



**ADDIS ABABA UNIVERSITY**

**COLLEGE OF BUSINESS AND ECONOMICS**

**OFFICE OF GRADUATE STUDIES**

**DEPARTMENT OF ACCOUNTING AND FINANCE**

**PRACTICES AND CHALLENGES OF ELECTRONIC DATA PROCESS  
AUDITING IN SELECTED COMMERCIAL BANKS OF ETHIOPIA**

**BY**

**ESTIFANOS BEKELE YITBAREK**

**A Thesis Submitted To Addis Ababa University Department of Accounting  
and Finance in Partial Fulfillment of the Requirements for Masters of Science  
in Accounting and Finance**

**Advisor: Degefe Duressa (PhD)**

**Addis Ababa, Ethiopia**

**JUNE, 2022**

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## **DECLARATION**

I hereby declare that the academic study report on the title; “Practices and Challenges of Electronic Data Process Auditing in selected Commercial Banks Selected of Ethiopia” is my original work and has not been presented in any other University or College for examination purpose. All sources that I have used or quoted in this research report have been indicated and acknowledged by means of complete references.

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**APPROVAL SHEET**

This is to certify that the thesis prepared by Estifanos Bekele entitled; “Practices and challenges of Electronic Data Process Auditing in Selected commercial Banks of Ethiopia” submitted in partial fulfillment for the Masters of Science in Accounting and Finance complies with the regulations of the university and meets the accepted standards with respect to the originality and quality.

**APPROVED BY:**

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Advisor: -----	-----	-----
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## ACRONYM AND ABBREVIATION

AIS	Accounting Information Systems
CAATS	Computer Aided Audit Techniques
CAG	Controller and Auditor General
CAS	Computerized Accounting System
CAIS	Computerized Accounting Information Systems
CIS	Chief Executive Officer
CPAs	Certified Public Accountants
EDP	Electronic Data Processing
ERP	Enterprise Resources Planning
IS	Information System
IT	Information Technology
MAS	Manual Accounting System
NAO	National Audit Office
PC	Personal Computer
POB	Public Oversight Board

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## ABSTRACT

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*The main objective of the study was to investigate the practices and challenges of EDP in internal auditing function in case of selected commercial banks, head offices. Descriptive research design was employed to conduct the research with method approach. Participant of the study were 87 and 15 process owners were selected for interview. Questionnaires and structured interview were the instruments used for data collection. Frequency distribution, percentage, mean and standard deviation were used to present, analyze and interpret data in line with each research questions. Based on the study, existence of budget allocation problem in EDP application in internal audit functions, and lack of management support in promoting and encouraging EDP, lack of technical and managerial skills in implementation and development of E-banking technology, lack of social awareness regarding E-auditing services provided, high cost of implementation of E-banking, poorly developed telecommunication infrastructure, lack of law mandating the bank to adopt E-banking technology and lack of suitable legal and regulatory framework for EDP Auditing were considered as factor that has a negative influence on the adoption and growth of E-auditing technology in commercial banks. As per the findings giving more emphases towards the EDP system in audit process, solving infrastructure that challenges EDP in internal auditing, subsidizing the high cost for ICT equipment that challenges banks in introducing E-banking, arranging appropriate program for training, creating deep awareness to employees concerning the role of EDP in internal auditing they offer and the benefits associated with using Electronic services through advertising their services on the internet, mass media as well as through organizing public exhibition and talk shows were recommended*

**Key Words:** Practices, Challenges, Electronic, Data, Auditing Etc

# CHAPTER ONE

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## 1. INTRODUCTION

### 1.1. Background of the study

In today's world, the computer technology advancement is influencing organizations from various industries in profound ways, presenting numerous opportunities for improvement and innovation.

A robust banking industry is crucial in any country in this period of globalization, with growing competition in all industries throughout the world, and may have a substantial impact on promoting economic development through efficient financial services. As a result, several banks throughout the world are altering their business methods in order to target global consumers in more easily and cheaply ways.

Therefore, business banks are Banks are creating technology to enable them to supply banking goods and services through the most cost-effective channels possible, one of which is the adoption of e-banking or online banking. Regarding this, Booz & Hamilton (1997) stated that providing these services has lower transaction costs than the typical way. The industry is quickly expanding and the rapidly growing and expansion of every commercial bank in the world is being hammered by information and communication technology, and Ethiopian banks will never be different. In affluent nations, electronic banking is extensively utilized, and it is fast gaining traction in poorer countries and is rapidly expanding in developing countries. This is because, the bank technique for most developing countries is money driven that the majority of financial process are performed by exchanging printed matters and coins for goods and services.

This tendency, however, is already giving way to development of a complex and contemporary payment system in which cash and notes are transformed to data and then sent over telephone lines and satellite Transponders. In relation to this Ozuru (2010) revealed that development of sophisticated and modern financial system is due to rapid technological progress and development in the financial market of the world.

When come to Ethiopia, electronic payment systems are at an evolving stage. Michael (2017) stated that face of rapid expansion of electronic payment systems throughout the developed and

the developing world, Ethiopia's financial sector cannot remain an exception in expanding the use of the electronic banking system. This is because; the use of the computerized technology in the day to day administration of the commercial banking system cannot be ignored. In business sectors, the computer technology has immense power to process and store data at a very magnificent speed expressed in micro seconds. The speed of processing and retrieving data will enable much work to be performed within a short time that traditional approach. Due to a pervasive and steadily importance of Electronic Data Process many commercial banks, commercial banks have invested in electronic data processing because they recognized the numerous benefits to their operation.

Solomon and Trotman (2003) argued that in recent years, the use of electronic data process audit in banking business has grown exponentially and it has changed the audit process and has resulted in opportunities and challenges for auditors. They also argued that auditors are struggling to maintain their identity and purpose as their organizations they audit undergo radical changes.

As usage of information system in the organizations increasingly becoming more complex, in order to make effective audit work the auditors must use the computer as an auditing tool, audit automated systems and data, understand the business purposes for the systems, and understand the environment in which the systems operate. By seeking new uses for computers and communications, auditors improve their ability to review systems, information and manage their activities more effectively. Automated tools allow auditors to increase individual productivity and that of the audit function more easily. By recognizing the importance of emerging environment and requirement to perform audit task effectively, auditors must recognize the key reasons to use audit tools and software in business areas.

The increasing application of computers to accounting and business banks administration generally result in a number of changes in the data processing system. Many of the attributes of an EDP system affect the auditors and their work in business environments. Merrill (2006) stated that the changed audit trail and computers speed, accuracy, reliability, vulnerability, and auditing abilities require the auditors to examine the traditional auditing procedures and adopt procedures that are most appropriate, efficient and effective for electronic data processing systems

However, according to Stoel (2012), the increased challenges of EDP audit services put emphasis on the importance of performing these services in the most efficient and effective manner. As a result, additional research is needed to understand the potential threats and challenges in performing EDP audits and critical challenges that may be related to the overall the EDP auditing. So, this research explored the current practices and challenges of internal audit that may affect the quality of auditing functions in selected Commercial Banks, Head offices in Ethiopia.

## **1.2. Statement of the Problem**

In this era of globalization, with increased competition around the globe in all sectors, a strong banking industry is important in every country and can have a significant effect in supporting economic development through efficient financial services; as a result many banks in the world are modifying their strategies to reach customers worldwide more easily and cheaply. With this respect, Ayana (2012) confirmed that banks are developing the technologies that will help them deliver banking products and services by the most cost-effective channels and one of such channel is adoption of E-banking or internet banking.

Abraham (2012) also added that Electronics banking has several benefits like transferring money, collecting receivable, paying bill, productivity gains, transaction cost reduction, customer service improvement and at the same time establishing a means to control the overall activities on bank accounts.

However, there are a number of challenges which commercial banks operating in Ethiopia are facing in the provision of electronic banking services. According to the study of Megersa (2010), one of the major hindrances is lack of appropriate technological infrastructure to support the service. The financial institutions also argue with internet challenges including its congested connection, security and quality of service.

Admassu & Asayehgn (2014) also discussed that banking industry in Ethiopia is in a rudimentary and fragile state. The expansion of banking business both horizontally and vertically over the years has posed new challenges to the internal auditor. In modern banking, the internal auditor has been challenged by a new dimension of business process development in banks.

The introduction of electronic banking in to the banking sector is to bring extra opportunities to the customers there by to enhance the banks 'profitability. Unless this technology bring increase customer satisfaction than the traditional brick and mortar branches customer may perceive as the same as different branches rather than a new means of delivery channels (Worku, 2016).

Tamiru (2021) found out that commercial banks realized service benefits like, increased comfort and time saving, transactions can be made without requiring the physical interaction with the bank, quick and continuous access to information, better cash management, E-banking facilities speed up cash cycle and increases efficiency of business processes as large variety of cash management instruments are available on internet sites, reduced ,conveniences, speed ,and funds management's-banking activities.

However, lack of banking services through the web or other electronic means such as using mobile phone data and network security and privacy, lack and limitation of government policies, regulations and Ecommerce laws, as well as legislation to protect workers and to make the Internet secure, weak telecommunications, broken and slow Internet connections and lack of Internet awareness were the main challenges. In spite of the findings, the participants of the study were twenty branches and only the IT departments of the two commercial banks under study based on a structurally designed questionnaire.

Moreover, prior researchers identified some of the challenges of EDP auditing; however, these factors had not been studied and empirically tasted in the Head offices context. Those studies did not include the current challenges of facing internal auditors using E-banking in case of head offices. Therefore, this research will attempt to fulfill the non-empirical evidence gap by integrating those factors identified by the researchers with the actual challenges of EDP Audit practices in Head offices context. Therefore, the researcher find it relevant fill the research gaps, by examining current practices and challenges of E-banking especially in the selected commercial bank, head offices in Ethiopia.

## **1.3 Objectives of the Study**

### **1.3.1 General objective of the study**

The general objective of the study was to investigate the practices and challenges of electronic data process in internal auditing in case of commercial banks, Selected Head Offices using the following specific research questions with their respective objectives.

### **1.3.2 Specific Objectives of the study**

1. To examine current existed management and staff support for EDP in auditing function in selected commercial banks, head offices
2. To examine the perceptions of banks auditors on EDP in selected commercial banks, head offices
3. To identify challenges facing electronic auditing in selected commercial banks, head offices

### **1.3.3 Research Questions**

1. To what extent management and staff support for EDP in auditing function in selected commercial banks, head offices?
2. What were the perceptions of internal auditors on EDP in selected commercial banks, head offices?
3. What are the major challenges of adopting EDP in internal auditing in case of selected commercial banks, Head Offices?

## **1.4 Significance of the study**

The study is likely to provide valuable information to the organization (Head offices) in decision making to identify challenges of EDP auditing; to improve the EDP audit departments to take corrective measurement for the recommended idea, and identify features that will highly affect the effectiveness of EDP audit in the study. Further, this study was initiated to generate and add some information to the existing knowledge of the challenges affecting EDP audit work that have contributions for clear understanding of the challenges of EDP audit.

The findings of this research provided multipurpose information to different users, including public sectors, government, policy planners, academicians and the public at large and it could help top management and development policy makers.

