Addis Ababa University College of Business and Economics

Department of Accounting and Finance

THE IMPACT OF INFORMATION TECHNOLOGY IN AUDIT QUALITY: THE CASE OF EXTERNAL AUDIT FIRMS IN ADDIS ABABA.

BY: ABEL HABTAMU

A Project Paper Submitted to the Department of Accounting and Finance at Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Master of Science in Accounting and Auditing.

Research Advisor: Kelifa Sermolo (PHD)

March 2024

Addis Ababa, Ethiopia

Declaration

I hereby declare that the title "*The Impact of Information Technology in Audit Quality: In the Case of External Audit Firms in Addis Ababa"* is submitted to partially fulfill the requirements for the award of a master's degree in accounting and Auditing. The research is a result of my effort and has not been submitted for any Degree program in this or other institutions. All sources of materials used for this project are properly cited according to academic guidelines and the thesis is done independently with the guidance and recommendation of my advisor.

Name: Abel Habtamu

Signature: _____

Date: March 2024

This Project Paper has been submitted for examination with my approval as a university advisor.

Advisor: Kelifa Sermolo(PhD)

Signature: _____

Date: March 2024

Statement of Certification

This is to declare that the project titled "The Impact of Information Technology in Audit Quality: In the Case of External Audit Firms in Addis Ababa," prepared by Abel Habtamu, fulfills the requirements for the Master's Degree in Accounting and Auditing. It also complies with the University regulations and meets the accepted standards for originality and quality.

Approved by:

Kelifa Sermolo (PhD)		March 2024
Advisor	Signature	Date
Temesgen Worku (PhD)		March 2024
Internal Examiner	Signature	Date
Dakito Alemu (PhD)		March 2024
External Examiner	Signature	Date

Acknowledgement

First I would like to start by expressing my gratitude to God for giving me the strength, wisdom, and ability to successfully complete this project. I also want to express my gratitude to all my family members, especially my father, Mr. Habtamu Metaferiya, and my mother, Ms. Genet Tessema, as well as my friends who assisted me during this study.

I also want to extend my thanks to my advisor, Kalifa Sermolo (PhD), for his guidance, understanding, and for providing constructive feedback on my paper. Additionally, I want to express my gratitude to Habtamu Berhanu (PhD) for his critiques and feedback on my topic and thesis were being developed.

Lastly, I want to express my gratitude to the management and staffs of all the private audit firms, as well as the employees of Accounting and Auditing Borad of Ethiopia, for their unreserved support in helping me collect the necessary data.

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ACRONYMS & ABBREVIATIONS

ASC	Audit Services Corporation
ACCA	Associations of Chartered Certified Accountants
IAASB	International Auditing and Assurance Standards Board
IASB	International Accounting Standards Board
IAESB	International Accounting Education Standards Board
IESBA	International Ethics Standards Board for Accountants
IFAC	International Federation of Accountants
IPSASB	International Public Sector Accounting Standards Board
IT	Information Technology
PWC	Price water house Coopers International Limited

Abstract

This study investigated the influence of information technology (IT) on audit quality, focusing on external audit firms in Addis Ababa. Data analysis employed a descriptive and inferential approach. Questionnaires were distributed to 98 external auditors to gather necessary information. IBM SPSS Statistics 2013 software (v22.0) was used to analyze the data, presented in tables and charts. The findings revealed that all independent variables had positive and significant coefficients. This indicates that as the value of an independent variable increased, the mean of the dependent variable (audit quality) also increased. Auditor competency had the strongest positive and significant effect on audit quality, followed by IT-based auditing, audit risk, and audit quality itself. The regression analysis indicated that the independent variables included in the model explained 52.3% of the variance in audit quality. Based on the findings, the study recommends that The Accounting and Auditing Board of Ethiopia should have prioritized evaluating the quality of audit firms and grading them based on their performance. Additionally, firms should provide Continuing Program Development (CPD) and prepare IT-based audit working papers that include audit procedures, rules, and regulations, as well as analysis working papers. This will help enhance the auditors' abilities and prevent the risk of material misstatement due to control risk.

Key words: IT based auditing, competency risk, audit quality

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

An audit's objective is to increase the level of confidence of the intended users in the financial statements. This is accomplished by the auditor by expressing an opinion or provide a report to the users on whether the financial statements are prepared, in all material respects, in compliance with the applicable financial reporting framework. In the case of most general-purpose frameworks, the opinion is whether the financial statements are fairly presented, in all material respects, or provide a true and fair view in accordance with the framework (ISA 200, 2021).

Based on the fact that the audit opinion is highly dependent upon audit quality, the quality of audits is a priority issue for auditors, regulators, and users of financial data. Most of the earlier audit research examined the issue of audit quality in various ways, but audit quality is a complex subject, and no analysis of it has achieved universal recognition definition. Regarding the definition of audit quality, there are various perspectives. The definition offered by De Angelo (1981, P. 186) is the one that is most widely used. He states that audit quality is "The market-assessed joint probability that a given auditor will both detect material misstatements in the client's financial statements and report the material misstatements" In this idea, the definition means that audit quality is a function of the auditor's technical ability to detect material misstatements and report the misstatements based on the objectivity and independence. DeAngelo (1981) added that the probability of discovering the material misstatements on the financial reports also depends on the technological capabilities of the auditor and the identified audit procedures to detect the material misstatements. According to Palmrose (1988, Pg 50-73.) audit quality "the level of assurances-the probability that financial statements contain no material omissions or misstatements".

The IFAC aims to ensure high-quality performance by professional accountants. To achieve this, the IFAC has an obligation to support the (a) adoption and implementation of international standards and other pronouncements issued by the International Auditing and Assurance Standards Board (IAASB), International Accounting Education Standards Board (IAESB), International

Ethics Standards Board for Accountants (IESBA), International Public Sector Accounting Standards Board (IPSASB), and International Accounting Standards Board (IASB), as well as (b) the establishment of quality assurance and investigation and disciplinary systems. In addition, the Institute aims to support a strong relevant and sustainable accountancy profession in Ethiopia that is dedicated to the promotion of the public interest (Sonny Mabheju, 2016).

In Ethiopia, AABE was government organ having its legal personality is established in 2014 in the proclamation - No. 332/2014 (Federal Negarit Gazzeta, 2007). Accounting and Auditing Board of Ethiopia is responsible to empowered, register and license auditors, to conduct investigation and take measures on public auditors and entities having public interest, to issue standards of financial reporting, to give accreditation for accounting entities, to receive and register financial statements of reporting entities, to conduct quality assurance reviews of public auditors and other audit firms, as well as to advise government on matters of financial reporting (AABE, 2015).

The rapid development of information technology (IT) is consistent with the evolution of humans, which includes the growth of infrastructure such as hardware, software, storage systems, communication technology, and networking. (Laudon et al 2006). It is not only influencing the business but also other sectors such as health, education, government etc. Information Technology is an effective tool for striving to future (Jogiyanto, 2013). Less than one generation, information technology has changed business all over the world (Azhar, 2010).

The auditing profession heavily relies on information technology, as firms use various tools to improve the quality of audits. Due to rapid business development, IT utilization has become a prerequisite in all aspects of life, including IT-based audit (digital audit), which provides timely, high-quality data at a reasonable cost. The digital audit addresses the issue of professional judgment, which is the possibility of human failure, to improve the quality of opinions and consequently produce a sound audit report. We emphasize the importance of digital transformation in work procedures and approaches by taking advantage of technological progress (Imtithal Rasheed Batcha, 2022).

The increasing reliance on information technology (IT) in financial reporting processes presents significant opportunities and challenges for audit quality. IT can significantly improve audit procedures by enabling auditors to perform continuous monitoring, utilize data analytics for deeper

insights, and leverage automation for routine tasks. This leads to a more efficient and effective audit, which can significantly enhance the detection rates of material misstatements. (Dechow, Sloan, & Sweeney, 2010, p. 17) According to Pierce, et al, (2015), Information technology has assisted businesses in managing and reducing financial crimes such as fraud, forgery, bribery, and corruption.

This research paper uses three independent variables to determine the impacts of using information technology on the audit quality, the variables are.

Audit risk- is defined as 'the risk that the auditor expresses an inappropriate audit opinion when the financial statements are materially misstated. Audit risk is a function of the risks of material misstatement and detection risk'. Hence, audit risk is made up of two components – risks of material misstatement and detection risk. Risk of material misstatement is defined as 'the risk that the financial statements are materially misstated before an audit. This consists of two components... inherent risk ... control risk.'

Audit Evidence- Information used by the auditor in arriving at the conclusions on which the auditor's opinion is based. Audit evidence includes both information contained in the accounting records underlying the financial statements and information obtained from other sources.

Auditor Competency- includes Auditor knowledge, skill, ability, and suitability of personal behavior possessed to be able to perform his / her duties with good and objective results.

1.2. Statement of the problem

The auditing profession plays a crucial role in serving the public interest. Both the users and the audit industry require a reliable and independent audit of high quality. Poor audit quality can lead to severe consequences, such as reputation damage to the auditor's firm, an increased risk of litigation, and loss of clients and revenue.

According to IAASB Audit Quality Perspective report (2011, Pg. 4) Audit quality conceptually have three fundamental aspects: inputs, outputs, and context factors. There are inputs to audit quality apart from auditing standards. One important input is the auditor's personal attributes such as auditor skill and experience, ethical values and mindset. Another important input is the audit

process. Outputs of the audit are also important influences on audit quality because often the outputs are considered by stakeholders in their assessments of audit quality. For example, the auditor's report is likely to be viewed as positively influencing audit quality if it clearly conveys the outcome of the audit. More broadly, there are context factors that also influence audit quality. For example, sound corporate governance facilitates audit quality, especially if it creates a climate of transparency and ethical behavior within the entity.

According to previous studies shows the use of Information Technology (IT) in auditing practices in Ethiopia is facing significant challenges that hinder the profession's ability to take advantage of its potential for improved efficiency, accuracy, and effectiveness.

Here are the main issues:

Digital Divide: A persistent digital divide plagues Ethiopia, as evidenced by the World Bank (2021). Limited internet access, particularly in rural regions, restricts auditors, especially those operating outside major cities, from utilizing cloud-based tools and real-time data analysis effectively. This significantly limits the reach and potential benefits of IT-assisted audits.

Financial Constraints: The financial burden of implementing and maintaining advanced audit software poses a major barrier, particularly for smaller Ethiopian firms (Eshete & Assefa, 2019). The high cost of acquiring and maintaining specialized IT infrastructure discourages broader adoption of these technologies.

Auditor Skill Gap: Studies like Bayu and Tefera (2018) highlight a significant lack of expertise among Ethiopian auditors in IT systems, data analytics, and cybersecurity. This skill gap impedes the effective utilization of IT tools within the auditing process, limiting the potential for improved audit quality.

Client Preparedness: The success of IT-assisted audits relies heavily on client readiness. As highlighted by Eshete and Assefa (2019), the willingness and capacity of clients to adopt IT systems compatible with audit software and provide data electronically directly affects the efficiency and effectiveness of these audits.

