. Financial institutions now have access to a significant number of new customers.Agents can increase their sales volume while also strengthening client relationships. Appropriate strategies, on the other hand, can be difficult to implement. Creating networks of partners capable of filling the correspondent post may be tough.

2.3. Summary and Knowledge Gap

The study attempted to analyze various theoretical and empirical literature related to barriers and drivers of electronic banking system adoption in this chapter. The outcomes of the studies addressed in the previous sections demonstrated that technological, organizational, and environmental factors all influence bank adoption of electronic banking systems.

The majority of studies on electronic banking adoption in Ethiopian banks limit the scope of the research to a few specific banks in the nation. Yabibal (2020) conducted a study on the "Assessment of opportunities and challenges of the adoption of e-banking services in CBE (in the case of Debrebirhan town)" and Million (2019) conducted a study on the "assessment of things moving e-banking using in Wegagen Bank South Addis Ababa District"(Customer perspective)

Abdulselam (2019) conducted research on the benefits and drawbacks of electronic banking in Ethiopian commercial banks, using the Gurage zone as a case study. Several studies pertaining to this topic have been presented by researchers from all around the world. However, there are few research on technological innovation uptake in Ethiopia.

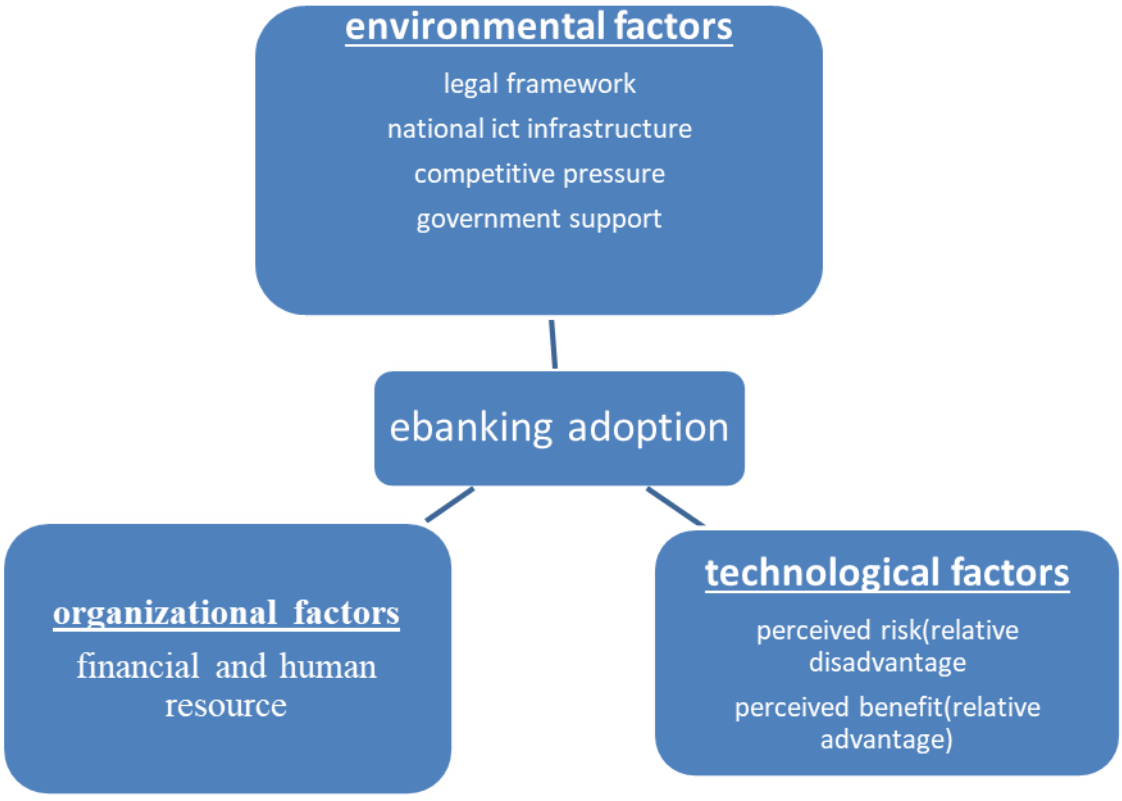
As described in the preceding sections of this chapter, this study was motivated by a dearth of research studies on the hurdles and drivers of Ethiopian banks' implementing electronic banking systems as well as contradictions between theoretical and empirical studies. As a result, to the best of the researcher's knowledge, no studies have been undertaken on the specified subject areas. As a result, by conducting a study on the constraints and drivers of electronic banking adoption in Ethiopian banks, the study tried to address a research gap.

2.4. Conceptual Framework

The technology–organization–environment (TOE) paradigm proposed by Tornatzky and Fleischer (1990) tries to estimate the likelihood of technology improvements being adopted successfully. This paradigm has been used in a number of studies and has been found to be a thorough and well-received method of accomplishing organizational change.

The organizational context describes the characteristics of an organization that limit its capability to hold and practice e-banking. The technical context refers to adopters' impressions of e-banking attributes. Relative advantages (perceived benefits), compatibility, trialability, complexity, and perceived hazards are all frequent features of technology investigated in technology adoption studies, according to Roger's (1995) diffusion of innovation theory.

Figure 2.2 Conceptual Framework



Source: Tornatzky and Fleischer (1990, P 541)

CHAPTER THREE

3. Research Methodology

This section includes logic frameworks, which include research design, targeted public interpretation, sample technique, data collection method, research tool, comprehensive and specific criteria, and data analysis method, as well as research design, targeted public interpretation, sample technique, information. Collection method, research tool, inclusive and special criteria and data analysis method.