## **1.5 Scope of the study**

The scope of this research was confined to the difficulties of electronic auditing at only some head offices. Only data from chosen branches was utilized in this study to maintain the integrity of the data obtained and to honor their pioneering role in electronic auditing. To retain the focus on the banking business, it excluded other financial organizations. Furthermore, the study was limited to a review of the practices and problems of electronic auditing from the perspective of banks. In addition the study focused on investigating the challenges and opportunities of E-auditing faced by the employees in adoption and the bank side implementation in the case of commercial banks head offices. Conceptually; it merely focused on the challenges faced by employee of the banks in E -auditing banking practice it did not include issues other than the stated concepts and other related issues which are directly related to the topic of the study

## **1.6 Limitations of the Study**

In terms of the study's limitations, there was insufficient literature on the topic under investigation to the researcher's knowledge because it is a new idea in Ethiopia. Furthermore, several respondents failed to submit questionnaires on time during data collection. There was also a trend of declining to offer complete answers to queries, particularly in short interviews. Furthermore, COVID-19 presented a significant difficulty in terms of completing and articulating the thesis at the desired level. This was owing to the fact that it impacted all research participants and posed significant challenges to data dissemination and collecting

## **1.7 Organization of the paper**

There are five chapters in the study paper. The first chapter included the backdrop of the study, the statement of the problem, the study's objectives, the scope, and the importance of the research report. The second chapter is a survey of the literature on the definition of electronic auditing and the technology's challenges. The study methodology/design, data gathering method and sources, sample technique, and data analysis methodologies are all covered in Chapter 3. In chapter four, the study findings and discussions were given. The fifth and last chapter reviewed the findings, wrapped up the report, and offered some suggestions.

## CHAPTER TWO

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## 2 REVIEW OF RELATED LITERATURES

### 2.1 Introduction

This chapter dealt with an overview of the electronic auditing services and presented theoretical and empirical review of literature. The researcher discussed the history of the banking industry in Ethiopia as well as the progress of e-banking and also tried to identify the major challenges and prospects in availing the services by going through different research papers, journals and books in the study areas.

### 2.2 Theoretical review of auditing for EDP systems

The influence of computers on the audit process varies from client to client and is mostly determined by the sophistication of the computer data processing system. A basic system may be so similar to the previous card or manual method that the auditor will have no trouble adjusting his audit technique to the computerized system. Understanding a more complicated computer-based system may need extensive technological skills on the part of the auditor.

The necessity for an examination of the internal control system is not diminished by EDP in any manner. On the contrary, it appears that a greater focus should be placed on internal control review to ensure that it is successful. The centralization and concentration of data processing in an EDP system, as well as the appearance of new controls that must be evaluated, have necessitated this emphasis. Internal control evaluations are based on a study of the system to gain a better understanding of how it is supposed to work and a collection of information that shows how it really works.

When audit tests are being evaluated and planned. It is reasonable to assume that auditing standards, which were developed with the primary goal of auditing in mind, are unaffected by the individuals or equipment that process and preserve accounting and financial data. To be applicable to a wide range of audit circumstances, auditing standards must be broad in scope also that computers have had on the audit process varies among clients and is dependent to a great extent on the level of complexity of the computer data processing system. A simple system may

so resemble the predecessor card or manual system that the auditor has very little difficulty in adapting his audit procedure to the computerized system. A more complex computer- based system may require considerable computer expertise on the part of the auditor for understanding the system he is evaluating and planning his audit tests. It is logical to suppose that auditing standards, which have been established in the light of the primary objective of auditing, are independent of the personnel or machines used to process and maintain the accounting and financial records.

The auditing standards must be broadly based in order to have applicability to a wide range of audit situations. Evaluating the system of data processing and control, the auditor must assess the accuracy of the system's data pertaining to the presence and accurate value of assets, liabilities, equities, and transactions. Historically, the records examined were printed reports, lists, documents, and business papers, all of which the auditor could read. Traditional auditing procedures may be used to the degree that such records are available in electronic systems.

However, EDP systems commonly produce portion of their output in machine-readable formats such as cards, tapes, and disks. Although this output can always be transformed to legible printing, it gives the auditor the option to evaluate the records using the computer. Computer audit programs can assist in the performance of auditing procedures such as: (1) selection of exceptional transactions and accounts for examination, (2) comparison of data for correctness and consistency, (3) checking of information obtained directly by the auditor with company records, (4) performance of arithmetic and clerical functions, and (5) preparation of confirmations.

The auditor needs to understand the nature of these controls in order to properly evaluate and test the computer data processing system. The changes in data processing controls due to the computer are an important reason why the auditor cannot ignore the computer in his evaluation of internal control.

New controls are necessary because of mechanization. Their purpose is to detect and control errors arising from the use of EDP equipment and EDP processing methods. If these controls are absent, the system may be exposed to undue risk of error. If the omissions are deemed serious, the scope of audit procedures is influenced. In a manual system, internal control relies upon such

factors as human alertness, care, acceptance of responsibility and division of duties. Computer processing reduces the number of persons involved in data processing. Since the data processing activity is concentrated, many controls based on human judgment or division of duties is no longer available.

However, for many checks, the computer program provides an alternative which substitutes for the judgment of humans engaged in processing. In most instances, the computer checks can be more extensive than those performed manually. The presence or absence in a computer-based system of controls such as these which substitute for human judgment or division of duties should influence the nature and extent of auditing procedures used in the circumstances

### **2.3. Ethiopia's Banking History**

According to Ethiopian history, the country's first bank, the Bank of Abyssinia, was established in February 1905 under Emperor Menelik II's rule. The former Bank of Abyssinia was forced to dissolve due to foreign dominance of its administration (mostly British), and the new Bank of Abyssinia was founded in its place.

The Bank of Ethiopia was still run by foreigners in 1931 due to a dearth of skilled workers in Ethiopia at the time. The Bank of Ethiopia was replaced by the State Bank of Ethiopia shortly after the war with Italy. The latter was the country's first government-owned and managed bank. Meanwhile, a number of foreign banks had established branches in the country, the majority of them with a desire to exert control over the country's economy. The current Commercial Bank of Ethiopia (CBE) and National Bank of Ethiopia (NBE) sprang from the State Bank of Ethiopia.

CBE had been the lone player in the country's commercial banking industry under Dergue's tenure. However, with the current government's takeover in 1991 and subsequent promotion of private investment, the country's financial industry has seen the emergence of a number of private banks.

As a result, the Monetary and Banking Proclamation No.83/1994 and the Licensing and Supervision of Banking Business Proclamation No.84/1994 established the legal framework for banking investment. As a result, Awash International Bank, the country's first private bank, was created in 1994 by 486 shareholders, and by 1998, the bank's authorized capital had reached Birr

50.0 million. Dashen Bank was founded on September 20, 1995, as a share corporation with a Birr 50.0 million authorized and subscribed capital.

Wegagen Bank began operations in 1997 with a Birr 60.0 million authorized capital. United Bank, the fifth private bank, was founded on September 10, 1998, by 335 stockholders. Nib International Bank that commenced business on May 26, 1999 with an authorized capital of Birr 150.0 million. The Oromian Cooperative Bank was founded on October 29, 2004 with a capital of Birr 22.0 million.

Lion International Bank began operations on October 2, 2006, with an authorized capital of Birr 108 million. Zemen Bank began operations on June 17, 2008, with a Birr 87.0 million authorized capital. Oromia International Bank began operations on September 18, 2008, with a Birr 91 million authorized capital. Buna International Bank and Birhan International Bank have just begun operations in the country (NBE, 2009).

#### **2.4 Audit Practices in Relation to Computerized System**

The ongoing expansion of internal auditing services, along with limited resources, has sparked a renewed interest in discovering innovative approaches for internal auditors to meet their audit objectives more efficiently. Simultaneously, significant advances in electronic data processing have brought new capabilities. Internal auditors have increased their usage of computers in their audit job as a result of all of these issues. This is very useful when dealing with large amounts of data and processing.

Computers also facilitate the application of various statistical sampling techniques to a larger extent. As a result, we should look more closely at how internal auditors may use computers to achieve their audit objectives in all operational areas. The widespread use of computers by businesses of all sizes has prompted changes in the auditing process. To meet audit objectives, the auditor can no longer rely solely on manual audit techniques.

In a manual setting, the entire internal control environment may alter. When information is entered manually, the nature of the audit evidence changes. When information is solely readable by electronic means, the nature of the audit evidence changed. The adoption of computer aided

auditing procedures may result in the computer performing audit tests that were previously performed manually.

Furthermore, these tools may allow the auditor to perform audit processes that were previously impossible. As new systems are bought or built, he may assess whether data can be gathered and kept in a way that will make auditing easier in the future. The internal auditor may not only increase the quality of audits but also sharpen his capabilities to undertake specific reviews for management and so provide better service by maximizing the use of computer assisted audit procedures.

## **2.5 Reviews of Empirical Studies**

Arne (1969) argued that if auditors are to serve their clients and protect third parties, they must devote a significant amount of time to this task. In addition, Sampson and Owusu (2013) also argued that in order for auditors to thrive in an electronic data processing environment, they must not only be accounting experts, but also have in depth knowledge of computers and be capable of testing high level technologic controls themselves to reduce the risk of a misstated udit report.

According to Gaturu and Ngahu (2015), Computer audits employing CAATs and effective internal controls, are equivalent to discovering mistakes and financial misappropriations in a company's accounts. According to Yang, Lin, and Koo (2011), the amount to which computerized internal controls can be altered, has a significant impacts on the efficacy and efficiency of internal control as well as the performance of Taiwanese organizations.

Gopalan and San (2011) in a study of the impact of information technology on internal auditing, discovered that while proper use of technological tools in auditing is critical to completing an audit engagement, it is only the first step toward accepting the changes technology is causing in business and auditing as a profession. They said that as technology advances, the nature and technique of corporate controls would continue to change, necessitating changes in audit methods and processes.

Computerized accounting offers several more benefits than manual accounting even though the functions of manual accounting as well as manual auditing may never go away completely( Ohonba,2015)

According to a research performed by Wondwossen & Tsegai (2005) on the obstacles of E-banking adoption in commercial banks in Ethiopia, the following characteristics were identified as stumbling blocks to the usage of electronic payment systems in Ethiopia. These barriers include a lack of sufficient infrastructure for E-payments, client internet access, and learning how to connect with the bank's website.

Some other study conducted in Ethiopia on the Challenges and Opportunities of Electronic Banking in the Ethiopian Banking Industry by Kassahun (2016) found that the major challenges Ethiopian banking faces in the adoption and development of E-banking technology are the high cost of implementation, lack of customer awareness, limitations in network infrastructure and internet related services and support, low levels of computer literacy, and low rate of ICT infrastructure.

The study identified operational and service benefits from implementing and developing E-banking technology, such as increased productivity, reduced paper work, reduced transaction costs, generated foreign currency, increased reliability, and reduced errors as operational benefits, as well as facilitating product development, marketing and market access, improving customer service, reducing long lines in banking halls, increasing accessibility of bank services, and creating new jobs as service benefits.

Abebaw (2020) conducted a study on the influence of E-Banking on financial performance in Ethiopia, specifically for commercial banks, and found that Mobile Banking is statistically significant for capital, non-performing assets, and deposit performance.