The challenges listed above significantly affect the use of Information Technology in auditing practices in Ethiopia, which ultimately affects the quality of audits. Ensuring high-quality audits

is essential for maintaining accountability and transparency in financial reporting, which is vital for the growth and stability of the country's economy.

Several studies, including those conducted by Mikias G/egziabher. (2021). Studied on the impact of information technology in financial statement audit quality: In the case of grade “A” external audit firms in Ethiopia. (MSc. dissertation, Addis Ababa University), AL-Salmi, M. H., Wee, S. T., & Akbar, F. (2022). The impact of information technology on audit quality in Oman. remilitarize, 12(6), 2003-2014, and Alghurair, Almatori, Alhasswi, Alfilakawi, and Alsubai (2016) investigated the influence of technology on improving audit quality in the State Audit Bureau of Kuwait (SAB)., have explored the impact of information technology on audit quality.

However, the previous studies on audit quality have not considered the impact of input factors such as auditor competency and audit processes, which are reported by ISSAB audit quality report. Moreover, there is a lack of comprehensive research on how information technology affects audit quality in external audit firms located in Addis Ababa. Some of the previous studies have been limited in measuring audit quality due to the use of inappropriate variables, and other research has not clearly shown the problem affecting the adoption of information technology in auditing. This study aims to address these gaps by using variables that directly relate to information technology and audit quality. The researcher was motivated to undertake this study and arrived at relevant conclusions to enhance the current state of audit quality.

1.3. Research Question.

1. How does IT-based audit evidence impact audit quality?
2. What is the relationship between IT based audit risk assessment and audit quality?
3. How does the Competency of audit professionals affect audit quality in Addis Ababa? 3

1.4. Objective of the study

1.4.1 General objective

The general objective of this research is to analyze the impact of information technology on the audit quality focusing on external audit firms in Addis Ababa.

1.4.2 Specific objective

1. To evaluate the effect of IT based audit evidence on the audit quality.
2. To investigate the effect of Information Technology based audit risk decisions on audit quality.
3. To assess the effect of competency of audit professionals in using Information Technology on audit quality.

1.5. Research Hypothesis

The study will examine the following hypothesis:

Hypothesis 1: Information Technology-based audit evidence has a positive and significant effect on audit quality.

Hypothesis 2: Information Technology has a positive and significant effect on the audit risk decisions of external audit firms, leading to improved audit quality.

Hypothesis 3: The competency of audit professionals in using Information Technology has a positive and significant effect on audit quality.

1.6. Significance of the study

As a result, this study will examine the impact of information technology on the quality of audit and providing useful information for the following parties.

Private audit firms, Provide insight about the impact of information technology in the audit quality and create valuable input for their performances.

For academicians, the results of this research would significantly benefit for the literature already in existence. The study may also serve as a resource for scholars in the future who wish to study in this specific area.

Government body, the findings of the study would give an important information to regulators mainly for AABE to formulate policies and quality controlling mechanisms for the private audit firms which uses information technology on the audit engagement based on the empirical evidences obtained from this study.

1.7. Scope of the study

The scope of the study is to examine the impact of information technologies in the quality of financial statement audit. The study is limited to the three very important explanatory variables: auditor proficiency, the effectiveness of the IT based audit evidence and audit risk. Hence, there might be other determinants of external audit quality. This study only focused on selected certified external audit firms in Addis Ababa performing the auditing activity.

1.8. Limitation of the study

Factors of Audit quality elements, auditor proficiency, and the effectiveness of IT based Audit evidence and audit risk are considered in this study. Other Factors of Audit quality elements like Auditor independence, professional ethics is not included or considered in this study. The study has some limitations that the researcher was aware of. Therefore, this study will not completely address the issue of audit quality.

1.9. Organization of this study

This research paper is divided into five chapters. The first chapter provides an introduction to the background information, statement of the problem, general and specific objectives, and significance of the study, research questions, scope, limitations, and organization of the paper. The second chapter reviews theoretical and empirical literature and justifies the research with a conceptual framework. Chapter three outlines the research methodology, including research approach, design, data type and source, target population and sample size determination, sampling techniques, methods of data collection, analysis, and ethical considerations. Chapter four presents the findings of the research, focusing on the impact of information technology on the audit quality in external auditing firms in Addis Ababa. The researcher provides an analysis and interpretation of the respondents' opinions. Chapter five concludes the paper with a discussion of the summary of findings, conclusions, and practical recommendations.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter is all about theoretical framework of the study and elaborates different theoretical explanations and overviews related to the information technology and determinant factors of external audit quality. In order to link different theories with this study, the researcher used different theoretical issues from different authors.

2.1. Theoretical Review

2.1.1. Evolution of Auditing

The origin of "Audit" comes from the word 'Audire.' With the advent of the Industrial Revolution, 'auditing' evolved as a financial accountability tool. The word "audit" has Latin origins (audio, audire, and means listening). This word has many definitions and classifications during this time. Generally, it is a synonym to control, check, inspect, and revise. Auditing was primarily a method to maintain governmental accountancy, and record-keeping was its main stay. From the time of ancient Egyptians, Greeks, and Romans, the practice of auditing the accounts of public institutions existed. Checking clerks were appointed in those days to check the public accounts. The main objective of auditing of those days was to locate frauds and to determine whether the receipts and payments were properly recorded by the person responsible. It wasn't until the advent of the Industrial Revolution, from 1750 to 1850, that auditing began its evolution into a field of fraud detection and financial accountability. (iEduNote, June **2023)**

Businesses expanded during this period and brought in large-scale production, steam power, improved facilities, and better means of communication. This resulted in the origin of the joint-stock form of organizations. Shareholders contribute to the capital of these companies but do not have control over the day-to-day working of the organization. Management was hired to operate businesses in the owners' absences, but the shareholders who have invested their money would naturally be interested in knowing the company's financial position. So they found an increasing

need to monitor financial activities for accuracy and fraud prevention. This originated the need for an independent person to check the accounts and report to the shareholders on the accuracy of the accounts and the safety of their investments. In the early 20th century, the reporting practice of auditors, which involved submitting reports of their duties and findings, was standardized as the "Independent Auditor's Report." The increase in demand for auditors leads to the development of the testing process. Auditors developed a way to strategically select key cases representative of the company's overall performance. This was an affordable alternative to examining every case in detail, requiring less time than the standard audit. (iEdu Note, June 2023)

Evolution of Auditing & Objective

Table 1. Evolution of Auditing

Period	Audit ordinates	Auditors	Objectives of the audit
Up to 1700	Kings, emperors. Churches and the state	People of the state or scribes	» The punishment of the thieves for the funds changing direction. » Protecting assets.
1700 – 1850	States, Courts, and shareholders	Accountants	» Repressing fraud and punishment of the authors. » Protecting the assets.
1850 – 1900	The state and the shareholders	Professional accountants or lawyers	» Avoiding fraud and errors and attesting to the viability of the balance sheet.
1940 – 1970	The state and the shareholders	Professionals in audit and accounting, and counseling	» Attesting the honesty and regularity of the historical financial data/
1970 – 1990	The state, the third, and the shareholders	Professionals in audit and counseling	» Attesting the quality of the internal control and respecting the accounting norms and the audit norms.
1990+	The state, the third, and the shareholders	Professionals in audit and counseling	» The protection against international fraud

Source: iEduNote.com, June 2023

The financial report includes a balance sheet, an income statement, a statement of changes in equity, a cash flow statement, and notes comprising a summary of significant accounting policies

and other explanatory notes. The purpose of an audit is to form a view on whether the information presented in the financial report, taken as a whole, reflects the financial position of the organization at a given date (PwC, 2023). The objective of an audit of financial statements is to enable the auditor to express an opinion whether the financial statements are prepared, in all material respects, in accordance with an applicable financial reporting framework (ISA 200, 2007)

2.1.2. Theories of Auditing

Theories of Auditing are frameworks that attempt to explain the purpose, principles, and practices underlying the auditing process. These theories are aimed at improving our understanding about the role of auditors in ensuring the accuracy and reliability of financial information. Theories of Auditing establish the rationale and justification for the auditing profession. They offer a theoretical foundation for understanding the objectives, methods, and limitations of the auditing process. Here are some prominent theories within the field:

Stewardship Theory: Which emphasizes the auditor's responsibility to ensure that management acts as a steward of the company's resources for the benefit of the owners (shareholders).

Agency Theory: which focuses on the role of auditors in mitigating information asymmetry between managers (agents) and shareholders (principals) by providing independent verification of financial statements, reducing the risk of opportunistic behavior by managers; and

Lending Credibility Theory: which suggests that audits add credibility to financial statements issued by companies by expressing an opinion on the fairness of the financial statements, enhancing the confidence of users (investors, creditors) in the information presented. (American Psychological Association, 2020).

2.1.3. Audit Quality

Audit quality encompasses the key elements that create an environment which maximizes the likelihood that quality audits are performed on a consistent basis. The objective of an audit of financial statements is for the auditor to form an opinion on the financial statements based on having obtained sufficient appropriate audit evidence about whether the financial statements are free from material misstatement and to report in accordance with the auditor’s findings. A quality audit is likely to have been achieved by an engagement team that:

- ❖ Exhibited appropriate values, ethics, and attitudes.
- ❖ Was sufficiently knowledgeable, skilled, and experienced and had sufficient time allocated to perform the audit work.
- ❖ Applied a rigorous audit process and quality control procedures that complied with law, regulation, and applicable standards.
- ❖ Provided useful and timely reports; and
- ❖ Interacted appropriately with relevant stakeholders.

The responsibility for performing quality audits of financial statements rests with auditors. However, Audit quality is best achieved in an environment where there is support from, and appropriate interactions among, participants in the financial reporting supply chain (IAASB, 2014).

According to UK Financial Reporting Council's Framework on Audit Quality 2008**,** a similar framework was set up five years earlier by the UK Financial Reporting Council. The Financial Reporting Council identified four main drivers for audit quality:

1. The culture within an audit firm.
2. The skills and personal qualities of audit partners and staff.
3. The effectiveness of the audit process; and
4. The reliability and usefulness of audit reporting

The focus in both frameworks (the UK FRC and the IAASB one) is on a process view of auditing where inputs are combined efficiently in order reach a certain outcome (assurance level), embedded in a specific contextual environment. (Financial reporting council the audit quality framework, 2008)

2.1.4. Determinants of audit quality

In this section the researcher briefly discusses definitions of variables, measurements of determinant variables which are mainly related audit quality and information technology, discussions and analysis of literatures on the relationship between IT based audit evidence approach, audit risk, audit tenure, IT based audit process.

2.1.4.1. IT based Audit evidence approach

According to ISA 500 Audit evidence is information used by the auditor in arriving at the conclusions on which the auditor's opinion is based. Audit evidence includes both information contained in the accounting records underlying the financial statements and other information. The auditor shall design and perform audit procedures that are appropriate in the circumstances for the purpose of obtaining sufficient appropriate audit evidence.