3.1. Research Design

The investigation was carried out within a conceptual framework known as the research design. The study objective begins with the research problem of what are the barriers and drivers of electronic banking adoption in the Ethiopian banking system. In order to identify the research question and construct a framework, a literature study is undertaken based on the research topic. As demonstrated by the research purpose and research question, this study used a largely descriptive technique of research design. A descriptive analysis design is a methodology that involves observing and summarizing a subject's activities without intervening in any way. Its objective is to collect, arrange, and synthesize information about the investigation's subject (punch, 2006).

In order to achieve the study's goal, the researcher used a quantitative research approach. Self-administered questionnaires were used to collect data. In order to acquire the information needed, a questionnaire was created and pre-tested. Quantitative data collection methods were created with the goal of determining the relationships between variables. The quantitative technique is beneficial when collecting and presenting research findings since it aids the researcher in avoiding bias (Creswell, 2003).

3.2. Target Population

The study's target population was all Ethiopian banks that are registered with the National Bank. The National Bank of Ethiopia has Seventeen private commercial banks and two state banks.

3.3. Sample Design

This section depicts Ethiopia's banking environment in terms of the policy and legislative framework that governs the banking industry. The National Bank of Ethiopia (NBE), which also functions as the country's financial regulator, oversees Ethiopia's sector. The NBE has 19 banks registered with it (NBE 2020). There are two state-owned banks among them, as well as 17 additional private commercial banks. Five commercial banks were chosen for this study, all of which are based in Addis Ababa, the country's capital.

The process of picking a group from a much larger population about which generalized assertions are needed, so that the selected fraction represents the full group, is referred to as sampling (Leedy, 1989; pp. 158). A commercial bank was operated, and more banks that made an initial public offering to begin operations were included in the population, with a sample selected from the entire population to acquire rich evidence. In the year 2020, there were 17 private banks and two state-owned banks operating in the United States. As a result, non-probability sampling, namely purposive sampling, was used to obtain relevant

data for the study. As a result, the researcher selects five commercial banks as a sample, all of which are currently experimenting with technological innovation.

The methods for picking samples from the available lists were based on the fact that banks now utilize a variety of technological tools to deliver customer care (or based on their familiarity with technology). As a result, this study used a simple random sampling method to select respondents from the purposively selected sample commercial banks, as well as a purposive sampling methodology to select respondents from the purposively selected sample commercial banks.

The banking industry in Ethiopia is separated into two distinct sectors. I There are two state-run banks, and ii) there are seventeen privately owned commercial banks. Five commercial banks are utilized as sample units based on E-banking practice, with a total of 75 bank employees and 5 managers from each category. This means that at least one management from each bank, as well as one from the NBE's payment and settlement department, They'll be polled to see what they think about the barriers to and drivers of E-banking system adoption in Ethiopia. A single state

controlled and four commercial banks are chosen as a sample by the researcher. As a result, samples were chosen to reflect the important characteristics of the entire population.

There are 18 staff members on each of the selected five commercial banks using simple random sampling (lottery method) who work specifically on the banks' electronic banking services.Therefore, the total population of the study is 90. The sample size for the analysis was determined using Yamane's (1967) formula based on a 95 percent desired confidence level and a 5 percent desired level of precision.

$$n = \frac{N}{1 + N(e^2)}$$

Where: -

n = Sample size

N = population size =90

e = precision level=0.05 at 95% confidence level

$$n = \frac{90}{1 + 90(0.05^2)}$$

$$n = \frac{90}{1 + 0.225} = \frac{90}{1.225} = 73.469 \approx 74$$

Based on the above sample determination formula we found 74 sample and one sample have been add to simplify and make fair the number of samples selected from each bank. Based on this 75 samples have been selected on the survey.

Table 3.1 Sample Size Determination

SN	Bank	Population	Sample
1	Commercial Bank of Ethiopia	18	15
2	Dashen Bank	18	15
3	Awash Bank	18	15
4	Zemen Bank	18	15
5	Wegagen Bank	18	15
Total		90	75

Source: own computation based on Yamane’s (1967) formula

The additional sample calculation was done using a straightforward quantitative relation formula as follows:
As a result, the number of samples from each bank equals 18*0.83333= 15.
The remaining calculations were created and supported on top of one another.

According to the equation, the total sample size for the analysis was 75 respondents. The study employed stratified random sampling techniques. Finally, the convenience sampling method was employed as a convenience sampling method to collect the data.

3.4. Method of data Collection

Acording to Kothari (2004), a researcher should consider two types of data, primary and secondary. Primary data was employed for this study. A self administred questionnaire was appropriated to gather first hand data from the respondents. The questionnaire was designed with close ended question items with response options described from disagree strogly to agree strongly.

3.5. Analysis of Data

The data acquired by surveys was examined using descriptive statistics such as mean, frequency, and standard deviation. The researcher employed descriptive analysis to present and analyze the data collected on a variety of variables affecting electronic banking usage. The data was analyzed using social science statistical tools (SPSS Version 26). Statistical approaches are generally utilized to summarize the responses during the descriptive analysis phase, such as frequencies, percentages, mean, and standard deviations. In addition, data acquired through interviews and document reviews was used as a source of supplemental data and to triangulate questionnaire responses.

3.6. Ethical Considerations

The researcher exercised due diligence in designing the research work, which can provide a platform on which to conduct the study. In addition, the secret of the requesting bank is well protected, and all the data that has been used in the study was acknowledged.

The privacy of the people that have been engaged in providing data was well maintained. Data that has been collected through interviews was included in the report with the consent of the interviewee.