POS banking, on the other hand, has statistically significant effects on profit, capital, and deposit performance. Profit, non-performing assets, and deposit performance are all statistically significant when it comes to card banking. Overall, the findings show that IT investment, namely E-Banking services, has an impact on a bank's primary financial performance. The impact of E-Banking products varies in size and direction on banks' financial performance measurements.

## **2.6 Challenges of Electronic data process auditing Adoption**

### **2.6.1 Planning**

Planning an audit comprises determining the overall approach to be used throughout the audit. It is critical that the auditor properly plans the audit since it has significant advantages. The auditor must evaluate the impact of information technology on audit operations, particularly the capacity to collect data and the anticipated usage of CAATs, when determining the overall audit strategy, according to ISA 300.

### **2.6.2 Risk Assessment**

The auditor must be familiar with its client's business environment in order to assess the possibility of misstatement of important items. The auditor must comprehend the firm's information system as well as the corresponding business processes linked to financial reporting and communication in order to understand the firm and its business environment. Infrastructure (physical and hardware components), software, people, processes, and data are all part of an entity's information system, according to IAS 315.

The financial reporting information system is made up of procedures that start, record, process, and report a firm's transactions, as well as assure that associated assets, liabilities, and equity are appropriately accounted for. The quality of information provided by the system determines management's capacity to make right decisions in the control and administration of a firm's activities, as well as the ability to compile credible financial reports.

### **2.6.3 Testing**

According to IAS 315, the auditor is responsible for planning and implementing solutions to the possibility of misstatement of material items. This is normally accomplished via the use of substantive and compliance tests. The auditor would be able to perform more detailed examination of electronically processed transactions if CAATs were used. According to ISA 330, the auditor must prepare and carry out new audit procedures, the timing, type, and scope of which must be determined by and in response to the risks of significant misstatement that have previously been identified.

### **2.6.4 Auditing Around the Computer**

The conventional audit approach is used while auditing around computers, in which the computerized equipment is entirely disregarded as if it doesn't exist. The auditors regard the computer as a black box and treat it as such (Millichamp, 1998). The auditors rely on the computer's physical inputs and outputs and do not evaluate the mechanism by which output is generated inside the computer.

### **2.6.5 Auditing Through the Computer**

In auditing through the computer, the computer itself is used to test controls as well as transactions. Assurance of the computer process is obtained by the auditor through a direct examination of the processing procedures that take place within the computer. This approach requires adequate computer knowledge and skills and is often facilitated by the use of CAATs.

### **2.6.6 Auditing With the Computer**

Computer auditing entails a firsthand examination of the computer's processes, software, and hardware. The usage of audit facilities such as Integrated Testing Facilities (ITF) and System Control and Review Files characterizes this method (SCARF). Dummy records are included into the client's application file by ITF. The outcome of processing data is uploaded to the fake records and printed out for the auditor's approval during the audit test. When SCARF is used, the client's accounting application is coupled with the computer audit software in such a manner that the program automatically and concurrently scrutinizes every data processing. It decreases the risk of losing the audit trail (Olowokere, 2003).

In summary, auditing in an electronic data processing environment would necessitate auditors planning their audit, assessing the risk of substantial misstatements, and testing the system using audit evidence to develop an independent judgment. The auditor would audit around the computer, through the computer, and with the computer to accomplish the audit.

## **2.7. Technological challenges**

Technological problems, according to Babatunde and Adebisi (2012), include technological characteristics including research and development activities, automation, technology incentives, and the velocity of technological change. They can establish entrance barriers, specify the minimal level of efficient production, and impact outsourcing decisions.

Furthermore, technological changes can have an impact on pricing, quality, and innovation. This study looks at how technical invention, advancement, availability of state-of-the-art technology,

the nature of technological developments, and the variety of technology impact manufacturing businesses' strategic decisions. A technical innovation can have an immediate and dramatic impact on a company's surroundings. To begin with, technical advancements can have a substantial impact on the demand for companies or industry's products or services (Barnat, 2005).

Because it transfers demand from one product to another, technological change, according to Barnat (2005), may demolish current enterprises and even whole sectors. Changes in technology may also have an impact on a company's operations, as well as its goods and services. He went on to say that the changes might have an impact on processes, procedures, raw materials, and service delivery. As a result, marketers should maintain track of technical advancements and inventions, as well as the nature of technological changes and the diversity of technology in their operational environment.

## **2.8. Strategic Challenges of Electronic data process in banking**

Karjaluoto (2012) revealed that banks have the option of providing financial services using a variety of electronic conveyance station innovations, such as Internet, video banking, E-banking, and ATM innovation. They also demonstrated that in the E-banking market, Internet innovation is the primary electronic dispersion diversion. E-banking is defined as internet-based banking that entails the provision of banking services such as account access, record exchange, and the provision of an online monetary administration. Turban (2013) also believes that in the 1990s, E banking was underutilized since businesses only used it to promote their products and services.

Rogers (2011) examined client introductions and the use of monetary allocation directives in the Australian financial services industry, discovering that most budgetary foundations have reexamined their procedures to take full advantage of IT after being confronted with aggressive weight following the introduction of deregulation in 1983.

Ayo (2009) explored the possibilities of internet business in light of ability, motivation and opportunities (AMO) model and observed that practically all organizations have online nearness. The paper reported the inspiration and open doors for internet based business as low in light of absence of e-Payment foundation and access to information and communication technology (ICT) facilities.

In addition, Buse and Tiwari (2009) found that the most prominent flexible clients are best administration, followed by salaried class, understudies, and others, in an exact examination of client acknowledgment of online business done in Germany. The most common reason for completing portable E-banking is universality, followed by ledger review, and promptness; and the most common fear of customers regarding portable E-banking is fragility, followed by expense, and discomfort.

Mahdi and Mehrdad (2010) used chi-square to determine the impact of E-banking in Iran, and their findings from the perspective of customers show that E-banking causes Iranians to have more focus. At the end of the day, Iran banks provide clients with benefits that they determine satisfactory with regard to the use of E-banking.

### **2.9. Organizational challenges of Electronic data process in banking**

Daghfous and Toufaily (2009) conducted a research on the achievement and fundamental calculations of Lebanese banks' E-banking choices. The investigation focused on the aspects that can lead to the adoption of E-banking and other variables that can work as a stumbling block to its adoption. It focused on the authoritative, auxiliary, and critical elements that can speed up or slow down the adoption of this electronic method.

The findings of their research show that authoritative challenges (bank size, utilitarian divisions, specialized staff, and specialized infrastructure, thought dangers, leaders' global experience, and advancement dominance) are challenges that have a significant impact on the acceptance of E-banking. Among the basic qualities, the outcome established that the bank's internal mechanical environment is an important factor in determining the appropriation of E-banking.

Humphrey (2008) conducted another expressive contextual investigation on Components Affecting the Acceptance of Internet Banking in Oman, with the goal of identifying the fundamental potential variables or hindrances that are currently restraining the fuse or selection of E-trade applications in the Omani Banking sector. Information for their study was acquired through semi-structured meetings and a study survey, as well as a search of select bank archives.

The findings of their research paint a pragmatic picture of E-Commerce applications' acceptance in Oman's central money-related portion sector. One of the most important findings is that security and information secrecy problems have been a significant impediment.

E-banking was cautious to use E-trade apps because they believed that electronic exchanges were more interested in programmers and viruses, which they couldn't regulate. According to their findings, the lack of top-level administration support is another restraining factor in the adoption of electronic commerce apps.

Mayer's (2008) study on key success factors (CSF) in E-banking, which was conducted in the United Kingdom, aims to resolve the fundamental difficulties that budgetary sector associations have while establishing organizations on the internet. The overview technique was used by experts who work in the UK's budgetary sector. Understanding the CSFs in E-banking is critical for senior management in banking-related organizations, according to the study, since it may assist them improve their critical planning process.

According to the findings of the study, two types of measurable assessments were conducted: expressive factual examinations and variable examinations. In unmistakable tests, the components (or challenges) were ranked according to their mean score, with the highest score being the most critical, and so on. Easy to use site, frameworks security, backing from top management, quick responsive customer service, expansion of electronic business within the organization, and unmatched accessibility of administrations and swift conveyance of services were the top six considerations.

The research of Kim (2010) on the appropriation of electronic banking: hidden purchaser conduct and basic achievement variables led in Estonia was expected to consider the further understanding of, how customers perceive electronic banking in the prime of intuitive diverts in Estonia, as Estonia is globally renowned for being a pioneer in the recognition of new advancements. In Estonia, a series of top-to-bottom discussions were led by driving industry experts. The respondent's decision was based mostly on their involvement in the development of Internet Banking frameworks since its inception.

The overview for this investigation focused on six separate aspects that influence Internet Banking choices (better pricing, recommendations, better administration, marketing efforts, and so on).

Better accessibility and security). The most important factors in deciding to use Internet Banking are greater access to the administration (accommodation), lower prices, and increased security.

Better management (i.e., a preference for self-interest over office administration) was also of greater importance than usual. Bank advertising campaigns and personalized approaches from friends and acquaintances were two factors that respondents did not deem important in their decision.

Howcroft (2012) used the theory of planned behavior (TPB) and the diffusion of innovations theory (DIT) developed by a previous research in Singapore to identify the attitudinal, social, and seen behavioral control figures that may affect the reception of Internet Banking.

The purpose of the study was to collect data from South Africa with the goal of testing ideas about the factors that impact Internet Banking adoption and comparing the results to those from other countries. The results of the study show that attitudinal factors may predict the want to obtain Internet Banking to a smaller extent than behavioral control components, and those behavioral control elements can predict the desire to receive Internet Banking to a lesser extent than attitudinal variables.

## **2.10 Effectiveness of Information system Audit**

Information system audit is an inherent aspect (subpart) of the internal audit process, the performance of internal audit is also measured in information system audit..

### **2.10.1 Professional Proficiency of information system Auditors**

The proper staffing of an internal audit department, as well as appropriate employee management, is critical to the efficient running of an internal audit. An audit requires a team of professionals with the requisite education, training, experience, and professional credentials to undertake the complete range of audits mandated by the mandate (A1-Twajry, 2003).

To be considered a human resource, auditors must meet the IIA (2008)'s minimal continuing education criteria and professional standards, as well as having a high level of education (Bou-Raad, 2000).

The more the professional qualities of internal auditors in a particular department, as measured by the duration of their professional training, experience, and educational level, the better the department's efficacy, according to (Ratlitt, 1996).

Professional competence may be attained in a variety of ways, including on-the-job training, formal internal and external training, staff rotation, encouragement to become certified auditors in areas such as (certification like CIA, CISA, CFE, and ACCA), and auditor experience sharing sessions.

The internal audit guideline further emphasizes that each internal auditor's professional skill, as well as his or her motivation and ongoing training, are prerequisites for internal audit effectiveness. This means that each internal auditor must keep up to date on the necessary knowledge and abilities.

### **2.11 Quality of Audit Work**

According to Glazer and Jaenike (1998), completing auditing work according to internal auditing standards improves auditing effectiveness substantially. In the United Kingdom, Ridley and Silva (1997) discovered that professional standards compliance is the most important contributor to internal audit's advantage.