Appropriateness (of audit evidence) – The measure of the quality of audit evidence; that is, its relevance and its reliability in providing support for the conclusions on which the auditor's opinion is based.

Sufficiency (of audit evidence) – The measure of the quantity of audit evidence. The quantity of the audit evidence needed is affected by the auditor's assessment of the risks of material misstatement and by the quality of such audit evidence.

The audit evidence is the central element in the audit process that gives emphasis to the transactions and events of the organization, and future audit processes require obtaining information through online systems, and the elimination of manual audit paths has become imminent, and the need for automated tracks and the use of electronic exchange of data will be the emerging source for audit evidence.

The traditional view of audit evidence may not be sufficient in the face of advanced technology. The audit profession and its regulators must consider the impact of technology on traditional forms of audit evidence. The purpose of electronic evidence is the same as traditional forms, and its strength generally depends on the effectiveness of internal controls. However, there is a question that auditors must address regarding the reliability of electronic evidence obtained. Customers may not have physical documents to examine and may be unaware of the credibility of electronic evidence. Therefore, the auditor must examine the internal controls related to electronic evidence to ensure its reliability. The use of more sophisticated audit tools will assist the auditors by automating the collection, coordination and mapping of key audit objectives and procedures. For example, these auditing tools will be greatly regulated due to the formalization of the audit plan with pre-defined application processing data at predetermined times, then unforeseen or manually disclosed evidence or judgments is evaluated and the human approach is put into place

Consideration and its incorporation into the existing system. A feedback system that evaluates both short and long term results will be used to evaluate the performance of the audit system over time. (Mohamed, 2020)

2.1.4.2. Audit Risk

The objective of the auditor is to identify and assess the risks of material misstatement, whether due to fraud or error, at the financial statement and assertion levels, through understanding the entity and its environment, including the entity's internal control, thereby providing a basis for designing and implementing responses to the assessed risks of material misstatement. The auditor shall perform risk assessment procedures to provide a basis for the identification and assessment of risks of material misstatement at the financial statement and assertion levels. Risk assessment procedures by themselves, however, do not provide sufficient appropriate audit evidence on which to base the audit opinion.

The risk assessment procedures shall include the following based on **ISA 315:**

a) Inquiries of management, of appropriate individuals within the internal audit function (if the function exists), and of others within the entity who in the auditor's judgment may have information that is likely to assist in identifying risks of material misstatement due to fraud or error.
b) Analytical procedures.
c) Observation and inspection.

The auditor shall consider whether information obtained from the auditor's client acceptance or continuance process is relevant to identifying risks of material misstatement. If the engagement partner has performed other engagements for the entity, the engagement partner shall consider whether information obtained is relevant to identifying risks of material misstatement. Where the auditor intends to use information obtained from the auditor's previous experience with the entity and from audit procedures performed in previous audits, the auditor shall determine whether changes have occurred since the previous audit that may affect its relevance to the current audit (ISA 315, 2013).

2.1.4.3. Competency of Audit Professional

The challenge of auditing in the dynamic, complex environment of higher education requires members of the external audit staff to possess the highest level of professional abilities. Ultimately, professional Competency is a personal responsibility; however, our department is committed to assisting each staff member to meet that responsibility.

Competence can be developed through a variety of methods, including the following: Professional education, continuing professional development, including training Work experience, coaching by more experienced staff (IAASB, 2018)

Professional Competency implies having up-to-date knowledge and abilities related to higher education, financial management, and governmental policies as well as accounting and auditing issues. Professional competency is achieved and enhanced through formal education, on-the-job training, continuing education programs, professional certifications, and service to the profession. Competency can be demonstrated only through job performance. The researcher tries to address the ability of auditors to use information technology tools to improve audit performance and the Implementation of information technology in the process of collecting data and evaluating audit evidence. The success of this process was evaluated by the efficiency and effectiveness of the examination process, Flexibility, perceived Usefulness, and System Usage by the auditors.

2.1.5. Information technology

Information technology (IT) is the use of any computers, storage, networking and other physical devices, infrastructure, and processes to create, process, store, secure and exchange all forms of electronic data. Typically, IT is used in the context of business operations, as opposed to technology used for personal or entertainment purposes. The commercial use of IT encompasses both computer technology and telecommunications (Castagna & Bigelow, 2023).

According to Mohamed, (2020) Information and communication technology is described as various technological tools and resources that are used to shape, manage, store and distribute information. With the use of accounting systems based on advanced technologies, making the audit process a subject compatible with these technologies has become important, so increasing the quality and efficiency of the audit has gained great importance, so the change in audit techniques has become, and conducting audits of these electronic environments has become a necessity. The

audit activities with the help of information technology techniques have a critical importance for the auditor to achieve the audit activities as it ensures that the errors arising from the human in the accounting transactions are minimized. The audit objectives have not changed in the case of processing the accounting information manually or electronically, however the methods of applying audit procedures to obtain evidence may be affected, and the auditor can use manual procedures for auditing or use electronic auditing or both methods together. The advantages that IT provides in auditing as follows:

- Efficiency, productivity, quality increase, cost savings and time savings.
- New, interactive, and creative auditing tools compatible with high volume of data.
- Independence and increased oversight.
- Create added value and produce information.
- The possibility of reviewing in many areas that do not contain printed documents, such as electronic commerce.

The term "digital auditing" does not represent a distinct theoretical framework, but rather the application of various auditing theories in the context of information technology (IT). To better understand how IT-based auditing works, it is important to examine some of the relevant theories and how they can be applied.

1. **Risk-Based Auditing:** This theory suggests that audit procedures should be prioritized based on the inherent risk, which is the susceptibility to error, and control risk, which is the weaknesses in internal controls, associated with specific financial statement assertions (AICPA, 2023).

2. **Continuous Auditing (CA):** This theory proposes that internal controls and transactions should be continuously monitored throughout the year, instead of relying only on year-end procedures (Alles et al., 1994). Continuous auditing (CA) uses technology to regularly evaluate internal controls, detect potential risks, and provide timely insights to auditors and management. This approach aims to adopt a more proactive and preventive audit methodology (Dechow, Sloan, Sweeney, 2000).

3. **Audit Data Analytics (ADA):** This theory involves the use of advanced analytical techniques to discover patterns, trends, and anomalies in large datasets. These techniques can be statistical, machine learning-based, or a combination of both. (Alles et al., 2018).

1.1.4. Specific aspects of auditing in a computer-based environment

Information technology (IT) is integral to modern accounting and management information systems. It is, therefore, imperative that auditors should be fully aware of the impact of IT on the audit of a client's financial statements, both in the context of how it is used by a client to gather, process and report financial information in its financial statements, and how the auditor can use IT in the process of auditing the financial statements. The purpose is to provide guidance on following aspects of auditing in a computer-based accounting environment:

- ❖ Application controls, comprising input, processing, output and master file controls established by an audit client, over its computer-based accounting system and
- ❖ Computer-assisted audit techniques (CAATs) that may be employed by auditors to test and conclude on the integrity of a client's computer-based accounting system. Dealing with application controls and *CAATs* in turn:

- **Application controls**

Application controls are those controls (manual and computerized) that relate to the transaction and standing data pertaining to a computer-based accounting system. They are specific to a given application and their objectives are to ensure the completeness and accuracy of the accounting records and the validity of entries made in those records. An effective computer-based system will ensure that there are adequate controls existing at the point of input, processing and output stages of the computer processing cycle and over standing data contained in master files. Application controls need to be ascertained, recorded and evaluated by the auditor as part of the process of determining the risk of material misstatement in the audit client's financial statements.

a) Input controls.

Control activities designed to ensure that input is authorized, complete, accurate and timely are referred to as input controls. Dependent on the complexity of the application program in question, such controls will vary in terms of quantity and sophistication. Factors to be considered in

determining these variables include cost considerations, and confidentiality requirements with regard to the data input. Input controls common to most effective application programs include on-screen prompt facilities (for example, a request for an authorized user to 'log-in') and a facility to produce an audit trail allowing a user to trace a transaction from its origin to disposition in the system. Specific input validation checks may include:

- Format checks.
- Range checks
- Compatibility check
- Validity checks
- Exception checks
- Sequence checks.
- Control totals.
- Check digit verification

b) Processing controls

Processing controls exist to ensure that all data input is processed correctly and that data files are appropriately updated accurately in a timely manner. The processing controls for a specified application program should be designed and then tested prior to 'live' running with real data. These may typically include the use of run-to-run controls, which ensure the integrity of cumulative totals contained in the accounting records is maintained from one data processing run to the next. For example, the balance carried forward on the bank account in a company's general (nominal) ledger. Other processing controls should include the subsequent processing of data rejected at the point of input, for example:

- A computer produced print-out of rejected items.
- Formal written instructions notifying data processing personnel of the procedures to follow regarding rejected items.
- Appropriate investigation/follow up regarding rejected items.
- Evidence that rejected errors have been corrected and re-input.

c) Output controls.

Output controls exist to ensure that all data is processed, and that output is distributed only to prescribed authorized users. While the degree of output controls will vary from one organization to another (dependent on the confidentiality of the information and size of the organization), common controls comprise:

- Use of batch control totals, as described above (see ‘input controls’).
- Appropriate review and follow up of exception report information to ensure that there are no permanently outstanding exception items.
- Careful scheduling of the processing of data to help facilitate the distribution of information to end users on a timely basis.
- Formal written instructions notifying data processing personnel of prescribed distribution procedures.
- Ongoing monitoring by a responsible official, of the distribution of output, to ensure it is distributed in accordance with authorized policy.

d) Master file controls

The purpose of master file controls is to ensure the ongoing integrity of the standing data contained in the master files. It is vitally important that stringent ‘security’ controls should be exercised over all master files. These include:

- Appropriate use of passwords, to restrict access to master file data
- the establishment of adequate procedures over the amendment of data, comprising appropriate segregation of duties, and authority to amend being restricted to appropriate responsible individuals
- regular checking of master file data to authorized data, by an independent responsible official
- Processing controls over the updating of master files, including the use of record counts and control totals.

Computer Assisted Audit Techniques (CAATs)

The nature of computer-based accounting systems is such that auditors may use the audit client company’s computer, or their own, as an audit tool, to assist them in their audit procedures. The extent to which an auditor may choose between using CAATs and manual techniques on a specific audit engagement depends on the following factors:

- The practicality of carrying out manual testing
- The cost effectiveness of using CAATs

- The availability of audit time
- The availability of the audit client's computer facility
- The level of audit experience and expertise in using a specified CAAT
- The level of CAATs carried out by the audit client's internal audit function and the extent to which the extern al auditor can rely on this work.

There are three classifications of CAATs – namely:

- Audit software
- Test data
- Other techniques,

Dealing with each of the above in turn:

- **Audit software**

Audit software is a generic term used to describe computer programs designed to carry out tests of control and/or substantive procedures. Such programs may be classified as:

- **Packaged programs**

These consist of pre-prepared generalized programs used by auditors and are not 'client specific'. They may be used to carry out numerous audit tasks, for example, to select a sample, either statistically or judgmentally, during arithmetic calculations and checking for gaps in the processing of sequences.

