



**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF ACCOUNTING AND FINANCE**

**DETERMINANTS OF INTERNAL AUDIT EFFECTIVENESS: IN CASE OF
FEDERAL PUBLIC ORGANIZATIONS IN ETHIOPIA**

**BY
DERARTU BIRATU HORDOFA**

**JULY 2024
ADDIS ABABA, ETHIOPIA**

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SELECTED FEDERAL PUBLIC ORGANIZATIONS IN ETHIOPIA**

**A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF
ST. MARY’S UNIVERSITY IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MBA IN
ACCOUNTING AND FINANCE**

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ABBREBATIONS AND ACRONYMS

ACCA...	Association of Chartered Certified Accountants
AFROSAI	African Organization of English-Speaking Supreme Audit Institutions
CIA.....	Certified Internal Auditor
CPA.....	Certified Public Accountant
GAAS.....	Generally Accepted Auditing Standards
GAGAS.....	Generally Accepted Government Auditing Standards
INTOSAI.....	International Organization of Supreme Audit Institutions
MOFEC.....	Ministry of Finance and Economic Cooperation
OFAG.....	Office of the Auditor General
SPSS.....	Statistical Package for the Social Sciences

ABSTRACT

This study aimed to examine the determinants of internal audit effectiveness in selected federal public organizations in Ethiopia. Using a census, the researcher administered questionnaires to all 130 respondents, including internal auditor heads and internal audit staff from three selected federal public organizations. The study adopted a quantitative research approach, employing both descriptive and explanatory research designs to assess the effect of independent variables on internal audit effectiveness. Key findings revealed high levels of management support and internal audit quality, but lower scores for the size of internal audit departments, internal audit effectiveness, and the relationship between internal and external auditors. Correlation analysis indicated significant positive relationships between the independent variables (use of technology, management support, internal audit quality, size of internal audit departments, relationship between internal and external auditors, and independence of internal auditors) and internal audit effectiveness. Furthermore, linear regression analysis confirmed the substantial influence of management support, internal audit quality, use of technology, and independence of internal auditors on the overall effectiveness of the internal audit function. Based on these findings, the study recommends that organizations enhance management support, invest in technology, improve internal audit quality, address resource allocation, strengthen inter-auditor relationships, and promote auditor independence to optimize the effectiveness of their internal audit practices. The study's findings contribute to the existing body of knowledge on internal audit and provide practical insights for public sector organizations in Ethiopia and beyond.

Key words: Technology, Management Support, Internal Audit Quality, Auditor Independence, Audit Effectiveness

CHAPTER ONE

INTRODUCTION

This study focuses on determinants of internal audit effectiveness, in case of some selected federal public organizations in this section consists of Background of the study, Statement of the problem, research objectives, hypotheses of the study, significance of the study, scope of the study, operational definitions, limitation and operational key terms.

1.1. Background of the Study

The Institute of Internal Auditors (IIA) (2023) as an independent, objective assurance and consulting activity designed to add value and improve an organization's operations defines internal auditing. It helps an organization achieve its objectives by bringing an organized, disciplined approach to assess and improve the effectiveness of risk management, control, and governance processes. Internal audits are essential for organizations to ensure adherence to standard procedures and regulations, but assessing their effectiveness and understanding the factors that influence it remains challenging (Turetken, Jethefer, & Ozkan, 2020).

Following the global financial crisis, corporate managers began to focus more on risk management and enhancing the effectiveness of internal audit activities. Internal audit is seen as a tool to help organizations improve operational efficiency, increase compliance with regulations, and ensure the accuracy and reliability of financial statements (Lien & Viet, 2023).

The UN 2030 Agenda for Sustainable Development emphasizes the need for strong institutions, peace, and justice to address corruption, aligning with Ghana's efforts to combat the misuse of public sector resources (Owusu & Opoku Ware, 2023). In recent years, the public sector has shown increased managerial willingness to employ internal audit services to support well-controlled organizational operations. However, there is limited information on how internal audits can be effectively used in the public sector (Shuwaili, Hesarzadeh, & Bagherpour Velashani, 2023).

At the United Nations (UN), internal audit has become a critical component in Member States' and governing bodies' supervision responsibilities, as evidenced by the recent establishment of oversight committees. This has increased the effectiveness of internal audits and fostered direct accountability due to more frequent internal audit reports made public to governing bodies and the general public (UN, 2016).

Various researchers have identified different factors and indicators to measure the effectiveness of internal audits. For example, a study in Thailand by Thirathon and Mitrapanont (2022) helped regulators determine the qualifications and competence of internal audit personnel, showing a positive and significant influence of audit quality on internal audit effectiveness. Similarly, Orkaido and Moges (2022) highlighted challenges in the Ethiopian internal audit manual, including lack of independence, insufficient management support, overburdened audit staff, and limited professional competency (Ethiopia Ministry of Finance, 2004).

Management support significantly impacts the internal audit function's effectiveness and its value addition to the organization. George & Konstantinos (2015) found that management support, in terms of providing skilled staff, a sufficiently large audit department, and awareness of the need for internal audits, positively impacts internal audit effectiveness. This implies that the success of the internal audit function largely depends on the strength of management's support and commitment to the auditing process.