One of the most important variables in determining audit effectiveness is internal audit quality, which is evidenced by the offices' ability to produce valuable findings and suggestions. The IIA (1996) performance criteria require the auditor to organize and do the job in such a way that he or she may arrive at valuable audit findings and present improvement suggestions. The capacity of the office to plan, conduct, and disseminate audit results is a proxy for audit quality. As a result, audit quality may or may not be a consequence of significant personnel experience.

They require auditors to carry out their role objectively and in compliance with accepted criteria for professional practice, such that internal audit activity will evaluate and contribute to the improvement of risk management, control and governance using a systematic and disciplined approach.

This is crucial not just to comply with legal obligations, but also because an auditor's responsibilities may include evaluating areas that demand a high degree of judgment, and audit findings may have a direct influence on management's decisions or course of action (Bou-road, 2000).

It may thus be claimed that a higher level of internal audit job quality, as measured by adherence to formal standards, as well as a high degree of audit planning and execution efficiency, will increase the audit's efficacy.

Internal auditors are also expected to follow the institutes of internal auditors' (IIA) standards for professional practices in internal auditing in order to undertake quality audit work, according to the internal audit guideline. It also adds that the quality assurance and improvement program should include all parts of internal auditing as well as ongoing monitoring of its usefulness.

### **2.11.1 Top Management Support**

Based on a thorough literature assessment, Fernandez and Rainey (2006) claimed that top management support and commitment to change are vital for organizational renewal, since senior managers can organize the critical mass required to carry out initiatives initiated by one or more visionary thinkers.

A number of empirical studies have discovered that top management's support for quality work is a critical component in its improvement (for example, Dale and Duncaff) (1985). Given this, it's no surprise that management approval and support for the internal audit function has long been regarded as a significant factor in the function's success Sawyer (1973).

Several recent studies have found that top management support for internal auditing is a key factor of its efficacy; Schwartz et al (2005). Of course, funding is an essential indicator of such support. Internal audit departments must have the proper skills and resources to hire the correct number of high-quality employees, keep up with training and development, and purchase and manage physical assets.

### **Relationship between internal Auditor and External Auditor**

A positive professional connection between internal and external auditors is critical. Internal and external auditors' coordination and collaboration have a significant impact on the quality of an audit report. Coordination and collaboration can take the shape of cooperative planning and the exchange of information, opinions, and reports in order to allow higher-quality audits and avoid duplication of effort.

Both of these audit parties should create a professional working relationship, communicate information, and coordinate audit efforts, according to the International Standards for the Professional Practice of Internal Auditing (ISPPIA).

The head of the internal audit department must provide necessary information to internal and external auditors who provide assurance and consulting services; the chief internal auditor must also coordinate their activities to ensure that all matters are adequately covered and that any potential rework is kept to a minimum.

The importance of coordination and involvement between internal examiners and external inspectors has long been seen as one of the benefits of internal audit for both the organization and its external partners. Joint planning and exchange of data, feelings, and reports, for example, are examples of how to encourage outstanding audits, including the avoidance of unnecessary changes. The linkages between inside and external auditors have been explored in effective recommendations. For example, the ISPPA's cooperation standard illustrates that collaboration between internal and external auditors should include data exchange and activity coordination.

The application of these standards necessitates effective communication between internal and external auditors. Which, in turn, aid internal auditors in attaining their objectives and providing better services? From the standpoint of external auditors, data gathered by internal auditors will likely aid in the creation of a better audit sentiment, and efficiency will likely improve in circumstances when outer auditors may rely on the work of internal auditors.

According to research, adequate involvement can improve audit efficiency and adequacy, allowing administration to provide higher-quality administrations. Trouble between internal and external auditors is frequently viewed as a factor that degrades the character of both types of audits. Brierley et al. (2001) and Almohaimeed (2000) showed how conflict between inner and outer auditors might affect the character of internal audit.

## **2.12 Key Challenges faced in EDP Audit**

EDP auditing frequently entails locating and capturing highly technical observations. To conduct successful EDP audits, such technical depth is essential. Simultaneously, it is required to translate audit results into significance for the company's entire financial performance and its implications, which operating managers and senior management can understand.

In many poor countries, budget restrictions are commonly cited as a major hindrance to the successful implementation of a comprehensive EDP audit. The quantity of EDP deployment is

limited for the same reasons, and hence subsequent verification of the integrity of the EDP systems through an audit is also limited (EDP Audit White Paper, 2004).

EDP auditors have significant challenges with infrastructure (cable, data center facilities) and hardware (server, desktop, laptop, storage). Auditors must be well-rounded in their abilities in order to test efficiency, comply with set standards, and meet regulatory obligations.

If the auditor is to offer a fair appraisal of the company's EDP infrastructure and systems, technical skills in network deployment, maintenance policies, operating systems and administrations, as well as understanding of systems applications and development, are required (EDP Audit White Paper, 2004).

Organization (structure, personnel) and EDP culture are two variables that could stymie EDP audit adoption in Ethiopia. People have a habit of assuming that if something has been operating well for a long time, there is no reason to modify it. However, technological innovation has resulted in an avalanche of new dangers to EDP-based systems, necessitating constant testing against the most recent standards and benchmarking EDP systems against global standards.

Due to a lack of proficiency in the use of EDP auditing tools among EDP auditors, these tools are only used in a restricted number of EDP audits. For optimal use, several of the packages, such as sequence query languages, require knowledgeable programmers. These abilities are uncommon among traditional auditors, creating a significant impediment to effective EDP auditing (Sarems and Debeeled, 2016).

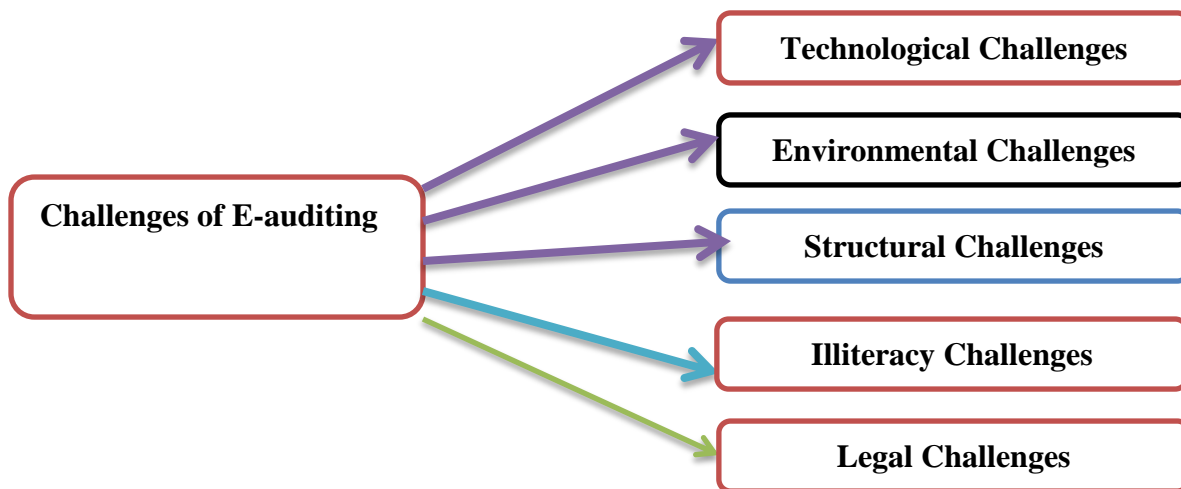
The strategic importance of EDP is not widely recognized. EDP has only been used for strategic goals by a few companies. EDP auditing as a process of evaluating how financial statements fit into the entire business plan does not arise in firms where EDP has no strategic function and circumstances where the requirement to preserve competitive advantage is not of fundamental importance (Sosthens, 2004).

EDP security is crucial, and performing an explicit EDP security audit should be a consideration. Information security includes several components, the majority of which are highly technical and necessitate specialist abilities not frequently found within many audit teams. In many impoverished countries, ICI audits face this clear issue.

### 2.13 Research Gaps

Understanding the key success factors (CSFs) in E-banking is crucial for banking companies in general, according to a review of empirical studies; because it could assist them enhance their strategic planning process. Organizational issues, data privacy, technology investment costs, and environmental concerns are the key difficulties and barriers to E-banking implementation.

Also, according to the literature, there are various factors that influence customers' adoption of E-banking, such as perceived advantages and other factors related to the services themselves & how to be accepted and used by customers, which vary from country to country, reflecting each country's economic and technological development. However, there are no more recent studies regarding the current status of EDP in terms of internal auditing commercial banks, specifically, head offices. Hence, in this study researcher find it relevant to fill the research gaps by investigating practices and challenges of Electronic data processing on internal auditing in commercial banks, selected head offices.



**Fig. 1. Conceptual framework of the study**

## CHAPTER THREE

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### 3. RESEARCH DESIGN AND METHODOLOGY

#### 3.1. Introduction

The research design and methodology are presented in this chapter, which served as a road map for the study's execution. The research approach, research design, population of the study, sources of data, sample size of the study, data collection process, data analysis, and research ethics issues were all briefly reviewed.

#### 3.2. Research Approach

The research was conducted utilizing a mixed methods approach, which combined quantitative and qualitative research approaches. The quantitative strategy was used to collect data from respondents using questionnaires, while the qualitative approach was utilized to collect data via interviews.

The qualitative technique is used to validate and triangulate the quantitative data in the study. This is because the study's main purpose was to represent real-world situations as they already exist. Furthermore, because of this architecture, it was feasible to forecast the future based on current conditions.

Qualitative research is focused with the study's qualitative phenomena. Interviews or focus groups are used in qualitative research to investigate attitudes, behavior, and experiences. It aims to elicit detailed responses from participants. Fewer people participate in the study since attitudes, behavior, and experiences are crucial, but the contact with these people tends to remain much longer.

In this study, the researcher used descriptive sequential mixed approaches. The sequential descriptive design with mixed techniques comprises of two separate phases: quantitative and qualitative (Creswell, 2003). The qualitative (text) data was collected and processed second in the sequence, and it was used to explain or expand on the quantitative findings from the first phase.

It is one in which the researcher conducts quantitative research first, analyzes the results, and then uses qualitative research to further explain the findings..

### **3.3. Research Design**

To identify the issues EDP Auditing at selected commercial banks, head offices, the study used a descriptive research design with a mixed research technique in which both quantitative and qualitative methods of research were used. Because the quantitative phase is followed by the qualitative phase, it is considered sequential descriptive. It's also appropriate for gathering important data that's been provided as a depiction of the true situation or characteristic in the research domains.

### **3.4. Source of Data**

The researcher employed both primary and secondary data in order to complete this study. Interviews and questionnaires were undertaken with experienced practitioners involved in the management or execution of EDP auditing at selected commercial banks to obtain primary data. As part of the study's purpose, secondary data was gathered from journals, books, manuals, and other relevant materials..

### **3.5. Target Population of the Study**

The unit of analysis of the study was auditors in selected commercial banks, Head offices. The target population of the study was from internal auditors, senior operation managers and internal audit directors.