- **Purpose written programs**

These programs are usually 'client specific and may be used to carry out tests of control or substantive procedures. Audit software may be bought or developed, but in any event the audit firm's audit plan should ensure that provision is made to ensure that specified programs are appropriate for a client's system and the needs of the audit. Typically, they may be used to re-perform computerized control procedures (for example, cost of sales calculations) or perhaps to carry out an aged analysis of trade receivable (debtor) balances.

- **Enquiry programs**

These programs are integral to the client's accounting system; however they may be adapted for audit purposes. For example, where a system provides for the routine reporting on a 'monthly' basis of employee starters and leavers, this facility may be utilized by the auditor when auditing salaries and wages in the client's financial statements. Similarly, a facility to report trade payable

(creditor) long outstanding balances could be used by an auditor when verifying the reported value of creditors (Acca Global, 2023).

1.2. Empirical Literatures

In general, several research have been done to look at the determining factors that might have an impact of information technology in the audit quality. As a result, the objective of this empirical study is not to report the findings of all prior studies, but rather to assess a few of them about the factors that influence the quality of external auditing.

Taufiq Supriadi, Mulyani.S, Eddy Mulyadi Soepardi, and Ida Farida (2019) the study focused on the impact of information technology and e-audit systems on audit quality. The researchers used descriptive and verificative statistical analysis with the help of statistical tools. The findings revealed that the use of information technology doesn't have any significant impact on audit quality while the successful implementation of e-audit systems improves audit quality. The researchers concluded that the full qualification of the successful implementation of the e-audit system on audit quality is dependent on the efficiency and effectiveness of the inspection process.

AL-Salmi, Wee, and Akbar (2022) investigated the effect of information technology on audit quality in Oman's government sectors. The Article examined the benefits of information technology in previous studies, as well as the relationships between IT and audit quality in Oman's public sector. They collected data through a survey and questionnaires, which they then analyzed using SPSS and Smart-PLS. The findings showed that there is a strong and positive relationship between information technology and audit quality in Oman's government sectors.

Alrabei (2021) a study was conducted to investigate how information technology affects the relationship between audit quality and the quality of accounting information. The study used a survey and questionnaires to collect data from Jordanian auditors and the data collected was analyzed using multiple regression analyses. The results of the study revealed that information technology plays a vital role in moderating the relationship between audit quality and the quality of accounting information.

Alghurair , Almatori, Alhasswi, Alfilakawi, & Alsubai, (2016). The influence of technology on improving audit quality in the State Audit Bureau of Kuwait (SAB). They used questionnaires,

personal interviews, and database logs to collect data, and they found that auditors employ technology in their duties to achieve higher accuracy and save time and effort.

Caldeira,C.D.C. (2019), A study was done to compare the impact of audit quality on company performance in Northern and Southern Europe. The goals of this study are to examine the impact of auditor size, auditor change, audit fees, auditor opinion, and board size as measures of audit quality, as well as to determine how the five metrics differ between the two European regions. Finally, the study indicated that board size is not represent an explanatory variable for audit quality. Audit size, audit opinion, and auditor change all have a statistically significant relationship with only one of the financial performance and profitability indicators, which is a limitation because it is only dependent on the precise indicator used. Audit fees is the most significant variable to explain the audit measure of the research model. Reinforcing the importance of audit fees in order to explain audit quality. Furthermore, by comparing the north and south region, it is possible to conclude that audit fees and board size present different results depending on the region.

Nguyen et al. (2020) investigated the determinants of information technology audit quality in Vietnam. The paper aims to investigate auditors, auditing firms and other external factors that affect quality of information technology audit in Vietnam. The study used a survey of auditors from Big4 and non-Big4 firms. The data are analyzed using a factor analysis and compare means approaches to illustrate the potential IT audit quality factors and identify differences between two groups of auditors. The results of the study suggest that independence and accounting knowledge and audit skills are the most important factors in determining IT audit quality. The result also shows that the auditors need to have enough competent and professional skills when conducting an audit, especially within an IT environment that requires high quality. The study also finds that auditors from Big4 firms tend to have higher IT audit quality than auditors from non-Big4 firms.

Imtithal Rasheed Batcha (2022), was studied on the impact of digital audit on improving Performance quality and reducing costs an applied research in a sample of private Auditing firms and offices. The research explores the impact of the use of digital audit on improving performance quality and reducing costs which are essential aspects of auditing. The research problem is "ignoring the use of digital audit via Information Technology in auditing to avoid shortages of some human resources and hence affecting performance quality and costs. The researcher aims at introducing digital audit, its goals, and its impact on performance quality improvement and cost

reduction of the audit. The most important recommendation proposed by the researchers is training auditors to efficiently utilize IT to save time, effort and to cut costs when carrying out audits.

In 2013, Anas, Ali Al, & Dr ahmed published a paper titled "Impact of Information Technology on the Auditing Profession". The paper investigated the impact of IT on auditing efficiency using IT as a proxy. The study focused on how computer systems are efficient in the review, verification, and estimation, testing the consistency in accounting, recalculating the value of specific elements, and the fundamental audit process such as statistical samples and comparisons, and the extraction of accounting ratios. The paper's findings imply two opposing conclusions. First, the use of IT to improve audit efficiency has a detrimental impact on quality. This is because auditors may rely too heavily on IT systems and may not be as critical in their assessment of financial statements. Second, the application of IT in numerous domains of auditing will aid in increasing efficiency and effectiveness. This is because IT can automate many of the tasks involved in auditing, freeing up auditors to focus on more complex and strategic areas. The paper's findings are consistent with the results of other studies on the impact of IT on auditing. However, more research is needed to fully understand the complex relationship between IT and auditing.

2.2.1. Study in Ethiopia

Mikias (2021), Studied about the Impact of Information Technology in Financial statement Audit Quality: In the case of grade “A “External Audit Firms in Ethiopia. The aim of this study is to assess whether existing information technology has impacted financial statement audit quality. In addition, the researcher isolated fundamental concepts of auditing such as; IT based audit sample, audit risk, materiality decision, information asymmetry assessment and non-audit service. To respond to the above-mentioned subject, the researcher uses ten Ethiopian audit firms have chosen based on convincing judgmental sample approach in establishing based on the criterion on the Audit clients and firm size. While, to improve the quality of information for testing the series research hypothesis. The study, both quantitative and qualitative (mixed) research methods are used.as a result, primary data from Sami-structured cloth-ended questionnaires has been collected and evaluated. Data derived from questionnaires that have been analyzed using the statically package. However, the data obtained from interview has been analyzed in words. Finally, the result of ordered regression model depicted that except IT based non-Audit service sampling, risk assessment, materiality decision, information asymmetry analysis has depicted positive probability

coefficients in 5 % significant level. As a result, this sends a strong message to existing and entrant audit firms, as well as the AABE, that IT-based financial statement auditing is critical to improving Ethiopia's current state audit quality.

Bogale (2016), studied the determinants of external audit quality proxies by discretionary (abnormal) accrual based on audit firm-specific and company-related attributes that are considered vital by regulatory and professional bodies to properly monitor the external audit profession and to maintain trust among the various stakeholders in Ethiopian manufacturing share companies. In light of this objective, the study adopted a quantitative method of research to test a series of research hypotheses. Specifically, the study used documentary analysis of companies' audited financial statements and personal inquiry with audit directors, officials of audit firms, and company managers. Then companies were selected based on a simple random sampling method to avoid biases and represent firms within the manufacturing share companies under consideration. Consequently, the study selected a sample of eighteen (18) companies for the period of five years (2011–2015) with a total of 90 observations. The results of panel least squares regression analysis show that certified audit professionals and joint provision of audit and non-audit services have statistically significant and positive relationships with manufacturing share companies' external audit quality. On the other hand, the size of independent non-executive board members and the duality of chief executive officers have a negative and statistically significant relationship with large manufacturing shares' external audit quality. However, the relationship between firm size, audit firm industry specialization, and audit firm tenure was found to be statistically insignificant. Therefore, it is clear that all large manufacturing share companies in Ethiopia should maintain board independence and keep in mind audit firm characteristics while hiring an audit firm for their audit services.

Feleke, (2017), conducted research on the perception of auditors about audit quality in Ethiopia. The research used the survey as a strategy of inquiry. The survey covers 88 external auditors who have senior auditor and above positions. The response rate is 60%. The research result shows that the analysis indicates that respondents agree on a positive relationship between audit firm size, audit competence, industry specialization, and auditor's reputation with audit quality. Tight audit time has a negative relationship with audit quality. Respondents are neutral on the relationship between audit fees, audit tenure, and provisions of non-audit services with audit quality.

Kumsa Bersisa (2022), has also been conducted on the topic "The Factors Affecting the Quality of External Audit Services: Evidence from Private Audit Firms of Ethiopia" the study is focusing on the impact of competence and independence on the quality of auditing. To attain this objective, the researcher adopted a mixed-methods research approach to test a research hypothesis, and by using a convenience sampling design, 102 close-ended sample questionnaires were distributed to audit practitioners working in private external audit firms in Ethiopia. The study used an ordinal regression model of data analysis and a statistical package, SPSS. The result shows that audit competence has a statistically positive significant effect on audit quality at a 5% significance level, and audit independence has a statistically positive significant effect on audit quality at a 5% significance level. Therefore, the study suggests that the Accounting and Auditing Board of Ethiopia gives a bigger scale to the independence and competence of auditors while setting a criteria to be fulfilled in the process of awarding professional licenses to new entrants.

Nafkot Assefa (2021), Researched the determinant factors affecting external audit quality in Ethiopian audit firms. Namely External audit quality, External Auditor's Professionalism, level of Education, Work Experience, evidence-based approach, and independence. Considering this objective, the researcher adopts a quantitative method of research approach to test a series of research hypotheses. Specifically, the study used primary data through close-ended questionnaires. From the total population of one hundred thirty-two external audit firms licensed and registered in Addis Ababa Accounting in Auditing Board of Ethiopia (AABE), forty audit firms are selected based on convenience sampling, and one hundred sixty four questionnaires are distributed. Seven questionnaires are distributed to each firm. The questionnaires are answered by principals/partners, Director/ Audit Managers, senior and junior audit positions. Finally, the results show multiple regression reveals that Auditors' professionalism, auditors' level of education, and auditors' independence have positive and significant effects on external audit quality, and auditors' work experience and Auditors' evidence-based approach has a positive and negative with insignificant effect on external audit quality. Therefore, this is a clear signal to audit firms, professional associations, and the Accounting and Auditing Board of Ethiopia (AABE) not to ignore the key determinant factors of Auditors' professionalism, auditors' level of education, and auditors' independence.