Previous studies on internal audit effectiveness at global and regional levels (Abraham, 2015; Shewamene, 2014; Cohen & Sayag, 2010; Mihret & Yismaw, 2007) have empirically established that a robust internal audit is an effective means of promoting good governance. Thus, internal audit effectiveness has become a key area of study, attracting the interest of researchers, academics, governmental institutions, and policymakers.

Despite the importance of internal audit, there is limited research focusing on the exact determinants of its effectiveness. No generally accepted method exists for determining the factors influencing internal audit effectiveness (Mansor, 2018). However, some studies (Hailemariam, 2014; Mihret & Yismaw, 2007; Singh; Yeboah, 2020) agree on four factors to measure internal audit effectiveness: internal auditor independence, management support, internal auditor competence, and an internal audit charter.

There are several gaps in the literature. First, previous research has primarily focused on internal auditor characteristics such as independence, competence, and management support. Second, few studies have included technology as a factor influencing internal audit effectiveness. Third, there is a theoretical gap, with most studies focusing only on agency theory and institutional theories, without applying other relevant theories to internal auditing.

To address these gaps, this study employs the Unified Theory of Acceptance and Use of Technology (UTAUT) to investigate the impact of technology on internal audit effectiveness.

This research aims to examine the impact of technology on internal audit effectiveness and includes factors such as the size of internal audit departments, management support for internal auditors, the quality of internal audits, the relationship between internal and external auditors, and the independence of internal auditors. The study focuses on three selected federal public organizations in Ethiopia, aiming to contribute valuable insights to both theory and practice in the field of internal auditing.

1.2. Statement of the Problem

The internal audit function promotes organizational achievement by adopting a systematic, rigorous method of assessing and enhancing the effectiveness of risk management, control, and governance systems (IIA, 2020). Internal auditors play a crucial role in today's dynamic, modern society, serving as an important tool for enhancing accountability and transparency across corporate governance structures (Hazaea et al., 2020).

Assessing internal audit effectiveness and understanding the factors influencing it is challenging (Turetken et al., 2020). There is limited information available on the effective use of internal audits in the public sector. Rodríguez-Sánchez (2023) highlighted the current importance of internal audit departments as stewards of modern technology opportunities to enhance internal audit effectiveness (Shuwaili et al., 2023).

Public enterprises have gained enormous economic significance, extending beyond traditional areas like infrastructure and public utilities to various economic sectors. Studies reveal that public enterprises contribute significantly to gross national product (GNP) and value-added in both industrialized and developing countries, comprising 50% of GDP in Ethiopia (MoPE, Report 2017). The Ethiopian government has established various public enterprises, allocating substantial capital. Effective financial management is crucial for these enterprises to operate with accountability and due diligence, conforming to financial management rules and regulations (Shuwaili et al., 2023).

Public enterprises in Ethiopia command significant capital and play a pivotal role in the economy. They provide essential services such as airline transport, electricity, telecommunication, shipping and logistics, and railway transport (MoPE, 2017). An effective internal audit (IA) department is crucial for the governance of these enterprises. This research focuses on the determinants of internal audit effectiveness (IAE) in Ethiopian public enterprises engaged in diverse activities. Internal auditors are expected to work independently and objectively to enhance public service quality, maintain robust internal control systems, prevent corruption, ensure good corporate governance, and promote accountability and transparency (Coram et al., 2008).

Internal audit has garnered significant attention in current corporate governance because it enables organizations to operate effectively and efficiently. Internal audits provide constructive criticism and recommendations, reduce information asymmetry in decision-making, and offer internal assurance on financial matters (Arena & Azzone, 2007; Mihret & Yismaw, 2007; Cohen & Sayang, 2010; Soh & Bennie, 2011).

There are several key debates surrounding internal audit effectiveness, including independence versus integration, the role of technology, management support, and the competence and training of internal auditors. Balancing the independence of internal auditors with their integration into the organization can be challenging. While independence is crucial for unbiased auditing, integration helps auditors understand the organization better. The extent to which technology can enhance internal audit effectiveness is also debated. While some argue that technology improves efficiency and accuracy, others point out potential challenges such as cybersecurity risks and the need for continuous technological updates. The level of management support for internal auditors is another debated issue. Strong management support is seen as essential for effective auditing, but excessive influence from management can compromise auditor independence. The qualifications and ongoing training of internal auditors are critical factors, with debate over the best methods to ensure auditors remain competent in a rapidly changing business environment.

Despite the importance of internal audit, there is a scarcity of research focusing on the exact determinants of internal audit effectiveness. No generally accepted method exists for identifying the factors influencing internal audit effectiveness (Mansor, 2018). While some studies agree on certain factors such as internal auditor independence, management support, internal auditor competence, and an internal audit charter (Hailemariam, 2014; Mihret & Yismaw, 2007; Singh; Yeboah, 2020), gaps remain. Previous research has primarily focused on internal auditor characteristics, with few studies including technology as a factor. Additionally, most studies rely on agency theory and institutional theories, overlooking other relevant frameworks.