3.7. Reliability and Validity

The concepts of reliability and validity assist the researcher in determining the study's quality. They demonstrate the quality of a method of conducting the research and examine the measurement tool. Validity is concerned with a measure's precision, while reliability is concerned with its consistency. When designing your research, arranging your techniques, and writing up your findings, it's critical to think about dependability and validity, especially in quantitative research.

3.7.1. Reliability

Reliability refers to however systematically measured one thing is. If an equivalent result is often systematically achieved by victimisation in an equivalent way under equivalent circumstances, the activity is taken into account as reliable. Hence, before starting the analysis, the researcher tried to check the internal consistency of the data through Cronbach's alpha value by applying SPSS reliability analysis. Based on the result of the test, the value of Cronbach's alpha is 0.82.

Table 3.2 Reliability statistics

S.No.	Variables	Number of items	Cronbach's alpha
1	Environmental factors	9	0.7211
2	Organizational Factors	6	0.7794
3	Technological Factors	5	0.7464
4	Perceived usefulnes	6	0.8284

Reliability Statistics

Cronbach's Alpha	N of Items
.8201	4

3.7.2. Validity

Validity is important in determining whether the statements in the questionnaire instrument and interview manuals are relevant to the study. According to Amin (2004), validity can be assured by the use of the content validity index (C.V.I), where the following results were obtained: Thus, the 0.931 calculated result was higher than 0.7, so the questionnaire items were considered valid for research.

Chapter Four

4. Results and discussion

Under this section, the researcher would present the results of the study, accompanied by their interpretations, so as to achieve the main and specific objectives of the study. There are five sections in this chapter. The chapter's overview is presented first, followed by demographic information on the respondents. The results and discussion of the challenges to e-banking adoption in Ethiopia are presented in the second section. The third segment includes details on the perceived advantages and drivers of e-banking adoption. The chapter is summarized in the final part.

4.1. Questionnaire response rate

As indicated in the last chapter of this study, data collected in various methods was reviewed in this chapter using the triangulation strategy. Five commercial bank employees, one state-owned bank (the Ethiopian Commercial Bank), and four private banks received a total of 75 questionnaires (Dashen Bank, Awash Bank, Zemen Bank, and Wegagen Bank).

A total of 70 valid surveys (93.3 percent response rate) were collected from a total of 75 questionnaires. The Statistical Package for the Social Sciences (SPSS) software was used to analyze the research findings.

The sections that follow provide descriptive metrics for each question's response as well as the results of an interview with e-payment administrators from selected institutions.

4.2. Demographic information of the respondents

The study participants on the survey questionnaire come from various backgrounds. The responses to E-banking usage and the factors that influence thire e-banking usage is reflected in the following manner.

Table 4.1 Demographic profile of respondents

S.Nº	Profile	Description	Frequency	Percent
1	Gender of respondents	Male	40	57.1
		Female	30	42.9
2	Age of respondents	20- 30 years	25	35.7
		31- 40 years	43	61.4
		41- 50 years	2	2.9
3	Educational Level of respondents	First degree	32	45.7
		Master's degree	38	54.3
4	Employer	State owned	15	21.4
		Private	55	78.6
5	Monthly income of respondents	2000-3999 Birr	1	1.4
		5000-9999 Birr	5	7.1
		>=10000 Birr	64	91.4
6	To what extent do your banks consider adopting E-banking?	To a limited extent	5	7.1
		To a moderate extent	18	25.7
		To a great extent	31	44.3
		To a very great extent	16	22.9

As it is shown in the above table, the highest percentage of respondents (57.14%) in this study are males, and 42.86% are females. In terms of age classification, the majority the study partcipants (61.43%) are between age category of 31 to 40, while the remaining(35.71%) and 2.86% falls between 20 to 30 and 41 to 50.

With regard to the educational back ground of the respondents, the Master's Degree accounts for 54.29%. Respondents from private banks account about 78.6% out of the total study participants. 91.43% of the participants earn a monthly salary of over 10,000 birr per month.

Employees from the selected banks were asked to describe the extent to which their companies have worked to adopt electronic banking technology. Based on that, 44.3%, 25.7%, and 22.9% of respondents declared that their bank was exerting its effort towards the adoption of electronic banking to a great extent, to a moderate extent, and to a very great extent, respectively.

4.3. Discussion on Barrires and Benefits of Adopting e-banking in Ethiopia

4.3.1. Barrires to Adopting E-banking in Ethiopia

In spite of the fact that there are numerous related benefits to the adoption of e-banking in ethiopia, thre are also barrires in this regards.

These barriers include a lack of proper E-payment infrastructure, a lack of net facilities with clients, and learning how to browse the bank's website. In addition, elements that can influence E-banking adoption in the country in terms of environmental, technological, and organizational aspects were examined in the following areas.

4.3.2. Environmental factor

Environmental factors are said to be external to banks, and they affect all of them because they are outside the control of commercial banks. Four variables were studied in this study: national ICT infrastructure, government backing, legal framework, and competition. The responses of the questioners yielded the following findings.

4.3.2.1. Lack of adequate ICT infrastructure

Despite the Ethiopian government's later changes to the national framework, the country's ICT infrastructure remains

inadequate. In Ethiopia, card-based payment systems have grown rapidly in recent years. In the country, five commercial banks have expanded the use of debit or ATM cards. Commercial Bank of Ethiopia, Awash Bank, Zemen Bank, Dashin Bank, and Wegagen Bank were among the banks involved. However, there are significant obstacles to those goals, including a lack of sufficient funds and communications infrastructure for new technology.