Gebre Ayinadis (2020), the study analyzed the determinant of audit quality in private audit firms of Ethiopia taking audit tenure, audit fee, internal control of auditee, accountability of external auditors, and number of staff assignments in audit engagements as determinants of audit quality. The study adopted a quantitative research approach to test its working hypothesis. The target population of the study was 122 licensed and registered private audit firms in Addis Ababa. Primary data were collected from the 55 sampled private audit firms of Ethiopia through questionnaires and structured interviews. Data from structured interviews were obtained from the principals/Partners of audit firms. Secondary data were also collected from the financial reports of auditees of the sampled audit firms to measure audit quality using discretionary (abnormal) accrual of management earnings as a proxy. The collected data were analyzed by using SPSS Statistics version 22.0, Linear multiple regression analysis, and descriptive statistics. The results of linear multiple regression analysis showed that audit tenure, internal control of auditees, and number of staffs assignment per audit engagements have positive and statically significant impacts on the audit quality of private audit firms in Ethiopia. While audit fees and accountability of external auditors have statistically insignificant impacts on the audit quality of private audit firms in Ethiopia. Accordingly, recommendations to private audit firms, auditees, and their shareholders and suggestions for future research are provided.

2.3. Research Gap

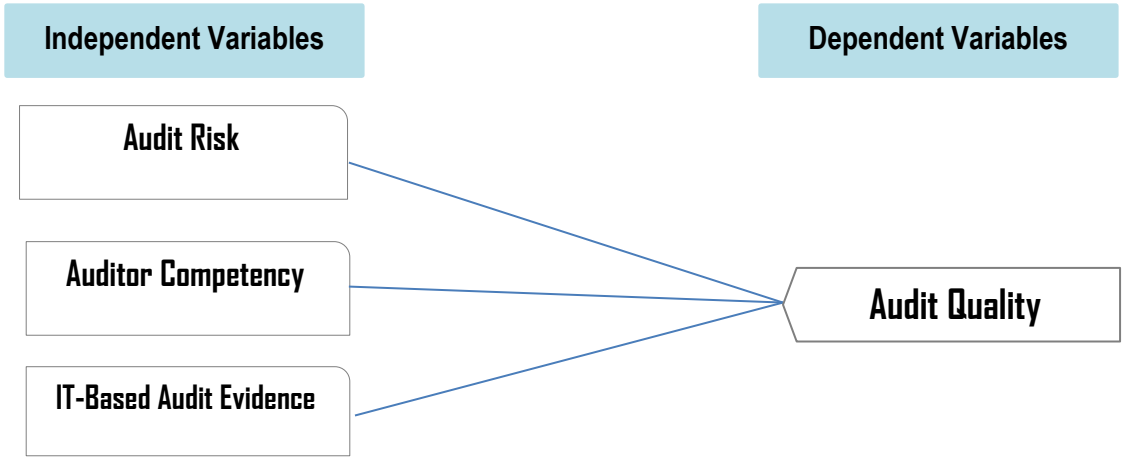
Researchers worldwide are conducting numerous studies on audit quality, but a universally agreed definition and measurement of audit quality do not exist. In Ethiopia, studies mainly focus on factors or determinants of audit quality and fail to cover other issues. This study aims to bridge this knowledge gap by exploring variables related to information technology and audit quality. In terms of researcher knowledge, there is no sufficient study that has been conducted in Ethiopia on the impact of information technology on audit quality in external audit firms in Addis Ababa. Therefore, this study attempts to investigate the impact of using information technology in IT-based audit evidence, audit risk, and auditor proficiency. This study's output will provide valuable insights for certified audit firms, regulatory bodies, and business communities.

2.4. Conceptual Framework

This conceptual framework shows how certain factors (independent variables) affect the quality of audits (dependent variable) in the external audit firms in Addis Ababa. The independent

variables used for this study were carefully chosen, and some were not included which wasn't relevant to this study or were not present in Ethiopia's external audit industry.

Table 2 Research Variables



This study aims to examine the impact of Information Technology on Audit quality in External Audit firms located in Addis Ababa. The independent variables chosen for the research are Auditor Competency, IT-based audit evidence, and Audit risk. The research questionnaire used for the study is and also independent variables mentioned above are adapted from previous research conducted in Ethiopian external audit firms.

Table 2: Sources of Research Variables

No	Academic researches	Variables
1	"Auditors Perception of Audit Quality in Ethiopia" Bayou Tsegaw Feleke "AAU" "Factors Affecting the Quality of External Audit Services: Evidence from Private Audit Firms of Ethiopia" Kumsa Bersisa "AAU"	Auditor Competency
2	"Determinants of External Audit Quality: The case of Private Audit Firms" Nafkot Assefa "AAU"	IT-Based Audit Evidence
3	" The Impact of Information Technology in Financial statement Audit Quality: In the case of grade "A "External Audit Firms in Ethiopia" Mikias G/egziabher "AAU"	Audit Risk

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter will comprehensively outline the research methods used to gather, present, and analyze the essential data and information required to tackle the research objectives and questions. In general, the goal of this chapter is to provide a thorough understanding of research design, study population, sample size and sampling techniques, data sources, data collection instruments, and data analysis methods.

3.1. Research Approach

There were three basic approaches to research: (a) qualitative, (b) quantitative, and (c) mixed methods (John, 2014). Kothari (2019) defined quantitative research as the measurement of quantity or amount. It was applicable to phenomena that could be expressed in terms of quantity. Qualitative research, on the other hand, focused on qualitative phenomena, meaning phenomena related to or involving quality or kind. Creswell (2009) noted that a mixed-methods study could employ either a qualitative or quantitative approach. Accordingly, the researcher employed both quantitative and qualitative (mixed methods) approaches for this study.

3.2. Research Design

Research design constituted the blueprint for the collection, measurement, and analysis of data (Kothari, 2019). The study adopted both Descriptive and Explanatory research designs. Explanatory designs aimed to establish cause-and-effect relationships. Their primary purpose was to determine how events occurred and which ones might have influenced outcomes (Dawson R. & Bob, 2006). Descriptive research was research for which the purpose was to produce an accurate representation of persons, events, or situations (Saunders et al, 2009). The researcher used a descriptive design to describe the variables utilized in the research. In this study, the researcher did not have control over variables and only reported what had happened or what was happening (Kothari, 2004).

3.3. Data Source and Types

The study utilized a structured questionnaire and interview questions as the primary methods of data collection. The structured questionnaire primarily gathered facts about respondents' opinions and attitudes regarding the influence of information technology on the audit quality focus of external audit firms in Addis Ababa. These questionnaires were designed to serve the purposes of identifying the research goals and analyzing the data collected through the questionnaire. Interviews, on the other hand, involved conversations between a researcher and participants where the researcher asked open-ended questions. This method facilitated the collection of qualitative data, providing in-depth insights and understanding of the participants' experiences, opinions, and perspectives. Together, these two data sources provided a comprehensive understanding of the research topic.

3.4. Data collection procedure

This procedure was designed to provide a comprehensive understanding of the influence of information technology on the audit quality focus of external audit firms in Addis Ababa. Accordingly, the researcher followed a data collection procedure which included the following steps:

i. ***Identifying the target population:*** The target population for this study was external audit firms in Addis Ababa.
ii. ***Developing a survey instrument:*** The survey instrument included questions about the influence of information technology on the audit quality focus of external audit firms in Addis Ababa.
iii. ***Selection of participants:*** Participants were selected through purposive and convenient sampling methods which involved selecting respondents relevant to the research purpose and considering the convenience of gathering the necessary data from them. This procedure helped to ensure a representative sample of the target population was obtained.
iv. ***Administering the survey:*** The survey was administered in person and using online forms depending on the availability of the participants.

v. ***Data Collection and Analysis:*** Finally, the data was collected and analyzed to draw meaningful conclusions and recommendations for future research and interventions. The collected data was analyzed using descriptive statistics and inferential statistics.

3.5. Target Population and Sampling

3.5.1. Target population

A population refers to the entire collection or total number of items from which samples can be drawn. The type and method of sampling chosen for a study primarily depend on the characteristics of the population under investigation (Kothari, C.R, 2006).

The target population for this specific study was the auditors employed by external audit firms located in Addis Ababa. Based on data gathered during the preliminary assessment, the number of auditors permanently employed by the targeted external audit firms was 153.

3.5.2. Sampling Techniques

The study employed purposive and convenient sampling techniques to distribute the questionnaires to respondents. The rationale behind for the selection of these sampling techniques is its advantages on providing representative samples for the subject under study.

3.6. Sample Size

The objective of this study was to investigate the influence of information technology on the audit quality focus of external audit firms in Addis Ababa. The researcher attempted to recruit the maximum possible sample size from the total target population. To determine an appropriate sample size, the researcher employed the formula utilized by Yemane (1968). Therefore, to calculate sample size following formula is applied:

$$n= N/ (1+N (e)^{2}),$$

Where n is the sample size, N is the population size, and e is the level of precision. By using this formula at 95% confidence level and 5% level of precision the following sample size will be obtained. $n=153/ (1+153(0.05)^2)$ then, **n=<u>110.</u>**

3.7. Method of Data Analysis

The data were collected using questionnaires and interview questions and were analyzed using both descriptive and inferential methods with software called SPSS version 22.0. The data gathered through questionnaires was fed into SPSS to prepare it for processing into graphs, figures, tables, and charts. Descriptive statistics, such as means, percentages, and standard deviations of the variables, were used to describe the characteristics of the respondents.

Additionally, the collected raw data was tabulated quantitatively and analyzed statistically using the Statistical Package for Social Sciences (SPSS) Version 22.0. Key findings were then interpreted and reported accordingly.

3.8. Model Specification

Multiple regression analysis was applied to analyze the relationships between the dependent variable and several independent variables (Hair et al., 2005). This approach was chosen because it is suitable for studies with a single metric dependent variable that is potentially influenced by more than one metric or non-metric independent variable. The regression model of the study looks as follows:

$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e$

Where,

Y = Audit Quality (DACR) b_1, b_2, b_3 = coefficients of regression

a = value of Y if $X_1 + X_2 + X_3 + X_4 + X_5 = 0$

$\mathbf{X_1}$ = IT-Based Evidence, $\mathbf{X_2}$ = Auditor Proficiency, $\mathbf{X_3}$ = Audit Risk,

e = residual value

3.9. Ethical Considerations

This study considered privacy, confidentiality, data protection, and the voluntary nature of participation as significant ethical issues. Every effort was made to minimize the risk or discomfort to participants arising from these issues. Prior to distributing questionnaires, the researcher

requested permission to conduct the research with sample respondents. Maximum efforts were made to ensure respondents felt secure, and confidentiality was maintained so that no harm could befall them. All assistance, collaboration from others, and sources from which information was drawn were acknowledged. The study thoroughly followed research ethics. Accordingly, the study purpose was clearly stated to the respondents, and all collected data were kept confidential. Moreover, all citations were referenced ethically.