This study aims to address these gaps by investigating the role of technology in internal audit effectiveness. It employs the Unified Theory of Acceptance and Use of Technology (UTAUT) to explore this impact. The study examines factors such as the size of internal audit departments, management support for internal auditors, internal audit quality, the relationship between internal and external auditors, and internal auditor independence. By focusing on three selected federal public organizations in Ethiopia, this research aims to provide valuable insights into both theory and practice in the field of internal auditing.

The contribution of the study extends the body of knowledge on internal audit effectiveness by incorporating technology and using UTAUT, offering a new theoretical perspective. It provides practical insights for public sector organizations, particularly in Ethiopia, on enhancing internal audit effectiveness.

The study also informs policymakers and regulators in designing better guidelines and standards for internal auditing, ensuring improved governance and accountability. Additionally, it helps managers and audit professionals understand how various factors impact internal audit effectiveness, allowing for the implementation of more effective audit practices and support systems.

1.3. Objectives of the Study

1.3.1. General Objective

The overall objective of the study is to identify the determinants of Internal Audit effectiveness in selected federal public organizations in Ethiopia.

1.3.2. Specific Objectives

The study tried to achieve the following specific objectives that are related to the research hypothesis.

- To assess the role of Technology in the effectiveness of internal audits in selected federal public institutions in Ethiopia
- To investigate the role of the size of the internal audit department on the effectiveness of internal audits in selected federal public institutions in Ethiopia
- To find out the role of management support to the internal auditors for the effectiveness of Internal Audit in selected federal public institutions in Ethiopia
- To evaluate internal audit quality to the effectiveness of internal audit in selected federal public institutions in Ethiopia
- To examine the role of the relationship between internal and external auditors in the effectiveness of internal audit in selected federal public institutions in Ethiopia
- To investigate the internal auditor 's independence to the effectiveness of internal audit in selected federal public institutions in Ethiopian

1.4. Significance of the Study

The research is expected to contribute to internal audit effectiveness; the following points illustrate how the study benefited in a variety of ways:

The study will provide some important contributions by using the Unified theory of acceptance to understand the effect of Technology on IA effectiveness. This theory is scarcely used by internal audit researches.

This study will add some findings to existing knowledge on the effectiveness of IA in federal public sectors and these findings may help Ethiopian's public sectors, as well as those in other countries with similar settings, to assess their IA.

This study will have concrete conclusions and recommendations based on study objectives that tried to identify gaps in the effectiveness of IA in Ethiopian's public sectors. So those Recommendations will have provided multipurpose information to different users, including the public sector, government, policy planners, academicians, and the general public at large, and they are useful to the top management, Lastly, the study will identify future research areas that have advantages for future researchers to conduct further studies on this topic.

1.5. Scope of the Study

The scope of the study is delimitation geographically, conceptually, methodologically as well as time. Geographically: This study aims to analyze the determinants of Internal Audit Effectiveness in case of federal public institutions in Ethiopia.

Conceptually: The scope of the study is delimited to determinants of Internal Audit Effectiveness within a three federal public institutions setting and examines the Internal Audit Effectiveness as the dependent and independent variables.

Regarding the methodology, *quantitative research approach* was applied. As quantitative method is appropriate to examine the relationship between two or more variables in the study. With respect to the research design, a *descriptive and explanatory* research design applied; this types of research design involves identification of attributes of a particular phenomenon based on an observational basis, or the exploration of correlation between two or more phenomena.

1.6. Limitation of the study

The study is limited to three selected federal public institutions in Ethiopia. Hence, it does not fully represent the all-federal public institutions in Ethiopia.

The population size is small, statistical tests might not be able to identify significant relationships within the data set. In this way, the researcher uses census to overcome this limitation. Moreover, there is a lack of previous studies in federal public institutions in Ethiopia.

The study results were based on the perceptions of the participants in spite of the researcher's effort to gather the necessary information as objectively as possible. Hence, the results of the study cannot generalize to internal audit functions in other countries public sectors than Ethiopian because each country has its own nature and culture.

In addition, the findings of the study will not necessarily generalizable to the internal audit function in other setting of developing or developed countries. There is insufficient population size for statistical measurements and there is limited access to data due to time constraints.

1.7. Organization of the Study

The study is organized into five chapters: Chapter one introduces the background information of the study and the organization, including the problem statement, research questions, objectives, significance, scope, limitations, and the organization of the study. Chapter Two reviews various literatures to enhance knowledge about the area and presents the conceptual framework. Chapter Three discusses the research design and methodologies adopted for the study with relevant justifications. Chapter Four presents the findings, results, and analysis on the determinants of Internal Audit Effectiveness. Chapter Five encompasses a summary of the findings, conclusions, and recommendations.

CHAPTER TWO LITERATURE REVIEW

This chapter provides an overview of previous research on knowledge. It introduces the framework for the case study, in this section the researcher tries to broaden the topic by mentions previous studies of internal audit effectiveness the section includes, Theoretical, empirical review, research gap and conceptual frame work of the study

2.1. Theoretical Literature Review

2.1.1. Definition of Terms

Internal Audit: Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations (IIA, 2020).