#### **3.5.1 Sampling Techniques and Sample Size**

Sampling is a process used in statistical analysis in which a predetermined of observations are taken from a larger population & it helps to make statistical inferences about the population. The sample should be a representation of the entire population (Kenton, 2018).

In Ethiopia, more than 20 banking institutions, both commercial and public, are now operational. The researcher used a purposive sample technique to select four banks, which means the banks were chosen in such a way that the researcher could obtain sufficient data on e-banking. Commercial Bank of Ethiopia, Awash Bank, Dashen Bank, and Wegagen Bank are among these institutions.

As a result, the researcher used stratified sampling first, followed by basic random sampling. There is approximately 125 Audit staff working on the problems under review from four branches. In addition, the researcher used convenience sampling in the selection process and was

able to interview a total of 6 professionals in the field, including various e-banking product managers from these four private commercial banks and a senior manager of an e-banking system provider's business development department.

### 3.5.2 Sample Size Determination

**Table 1:** Sample Size of the Study

Commercial Banks	Target(N)	Sample Size(n) proportionate
Ethiopian Commercial Bank	33	25
Awash Bank Sh.C	31	24
Dashen Bank Sh.C	33	25
Wegagen Bank sh.c	28	21
Total	125	95

To get representative data, solving formula cited by Yemane (1967), considering the level of acceptable margins of error 5% is employed in the study. Regarding this Kothari (2004) suggests that an optimum sample is one which fulfills the requirements of representatives and reliability

$$n = \frac{N}{1 + N(0.05)^2} = \frac{111}{1 + 111(0.05)^2} = \frac{95}{1.9875}$$

Therefore, the sample size of the study was 95. For the qualitative study, purposive sampling technique used to select key informants: audit managers. The researcher selected the key interviewees for the study purposefully who were believed to be appropriate based on experiences of carrying out EDP audit activities.

### 3.5.3 Data Collection Methods and Instruments

In this study two basic data collection procedure were employed, quantitative study using self-administered structured questionnaire and qualitative study by using semi structured interview and document review which helped the researcher as vital additional sources for understanding the phenomenon. The application of different data collection methods can improve the robustness of the research results through the cross-validation of data to be gathered using

different methods. Moreover, triangulation of data from different sources increases the quality of data, and accordingly the accuracy of the findings (Remus & Wiener, 2009).

### **3.5.4 Interview**

Interview was prepared and conducted with Internal EDP audit managers about the EDP audit practice and EDP auditing challenges. The EDP auditing managers were selected because they have more experience on the issue and they are the one who are responsible for the EDP audit concerns.

### **3.5.5 Questionnaire**

The questionnaire is one of the primary tools for data collection and will be used for this study. In this study, a five-point Likert Scale questionnaire was used to obtain data from internal EDP audit managers and internal EDP auditors. Accordingly, the scales range from 1= strongly disagree to 5=strongly agree in order to allow the participants to respond in a degree of agreement.

Likert Scale is an ordinal psychometric measurement of attitudes, beliefs and opinions. They are the most universal method for survey collection and they are easily understood. The questionnaire development involved a three-step process:

The first section of the questionnaire consisted of questions about general information of respondents, the second section contained question about the quality of EDP audit in the selected branches of Head offices, and last section consisted of questions about the challenges of EDP auditing.

The questions were kept as concise as possible with care to be taken to the actual wording and phrasing of the questions. The reason for the appearance and layout of the questionnaire are of great importance in any survey where the questionnaire is to be completed by the respondent (Lemlem, 2017).

### **3.6. Data Collection Procedure**

The data collection technique may be a simultaneous procedure that combined quantitative and qualitative data to provide a thorough study of the research problem. Both types of data were collected at the same time in this design, and they will be combined in the interpretation of the overall results. The researcher physically distributed the paper-based self-administered questioner to 97 internal audit experts working in the selected commercial banks during the data collection period. The researcher keeps track of the respondents' progress by various means, such as phone calls and visits, in order to encourage them to complete the surveys in the allocated time and provide honest feedback.

### **3.7. Method of Data Analysis**

After gathering all of the data from the respondents, the data was analyzed in this study. As a result, the study's analysis followed the research's goal. SPSS version 20 was used to analyze the survey data that was collected.

The descriptive data were first presented in tabular form utilizing frequency distribution and percentages. The data to be acquired via semi structured interview was then thoroughly discussed in order to better understand the challenges of EDP auditing, and was analyzed utilizing open coding in narrative style. The qualitative and quantitative data were presented jointly.

### **3.8. Reliability and validity of the study**

The consistency with which a method measures something is referred to as reliability. The measurement is considered reliable if the same result can be regularly achieved using the same procedures under the same conditions. The accuracy with which a method measures what it is supposed to measure is referred to as validity. When research has a high level of validity, it signifies that the findings correlate to real traits, characteristics, and fluctuations in the physical or social reality (Eden, 2017).

Therefore, reliability was tested using Cronbach's alpha values for the items in each construct. Accordingly, reliabilities less than 0.60 was considered to be poor, those in the 0.70 range, acceptable, and those over 0.80 was determined to be good.

Furthermore, validity is concerned with the significance of the research component. As a result, the research's validity was ensured by creating relevant questions and data collection techniques.

### **3.9. Ethics of the study**

To ensure integrity and quality, research should be planned, reviewed, and carried out. The fundamental ethical issue in doing research is informed consent. Furthermore, the confidentiality of study subjects' information and the identity of respondents must be preserved. Participants in this study were asked to participate voluntarily and without any compulsion. The researcher lawfully and smoothly communicated all individual participants after acquiring an official letter of cooperation from Addis Ababa University. The study's goal was made explicit and understandable to all participants. Any communication with all interested bodies was done with their permission and without jeopardizing or jeopardizing their personal or institutional well-being.

## CHAPTER FOUR

### 4. DATA PRESENTATION, ANALYSIS AND INTERPRETATIONS

#### 4.1 . Introduction

This section dealt with data presentation, analysis and discussion. The quantitative data were summarize and organized using SPSS software. This chapter presented data from questionnaire; structured interview and related journals regarding practices and challenges of electronic data process auditing in commercial banks of Ethiopia, in selected head offices, in Ethiopia.

#### 4.2 . Reliability Result of the Study

Table 2: Reliability Results

Research Questions	No. of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized
RQ1	6	0.643	0.644
RQ2	2.1	5	0.745
	2.2	6	0.756
	2.3	4	0.624
		0.708	0.706
RQ3	11	0.769	0.807
Average		0.707	0.719

Source: SPSS results, 2022G.C

Reliability was tested using Cronbach's alpha values for the items in each construct. Accordingly, reliabilities less than 0.60 was considered to be poor, those in the 0.70 range, acceptable, and those over 0.80 was determined to be good. Accordingly, the Cronbach's alpha for the study was 0.0.707 which laid within the  $0.6 \leq \alpha \leq 0.9$  category indicating that the survey instrument is good in terms of internal consistency. Validity is concerned with meaningfulness of research component. Therefore, the validity of the research was assured through designing appropriate questions as per objectives of the study.

### 4.3. Response Rate

In order to make the collected data suitable for the analysis, all questionnaires were screened to be complete. Out of 95 distributed questionnaires, 87(91.57%) response rates have been obtained. There are 8 unreturned and incomplete questionnaires which considered as errors and removed from the survey data.

On the other hand, the researcher involved interview for the bank managers and other high audit experts. Thus, from the sample of 15 participants, 12 (80%) of them participated in the interview. Therefore, all presentations and analysis presented below were summarized data from employees and interviewed from managers and other experts. The first section was on demographic characteristics of the respondents. Whereas, the second section presents and describes about the data practices and challenges of electronic data process auditing in selected commercial banks of Ethiopia in selected Head Offices, Ethiopia.

### 4.4. Demographic Characteristics of Respondents

The first analysis of data involves profiling the background characteristics of the respondents drawn from in commercial banks of Ethiopia in selected Head Offices, Ethiopia.

In this section, based on the response obtained from the respondents, demographic characteristics of the study group were examined in terms of sex, age, educational background and level and service years.

#### 4.4.1 Sex and age of Respondents

**Table 2:- Summarized Frequency and Percentage sex and age of Respondents**

SEX OF RESPONDENTS				
Sex	Frequency	Percent	Valid Percent	Cumulative Percent
Male	30	34.5	34.5	34.5
Female	57	65.5	65.5	100.0
Total	87	100.0	100.0	
AGE OF RESPONDENTS				
18-30	9	10.3	10.3	10.3

31-45	48	55.2	55.2	65.5
46-60	30	34.5	34.5	100.0
Total	87	100.0	100.0	

**Source:** Own Field Survey, 2022

As far as sex of respondents was concerned, about 30 (34.5%) were males whereas the rest 57(65.5%) were females in gender. This indicated that there was female dominant in the selected head offices. Regarding age of respondents 48(55.2%) was in between 31-45 years old. While the rest 30(34.5%) were in between 46-60 years old. About 9(10.3 %) were on between 18-30 years old.

The majority of personnel in chosen commercial bank head offices were youthful, enthusiastic, and mature enough to properly fill out the questionnaires distributed, based on the data presented above. Furthermore, it is simple to obtain crucial and sufficient opinions regarding their thoughts and attitudes toward the subjects under investigation.

#### 4.4.2 Educational Level and Work Experiences of Respondents

**Table 3:-**Summarized Frequency and Percentage educational level and experiences of Respondents

Educational Level Of Respondents				
ITEMS	Frequency	Percent	Valid Percent	Cumulative Percent
Diploma	11	12.6	12.6	12.6
First Degree	69	79.3	79.3	92.0
Master And Above Degree	7	8.0	8.0	100.0
Total	87	100.0	100.0	
WORK EXPEREINCES				
1-3 Years	8	9.2	9.2	9.2
4-7 Years	61	70.1	70.1	79.3
8-12 Years	16	18.4	18.4	97.7
13 And Above Years	2	2.3	2.3	100.0
Total	87	100.0	100.0	

**Source:** Own Field Survey, 2022

Regarding educational level of respondents, 69(73.3%) of them were degree holders while the rest were 11(12.6%) and 7(8.0%) were diploma and masters holders respectively.

Regarding service years of respondents, majority 61(70.1%) were employees of having service in between 4-7 years in e-banking, while the remaining 16(18.4%) of the have work experience in between 8-12 years. The rest 8(9.2%) were in between 1-3 years, 2(2.3%) were in in between 13 and above in descending order. This depicted that majority of the respondents were matured and experienced enough to fill the questionnaires in critical way.

#### 4.5 Descriptive Statistics of the Study

##### 4.5.1 Current Management and Staff Support Of EDP in Auditing

As depicted in table 4 seven questions were raised to respondents in order to assess the existence of management and staff support to internal auditors in selected commercial banks.