Table 4.4 National ICT infrastructure

Variables	Mean	Std. Deviation
Lack of suitable ICT infrastructure has a detrimental impact on e-banking	4.06	1.102

adoption.		
Adoption of electronic banking systems is hampered by the poor quality of internet connections and mobile networks.	4.59	0.525
The level of ICT infrastructure development significantly impacts electronic banking adoption.	4.10	0.965
National ICT infrastructure	4.25	0.93

NB: Response Measures From Disagree Stronglly (1) to Agree Strongly (4)

When asked if a lack of appropriate ICT infrastructure has a negative impact on e-banking adoption, the mean was 4.06, suggesting that the majority of respondents agreed, and statistically, this result may differ from the mean of 4.06 by + or – 1.102. Adoption of e-banking is hampered by the quality of the internet connection and cell network. With mean values of 4.59 and 4.10 and standard deviations of 0.525 and 0.965, the health of the ICT infrastructure had a substantial impact on electronic banking adoption.

This finding is in line with the results of the interview, in which the majority of bank respondents said that network connectivity was one of their biggest challenges. This means that the national ICT infrastructure has a significant role in commercial banks' adoption of electronic banking. Despite recent advancements, Ethiopia's ICT infrastructure remains a problem, which could stymie the successful introduction of electronic services. This study's findings were also in line with Tan and Ouyang's (2002) findings, which revealed that a lack of regulation is an initial obstacle to E-banking adoption in China.

4.3.2.2. Lack of Regulatory (Legal) Frameworks

The Ethiopian legal system does not now recognize electronic payments. Due to the non existance of such a regulatory framework, useful and effective electronic payment devices such as ATMs, credit and debit cards, and mobile/telephone/internet banking may be hampered. The development of the securities market, particularly long-term debt instruments, is another policy proposal now being considered (Getahun 2008). In contrast, Wondwossen associate degreed Tsegai (2005) discovered that in Abyssinia, an acceptable legal structure and security environment may boost the use of E-payments.

However, the banking industry views a lack of a legal framework and cross-country legal and regulatory distinctions as barriers to the adoption of the E-banking system in the Federal Democratic Republic of Ethiopia, according to the results of the survey presented in Table 4.4 about the legal framework for practicing E-banking system. This is also supported by the results of the interview, which revealed that it plays a significant part in the adoption process.

Table 4.5 Legal and regulatory framework

Variables	Mean	Std. Deviation
E-banking adoption is hampered by a lack of regulatory requirements. Negatively	3.76	1.042
The absence of regulatory frameworks that compel banks to use electronic banking has a substantial impact on its acceptance.	3.71	0.995
Legal and regulatory framework	3.74	1.02

NB: Response Measures From Disagree Stronglly (1) to Agree Strongly (4)

There have been improvements in the overall legal framework for banks by the National Bank of Ethiopia (NBE). However, there are still some gaps that need improvement. In the questioner, for the second variable, legal and regulatory framework, the result is depicted in the table showing that the participants agree that lack of regulatory guidelines on e-banking negatively influences adoption of the practice with a mean value of 3.76 and 3.71. Statistically, this result may deviate from the value by 1.042 and 0.992, respectively.

4.3.2.3. Government support

Table 4.6 shows the results of the questionnaire on government support.

Table 4.6 Government support

Variables	Mean	Std. Deviation
The lack of strong pressure from the government to encourage e-banking has led to the adoption of e-banks.	3.6	1.1
The growth rate in terms of providing infrastructure for remote areas	4.33	0.847

of the country will have a significant impact on the provision of electronic banking services.		
Government support	3.94	1.03

NB: Response Measures From Disagree Stronglly (1) to Agree Strongly (4)

The result presented above shows that the participants agreed and strongly agreed with a mean value of 3.56 and 4.33 When questioned if they believe there is no strong government push to promote agent banking and e-banking, they said that the level of progress in providing infrastructure amenities to rural locations has an impact on e-banking acceptance. It was discovered that a lack of government support is a significant variable that can act as a barrier in the electronic banking adoption process because it determines the extent and deployment of these services. Apart from competitive pressure, Chong and Pervan's (2007) survey of Australian SMEs reveals that government policies are the most important factor in determining the extent and deployment of e-banking.

4.3.2.4. Lack of competition

Competitive pressure is regarded a motivator for the development of E-banking in industrialized countries, according to various E-banking literature. However, a lack of competition in Ethiopia among local and foreign banks hinders the Ethiopian banking industry from adopting an e-banking system.

Table 4.7. Competitive Pressure

Variables	Mean	Std. Deviation
Lack of competition among local banks influences e-banking adoption negatively	2.83	1.251
Lack of competition from foreign banks influences electronic banking adoption negatively	3.51	1.189
Competitive pressure	3.17	1.26

NB: Response Measures From Disagree Stronglly (1) to Agree Strongly (4)

When respondents were asked whether a lack of rivalry between local banks has a detrimental impact on e-banking uptake, the results were as shown in the table above, healthy competition is an important variable in the study. Thus, they disagreed with a mean value of 2.83 and a standard

deviation of 1.251, indicating that this result may deviate from the mean with + or – of the same value. In addition, when survey respondents were asked if a lack of competition from foreign banks negatively influences e-banking adoption, they agreed, and the mean value was 3.51. This result is consistent with that of Ayana (2012), who argued in his paper that the government's prohibiting foreign banks' entry into Ethiopia is to protect local banks. However, this seems to be an obstacle since it means local banks' neglecting the adoption of e-banking since there is no competition with foreign banks that are well developed and technologically advanced.

4.3.3. Organizational factor

4.3.3.1. Financial resource

The availability of financial and trained human resources to implement the system is one of the most basic organizational concerns. Organizational factors such as financial resources, human resources, and top management support were similarly studied in this research as well, and the results from the questionnaire are discussed below.