Internal Audit effectiveness: internal is effective when it helps an organization achieve its objectives. Organizations must monitor internal audit effectiveness and efficiency to maintain and enhance its credibility (IIA, 2020).

Technology: The application of scientific knowledge for practical purposes, especially in industry (Oxford dictionary)

Size of the internal audit departments: the number of employee in the IA unit

Internal audit quality: Internal audit quality comprehensively addresses the Institute of Internal Auditors' (IIA) International Standards for the Professional Practice of Internal Auditing. With all eyes on the internal audit, you need to understand stakeholder expectations and communicate success measures that demonstrate quality. Internal audit quality provides a framework for developing a quality assurance and improvement program.

Management support to internal audit department: Management can demonstrate its support for internal audit by emphasizing the value of independent and objective internal auditing in identifying areas for improving performance quality and by implementing the recommendations of internal audit Departments, (Dawuda, Ataribanam, & Joseph, 2017).

Relationship between internal and external audit: Internal and external audit should ensure appropriate and regular communication and sharing of information a constructive relationship on this basis can be of benefit to the organization they serve (CIIA, 2020).

2.1.2. Definition of Internal Audit

The word Audire, which is Latin in origin that means to hear, is the root of the English word audit, the kings send specialized auditors to investigate the lords of the states under the authority of the kind used to hear from them Tricker and Tricker (2015), Internal auditing's goal is always to check the financial situation accounting records.

Meuwissen (2014), Accounts are scrutinized to determine if the accounting pieces of information accurately portray the organization's profit or loss position. Auditing is a careful examination of the adequacy, correctness, and comprehensiveness of financial records and financial accounts (Vasarhelyi, 2017). Arens, Elder, and Beasley (2012) provide a comprehensive explanation of auditing in many studies, Auditing is the procedure of acquiring and evaluating informational evidence to identify and record the degree to which the data conforms to specified standards.

According to Arens et al. (2012), Internal and external auditors are distinguished by the nature and scope of their work. Auditing is classified into two types: external auditing and internal auditing. According to Arens et al. (2012), External auditors usually are those who are not employees of an audited company or organization and offer an opinion on the financial accounts created by determining if the report provides an accurate and fair picture of the company's Internal Audit Effectiveness, and internal auditing.

According to IIA (2020), internal auditing is just an independent, objective inspection and advisory function that contributes and strengthens an organization's operations. It helps a firm achieve its objectives by bringing a systematic, controlled approach to analyzing and enhancing the efficiency of risk management, control, and effective governance.

2.1.3. Internal Audit effectiveness

The Institute of Internal Audit (IIA, 2010) has defined IA effectiveness as the degree (including quality) to which established objectives are achieved. Internal audit is effective if it provides the required service from the function or in other words if it achieves the objectives of the function (Dittenhofer, 2001; Mihret and Yismaw, 2007; Arena and Azzone, 2009).

They defined the term effectiveness as follows; for instance, Dittenhofer (2001) Effectiveness is the achievement of internal auditing goals and objectives using the factor measures provided for determining such factors.

According to IIA (2004), effectiveness is the degree to which established objectives are achieved (IIA, 2004). In addition, different researchers defined the word effectiveness in different ways. For instance: Dittenhofer (2001) interpret the term effectiveness as the achievement of IA goals and objectives using the factor measures provided for determining such factors.

Mihret and Yismaw (2007) describe IAE as the extent to which an internal audit department meets its purposes Arena and Azzone (2009) also define effectiveness as the capacity to obtain results that is consistent with target Effective IAF could be a major asset for improving public confidence in financial reporting and corporate governance.

In Mihret and Yismaw (2007), internal audit effectiveness is defined as the extent to which an internal audit office meets its supposed objective or the extent to which it meets the intended outcome. Arena and Azzone (2009) defined effectiveness as the capacity to obtain results that are consistent with targets.

All the three authors defined effectiveness in terms of achieving the IA goals and objectives, though interpreted in different ways. Mihret and Yismaw (2007) described the characteristics of effective internal audit unit from the internal audit point of view.

2.1.4. Establishments and history of internal audit in Ethiopia

In history, the first audit directive was issued in 1942 by Ethiopian ministry of finance. The main focus of the directive was fund utilization public sector and modernizing the activities of IA across the country. Then after in 1961 office of the audit general (O.A.G) was established and it modifies the duties and responsibilities of the offices and the auditors.

Moreover, proclamation 13/1987 empowered O.A.G to direct internal auditors in three ways. Firstly, internal auditors shall assure whether there is proper accounting records and reliable financial information within the organization.

Secondly, internal auditors shall assure whether the assets of the ministries and enterprises are adequately safeguarded and properly maintained; and thirdly, internal auditors shall assure whether policies and procedures laid down by top management are complied with that implies less attention was given to operational audit as a service to management (Kinfu, 1990; Argaw, 2000). Beside, regulation no.17/1997 was issued in July 1997, and this regulation was characterized by transferring the responsibility & authority of managing internal audit

function from the O.A.G to ministry of finance.