3.10. Reliability Test

Zikmund (2003) asserted that pre-testing was necessary to guarantee the validity of the questionnaire and error-free measurements that produced consistent findings. If each variable had a Cronbach's coefficient alpha of at least 0.6, the questions were considered credible. The internal consistency and reliability of the questions were given a higher ranking if the outcome was close to 1. Reliability of an object or scale could range from 0 to 1. The Cronbach's alpha model was employed in this study. By using 22 items from 15 samples... (the rest of the sentence remains unchanged).

Table 3: Reliability Test

Independent and Dependent variable	Cronbach Alpha	No of Items
Audit quality	.898	6
IT based audit evidence	.830	6
Auditor Competency	.746	5
Audit risk decisions based on IT	.806	5
Over all	0.946	22

Source: own survey, 2023

In relation to construct validity, that is the instruments measure the variables that they are supposed to measure and no other variables. Expert opinion from supervisors and other experts has been sought to assess the validity of the data collection instruments.

CHAPTER FOUR

ANALAYSIS, DISCUSSION AND INTERPRETATION

4.1. Introduction

This chapter presents the results of the investigation by the researcher based on the methodology stated in chapter three. It includes the general background of the respondents and detailed discussion of the specific objectives, analysis of descriptive statistics, and correlation and regression analyses through SPSS version-22.0.

4.2. Response rate

The researcher distributed 110 questionnaires for respondents. However only 98 were successfully returned. Which account 89.1% of response rate as it is above 70%, we can consider it as acceptable response rate (Mugenda and Mugenda, 2003).

Table 4: Response rate

	Frequency	**Percentage**
Responded	98	89.1
Not responded	12	11.9
Total	**110**	**100**

Source own survey, 2023

4.3. Demographic analysis

4.3.1 Gender

Table 5: Gender of Respondents

		Frequency	**Percent**
Valid	Male	73	74.5
	Female	25	25.5
	Total	**98**	**100.0**

Source: own survey, 2023

Different finding indicates that there is gender gap on employee job performance in the auditing system. For instance Paul and seamuls (2019) conducted a study for the purpose of Explaining the Gender Gap in Job Satisfaction and auditing practice effectiveness. In their finding the authors reported that women report greater job satisfaction and more accuracy than men.

In the current study as it is clearly displayed in the above table majority of the respondents (74.5%) of the total participants are male. It implies that man workers are dominantly working in the auditing sector than females.

4.3.2. Educational Background

Table 6: Educational Background of Respondents

	Frequency	Percent
Bachelor Degree	51	52.0
Masters Degree	8	8.2
ACCA	11	11.2
CPA	1	1.0
Multiple	27	27.6
Total	**98**	**100.0**

Source: own survey, 2023

previous researchers have reported that better education level play significant role on enhancing audit quality by lowering audit job related stress. Thorsten L et al. (2015), for example, conducted research on the association between Education and auditing Work Stress. Their study's key findings show a persistent link between lower education and higher levels of occupational stress.

From the aspects of education level majority of the respondent (which account 52% of the total participant) reported that they are BA degree holders followed by 27.6% of respondents who are indicating their education multiple. The remaining 11.2% of the respondents have ACCA. It implies that respondents have good educational background to understand and responded the questionnaires.

4.3.3 Audit software

Table 7: Audit software

		Frequency	Percent
Valid	Audit Software	15	15.3
	Advanced Excel	41	41.8
	Manual	2	2.0
	Audit software & Excel	40	40.8
	Total	**98**	**100.0**

Source: own survey, 2023

As it is displayed in the above table majority of the respondents reported that they are using Advanced Excel as audit software which account 41.8% of the total respondents followed by these who responded that they are using Audit software & Excel which represent 40.8% of the total respondents. The remaining 15% and 2% of the respondents are indicating that they are using Audit software and manual system. It implies that advanced excel is dominantly used by firms.

4.4. Descriptive Analysis

Descriptive statistics stand for the conversion of raw data into useful information which can be interpreted to explain a group of dimensions (Brayman & Bell, 2007). The researcher uses all respondents' (n=98) responses from the questionnaire by using SPSS version 22.0; for overall mean computation of each scale items for the variables minimum and maximum values are also considered to show exact answers of the respondents of the questionnaire; because they are not all incorporated in that mean (average) value only. The sample mean is to show the majority of respondents as best predictors of the population and hence to infer for others.

Table 8: five scaled criteria

No	Mean range	Response options
1	1.00- 1.80	Strongly disagree
2	1.80- 2.60	Disagree

3	2.60- 3.40	Neutral
4	3.40- 4.20	Agree
5	4.20- 5.00	Strongly agree

4.4.1 Audit quality

Table 9: Audit quality

	Mean	Std. Deviation
Awareness of client's industry is achieved during the audit Planning stage.	3.3000	.70711
Does your company audit works is conducted in compliance with audit standards.	3.6327	.80447
Does your company uses audit program as a tool which tells an auditor what procedure is required to follow during an audit, the audit firm has maintained an audit program and Auditors strictly utilize it during Auditing.	3.6837	.58498
Does your firm assessed a risk of material misstatement before planning the nature, timing and extent of an audit	3.9694	.97868
The firm has established policies and procedures for ethical r requirements and firm and its personnel comply with these requirements.	3.5510	.64412
Does the auditor verify the internal control system through direct observation of control will ensure the quality of audit?	3.7755	.73961
Over all		

Source: own survey, 2023

As it is clearly seen in the table above the highest mean value is recorded on item three stated as "The firm assessed a risk of material misstatement before planning the nature, timing and extent of an audit" with mean value of 3.96 which is equivalent with response rate of "Agree" based on our criterion. It implies that firms are effectively assessing a risk of material MIS statement befor planning the nature timing and extent of an audit.

The second highest mean value is 3.77 which is also reported on item six "the auditor verify the internal control system through direct observation of control will ensure the quality of audit." similarly this mean value is also equivalent with response rate of " Agree". It implies that
Audit quality is good from the aspects of auditors as they verify the internal control system through direct observation. Item two (Does your company uses audit program as a tool which tells an auditor what procedure is required to follow during an audit, the audit firm has maintained an audit program and Auditors strictly utilize it during Auditing) and item three (The firm assessed a risk of material misstatement before planning the nature, timing and extent of an audit) also have mean values of 3.63, and 3.68 respectively. Both of the mean values are also correspondent with mean value of "Agree" based on the criterion. It implies that the respondents are confirming that the auditing quality is sound good from both aspects.
The lowest mean value is 3.3 which is reported on item one stated as "Awareness of client's industry is achieved during the audit Planning stage" the mean value is equivalent with response rate of "Neutral" based on our criterion. It implies that respondents are neither agree nor disagree

4.4.2 IT-Based Audit Evidence

Table 10: IT based Audit Evidence

	Mean	Std. Deviation
To what extent do you agree that external auditors ask relevant questions and review documents that are related to the scope and nature of the audit they are conducting?	3.2504	.67701
To what extent do you agree that external auditors seek to obtain sufficient and appropriate audit evidence to back their opinions on the audit quality?"	3.3878	.63624
To what extent do you agree that the evidence collected using and reviewed by external auditors is sufficient to test conformance to selected standards and policies?	3.6327	.82970

Does the auditor's present deliverables with verifiable documentation with reference to support documents used and is laid out in an understandable document/report?	3.7143	.82487
IT-based audit evidence can be used to test a wider range of audit assertions.	3.7755	.81898
Do you believe that IT-based audit evidence is more efficient than the traditional based on its cost and time?	3.5000	.70711
All		

Source: own survey, 2023

As it is shown in the table above the highest mean value is recorded on item five stated as " IT-based audit evidence can be used to test a wider range of audit assertions" with mean value of 3.77 followed by the mean values of 3.71 which is also recorded on item four stated as "Does the auditors present deliverables with verifiable documentation with reference to support documents used and is laid out in an understandable document/report" both of the mean values are equivalent with response rate of "Agree" based on our criterion. It implies that firms are using IT based audit evidence to test a wider range of audit assertation and auditors present deliverables with verifiable documentation with reference to support documents used and is laid out in an understandable document/report.

Item one (To what extent do you agree that external auditors ask relevant questions and review documents that are related to the scope and nature of the audit they are conducting) and item two (To what extent do you agree that external auditors seek to obtain sufficient and appropriate audit evidence to back their opinions on the audit quality) have mean values of 3.25 and 3.38 accordingly. Both mean values are equivalent with mean range of "Neutral" based on our criterion. It implies that respondents are not assuring that the external auditors ask relevant questions and review document that are related to the scope and nature of the audit they are conducting. So it is possible to conclude that firm should pay sufficient attention for the issue.

4.4.3 Auditor competency

Table 11: Auditor competency

	Mean	Std. Deviation
To what extent do you agree that auditors demonstrate appropriate technical knowledge and expertise, including access to specialists, as required?	3.6327	.80447
Does you competent to comply updated laws and regulations in the audit performance.	3.5714	.73218
Do you believe that Information Technology enhance your productivity as audit professional.	3.5714	.59204
To what extent do you agree that the audit firm provides the necessary training, resources and assistance to enable auditors to develop and maintain the required competence and capabilities?	3.9286	.85253
To what extent do you agree that there are programs and clear guidelines set by the audit firm to ensure continuous professional improvement and assign appropriate authority to a person or individuals?	3.7755	.92537
Over all		

Source: own survey, 2023

As it is shown in the table above table all items under auditor competency have mean value ranged between 3.57 and 3.92. Based on our criterion all of the mean values are equivalent with mean range of “Agree”. It implies that respondents are confirmed that auditors are competency to perform tasks in the case area.

4.4.4 Audit risk

Table 12: Audit Risk

	Mean	Std. Deviation
How much do you agree that electronic audit programs help minimize inherent audit risk? (Inherent audit risk is the risk that exists before any controls are put in place.)	3.7347	.95842
To what extent does information technology can reduce sampling risk by increasing the number of item selection during sample size?	3.8163	.61505
How do you feel that various audit software can provide signals when auditors make non-sampling risk?	4.0000	.94159
To what degree do you think intentional acts of managers abusing hardware, software & accounting information systems can bias IT-based auditor risk decisions?	4.1633	.84578
How much do you agree that effective digital communication between auditors, clients & management helps reduce information asymmetry?	3.6633	.83658
Over all		

Source: own survey, 2023

In the above table all items have mean values ranged between 3.4 and 4.2. it implies that on average respondents are agreed on the items.

4.5. Qualitative data analysis

During key informant interview on Assistant Audit manager with 10-year experience stated that "There are several factors that can hinder the quality of external audits & Also state that about the factor that influence audit quality. One such factor is when the auditor lacks the necessary competence, which includes knowledge, experience, and skills. In addition, the auditor may not receive continuous professional development opportunities. Another barrier to quality auditing is

when the auditor lacks specific knowledge about the nature and compliance issues of the reporting entity. for example, lack of understanding about financial instruments. As per the interviewer view there are mainly two factors that affect the audit quality these are the auditor competency and the subject matter" Another participant with 15 years of Audit experience as partner said about the barriers of audit quality "Due to the complex nature of auditing, an auditor may not be able to gather sufficient and appropriate evidence to support their opinion." During an interview session, with Accounting and Auditing Board of Ethiopia senior management with 17-year experience expressed concerns about the excessive use of technology during financial statement preparation. According to the manager, the criteria used could be difficult to understand by both the auditor and the preparer, which could lead to material misstatements that might go unnoticed during the audit.