Table 4.8 Financial resource

Variables	Mean	Std. Deviation
The expense of implementing technological innovation is high.	3.99	0.96
The size of bank significantly affect of electronic banking adoption	3.7	1.1
Financial resource	3.82	1.01

NB: Response Measures From Disagree Strongly (1) to Agree Strongly (4)

As depicted in the results above, in the close-ended questionnaire, the majority of the respondents agreed that implementing technological innovation requires a high investment cost, with a mean value of 3.99 and a standard deviation of 0.955.

Similarly, they also agreed that the size of the bank significantly influences adoption of e-banking with a mean value of 3.66 and a standard deviation of 1.03, indicating that this result may vary with a value of + or – 1.034. This result implies that financial resources play a significant role in the adoption of E-banking.

4.3.3.2. Human resource

Table 4.9 Human resource

Variables	Mean	Std. Deviation
The lack of experienced IT people in technical innovation has a detrimental impact on the adoption of electronic banking	3.61	1.158
Lack of technical skill of staffs on using technological innovation influences electronic banking adoption negatively	3.73	1.154
Human resource	3.67	1.15

NB: Response Measures From Disagree Stronglly (1) to Agree Strongly (4)

When they were asked whether lack of skilled IT personnel in implementing technological innovation negatively influences adoption of e-banking or not, the respondents agreed that e-banking adoption is negatively influenced by lack of skilled IT personnel, with a mean value of 3.61 and a standard deviation of 1.158.

With a mean and standard deviation of 3.73 and 1.15, respondents also agreed that a lack of technical and management skills among employees in leveraging technological innovation has a negative impact on e-banking adoption. This finding suggests that human resource factors such as IT personnel and people with technical and administrative abilities are critical to the effective implementation of electronic banking.

Table 4.10: Management Support

Variables	Mean	Std. Deviation
Top-level management commitment to adopting new technology has a beneficial impact on electronic banking uptake.	3.9	.87
Top management encourages the adoption of E-banking by ensuring adequate supply.	3.8	1.2
Top management support	3.89	1.05

NB: Response Measures From Disagree Stronglly (1) to Agree Strongly (4)

Finally, when respondents were asked about the commitment of top-level management to adopting new technology, positively influencing adoption and their support by providing, the majority of the respondents agreed, with a mean value of 3.99 and 3.799, as well as a standard deviation of 0.860 and 1.215, respectively, indicating that the involvement of top management also positively impacts its adoption.

4.3.4. Tecnological Factor

The relative benefits of the enterprise as a result of adopting the e-banking system, as well as the relative disadvantages that prevent the banking industry from using the latest technological innovations. In this study, it was raised in relation to technological conditions.

4.3.4.1. Precieved Risk

One of the fundamental barriers a firm faces in adopting technological innovation is the perceived risks. A study by Sohail and Shanmugam (2003) suggests that one of the challenges of adoption of e-banks is fear of security risks. Furthermore, all of the bank managers who took part in this survey were questioned if security concerns arise when technical facilities are used in the banking business, and every single one of them stated that security is the primary problem that prevents our bank from using technological facilities. These were also supported by the survey results shown in table 4.2, as follows.

Table 4.11: Precieved Risk

Variables	Mean	Std. Deviation
The adoption of e-banking has a negative impact on the lack of trust in security features.	3.4	1.3
Customers fear the dangers of new technology innovations	3.74	1.3
Perceived risk	3.59	1.30

[8]

NB: Response Measures From Disagree Stronglly (1) to Agree Strongly (4)

As we can see from the table above, lack of confidence with the security aspects adversely influences e-banking adoption and customers' fear of the risk of new technology innovation where considered in the survey, and the majority of the respondents agreed with a mean value of

3.43 and 3.74. This can indicate that perceived risk, which will result in resistance to change, can be a barrier to the adoption of electronic banking.

Table 4.12 Withdrawal limit on E-banking products

Variables	Description	Frequency	Percent
Ultimate restrictions on e-banking products, such as daily ATM withdrawal restrictions, daily mobile bank transfer restrictions and daily POS payment restrictions, affect the success of electronic banking services.	Yes	66	94.3
	No	4	5.7

Source: survey result, 2022

As it is depicted in the above table 4.12, respondents of this study were asked whether imposing a maximum limit on E-banking services had an impact on their success or not. Accordingly, 94.4% of respondents agreed that the different types of limits imposed, such as ATM withdrawal limit, transfer amount, and POS payment limit, might act as a barrier for the successful implementation of electronic banking systems.

4.3.4.2. Perceived Benefits

It is vital to note that using an electronic banking system provides banks with a number of advantages. According to a number of scholars, the key benefits of electronic banking to the bank include cost savings, faster transactions, gaining new sectors of clients, improved bank reputation, and greater customer service and satisfaction.

According to the author, electronic banking provides immediate cost reductions, increased organizational functionality, productivity increases, improved efficiency, time savings, and increased profitability. Indirect benefits of electronic banking include boosting client happiness through improved services, a better financial experience, and meeting their charging needs and lifestyle.

The perceived benefits of adopting an electronic banking system were characterized as perceived ease of use (PEU) and perceived usefulness (PU) under the technology acceptance model (PU).

PU was also classified by Anwar (2015) in terms of time and cost savings. It is self-evident that banks require ICT infrastructure and internet access in order to provide all types of electronic banking services to its consumers.