Now a day, IA in Ethiopia is conducted mainly based on the IA standards that are developed by Ministry of Finance and Economic Development (MoFED). Mihret and Yismaw (2007) described that these newly formed standards are similar with the standards of IIA

Currently government has established different public enterprises by allocating huge amount of capital. Due to this significant money allocated to different corporations and other enterprises as capital, government need efficient and effective financial management to functioning with accountability and due diligent conforming to the specific rules and regulation and other instruction appropriate to financial management. In this regard, developing IA department and support the stuff so that they add value to their organization they belong is one of the best tools to ensure whether each and every organization meet their obligation as well as follow the rules and regulations firmly at the time of doing their activities. Furthermore, in order to add value and impose significant impact, the IA should be effective.

2.1.5. Types of Internal Audit services

I. Compliance Audits

The compliance audit function focuses mainly on compliance risks and their plan to mitigation the risk. The audit procedure could start by developing audit programs, and then assess the availability and adequacy of internal controls that effectively prevent and/or detect violations of laws, regulations, organizations policies or code of conduct; then evaluate whether organization's compliance program is effective and finally give respective recommendations.

II. Financial Audits

Financial audit focuses mainly on ensuring whether the financial statements presented by organizations are faithful, complete and accurate. The financial audit is conducted by developing audit program to evaluate conditions, organizing findings and finally provides audit reports with the respective recommendations to the management.

III. Operational Audits

Assessing and evaluating internal controls over different departmental operations is assessed and evaluated in this type of audit. It is conducted in order to ensure that operations are operated efficiently, effectively, and in alignment with the organizational mission and management's intent

IV. Construction Audit

Construction audit comprises all financial, compliance and operational audit. This type of audit is conducted to provide recommendation especially on project performance by assessing and evaluating construction projects.

V. Management audit

Management audit is an evaluation of all activities of an entity with a view to provide appropriate suggestion to the management to help their work. It focuses on the critical evaluation of management as a team rather than appraisal of individual. The main objectives of management audit are to improve the profit earning capacity, work of management, objectives of program human resource development so that organizational goal can be attained. Unlike financial audit, management audit mainly examines the non-financial data.

VI. Information Technology Audits

It is other types of audit mainly conducted to evaluate the adequacy of internal control and security and to assess the extent to which organization is IT system maintain data integrity. Besides, it assesses whether the IT system operate in compliance with its respective policy provide reliable and accurate information.

VII. Performance auditing

Performance audit refers to an audit of a program, function, operation or the management systems and procedures of an entity to assess whether the entity is achieving economy, efficiency and effectiveness in the employment of resources.

Performance audit is simply an audit of 3E'S namely of the economy, efficiency and effectiveness in other terms the value for money with which organizations' have carried out their responsibilities. Performance Auditing Focus Mainly on programs, projects, systems or activities.

VIII. Advisory and Consulting Engagements

These engagements are usually occurred when there is a need to do so by higher officials of respective organizations' and it is obviously conducted out IA annual Plan. It includes issues such as consulting on policies and other managers requites that are critical for decision.

2.1.6. Theories Related to Internal Audit

A new approach, which is adopted by Endaya and Hanefah (2013), and Alkebsi and Aziz (2017) is a combination of four theories: Agency, Institutional, UTAUT (Venkatesh & Zhang, 2010) and contingency theory (Ondieki, 2013).

2.1.6.1. Unified Theory of Acceptance and Use of Technology

Marinagi, Trivellas, and Sakas (2014), study used the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by (Venkatesh & Zhang, 2010) to explore the impact of information technology on the audit process from the perspective of auditors. Results show that higher effort expectancy means higher auditor's employment level in use of the IT, so study shows this theory support, Auditor processes must include emerging methodologies because to the increase in electronic evidence. With generalized audit software, auditors aim to evaluate client internal controls, the accuracy of their systems, and their capacity to manage risk. This study used part of UTAUT which is Performance expectancy (PE) the degree to which an individual believes that using a system IT helped him or her to attain gains in job performance, Recent research on the need for internal Auditors the use technology as stated

IT engagement adds value to the governance and effectiveness of the internal audit. Ali, and Oudat (2022), indicate that there is a considerable association between information technology and the efficacy of internal audits. Deloitte (2023a), in their report of Topics for IT Internal Audit, stated that large corporates are continuing to invest in new technologies to improve the efficiency of internal processes; this study used this theory to build its conceptual framework (IIA, 2022).

2.1.6.2. Agency theory

According to Mitnick (2015), this theory aims to comprehend the issues that occur whenever one party acts as a representative on behalf of another. There are two sides to agency: the actions and concerns related to soliciting and giving agent assistance on the agent side, as well as the activities and obstacles related to directing and regulating agent conduct on the management side. Changwony and Rotich (2015) that this theory supports a positivist group of philosophy also state it in their study. According to Gailmard (2014) stated It provides a logical framework for evaluating the accountability of political institutions It is a concept in the theory of contracts where the primary entity assumes responsibility for the work carried out by the other party's agent.

Based on the above paragraph, it can be seen clearly that this theory is a useful theory that can explain the relationship between some variables of the study, mainly internal auditor independence because if internal auditors' work is influenced by management. It loses this important attribute, in another dimension, internal auditor competence affects internal audit effectiveness, and if internal auditors are not competent enough, managers may take this as an opportunity to manipulate financial statements and, for this reason, the agency theory is relevant to be embedded in the development of this research conceptual framework.