The manager also explained that external audit issues generally arise from four key players: the auditor/assurance provider, the subject matter, the criteria/financial reporting standards, and those responsible for the preparation of financial statements/responsible for fair presentation." And asked about the implementation of technology-based auditing and its threat, and they stated that "It is being employed since it could influence how well the financial statements audit is done but at a higher risk. The auditor needs to have all the necessary technological equipment. One thing about IT use that I understand is that it makes audits more efficient, especially when CAATs are used".

4.6. Inferential analysis

Inferential analysis is concerned with various statistical tests for hypothesis testing to evaluate whether validity data can be considered to indicate some conclusion or conclusions. It also has anything to do with estimating population values. The task of interpretation is primarily accomplished through inferential analysis. The main inferential methods used in this study to analyze the relationship between the dependent and independent variables were correlation, coefficient, and multiple linear regressions.

4.6.1. Correlation analysis

Table 13: Rule of thumb

Range of coefficient	Descriptive of strength
±0.8 to ±1.00	Very strong
±0.61 to ±0.8	Strong
±0.41 to ±0.60	Moderate
±0.21 to ±40	Weak
±00 to + ±0.20	No relation

Source: (Bhattacherjee, 2012)

Pearson Correlation analysis: Multiple correlations and the equation describing such a relationship are used when there are two or more independent variables. Pearson correlation was calculated in this context to determine the relationship between independent variables and the dependent variable. Table below presents the results of Pearson correlation on the relationship between dependent and independent variables.

Table 14: Correlation

Correlations

		AQ	ITA	AC	ARD
AQ	Pearson Correlation	1	.559**	.630**	.476**
	Sig. (2-tailed)		.000	.000	.000
	N	98	98	98	98
ITA	Pearson Correlation	.559**	1	.457**	.248*
	Sig. (2-tailed)	.000		.000	.014
	N	98	98	98	98
AC	Pearson Correlation	.630**	.457**	1	.401**
	Sig. (2-tailed)	.000	.000		.000
	N	98	98	98	98
ARD	Pearson Correlation	.476**	.248*	.401**	1
	Sig. (2-tailed)	.000	.014	.000	
	N	98	98	98	98

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: own survey, 2023

The results in table above indicate that, there is positive and significant relationship between all independent variables (IT-Based Audit Evidence, Auditor Competency, and audit risk) and dependent (audit quality). Auditor Competency and audit quality have the highest correlation coefficient ($r = 0.630$, $p < 0.01$), the second ranked correlation is between IT-Based Audit Evidence and audit quality with r values of 0.559 followed by the correlation coefficient between audit risk and audit quality with values of ($r = -0.476$ $P < 0.01$).

The Pearson correlation coefficient between each pair of independent variables should not exceed 0.9, according to (hair et al., 2006 cited in mengistu 2016). This is because if the correlation value exceeds 0.90, the data may be suspected as having a major collinerity problem. The highest correlation coefficient in the table above is 45.1 percent, which is between Auditor Competency and audit risk, and it is still less than 0.90. As a result, it is believed that there would be no multicollinearity issues in this study.

4.7. Multiple linear regressions

4.7.1. Assumption test

A. Normality assumption

The researcher used both Analytical and graphical methods to check the normality assumption of the study

1. Analytical method

As the sample size is more than 50 and it is a parametric analysis the researcher used skewness and Kurtosis to check the normality assumption based on Analytical method.

Table 15: Skewness and Kurtosis

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
AQ	98	.203	.244	.783	.483
Valid N (listwise)	98				

Source: SPSS output 2023

In the above table the skewness level for the dependent variable 0.203 is very close to Zero. Such value indicate that the data is normally around the mean. It implies that the data is normal according to George & Mallery these scholars argues that the values for asymmetry and kurtosis between -2 and +2 are considered acceptable in order to prove normal univariate distribution (, 2010)

2. Using Graphical method to check normality.

When reviewing the data, the analyst should plot the standardized residuals against the predicted values to see if the points are evenly distributed over all independent variable values. To test the hypothesis, if the data come from normal population, the data in this study was plotted on a scatterplot and Histogram.

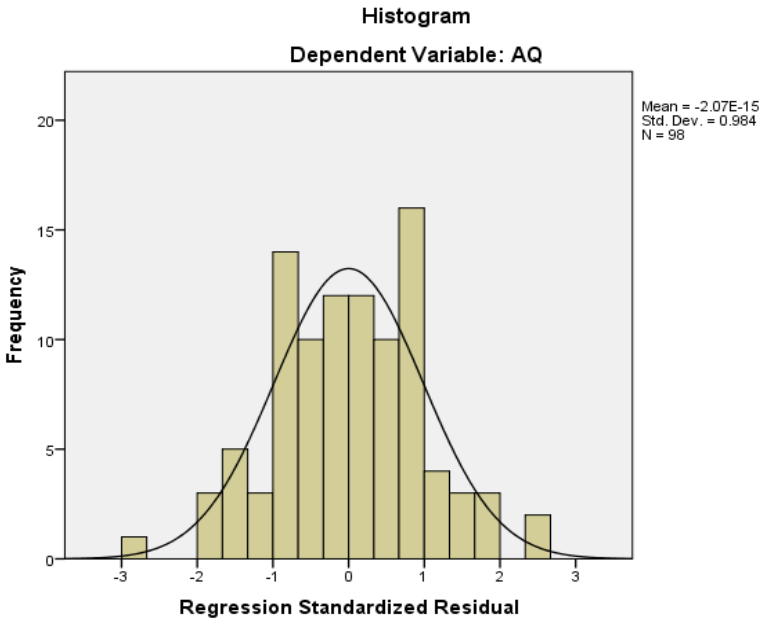
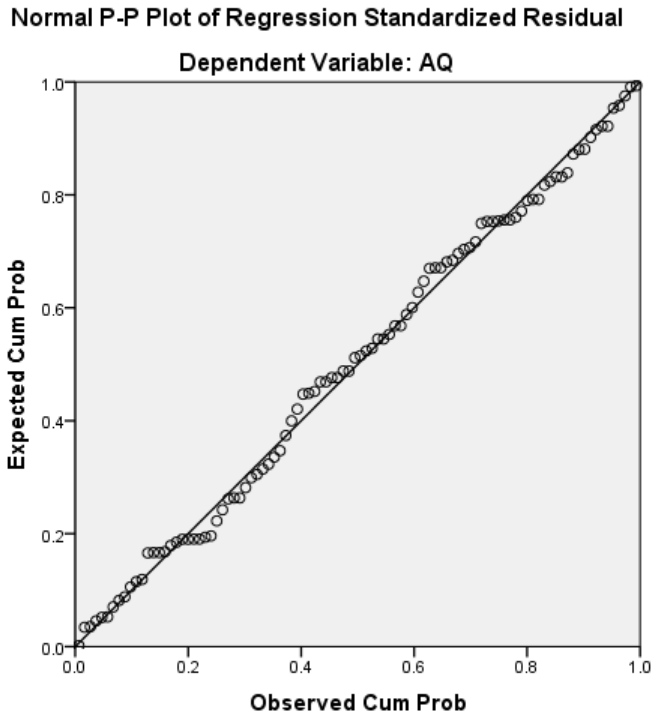


Figure 1: Histogram.

Source: own survey, 2023

As it is shown in the above Figure the histogram looks like a bell shaped. It implies that it is approximated a bell-shaped and normal distribution. Moreover, the standard deviation in the histogram measures the width of the bell curve. Still the SD value of .984 is less than one and it indicates that the data is normal.

Figure 2: Normal PP-plot.



Source: own survey, 2023

In the above Normal Probability plot as it is clearly seen the observed are plotted diagonally and very close with the expected normal line. It shows that the normality criterion is met, and data set is approximately normally distributed.

B. Checking absence of multicollinearity using VIF values.

Multicollinearity, which arises when the independent variables (explanatory variables) are highly interrelated, should not be present in the data. When independent variables exhibit multicollinearity, determining the precise variable that contributes to the variance in the dependent variable becomes difficult. The Variance Inflation Factor approach is the best way to test for the

assumption. The VIF values of all explanatory variables are less than 5. It shows that the assumption is not violated.

Table 16: VIF values to check absence of multicollinearity.

Model		Collinearity Statistics	
		Tolerance	**VIF**
1	(Constant)		
	ITA	.786	1.273
	AC	.703	1.423
	ARD	.834	1.199

Source: own survey, 2023

C. Checking auto correlation by using Duribn-watson.

Even if the concept of autocorrelation is most often discussed in the context of time series data in which observations occur at different points in time can also occur in cross- sectional data when the observations are related in some other way, in our case autocorrelation is checked by calculating Duribn-watson and it is 1.87 which is between the acceptable range.

4.7.2. Model Fit

Multiple linear regression is the most common type of linear regression analysis. To explain the relationship between the audit quality and determinant factors, multiple linear regression is used as a predictive analysis in this study. Because it allows the researcher to account for all these potentially significant factors in a single model, multiple linear regression is used. This strategy has several advantages, including a more precise knowledge of the relationship between each individual factor and the outcome.

Table 17: Model summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.734[a]	.538	.523	.25931	1.871

a. Predictors: (Constant), ARD, ITA, AC

b. Dependent Variable: AQ

Source: own survey, 2023

The researcher examined the cause and effect relationship between audit quality and independent factors using Adjusted R squared in this study. Adjusted R-squared is a variant of R-squared that considers the number of predictors in the model. It's utilized in this study because it has the advantage of increasing when a new word improves the model more than would be predicted by chance. When a predictor improves the model by less than expected, it declines. Typically, the adjusted R-squared is positive, not negative. It is always lower than the R-squared. The value of adjusted R2 = .523 means that total variation in the dependent variable (audit quality) is explained or caused by 52.3 per cent of the change in the dependent variable cause by all independent variables (audit risk, auditor competency, and IT based audit evidence). In other words, 57.7 (1-0.523) per cent of the variation in overall audit quality cannot be explained by these three independent variables. So, there must be other practices that are not incorporated in the study to explain audit. The overall model was also significant, tested with the help of ANOVA. The results are given in table below.

4.7.3. ANOVA

Table 18: ANOVA

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.365	3	2.455	36.512	.000[b]
	Residual	6.321	94	.067		
	Total	13.686	97			

a. Dependent Variable: AQ

b. Predictors: (Constant), ARD, ITA, AC

The above ANOVA table shows a strong relationship between the dependent and independent variables of the study with F-statistic or F-ratio of 36.512 for the overall analysis and is worth-mentioning that the F-value is highly significant (as p=.000<.01).