To ensure that it is a must for banks to have an official website that enables the bank's customers to carry out all kinds of electronic banking transactions, so that it saves customers' cost and time while adopting an electronic banking system. By making use of it, customers are able to make transactions from their homes. Polatogluet al. (2001), cited in Ayana (2012), suggests many benefits related to electronic banking.

i. Perceived ease of use

One of the most important advantages of using an electronic banking system is the perceived ease of usage. As it is revealed by Giglio (2002), cited in Ayana (2012), electronic banking system adoption enables banks to minimize the workload among the banking staff. By the same token, it also enables banks to boost their customers' satisfaction. On the other hand, Robinson (2000), cited in Ayana (2012), also pointed out that convenience is the other benefit that electronic banking offers to both the bank and its customers.

Table 4.2: Perecied Easy Use

Variables	Mean	Std. Deviation
Customers in electronic banking are easy to understand and use them.	3.14	1.040
Banks provide simple instruction for using online banking	3.34	1.128
The electronic banking service helps to perform banking operations in a simple way	4.39	.967
Perceived ease of use	3.62	1.18

NB: Response Measures From Disagree Stronglly (1) to Agree Strongly (4)

Ease of use was one of the major variables observed in this study. As it is indicated in the above table 4.2, respondents agreed that electronic banking products are easily understood and used by

customers. That accounts for a mean value of 3.14. In addition to that mean of 3.34, participants agreed that banks should provide simple instructions on the usage of e-banking.

With a mean score of 4.4 (SD = 0.967), significant majority of the study participants strongly agreed with the easiness of using e-banking services that make it easier to execute banking duties. This is warranted and compatible with the findings of different investigations in this body of knowledge.

ii. Perceived usefulness

Table 4.3 Perceived usefulness

Variables	Mean	Std. Deviation
Electronic banking services are accessible without time limit.	3.99	1.173
Electronic banking make improvement on customer service	4.64	.512
Electronic banking services are save time and cost of consumers	4.7	0.56
Electronic banking services are enhance the efficiency of a bank	4.6	0.69
Electronic banking services has made reduction of bank hall queue	4.6	0.74
Electronic banking generates wider market coverage for bank.	4.5	0.94
Perceived usefulness	4.50	0.84

NB: Response Measures From Disagree Stronglly (1) to Agree Strongly (4)

The usefulness of e-banking was strongly agreed upon by the majority of respondents. The recorded mean value for this question was the highest of the six questions presented to the respondents when asked if e-banking services were easly accessible with out time limits, which proves that adopting e-banking is undoubtedly useful to commercial banks in creating a process that is much easier than the traditional banking system. This is consistent with the interviews conducted, where all the interviews argued that use of E-banking is mainly convenient, improves bank productivity, and saves time and resources.

4.4. Analysis of Response from interviews

The interviews were conducted with five e-banking managers of Ethiopian commercial banks namely, CBE, DB, AB, ZB and WB. Those e-banking managers were chosen as they are believed to be the most knowledgeable persons about the barriers and drivers of e-banking system adoption.

During the interview the researcher forwarded questions regarding the social, Economic and legal barriers to the adoption of E-banking and some of the points raised lack of suitable legal and regulatory framework, lack of government initiation or lack of government prioritization, absence of financial networks that links different banks, low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet and security issues were the common and main challenges mentioned by the managers.

On the other hand, the benefits that the bank gained from adoption of e-banking system as per the interviews include to avoid customers time and place limitation and for being competitive with another private banks, to avoid banks productivity, to increase customer satisfaction, to reduce cost, time and convenience, wider market coverage for bank, the number of customers, technological enhancement

In general all the above mentioned drivers and barriers contribute to the adoption of ebanking system among of Ethiopian commercial banks.

Chapter Five

5. Conclusion and Recommendation

This chapter concludes the findings and discusses the conclusions drawn from the study also it provides recommendation.

5.1. Summary of thesis finding

This study is intended to investigate the drivers and barriers of electronic banking system adoption in Ethiopian commercial banks. In this respect, the researcher tried to determine the driving forces that facilitate adoption of the e-banking system and the major barriers to the adoption of the e-banking system in Ethiopia.

The study has adopted a quantitative research approach by utilizing primary data sources from each purposively sampled commercial bank in Ethiopia. The study conducted descriptive statistical analysis to analyze the consequences of those factors emanating from the technology-organization–environment (TOE) framework and technology acceptance model on e-banking system adoption. To determine barriers to adoption of e-banking systems, TOE is divided into three categories. The security risks of technology innovations employed by banking businesses have been identified as technology barriers in this study.

In the case of organizational factors, the researcher took into consideration that of financial cost as well as human resources. Alternatively, a lack of technical skill of staff in using technological innovation is considered a barrier for the adoption of E-banking in commercial banks in Ethiopia.

Environmental factors that are beyond the control of commercial banks are composed of four barriers to E-banking adoption. Those are lacks of a legal framework regarding the e-banking system at a national level, a lack of ICT infrastructure, and the absence of competition between local and foreign banks. On the contrary, lack of government support was not taken as a barrier for the adoption of the E-banking system in Ethiopia.

The benefits of adopting an electronic banking system were defined as perceived ease of use (PEU) and perceived usefulness (PU) using the technology acceptance model (TAM) (PU). A major advantage of adopting an e-banking system is easiness of use. The other benefits shown in the study were perceived usefulness and its impact, which was detected in terms of time and cost-saving. These squares represent the two fundamental edges that motivate industry to adopt technological innovations.On the other hand, perceived risk, which will result in resistance to change, can be a barrier to the adoption of electronic banking.

5.2. Conclusion

Adoption of proper technology is without a doubt a crucial success factor in the banking business in a rapidly changing and highly competitive environment. Electronic banking offers several advantages to both banks and customers in this regard, as the transaction costs of providing this service are lower than those of traditional banking. This has consumed a lot of time as well as the cost to both customers as well as banks. By recognizing the problems associated with the barriers that may create obstacles and drivers that might generate opportunities towards the adoption of electronic banking systems in Ethiopian banks, The researcher was motivated to investigate the barriers and drivers towards the adoption of an electronic banking system in Ethiopia.