2.1.6.3. Institutional theory

Abu-Azza (2012b), described in his study how institutional effects on organization structures and practices are emphasized in organizational theory, also Amenta and Ramsey (2010), detailed that organizational pressures come from external or internal sources.

Arena, Arnaboldi, and Azzone (2006) revealed that laws and regulations (coercive isomorphism), judgments made by another institution (mimetic isomorphism), professional consulting or professional groups have been recognized as institutional constraints that have an impact on both individuals and businesses (normative isomorphism). This resemblance can facilitate connections with other firms, attract career-minded employees, build trust, and qualify for administrative eligibility (Abu-Azza, 2012b). Lastly, several studies in the internal audit have adopted an institutional theory (Abu-Azza, 2012b). (Al - Twaijry et al. 2003); (Arena & Azzone, 2007); (Changwony & Rotich, 2015); (Mihret et al., 2010). The following are the reasons why institutional theory is relevant to this investigation.

Firstly, Institutional theory includes IA activities that are part of the organization's structures and aids in addressing such complex systems without restricting them to a specific set of organizational goals.

Abu-Azza (2012b) Second, Institutional theory assists countries with undeveloped stock markets, such as Ethiopia (Mihret et al., 2010), and the same as the case of this study Ethiopian. Therefore, this study draws on isomorphic processes of normative and coercive as suggested by institutional theory to investigate the factors determining IA effectiveness.

The results of preceding studies (Cohen & Sayag, 2010; Mihret et al., 2010) revealed that management support is the most important variable on the effectiveness of IA and Also is the most important dynamism of other factors.

In addition to directly promoting IA effectiveness as also detailed by different researchers (Alzeban & Gwilliam, 2014; Cohen & Sayag, 2010; Marfo-Yiadom, Tackie, & Achina, 2016; Shohihah, Djamhuri, & Purwanti, 2018) Management support is also revealed a representative of IA effectiveness. Clear rationality, communication, proficiency, and due professional care, as well as training and growth (Endaya & Hanefah, 2016).

Based on the above discussion, it can be seen clearly that the institution theory is a useful theory that can explain the relationship between some variables of the study, mainly Management support of internal Audit, as stated by Mihret et al. (2010). Institutional theorists view organizations as components of an organizational field, which is made up of some entities or sectors that are somehow connected so management must support internal auditors work to facilitate the organization effectiveness so the institution theory is relevant to be embedded in the development of this research conceptual framework.

2.1.6.4. Contingency theory

According to the contingency theory of management, there is no standard strategy for directing, controlling, and managing organizations. Auditing functions are part of the organizations that are subject to a variety of external factors. The approach acknowledges that audit methods and outcomes are frequently influenced by changeable and contingent factors; an internal audit is designed to assess the dependability of an organization's information, rules, practices, and procedures. Regardless of the audit subject, a variety of factors influence a company's outcomes and the contingency theory considers these elements during the audit process.

Ondieki, (2013), So this study used this theory because it investigates the role of variables, mainly internal audit quality, on internal audit effectiveness as contingent factors, Researcher employed this theory as the Ethiopian internal audit regulations is based on industry guidelines provided in the IPPF issued by the IIA, as stated Ondieki (2013).

Government regulations require certain financial organizations to have independent financial audits performed, while industry standards can require audits in other areas, such as accountability and independence. Therefore, this theory helped the researcher to assess the effect of the IA standards on internal audit, which is issued by IIA, on internal audit quality, and thus the effect of quality internal audit on internal effectiveness in Ethiopian's public institutions; it is also relevant to be embedded in the development of this research's conceptual framework.

2.1.7. Determinants of Internal Audit Effectiveness

The effectiveness of internal audits is influenced by several factors, ranging from internal auditor independence to management support and the relationship between internal and external auditors. Understanding these determinants is crucial for enhancing internal audit practices and ensuring robust governance within organizations. This section reviews key studies that explore these determinants, providing insights into how they affect internal audit effectiveness in different contexts and regions.

However, according to Mustika (2015), found that internal auditor independence (internal auditor independence from Management influence), Management support for internal audit activities, and the interaction between internal and external auditors were all elements that were put to the test. The study discovered that increasing internal audit competence, independence, and a solid relationship between internal and external auditors could be used to promote internal audit effectiveness in Java Province, Indonesia. The study discovered that the effectiveness of internal audits is unaffected by auditee independence.

Dellai and Omri (2016), investigated elements affecting internal audit efficiency in the context of Tunisia. Results showed that the independence of internal audit, the objectivity of internal auditors, management support for internal audit, the use of the internal audit function as a management training ground, and the industry of the organization all have an impact on the effectiveness of internal auditing. The study can provide useful insight to the situation in developing countries.