**Table 4:** Current Existed Management and Staff Support To Internal Auditors in Commercial Banks, Head Offices

S.No	Descriptive Statistics	Scale	
		Mean	Std. DeV.
<b>ITEMS</b>			
1.	Internal audit obtains a sufficient budget to successfully carry out its duties	2.11	1.06
2.	Management has full commitment to add value to internal audit	2.21	.99
3.	Internal auditors receive full cooperation from the auditee (branches being audited)	2.35	1.18
4.	Management & other organ of the bank give adequate support & appreciation for the role of internal audit function.	2.36	1.22
5.	The management of the head offices gives timely corrective action for the recommendation of Auditors	2.60	1.18
6.	There exist internal audit committee that ensure, If appropriate action is taken by the management for the audit findings	4.45	1.28
7.	There exists adequate resources provided for internal audit purpose	4.64	1.27

**NOTICES:** - (1.00-1.49) = highly agree; (1.50-2.49) = agree; (2.50-3.49) = undecided; (3.50 - 4.49) disagree; (4.50-5.00) = highly disagree

**Source:** Own Field Survey, 2022

As depicted in table 4, seven questions were raised to respondents in order to assess the existence of Management and staff support to internal auditors in application EDP in commercial banks, Head offices

With regards to sufficiency of budget allocated to internal audit department, majority of the respondents disagreed with mean of 2.11(SD=1.06). Due to this the majority of respondents still conclude the existence of budget allocation problem coinciding with the finding of (Wonwoseen and Tsega, 2019).

The second question is to determine whether management is committed to increasing the value of the internal audit department. As indicated in table 4, the research group, which consists of an average of 2.21(SD=0.99) internal auditors, believes that there is a difficulty on the management side when it comes to promoting and encouraging the internal audit department.

Furthermore, the degree to which internal auditors receive full cooperation from auditees (audited branches) and the degree to which management and other bank organs provide adequate support and appreciation for the role of internal audit function were both rated low, with mean scores of 2.35 (SD=1.18) and 2.36 (SD=1.22), respectively. It's easy to deduce from this that the majority of respondents disagree with management's support and appreciation of internal electronic auditing.

This means that the majority of respondents believe that commercial bank management isn't committed to adding value to the internal audit department, that branches aren't fully cooperating, and that internal auditors aren't given appropriate assistance and recognition. This finding confirms that inadequacy of support from the firm's management and other organs is a significant barrier to electronic audit practice failure, contradicting the firm's proposal (Kassahun, 2016).

In response to the question of whether management of the head offices takes timely corrective action in response to auditors' recommendations, the majority of respondents did not agree or disagree, indicating that the concept of management's timely handover corrective actions on operations where internal auditors identified disparities remains unanswered, whereas they agreed with the items that there is an internal audit committee that ensures, if appropriate,

This implies that majority of the study group consider that there exists assistance provided by the auditee implying that this hadn't been the obstacle for electronic auditing department to function properly and attain its predetermined objectives.

Furthermore the interview conducted with executives of internal audit department from four head offices, the frequently raise issues revealed that;

Employees didn't get enough training and support in performing electronic auditing system in work place. The respondents blame the commercial banks in that they need on job training rather than formal ones. However, they government did not give much attention for such training type (\*interview\* @ 2022 G.C).

#### **4.5.2 Challenges Facing Electronic Auditing**

At this level of globalization and the internet, the auditor finds himself in some difficult positions in order to keep up with the growing technological development processes that have been emphasized.

Although there are multiple benefits to using E-banking, there are numerous roadblocks to the system's implementation. Many banks in Ethiopia's banking business still use traditional banking systems and do not take advantage of electronic banking services to their full potential. In the following categories, the researcher attempted to examine the organizational, infrastructure, illiteracy, and legal aspects that can influence E-banking adoption. The following aspects are examined in greater depth in the paper. The IT users' public, organizational structure, firm's process, company size, technological expertise of the organization's members, technological and financial resources available, process of selecting and implementing IT, and management backing and support for the project are the most cited organizational factors, according to Harrison (2012).

### 4.5.3 Organizational Management Challenges

In this study items related to Organizational Management Challenges are taken as organizational factor and the survey result is shown on table 5 as follows.

**Table 5:** Organizational challenges of E- banking

Descriptive Statistics			
ITEMS		Mean	SD
1.	the management does not encourage the external auditor to continuously assess and reassess the internal audit functions	3.42	.64
2.	High cost of implementation of E-banking	4.18	.56
3.	Lack of expertise training on EDP	4.27	.58
4.	Resistance to changes in technology among by Board, top Management and staff	4.33	.67
5.	Lack of customer awareness with E-banking products	4.55	.72
6.	Lack of technical and managerial skills in implementation and development of E-banking technology	4.56	.52

**NOTICES:** - (1.00-1.49) = highly agree; (1.50-2.49) = agree; (2.50-3.49) = undecided; (3.50 - 4.49) disagree; (4.50-5.00) = highly disagree

**Source:** Own Field Survey, 2022

In the four commercial banks' head offices, the mean score and standard deviation were found to be 4.56 and 0.52 respectively, indicating that a lack of technical and managerial skills in the implementation and development of E-banking technology is the major organizational challenge for implementation and growth of E-banking technology. This is consistent with Gardachew's (2010) finding that the high cost of ICT equipment, network, software, and reorganization is a barrier to E-banking adoption. The respondent also agreed that a lack of societal knowledge about bank-provided E-auditing services is an issue that is preventing the successful adoption and growth of E-auditing technology, with an average Likert scale score of 4.55.

In a similar vein, Communities are not aware of the benefits of e- banking technology to the individual as well as to the society as whole. As a result, they are not provoked enough to use E-banking products or services (\*interview\* @ 2022 G.C).

The findings are consistent with those of Gardachew (2010), who concluded that customers' lack of familiarity with E-banking technology products and services is the primary barrier impeding the acceptance and growth of E-banking technology.

With a mean score of 4.33, the results also highlighted that resistance to technological changes among the Board, top management, and employees is a factor that has a negative impact on the acceptance and growth of E-auditing technology in commercial banks.

**Besides, an interview conducted with one of the banks E-banking manager confirmed that;**

*E-auditing and E-payment system requires high level of understanding and knowledge on ICT, E-banking on one hand and limited knowledge of about E-banking and how they operate by the banks managers on the other hand create a great obstacle for implementation and growth of E-auditing technology (\*interview\* @ 2022 G.C).*

The finding is in line with EDP Audit White Paper (2015) where lack of skilled human in E-banking context is considered as hurdles that prevent pervasive e-commerce adoption in developing countries.

In addition, lack of expertise training on EDP and High cost of implementation of E-banking were also relatively considered and rated as that challenge electronic data process in auditing function I case of selected commercial banks, head offices.

In general, the findings revealed that organizational management challenges include a lack of technical and managerial skills in the implementation and development of E-banking technology, customers' unfamiliarity with E-banking products and benefits, a lack of technical and managerial skills in the implementation and development of E-banking technology and resistance to changes in technology, a lack of expertise training on EDP, and a high cost of implementing E-banking.

#### 4.6 Environmental factors

**Table 6:** Infrastructure Challenges E-AUDITING

DESCRIPTIVE STATISTICS			
ITEMS		MEAN	STD. DEV.
1.	Broken and slow internet connection	3.34	.96
2.	Lack of demand from the customer's side	3.44	1.22
3.	Low level of internet penetration	3.70	.82
4.	Limitation in ICT infrastructure	3.98	.76
5.	Poorly developed telecommunication infrastructure	4.28	1.10

**Notices:** - (1.00-1.49) = highly agree; (1.50-2.49) = agree; (2.50-3.49) = undecided; (3.50 - 4.49) disagree; (4.50-5.00) = highly disagree

**Source:** Field Survey, 2022

In the above table 6, the mean values of each of the items of indicating infrastructural challenges were calculated between 3.34 and 4.28 with almost comparable standard deviations that range between 0.99 and 1.10. The highest mean values and highest challenges is scored in the case that there is poorly developed telecommunication infrastructure (M=4.28, SD=1.10) and limitation in ICT infrastructure (M=3.98, SD=0.76) as well as low level of internet penetration (M=3.70, SD=0.82).

Regarding this issue one of the key informants confirmed that;

*The only telecom service provider in the country (Ethio telecom) provides an inadequate Internet connection for the delivery of e-auditing services. As a result, one of the most significant obstacles to the adoption and implementation of the e-auditing process in selected commercial banks (\*Interview\* @ 2022 G.C).*

The study of Wondwossen and Tsegai (2015) stated that lack of sufficient telecommunication infrastructure is one of the basic challenges in the development of E-payment in Ethiopia which is in line with the findings of this study.

Regarding lack of demand from the customer's side and Broken and slow internet connection with mean values of (M=3.44, SD=1.22) and (M=3.34, SD=0.96) respectively. This reveals that

the mean values and standard deviation lied in undecided interval indicating that the respondents remain unresponsive regarding the raised items.

However, one of the key informants stated that;

*Banks' attempts to embrace e-auditing services have also been hampered by network failure. E-auditing service delivery is hampered by frequent power outages. As a result, the complete introduction of e-auditing services is discouraged (\*interview\* @ 2022 G.C).*

#### 4.6.1 Illiteracy Challenges

**Table 6: Illiteracy Challenges**

Descriptive Statistics			
Items		Mean	Std. Dev.
1.	Lack of demand from the customer's side	2.09	.86
2.	Customer low levels of computer literacy.	2.26	.76
3.	High cost implementation	2.28	1.02
4.	Lack of educated and efficient staff in EDP in auditing works	3.63	1.09
5.	Lack of customer awareness with EDP Auditing	3.65	1.08

**Notices:** - (1.00-1.49) = highly agree; (1.50-2.49) = agree; (2.50-3.49) = undecided; (3.50 - 4.49) disagree; (4.50-5.00) = highly disagree

**Source:** Field Survey, 2021

In the above table 7, the mean values of each of the items of indicating illiteracy challenges were calculated between 2.09 and 3.65 with almost comparable standard deviations that range between 0.86 and 1.08. The highest mean values and highest challenges is scored in the case that there is lack of customer awareness with EDP Auditing (M=3.65, SD=1.08) followed by lack of educated and efficient staff in EDP in auditing works (M=3.63, SD=1.09), customer low levels of computer literacy (M=2.26, SD=0.76) and lack of demand from the customer's side (M=2.09, SD=0.865) as main challenges facing performing electronic auditing in selected commercial banks.

The findings corroborated Kassahun's (2016) conclusions, which said that the key hurdles facing Ethiopia's banking industry in the adoption and growth of E-banking technology are a lack of client awareness and a lack of computer literacy among employees. Abebe (2019) also corroborated the results of manpower issues, such as internal auditors' and even most accounting staff's inability to use the EDP. This means that the system's management manpower is insufficient and untrained.

#### 4.6.2 Legal Issues

**Table 7: Legal Issues**

Descriptive Statistics			
Items		Mean	Std. D.
1.	Lack of sufficient government support affects customers' willingness	3.05	1.24
2.	Cross-country legal and regulatory differences.	3.29	1.42
3.	Lack of suitable legal and regulatory framework for EDP Auditing	3.60	1.33
4.	Lack of law mandating the bank to adopt E-banking technology.	3.76	1.18

**Notices:** - (1.00-1.49) = highly agree; (1.50-2.49) = agree; (2.50-3.49) = undecided; (3.50 - 4.49) disagree; (4.50-5.00) = highly disagree

**Source:** Field Survey, 2022

In the above table, the mean values of each of the items of indicating legal issues as challenges were calculated between 3.05 and 3.76 with almost comparable standard deviations that range between 1.24 and 1.18. The highest mean values and highest challenges is scored in the case that there is lack of law mandating the bank to adopt E-banking technology (M=3.76, SD=1.84), Lack of suitable legal and regulatory framework for EDP Auditing selected branches (M=3.60 SD=1.33).