The result of the study revealed that the e-banking system was not well adopted by the Ethiopian banking industry. This is attributable to poor internet connection and mobile network, low level of ICT infrastructure, lack of legal framework, and lack of government support to promote e-banking. These are the major barriers in the electronic banking adoption process, since they determine the level and deployment of these facilities.

Along with the basic factors influencing e-banking adoption in Ethiopia, the study's findings reveal that lack of competition from foreign banks, security risks, a lack of trust in technological adoption, and a lack of technical and management skill among staff in using technological innovation are all major barriers to the system's adoption. E-banking product or service security risk level, such as ATM withdrawal limit, a transfer amount, or a POS payment restriction, might operate as a barrier to effective electronic banking system implementation.

In contrast, the findings of this study make e-banking services easier to perform banking tasks. Adopting e-banking is undoubtedly useful to commercial banks in creating a process. This shows that the benefits of technology innovation are well-known to banks and represent a powerful force for driving the adoption of the system. Ease of use is one of the basic benefits of e-banking, which allows bank employees to do banking tasks more easily. Another acceptable force for the benefit of the system is to save time and money. This, along with other benefits identified in the study, is well thought to have the potential for banks to improve their reputation.

5.3. Recommendation

According to the study, the researcher offers the following recommendations to address the challenges of adopting the e-banking system in the Ethiopian banking industry and to successfully implement e-banking technology. Therefore, this study has tried to provide briefly the following recommendations:

To ensure smooth adoption of E-banking in Ethiopia, the regulatory bank of Ethiopia (NBE) needs to urgently set up a clear set of legal frameworks on the use of technological innovation in the banking sector. ICT infrastructure is essential for the success of the e-banking system. Therefore, the banking industry of Ethiopia should give investment priority to ICT infrastructure development in order to support the banking sector. Ethiopian banks ought to replace their traditional banking services with a new technology-based way of banking by changing their focus of attention to cost reduction, customer retention, ease of use, and a wider scope of products and services. The banking industry in Ethiopia should introduce its customers to electronic banking.

Overall, the findings of this study indicate that the current level of e-bank acceptance and its implications for Ethiopia as a developing country requires further study. In addition, a better understanding of the barriers to banking adoption listed in this study will help determine the best course of action to promote growth. It also helps to raise awareness of the importance of e-banking in all banking industries in the country.

REFERENCES

Addis B. (2017), *Challenges and Prospects of Electronic Banking; the Case of Dashen bank,* general MBA thesis,ST. Mary's university,Addis Ababa, Ethiopia

Alhaji Abubakar Aliyu, Sayf M.D Younus & Rosmaini Bin HJ Tasmin (PhD) (2012), *An Exploratory Study on Adoption of Electronic Banking: Underlying Consumer Behaviour and Critical Success Factors.* Case of Nigeria.Business and Management Review Vol. 2(1) pp. 01 – 06 March, 2012 ISSN: 2047 – 0398

Anuwar (2015), *Assessment of Factors Affecting Adoption of Agent Banking and Electronic Banking in Ethiopian Banking Industry: A case of selected ten banks,* MSC THESIS,ST. Mary's university, Addis Ababa, Ethiopia

Ayana Gemechu, (2012), *Adoption of Electronic banking system in Ethiopian Banking industry: Barriers and Drivers*, MSC THESIS, Addis Ababa University, Addis Ababa, Ethiopia

Besufkad Gebre, (2017), *The Effects of E-Banking on Bank Performance: the Case of selected Ethiopian Commercial Banks:* A Research Project;Addis Ababa university

Beza Muche, (2010), *Assessment of the Opportunities and Challenges for the Adoption of E-Banking Service in Ethiopia* (A study with reference to selected commercial Banks): A Research project , university of Mekele

Hemlata Gangwar Hema Date R Ramaswamy , (2015),"*Understanding determinants of cloud computing adoption using an integrated TAM-TOE model*", Journal of Enterprise Information Management, Vol. 28 Iss 1

Jeff Baker, (2011), *The Technology–Organization–Environment Framework*: American University of Sharjah, P.O. Box 26666 Sharjah, United Arab Emirates

Michael M. (2016), *Challenges and Opportunities of E-banking in Ethiopia*: The Case of Commercial Bank of Ethiopia, MBA thesis, ST. Mary's university, Addis Ababa, Ethiopia

Muteteri a. (2015), *Electronic Banking and Financial Performance of Commercial Banks in Rwanda*: a case study of bank of Kigali, a research project, university of Jomo Kenyatta

NBE. (2019), *Annual Report of Fiscal Year 2018/19.*

NormasitaSidek(2015), *Determinants of Electronic Payment Adoption in Malaysia*: *The Stakeholders' Perspectives BA (Hons) in Accounting and Finance MSc in E-Business and Innovation*, A thesis submitted for the degree of Doctor of Philosophy at The University of Queensland in ,Australia

PriyankaPandey & Dr. SureshramanaMayya & Dr. H. G. Joshi, (2015), *Barriers of Internet Banking Adoption Among Bank Customers of Urban Area of Udupi District*, Karnataka, International Journal of Economics and Management, SSIJEM VOLUME 5, ISSUE 3 [MAY 2015] ISSN 2231-4962

Raphael, N. Edgar & Machimu, M. Gervas. (2021), *Rural Customer Electronic Banking Services Adoption:* Experiences from Nmb Bank Plc Customers in Rombo District, Tanzania. Journal of Co-operative and Business Studies (JCBS) Vol. 6, Issue 2.