4.7.4. Regression coefficient

Table 19: Regression coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.786	.282		2.792	.006
	ITA	.301	.074	.323	4.091	.000
	AC	.328	.071	.385	4.605	.000
	ARD	.158	.050	.241	3.143	.002

As shown in the table above, all significant independent variable coefficients are positive, implying that as the value of the independent variable rises, the mean of the dependent variable (audit quality) also rise. For detail analysis auditor competency has the largest positive and significant effect on audit quality a beta value (= -0.385), at 95 percent confidence level ($p < 0.05$), the second ranked coefficient value is .323 on the variable of IT based auditing, followed by standardized B values of .241 which is between audit risk and audit quality and p value of this coefficient indicate that it is significant at 95% confidence level.

4.8. Discussion

In line with the finding of this study similar results are reported in previous research. For instance, Dale et al (2013) reported in their finding that 13 factors associated with IT audit quality, and Independence and Business Process Knowledge are among the highest rated factors for impact on IT audit quality. Moreover, in line with the finding of this study similar result were reported in the work of Shah (2014), who reported that audit quality has been linked and improved by having technology-based auditing system.

On the other side opposite result is reported in the work of Dr. Anas Ali (2023) who reported that the role of information technology in the process of improving the efficiency of audit has a negative effect on the quality of the review process, But the derived benefits from use the recent methodologies Auditing in the field of actual efficiency associated mainly with the disposal of the old methods and procedures that associated with old methodologies more than related to the methods and procedures for the modern methodologies.

Moreover, other supportive result was reported in the work of Dr. Nawaff (2017) who suggests that one of factors affecting on IT audit quality, is business environment, entity activities and risks, which can be to mystification for auditors in condition auditors haven't enough know. But in condition that auditors have sufficient knowledge, it may be helping the entity's auditors to improvement the quality of audit work.

This study also supports other research (Moffitt et al., 2018; Manita et al., 2020), which indicates that auditors can produce more timely, accurate reports with greater usefulness when they employ sophisticated digital tools. Additionally, earlier research has suggested that one possible drawback of digitalization could be that as the auditing sector becomes more digitally advanced, the skills required by audit companies will change (see, for example, Appelbaum et al., 2017; Tiberius & Hirth, 2019).

4.9. Hypothesis test

The significance (sig.) value expresses a value to accept or reject the (null) hypotheses. It is also called the p-value. The p-value is the probability that the correlation is one just by chance. Therefore, the smaller the p-value, the better will be. The general rule is: reject H0 if $p < .05$ and accept H0 if $p \geq .05$ (Pallant, 2007).

In this part of the study, proof of the alternative hypothesis is made based on Table below for the variables. Because, to test the research hypotheses already set in chapter 1, it is possible to find out if the independent variables are significant predictors of the dependent variables.

Table 20. Summary of hypothesis test

Hypothesis	beta value	P value	Status
Ha_1. Information Technology-based audit evidence has a positive and significant effect on audit quality.	.323	.000	Accepted
Ha_2: Information Technology has a positive and significant effect on the audit risk decisions of external audit firms, leading to improved audit quality.	.385	.000	Accepted
Ha_3: The competency of audit professionals in using Information Technology has a positive and significant effect on audit quality.	.241	.002	Accepted

Based on the information above the p value for all variables from coefficient is less than 0.05 and all alternative hypotheses are Accepted.

CHAPTER FIVE

MAJOR FINDING, CONCLUSIONS AND RECOMMENDATION

This chapter incorporates the conclusion regarding the major finding of the study based on the result found from the data collected in the form of both primary and secondary data. The chapter also contains the recommendations forwarded depending on the arrived conclusion.

5.1. Conclusions

- The research was conducted to analyze the influence of information technology on the audit quality focus external audit firms in Addis Ababa. Moreover, the study was conducted to address three specific objectives such as: To evaluate the IT based audit evidence for the audit quality. To investigate the effectiveness of Information Technology on the external audit firms audit risk decisions on audit quality, and to assess the Competency of audit professionals using Information Technology in the audit quality.
- In the study it is reported that more male is participated in the work of auditing while few numbers of females are also participated. From the education aspect majority of the audit workers are well educated in turn which will enable to improve the overall audit quality.
- The descriptive analysis shows that respondents perceived that audit quality is well improved in the firms. Moreover, the result showed that firms are effectively assessing the risk of material misstatement before planning the nature timing and extent of an audit. Additionally, it is also indicated that audit quality is good from the aspects of auditors as they verify the internal control system through direct observation. However, the issue of awareness of clients during the audit planning stage is not enhanced and it needs better attention.
- Regarding about the IT based auditing system practice the result reported that the external auditors ask relevant questions and review document that are related to the scope and nature of the audit they are conducting. Firms are using IT based audit evidence to test a wider range of audit assertion and auditors present deliverables with verifiable documentation with reference to support documents used and is laid out in an understandable document/report.
- The correlation result shows that there is positive and significant relationship between all independent variables (IT-Based Audit Evidence, Auditor Competency, and Audit Risk) and

dependent (Audit Quality). Auditor Competency and audit quality have the highest correlation coefficient followed by IT-Based Audit Evidence and audit quality and correlation coefficient between audit risk and audit quality accordingly.

- The value of adjusted R2 = .523 this value indicate that total variation in the dependent variable (audit quality) is explained or caused by 52.3 per cent of the change in the dependent variable cause by all independent variables (audit risk, auditor competency, and IT based auditing).
- All variable coefficients are positive and significant implying that as the value of the independent variable rises, the mean of the dependent variable (audit quality) also rise. For detail analysis auditor competency has the largest positive and significant effect on audit quality followed by IT based auditing, and audit risk.

5.2. Recommendation

Based on the finding and conclusions the researcher provides the following recommendations

- As per results indicate Auditor Competency, audit risk, and IT-based audit evidence are factors that have a significant impact on the Ethiopian external audit quality, Due to this, firms should establish their own IT department in their division or work with IT consultants in order to enhance their quality and consider the cyber security of the IT system and safeguard their data properly, Due to the firms compel by the law in order to keep audit working papers for 10 years after the audit work is done.
- The study recommended the Accounting and Auditing Board of Ethiopia should have prioritized evaluating the quality of audit firms and grading them based on their performance.
- The study also recommend that the firms should provide Continues program development (CPD) & Prepare IT based Audit working papers which includes the Audit procedures, Rule and regulations & Analysis working papers which helps to enhance their Professionals ability and to avoid the risk of material misstatement due to control risk. (***Audit working papers*** is a file which includes all the audit documents and evidence.)
- The study includes variables to show the impact of IT on the audit quality and future researchers could add other important variables in the model to full fill the gap on the impact of IT on the audit quality in the case of private audit firms of Addis Ababa.

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Addis Ababa University College of business & economics

Department of accounting and finance

APPENDEX

Questionnaires

Dear respondent,

The purpose of this questionnaire and Interview is only analyses "To Assess the impact of information technology in audit quality in the case of External Audit firms in Addis Ababa". Therefore, I would like to assure you that the information you provide will be confidential and used only for the purpose of achieving academic award for MSC program in Accounting and Auditing.

Thank You in Advance for Your Cooperation

Abel Habtamu

Direction

- There is no need to write your name or other identity.
- Your response would be kept confidential and was used only for academic purpose.
- Please respond to the item in the questionnaire by putting a tick mark (√) inside the box.
- These are abbreviations used on 5-point Likert scale.

  Strongly Agree (SA),
  Agree (A),
  Neutral (N),
  Disagree (D) and
  Strongly Disagree (SD).

Section 1 – General information

1. Your gender

Male	Female

2. Your qualification (Please tick the appropriate one. you can tick more than one)

Diploma	Bachelor's Degree	Master's Degree	ACCA	CPA	Other

3. Your current position

Junior/Associate Auditor	Senior Auditor	Audit Manager	Principal/ Partner

4. Years of Experience in External Audit

Less than 2 years	2 to 5 years	5 to 10 years More	than 10 years

5. What is your experience related to the types of information technology Plate form you are going to use.

Audit Software	Advanced Excel	Manual	Both

6. Years of adopting information technology devices (Based on your Company Context).

Less than 10 years	Less than 5 years	Less than 2 years

7. In what extent does Information Technology Affect Audit quality

Highly Affected	Normal	No Effect

Section 2 – Audit Quality

S/N	Statement	SD	D	N	A	SA
1	Awareness of client's industry is achieved during the audit Planning stage.					
2	Does your company audit works is conducted in compliance with audit standards.					
3	Does your company use audit program as a tool which tells an auditor what procedure is required to follow during an audit, the audit firm has maintained an audit program, and Auditors strictly utilize it during Auditing.					
4	Does your firm assessed a risk of material misstatement before planning the nature, timing, and extent of an audit					
5	The firm has established policies and procedures for ethical requirements and firm and its personnel comply with these requirements.					
6	Does the auditor verify the internal control system through direct observation of control will ensure the quality of audit?					

Section 3. IT based audit evidence for the audit quality

S/N	Statement	SD	D	N	A	SA
1	To what extent do you agree that external auditors ask relevant questions and review documents that are related to the scope and nature of the audit they are conducting?					
2	To what extent do you agree that external auditors seek to obtain sufficient and appropriate audit evidence to back their opinions on the audit quality?					
3	To what extent do you agree that the evidence collected using and reviewed by external auditors is sufficient to test conformance to selected standards and policies?					
4	Does the auditors' present deliverables with verifiable documentation with reference to support documents used and is laid out in an understandable document/report?					
5	IT-based audit evidence can be used to test a wider range of audit assertions.					
6	IT-based audit evidence is more reliable than traditional audit evidence.					

Section 4. Auditor Competency for Audit Quality.

S/N	Statement	SD	D	N	A	SA
1	To what extent do you agree that auditors demonstrate appropriate technical knowledge and expertise, including access to specialists, as required?					
2	Does you competent to comply updated laws and regulations in the audit performance.					
3	Does Information Technology have enhanced my productivity as an audit professional?					
4	To what extent do you agree that the audit firm provides the necessary training, resources, and assistance to enable auditors to develop and maintain the required competence and capabilities?					
5	To what extent do you agree that there are programs and clear guidelines set by the audit firm to ensure continuous professional improvement and assign appropriate authority to a person or individuals?					

Section 5 – Audit risk decisions based on information technology.

S/N	Statement	SD	D	N	A	SA
1	How much do you agree that electronic audit programs help minimize inherent audit risk? (Inherent audit risk is the risk that exists before any controls are put in place.)					
2	To what extent does information technology can reduce sampling risk by increasing the number of item selection during sample size?					
3	How do you feel that various audit software can provide signals when auditors make non-sampling risk?					
4	To what degree do you think intentional acts of managers abusing hardware, software & accounting information systems can bias IT-based auditor risk decisions?					
5	How much do you agree that effective digital communication between auditors, clients & management helps reduce information? asymmetry?					

Interview Questions

1. What are the barriers of the external Audit quality?
2. What are the most important factors that influence audit quality?
3. Does the information technology impact the quality of the financial statement audit & how it helps the office (AABE) Audit quality review process?

Thank You

Abel Habtamu