2.1.7.1. Technology

To better understand the profession and its practitioners, the Internal Audit Foundation and the IIA undertook a global view to support the new study, Internal Audit: A Global Perspective. With input from more than 3,1180 auditors in 159 locations, the study covers the breadth and complexity of internal auditing as well as the intricacies of industries, sectors, and countries. The study showed regional differences within a diverse profession that adds value to stakeholders through governance, sustainability, and IT engagements (IIA, 2022),

Technology could be necessary in pursuing the entity's goals and improving control over the organization's operations. The numbers of organizations utilizing technology as well as the volume of usage both continue to increase (Commission, 2013).

Alqaraleh et al. (2022) the study looked at this issue by collecting information from 153 internal auditors in Jordanian public businesses. The results showed a strong correlation between information technology and the effectiveness of internal audits. Deloitte (2023a) large corporations continue to invest in new technology to increase the effectiveness of internal processes, according to their study on Issues for IT Internal Audit. Internal Audit's participation in this transformation and initiatives needed a departure from the standard internal audit methodology in favor of a flexible evaluation of risks throughout the development of the new technology.

Internal auditing has received a relatively little investigation to this point. New Directions in Internal Audit Research is a recent article. According to Christ et al. (2021) existing recommendations for forthcoming research are assumed three broad areas for additional academic research are identified, including information technology innovation use of internal auditing (Akinleye and Olanipekun (2019). A research looked at how information technology affected internal audits at universities in Southwest Nigeria. In addition to distributing questionnaires to the chosen universities, primary data were also utilized. This study concluded that internal audit and information technology have a significant relationship at Southwest Universities.

Eulerich et al. (2022), in research, internal audits at Southwest Nigerian universities were examined concerning information technology. Primary data were used, and the chosen universities received questionnaires. This study found a strong correlation between internal audit and information technology in Southwest Universities.

Oluoch (2022) Indicated his study conducted in Kenya established that the use of IT in internal auditing is significant as it advances auditing efficiency and effectiveness within organizations.

Madhar and Almaktoomi (2022), the purpose of the research on the effectiveness of the internal audit process at the National Bank of Oman was to determine how information technology has affected internal auditing, perception, and banking transactions. Shown how, by employing automated procedures, the productivity of internal auditing and audit function tasks may be increased. The effectiveness of internal audits at the National Bank of Oman are significantly influence by information technology. It aids in the timely and accurate delivery of information, increases accuracy, enhances and facilitates further information analysis, lowers risk and enhance control procedures

According to Global (2022), the influence of IT must be considered with judgment during an evaluation of internal control over financial reporting. There are exclusive risks to be considered. The controls that alleviate these risks are important because of their universal effect on the reliability, integrity, and availability of processing and relevant data.

CBOK (2016), Common Body of Knowledge (CBOK) is the world's largest ongoing study of the internal audit profession reported that IIA recognized the value of technology, including data mining, analysis tools, and continuous auditing, to help organizations work better.

According to (ICAEW (2021)), The Institute of Chartered Accountants in England and Wales recommends organizations utilize Technology where appropriate since it may enhance the control environment for risk management. This may enable internal audit departments of firms to make wise suggestions, and judgments that are more informed by removing human error, and streamlining data exchange across processes.

2.1.7.2. Size of the Internal Audit Departments

The size of the internal audit department has been identified as the key determinant of internal audit effectiveness, especially in larger organizations (Alzeban & Gwilliam, 2014).

According to researchers Mashayekhi and Nourbakhsh (2022), According to researches, any firm can increase the likelihood of detecting maladministration by having an efficient and effective internal audit department and creates an obstacle for managers to abuse their organizational position and authority

Musah (2018) Analyzed variables that affect internal audit effectiveness amongst Ghanaian SOEs. The internal audit effectiveness of Ghanaian SOEs was found to be significantly influenced by factors including the size of the internal audit Departments, the professionalism of the internal audit staff, the independence of the internal audit Departments, and a positive working relationship among internal and external auditors. Al-rbai (2022), Internal audit Departments in government institutions face various obstacles, such as a lack of incentives, inadequate budgets, difficulty in communication, a limited number of employees, and a lack of professional preparation.

2.1.7.3. Management support of internal Audit

Grima et al. (2023) remitted to internal auditors (IA) in various countries, receiving 402 final valid responses. Exploratory factor analysis, factors that confirmed the positive influence of IA size and management support were having a high influence on internal audit effectiveness. Top management support is crucial to the acceptance and appreciation of the IAF (internal audit function) within an organization. International Standards for the Professional Practice of Internal Auditing (ISPPIA) state that top management and the Board of Directors to execute their duties and fulfill their responsibilities should support internal auditors. Indeed, the internal audit department should have sufficient resources to improve the effectiveness of its activities (ISPPA, 2014).

According to Gakpetor (2018), the results of the study showed that management support for internal audit function is the most significant determinant of internal audit effectiveness. The study also revealed that the sizes of the internal audit Departments, competence of internal audit staff, independence of the internal audit Departments as well as good relationship between internal and external auditors were significant determinants of internal audit effectiveness.

According to the Institute of Internal Auditors' professional standards, management assistance is one of the crucial factors in ensuring the successful delivery of internal audit services in the public sector. Therefore, the researchers wanted to know how satisfied internal auditors were with the support they received from management (A, Ataribanam, & Aa, 2017).