Regarding this the key informants stated that;

*Employees are not provided with proper electronic banking training.  
Because e-banking technology is so dynamic, it's critical that personnel*

*are well-versed in the products. This enables banks to provide customers with quick, up-to-date, and secure services. Furthermore, most banks' e-banking training is limited to the ICT professionals of each bank, according to the report. (\*interview\* in the year 2022 G.C.)*

Whereas, regarding lack of sufficient government support affects customers' willingness (M=3.05, SD=0.46) and Cross-country legal and regulatory differences (M=3.29, SD=1.42) the respondents remain unresponsive to the issues.

In addition, to the above challenges, the executive managers added that;

*Regarding the social, Economic and legal barriers to the adoption of E-audit and some of the points raised like 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 professionals (\*interview\* @ 2022 G.C).*

#### **4.6.3 Attitudes Audit Employees towards EDP**

**Table 8: Attitudes Audit Employees towards EDP**

<b>Descriptive Statistics</b>			
<b>Items</b>		<b>Mean</b>	<b>Std</b>
1.	Electronic facilitates quick response	2.05	.97
2.	Electronic Auditing increases operational efficiency	2.06	.79
3.	Electronic improves service quality	2.97	1.23
4.	Increases the productivity of the bank	3.55	.75
5.	Electronic Auditing provides up to date information	3.57	.87

6.	Controls fraud	3.69	1.15
7.	Electronic Auditing minimizes the cost of transaction	3.74	1.12
8.	Electronic Auditing saves time of customers	4.14	.98
9.	Electronic Auditing service increase customer satisfaction	4.34	.66

Notices: - (1.00-1.49) = highly agree; (1.50-2.49) = agree; (2.50-3.49) = undecided; (3.50 - 4.49) disagree; (4.50-5.00) = highly disagree

The goal of introducing electronic banking into the banking sector is to give clients more options while also increasing the bank's profitability. In keeping with this, respondents were asked about their attitudes regarding electronic auditing in their various commercial banks and corporate headquarters.

Employee perceptions of the role of electronic in auditing functions and boosting operational efficiency of auditing services were found to be poor in the study, with mean values of 2.05 (SD=0.97) and 2.06 (SD=0.79), respectively. The findings support Worku's (2016) claim that unless electronic auditing technology improves customer satisfaction over traditional brick and mortar branches, customers may consider electronic auditing technology as just another branch rather than a new delivery channel.

Electronic improves service quality (M=2.97, SD=1.23) was rated in between interval of 2.50 and 3.49 indicating the respondents remain unresponsive.

However, majority of the respondents agreed that electronic auditing process increases the productivity of the bank and provides up to date information for internal auditors with mean values of 3.55 (SD=0.75) and 3.57 (SD=0.87) respectively. Furthermore the respondents agreed with that electronic auditing services control frauds, minimizes the cost of transaction, saves time of customers and increases customers satisfaction with mean values of 3.69 (SD=1.15), 3.74 (SD=1.23), 4.14 (SD=0.98), 4.34 (SD=0.66) in ascending order.

**One of the key informants stated that;**

*The potential operational efficiency benefits of E-auditing technology as perceived by the internal auditors adoption and development of E-banking technology in Ethiopia banking industry will increase productivity of the Bank, reduce paper work and transaction cost.*

## CHAPTER FIVE

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### 5. SUMMARY OF MAJOR FINDINGS, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

The main purpose of this study was to investigate Practices and challenges of Electronic Data Process on Auditing in Case of Selected Commercial Banks, Head Offices” as representative of the rest. The descriptive survey method was employed as a method of the study. The sources of data were internal audit employees and other concerned bodies equipped with issues under study.

To seek answers to the research questions, the data were gathered through questionnaires and interviews supporting with related annual reports and documents. The questionnaires were filled out and returned by 87 employees. Interview session was conducted with, totally 15 respondents who have enough experienced and ample knowledge regarding the issues. The data obtained through the above instruments were analyzed quantitatively using frequency and percentages, mean and standard deviation using SPSS and sequentially supplemented by qualitative data. Finally, based on the analysis of the data, the following major findings, conclusions and recommendations were obtained from the study as three research questions.

#### 5.2 Summary of Major Findings

- ✚ Regarding existence of Management and staff support to internal auditors in application EDP in commercial banks, Head offices, and majority of respondents still conclude the existence of budget allocation problem, the existence of the problem from management side in promoting and encouraging the internal audit department, the less practices and encouragement of internal auditors receive full cooperation from the auditee. Here one can easily infer that majority of the responses goes to the disagree side than agreeing with management support and appreciation of internal electronic auditing.
- ✚ Regarding challenges facing EDP in internal auditing, lack of technical and managerial skills in implementation and development of E-banking technology is the major organizational challenge for implementation and growth of E-banking technology in the four commercial banks, head offices in which the mean score and standard deviation were found 4.56 and 0.52

respectively. The respondent also agreed that lack of social awareness regarding E-auditing services provided by banks is considered as a factor that negatively affecting the successful adoption and growth of E-auditing technology. The result further revealed that Resistance to changes in technology among by Board, top Management and staff is considered as factor that has a negative influence on the adoption and growth of E-auditing technology in commercial banks.

- Moreover lack of skilled human in E-banking, lack of expertise training on EDP and High cost of implementation of E-banking were also relatively considered and rated as that challenge electronic data process in auditing function I case of selected commercial banks, head offices.
  - the result also revealed that lack of technical and managerial skills in implementation and development of E-banking technology, customers unfamiliarity with the E-banking products and their benefits, lack of expertise training on EDP and High cost of implementation of E-banking are considered as organizational management challenges that hinders Ethiopia commercial banks to adopt and develop Electronic auditing technology
  - Furthermore, with respect to infrastructural challenges, poorly developed telecommunication infrastructure, limitation in ICT infrastructure as well as low level of internet penetration were main challenges obstacle for EDP in Auditing function.
  - Legal issues were also other challenges of EDP application in auditing functions. the includes lack of law mandating the bank to adopt E-banking technology and Lack of suitable legal and regulatory framework for EDP Auditing selected commercial banks. The introduction of electronic banking in to the banking sector is to bring extra opportunities to the customers there by to enhance the banks 'profitability. In line to this the respondents were asked their perceptions towards electronic auditing process in their respective commercial banks, head offices.
- ✚ With respect to internal auditor's employees towards EDP in auditing functions, the study depicted that there are low perceptions of employees towards facilitating role of electronic in auditing functions and increasing operational efficiency of the auditing services. However, majority of the respondents agreed that electronic auditing process increases the productivity of the bank and provides up to date information for internal

auditors, electronic auditing services control frauds, minimizes the cost of transaction, saves time of customers and increases customer's satisfaction.

### **5.3. Conclusion**

The findings of the study revealed that the current practices and challenges of EDP in internal auditing in selected commercial banks, head offices in Ethiopia. Thus, the study revealed the existence of budget allocation problem in EDP application in internal audit functions, and management did not promote and encourage internal audit department employees. In addition, internal auditors did not receive full cooperation and experiences from the other auditee. Regarding challenges facing EDP in internal auditing, lack of technical and managerial skills in implementation and development of E-banking technology, lack of social awareness regarding E-auditing services provided, resistance to changes in technology among by Board, top Management and staff, lack of skilled human in E-banking, lack of expertise training on EDP and High cost of implementation of E-banking, customers unfamiliarity with the E-banking products and their benefits, poorly developed telecommunication infrastructure, limitation in ICT infrastructure as well as low level of internet penetration were main challenges obstacle for EDP in Auditing function, lack of law mandating the bank to adopt E-banking technology and Lack of suitable legal and regulatory framework for EDP Auditing were considered as factor that has a negative influence on the adoption and growth of E-auditing technology in commercial banks. Lastly, majority of the respondents agreed that electronic auditing process increases the productivity of the bank and provides up to date information for internal auditors, electronic auditing services control frauds, minimizes the cost of transaction, saves time of customers and increases customer's satisfaction. However, the study depicted that there are low perceptions of employees towards facilitating role of electronic in auditing functions and increasing operational efficiency of the auditing services.

## **5.4. Recommendations**

From the data analysis and findings, the researcher arrived at the following recommendations

- The commercial banks top-level management needs to give more emphases towards the EDP system in audit process. In order to achieve their job work in effective and efficient manner they support them, give attention, consistently reply the request as soon as possible through training need assessment.
- Banks needs solve infrastructure that challenges EDP in internal auditing
- Government need to subsidize the high cost for ICT equipment that challenges banks in introducing E-banking.
- The bank should have an appropriate program for training, developing system audit staff , giving an opportunity for continuing education and certification in CISA so as to system audit staff produce effective audit work.
- It should create deep awareness to employees concerning the role of EDP in internal auditing they offer and the benefits associated with using Electronic services through advertising their services on the internet, mass media as well as through organizing public exhibition and talk shows.
- Government should support banking sector by facilitating development of sufficient ICT infrastructure for the successful implementation and development of E-banking services.

## **5.5. Limitation and Suggestion for Further Study**

The existing practices and problems of EDP in the auditing system in selected commercial banks were described in this study. Nonetheless, the study did not take into account the viewpoints of customers and other stakeholders. As a result, the researcher recommends that more research need to be conducted in this area, particularly to capture the opinions of customers and other above-mentioned stakeholders.

## REFERENCES

- Abebaw (2019). Opportunities and challenges in the adoption of e- banking services. International Journal of Bank Marketing.
- Arne, M. R. (1969). An Auditor's Identification and Evaluation of Internal Controls with EDP Systems. (Master's Thesis) Submitted to the Graduate Faculty of Texas Tech University
- Auditing Guidelines (2003). Yearly Report, London.
- Ayo, W, (2009). Electronic -banking in Ethiopia: practices, opportunities and Challenges", Journal of internet Banking and commerce.
- Babatunde, B.O. and Adebisi, A.O (2012). Strategic Environmental Scanning and Organizational Performance in a Competitive Business Environment, in Economic Insight -Trend and Challenges.
- Barnat, R. (2005). Strategic Management, New Jersey: Prentice Hall. Basel J. A. Ali-Ph.D. Role, Challenges and Benefits of Electronic Banking service in Jordan.
- Booz-Allen and Hamilton (1997). Corporate internet banking: A global study of potential Effects', New York, NY
- Burr, W. (1996). Wie Information stechnik die Bank organization. verändernkönnte,||Bankund Markt.
- Buse, P. (2009). Changes in th E-banking sector: the case of Internet banking in the UK. Internet Research.
- Creswell, W.J. (2003). Research Design: Qualitative, Quantitative and Mixed approaches||, 2nd ed., New Delhi: Sage.
- Daghfous, M (2009). Adoption of Internet banking by Australian consumers: An empirical Investigation and trends in South African Internet banking; Aslib Proceedings, New Information Perspectives.

Daniel, E. (1999). Provision of electronic banking in the UK and Republic of Ireland. *International Journal of Bank Marketing* Dr. Richard Pankhurst, Early Ethiopian Banking History.