Rehman, T.et al(2003), *Theory of Reasoned Action and Its Integration with Economic Modelling in Linking Farmers' Attitudes and Adoption Behaviour – an Illustration from the Analysis of the Uptake of Livestock Technologies in the South West of England*, The University of Reading,Centre for Environmental Data and Surveillance,Bath, BA2 9ES England

Rogers, M 1995, *Diffusion of Innovations*, 5th edition, New York: Free Press.

Shah, M. & Clarke, S (2009), *E-Banking Managemen*t: *Issues, Solutions, and Strategies*: University of Central Lancashire & University of Steve Clarke Hull, UK

Tornatzkyet.al (1983), *The process of technological innovation*: reviewing the literature: National Science Foundation,Washington, D.C.

Tornatzky, G & Fleischer, M (1990), *The Process of Technology Innovation*, Lexington, MA, Lexington book.

Annex: Questionnaire

Dear Respondents

I am a graduate student at Addis Ababa University. In partial fulfillment of the requirements for the degree of Master of Business Administration in Finance, I am undertaking a survey on the adoption of electronic banking systems in Ethiopia's benefit and drivers' communities. I therefore request your kind assistance in completing the attached questionnaire to the best of your knowledge. The information you give will be treated with strict confidence and used solely for academic purposes. A copy of the final report will be made available to you upon request.

Your assistance and cooperation will be highly appreciated.

Thank you.

Ghenet Bahta

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Section One: Questionnaire

Part I: Demographic Details

Please indicate the following by ticking (√) on the spaces in front of the response options:

1. Gender:

Male ☐ Female ☐

2. Age:

20 to 30 years ☐ 31 to 40 years ☐

41 to 50 years ☐ 51 to 60 years ☐

3. Educational level:

Diploma holder☐ First degree holder☐

Masters degree ☐

4. Employer:

State owned bank Private bank

5. Monthly Income:

Less than Br 2000☐ Br 2000 to Br 3999 ☐

Br4000 to Br 4999 ☐ Br 5000 to Br 9999 ☐

Above Br 10000 ☐

6. To what extent do your banks consider adopting E-banking?

Not applicable ☐

To a limited extent ☐

To a moderate extent ☐

To a great extent ☐

To a very great extent ☐

Part II: Challenges and prospects of adopting Electronics banking in Ethiopian banking industry.

Kindly indicate by ticking (√) the extent to which you agree with each of the following statements as regards the adoption of E-banking by your bank.		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Environmental factors		1	2	3	4	5
National ICT infrastructure	Lack of adequate ICT infrastructure negatively influence adoption of e- banking					
	The quality of internet connection and mobile network significantly challenge adoption of e-banking					
	The development levels of ICT infrastructure significantly impacts electronic banking adoption.					
Legal and regulatory framework	Lack of regulatory guidelines on e-banking negatively influences adoption of e-banking.					
	Lack of legal frame works that enforce banks to adopt Agent banking and e-banking significantly impacts e-banking adoption.					
Government support	Lack of strong push from the Government to promote Agent banking and e-banking positively supports e-banking adoption.					
	The level of development in providing infrastructural facilities (road, electric power, telecommunication and etc) to remote area of the country significantly impacts e-banking adoption.					
Competitive pressure	Lack of competition between local banks negatively influences e-banking adoption.					
	Lack of competition from foreign banks negatively influences e-banking adoption.					

Kindly indicate by ticking (√) the extent to which you agree with each of the following statements as regards the adoption of E-banking by your bank.		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
2. Organizational Factors						
Financial resource	Implementing technological innovation requires high investment cost.					
	The size of bank significantly influences adoption of e-banking.					
Human resource	Lack of skilled IT personnel's in implementing technological innovation negatively influences adoption of e-banking					
	Lack of technical and managerial skills of staffs on using technological innovation negatively influences adoption of e-banking.					
Top management support	Commitments of top level management to adopt new technology positively influences adoption of e-banking.					
	Top management support by providing sufficiently the required resource to adopt E-banking					
3. Technological Factors						
Perceived risk	Lack of confidence with the security aspects negatively influences adoption of e-banking.					
	Customers fear risk of new technology innovation					
Perceived ease of use	Electronic banking products are easily understand and used by customers.					
	Bank provide simple instruction how to use e-banking services					
	E-banking service helps to perform banking tasks in a simple way.					

Kindly indicate by ticking (√) the extent to which you agree with each of the following statements as regards the adoption of E-banking by your bank.		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Perceived usefulness	E-banking services are accessible without time limit.					
	E-banking improve customer service					
	E-banking services are save time and cost of users					
	E-banking services are increased the productivity of bank					
	E-banking services are reduce bank hall queue					
	E-bankingcreates wider market coverage for bank.					
Other	The maximum limits on E-banking products e.g. daily withdrawal limit from ATM, daily transfer amount limit by mobile banking and daily payment limit using POS, has an impact on success of Electronic Banking services.					

Interview Guide

I. About Barriers to Adopting E-banking System In Ethiopian Context

1. What kind of E-banking service your kind bank/branch provides for the customers?
2. What do you think are the majior factors and cahhenges for your bank in deliberating those E-banking services to your clients?
3. Do you consider that polices of the government have seriously impacted (affected) your bank in adopting the e-banking system?
4. What are the specific supports you gate and expect from government so that your kind bank will offer or adopt the e-banking service?

II. About Key Drivers and Challenges in Adopting Electroniv Banking

1. What befits do your bank gains by adopting the e-banking systems like ATM service? What do your customers realy benefit?
2. What are the advantages and disadvantages of adopting e-banking service as far as your cliants and the bank are concerned?