Dashen bank (2011). Annual Report, available at: <http://www.dashenbank.com>

Dashen Bank S.C. (2014/2015). Annual Report, Addis Ababa

EDP Audit White Paper (2004). Evolution of Auditing: From the Traditional Approach to the Future Audit1

Environment – A Risk To Audit Professionals And A Challenge To Accountancy Training Providers. *Research Journal of Finance and Accounting*.

Gardachew (2010). Electronic -banking in Ethiopia: practices, opportunities and Challenges“, *Journal of internet Banking and commerce*.

Gardachew (2012). Banking in Ethiopia-Practices, opportunities and challenges, *Journal of internet banking and commerce*.

Gaturu, I. N. & Ngahu, S. (2015). Effect Of Computerized Audit System on Financial

Gaturu, I. N. & Ngahu, S. (2015). Effect Of Computerized Audit System On Financial

Hock B, Burch C (2011). *The Internal Audit Activity’s Role In Governance, Risk and Control”*, Third Edition CIA Preparatory Program, Hock international, LLC.

How croft, D. (2012). Who offers Internet Banking? *Quarterly Journal*, Office of the Comptroller of the Currency, Vol. 19 No. 2.

Humphrey, K. (2008). *Internet Banking: Developments and Prospects*l, Working Paper, Center for Information Policy Research, Harvard University, April. 39

Jassimuddin, S. (2010). Towards modeling the effects of national culture on IT implementation and acceptance. *Journal of Information Technology*

Jassimuddin, S. (2010). Towards modeling the effects of national culture on IT 55 implementation and acceptance. *Journal of Information Technology*.

Jayawardhena, F. (2010). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*.

Karjaluoto, D. (2012). Internet Banking: Developments and Prospects, Economic and Policy Analysis Working Paper No. 2000-9, Office of Comptroller of the Currency, September.

Karjaluoto, D. (2012). Internet banking: Developments and Prospects, Economic and Policy Analysis Working Paper No. 2000-9, Office of Comptroller of the Currency, September.

Karjaluoto, H, Mattila, M and Pentto, T (2002). Factors underlying attitude Formation Towards online banking in Finland", *International Journal of Bank Marketing*.

Kasai (2015). Analyzing the impact of consumer innovativeness and perceived risk in internet banking adoption: A study of Indian consumers

Kassahun Girma (2016). Challenges and Opportunities of Electronic Banking in Ethiopian Banking Industry. Addis Ababa, Ethiopia.

Kim, J. & Prabhakar, N. (2010). Internet Banking in the US, Japan and Europe, *Multinational Business Rev* 7381.

Kothari, C.R (2004). *Research Methodology, Methods and Techniques Revised 2nd Ed*, New Age International Press. Ltd Publishers, New Delhi, India

Mahdi Salah (2004). E-banking in Emerging Economy: Empirical Evidence of Iran (Corresponding author) Accounting and Management Department, Zanzan University, Iran.

Mahdi. R. (2010). A meta-analysis of the technology acceptance model. *Information and Management*.

Management At Water Resources Management Authority In Nairobi County. *International Journal of Economics, Commerce and Management*.

Mayer, C. (2008). Do Internet Activities Add Value? The Italian Bank Experience, Working Paper, Berkley Research Center, New York University.

Mayer, C. (2008). Do Internet Activities Add Value? The Italian Bank Experience, Working Paper, Berkley Research Center, New York University.

Megersa, N. (2010). The Role and Performance of International Banking In Financing International Trade, Addis Ababa

Merril, W. (2006). Auditing through the computer, *Certified Public Accountant*, Oklahoma 4(3)

Nitsure R (2003). E-banking challenges and opportunities. Economic and Political weekly.

Ohonba, O. (2015). The Relevance of Auditing In A Computerized Accounting System,

Ohonba, O. (2015). The Relevance Of Auditing In A Computerized Accounting System, *Ernest International Journal of Management and Applied Science*.

Ozuru, H. N; Chikwe, J. E and Idika Uduma (2010). *The use of Traditional payments and electronic payments Systems in Nigeria* discourse. Proceedings of the 11th Annual Conference of International Academy of African Business and Development.

Rafiu, P. (2007). The importance of trust in electronic commerce internet research Electronic networking application and policy.

Rahman, M.(2006). Innovative Technology and Bank Profitability: The Bangladesh Experience.

Reneau, J. R. (2002) Auditing in a data base environment, *Journal of Accountancy*, New

Rogers, D. (2011). The adoption of electronic banking in Tunisia: an exploratory study. Journal of Internet Banking and Commerce.

Rogers, D. (2011). The adoption of electronic banking in Tunisia: an exploratory study. Journal of Internet Banking and Commerce.

*Rogers, D. (2011). The adoption of electronic banking in Tunisia: an exploratory study. Journal of Internet Banking and Commerce.*

Sampson, A. & Owusu, A. (2013). Evaluating Internal Controls In A Computerized Works Environment. A Risk To Audit Professionals And A Challenge To Accountancy Training Providers.

Sampson, A. & Owusu, A. (2013). Evaluating Internal Controls In A Computerized Works

Sarems and Debeled (2016). Handbook of International Quality Control, Auditing, Review, Other Assurance, and Related Services Pronouncements

Sarens, G. and De Beelde, I. (2006). A comparison between US and Belgian companies”,*Managerial Auditing Journal*.

Sathye, M (1999). Adoption of Internet banking by Australian consumers: an empirical investigation, *International Journal of Bank Marketing*.

Sathye, M (1999). Adoption of Internet banking by Australian consumers: an empirical investigation, *International Journal of Bank Marketing*.

Singh, B. and Malhotra, P. (2004). Adoption of Internet banking: An empirical investigation of Indian banking Sector. *Journal of Internet Banking and Commerce*.

Solomon, I., and Trotman, K. (2003). Experimental judgment and decision research in auditing, *The first 25 years of AOS. Accounting, Organisations and Society*

Thompson, J. & Martin, F. ( 2010). *Strategic Management: Awareness and Change (5th ed.)*: New York: Thomson press

United Bank (2017). Annual financial statement report

United Bank SC (2015). web report. Addis Ababa, Ethiopia

Wondwossen, T and Tsegai, G (2005). E-payment: challenges and opportunities in Ethiopia“, *Economic commission for Africa, Addis Ababa Ethiopia*.

Worku and et al.(2016). The Impact of Electronic Banking on Customers ‘Satisfaction in Ethiopian Banking Industry (The Case of Customers of Dashen and Wogagen Banks in Gondar City)York: 9(4)

**ADDIS ABABA UNIVERSITY**  
**FACULTY OF BUSINESS AND ECONOMICS**  
**SCHOOL OF GRADUATE STUDIES**  
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**APPENDIX A: QUESTIONNAIRES**

Dear respected respondent, the objective of this questionnaire is to gather first-hand information that will help to Challenges of Electronic Data Process Auditing in Selected Commercial Banks of Ethiopia This study is undertaken as a partial requirement for the completion of the degree of Masters of Business Administration. All data and information that will be gathered through this questionnaire will be used for the research purpose only and remains confidential. Therefore, you are kindly requested to respond to the questions with utmost good faith, honesty and to the best of your knowledge.

**PART I.** General Profile (Please use the blank space for question requiring your exact answer and for the rest of questions put  $\surd$  or X that best represent you in the selected box).

1. Gender: Male                      Female
2. Age:                      20-30                      31-40                      41-50                      51-60
3. Educational Status                      College Diploma                      University First Degree  
Master's Degree                      Other \_\_\_\_\_
4. How long have you worked in EDP audit business operation\_\_\_\_\_
5. Your current position? \_\_\_\_\_

**PART II:** Questionnaires related practices and Challenges of Electronic Auditing of Ethiopian commercial bank Ethiopia in selected branches of Addis Ababa as per mentioned research questions.

**Instruction:** Please indicate whether you agree or disagree with each statement by ticking (√) on the spaces that specify your choice from the options that range from “strongly agree” to „strongly disagree“ .Each choices were identified by numbers ranged from 1 to 5.

S.No	ITEMS	1	2	3	4	5
RQ1	<b>Current practices</b>					
1	Internal audit obtains a sufficient budget to successfully carry out its duties					
2	Management has full commitment to add value to internal audit					
3	Internal auditors receive full cooperation from the auditee (branches being audited)					
4	Management & other organ of the bank give adequate support & appreciation for the role of internal audit function.					
5	The management of the head offices gives timely corrective action for the recommendation of Auditors					
8	There exist internal audit committee that ensure, If appropriate action is taken by the management for the audit findings					
9	There exists adequate resources provided for internal audit purpose					
RQ2	<b>CHALLENGES FACING EDP</b>					
<b>2.1 Organizational Challenges Facing EDP In Internal Auditing</b>						
1.	the management does not encourage the external auditor to continuously assess and reassess the internal audit functions					
2.	High cost of implementation of E-banking					
3.	Lack of expertise training on EDP					
4.	Resistance to changes in technology among by Board, top Management and staff					
5.	Lack of customer awareness with E-banking products					

6.	Lack of technical and managerial skills in implementation and development of E-banking technology					
<b>2.2 ENVIRONMENTAL CHALLENGES</b>						
<b>2.2.1 Infrastructure Challenges</b>						
	Broken and slow internet connection					
	Lack of demand from the customer's side					
	Low level of internet penetration					
	Limitation in ICT infrastructure					
	Poorly developed telecommunication infrastructure					
<b>2.2.2 Illiteracy Challenges</b>						
	Lack of demand from the customer's side					
	Customer low levels of computer literacy.					
	High cost implementation					
	Lack of educated and efficient staff in EDP in auditing works					
	Lack of customer awareness with EDP Auditing					
<b>2.2.3 LEGAL CHALLENGES</b>						
	Lack of government initiation or lack of government prioritization					
	Cross-country legal and regulatory differences					
	Lack of sufficient government support affects customers' willingness					
	Lack of law mandating the bank to adopt E-banking technology.					
	Lack of suitable legal and regulatory framework for EDP Auditing					

	selected branches					
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RQ3	Attitudes of employees towards EDP Auditing					
1	Electronic facilitates quick response					
2	Electronic Auditing increases operational efficiency					
3	Electronic improves service quality					
4	Increases the productivity of the bank					
5	Electronic Auditing provides up to date information					
6	Controls fraud					
7	Electronic Auditing minimizes the cost of transaction					
8	Electronic Auditing saves time of customers					
9	Electronic Auditing service increase customer satisfaction					

## 6. PART 3: INTERVIEW GUIDED QUESTIONS

- Does the demand for Electronic auditing services show an incremental behavior? -----  
-----  
-----
- What are the existing and future opportunities that banks can attain by adopting Electronic auditing system?-----  
-----  
-----
- Do you see any social, Economic and legal barriers to the adoption of Electronic auditing in your branch? -----  
-----
- Is there any special rule that guide banking industries in implementation of Electronic audit system? -----  
-----
- Does your bank provide sufficient Electronic auditing training to auditors? -----  
-----  
-----

6. What can you say regarding the government's effort towards modernizing the banking industry? -----  
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7. What do you think must be done to further facilitate the usage of EDP auditing services in Ethiopia? -----  
-----.

**The END!!!**