The IIA's Standards for Professional Practice of Internal Auditing (1110—Organizational Independence) recognizes that internal auditors should have the support of senior management and of the board so that they can gain the cooperation of auditees and perform their work free from interference (IIA, 2016). This claim and the studies mentioned above support the idea that top management assistance is crucial for improving internal audit independence. Therefore, top management and the board of directors should assist internal auditors for them to perform their jobs effectively. For an internal audit department to keep track of management risk, management assistance is also crucial. Top management support is shown by the motivation provided by top management to internal auditors.

2.1.7.4. Internal audit quality

According to IIA (2023), Internal Audit Quality comprehensively addresses the Institute of Internal Auditors' (IIA) International Standards for the Professional Practice of Internal Auditing. With all eyes on internal audit, you need to understand stakeholder expectations and communicate success measures that demonstrate quality.

According to Nugroho, Uzliawati, and Taqi (2021), the purpose of the research was to ascertain how the efficacy of internal audit was impacted by audit quality, internal audit size, and auditor competency with management assistance. Internal auditors employed by Indonesian State-Owned Companies (SOE) in the finance and insurance sectors made up the research population. The results demonstrated that audit quality has a favorable effect while management support moderates the effect, using raw data from 62 respondents.

Moreover, a study by Mahyoro and Kasoga (2021), findings reveal that audit quality; organization setting and auditee attributes have a significant positive influence on the effectiveness of internal audit services in LGAs in Tanzania. This is in line with the research work of George, Theofanis, and Konstantinos (2015), in the Greek Athens Stocks Exchange company.

The research of (Mihret et al., 2010) study conducted at several significant 49 Asian Journal for Social Science & Management Technology academic institutions in Ethiopia found that, when compared to other variables, the quality of internal audit has the greatest impact on the effectiveness of the internal audit.

2.1.7.5. Relationship between internal and external auditors

Khelil (2023), has in-depth discussed how important it is for internal and external auditors to work together. Interviewed internal auditors indicate that working closely with their external colleagues boosts their confidence and helps Tunisian research.

Behrend and Eulerich (2019). In addition, the body of research on the external auditor's assessment of Internal Audit Function (IAF) quality is the most advanced, pervasive study field, CIIA (2020), Chartered Institute of Internal Auditors Internal and external audits are complementary functions within the assurance framework, and both are essential for the effective governance of an organization. Awuah, Onumah, and Duho (2022), a research found that effective internal auditing was significantly influenced by the relationships between internal and external auditors.

According to Onay (2021), in his research on the factors that affect internal audit effectiveness in Turkish organizations, the researcher interviewed 187 internal auditors who are active members of the Institute of Turkish Internal Auditors. The results of this study's regression analysis demonstrate that the link between internal and external auditors significantly reduces the effectiveness of internal audits in Turkish organizations.

The relationship between internal and external auditors has been widely addressed by professional standards (Institute of Internal Auditors [IIA], 2022; American Institute of Certified Public Accountants [AICPA], 2018; Public Company Accounting Oversight Board [PCAOB], 2013, 2007; International Standards for the Professional Practice of Internal Auditing (ISPPIA)). These standards suggest that working relationships between the respective audit parties should include sharing information and coordination of activities, which consequently permits assisting internal auditors in performing their objectives and providing better service to the organization (Alzeban & Gwilliam, 2014).

2.1.7.6. Internal audit independence

Darwesh, Ali, and Hamad (2023), the study found that the principle of independence affects the decisions of the internal auditor and contributes to enhancing accountability and performance of the institution and thus contributes effectiveness of internal auditing. The importance of research was to develop the role and work of the internal auditor to improve the internal control system.

Independence is the freedom from situations and relationships that threaten an internal auditor's ability to objectively perform the responsibilities of internal audits in an unbiased manner. To achieve this, the chief audit executive must have direct and unrestricted access to senior management and those charged with governance to communicate and report and must report the independence of the internal audit to the board annually (IIA, 2017).

Even though corporations typically employ internal auditors, professional groups are stressing the importance of IA independence more and more. Alzeban and Gwilliam (2014) IA independence is the freedom from conditions that threaten the ability of the IA activity to carry out IA responsibilities in an unbiased manner (The Institute of Internal Auditors 2017,

In addition, internal auditing standards (Standard 1100-Organizational Independence) stressed the significance of maintaining the organizational status and the independence of the IA function. These goals can be achieved by having the IA report to a level within the organization that permits it to carry out its responsibilities without interference in determining the scope of work, conducting the audit, and communicating the audit results (Hazami-Ammar, 2019).

Rakipi, De Santis, and D'Onza (2021) Emphasized that IA independence is fundamental to ensuring the trustworthiness of IA services. Additionally, IA's lack of independence impairs its capacity to give the audit committee assurance, which impairs the committee's capacity to successfully carry out its corporate governance responsibility. However, there are some threats to this independence, including using the IA function as a learning experience for a future managerial position within the organization. the CEO or Chief Financial Officer (CFO) approve the IA budget as this is seen as a potent means of imposing budget restrictions that may limit the scope and affect IA effectiveness. Senior management heavily involved in the development of the IA plan, and having IA serves as a consulting role and be paid for it (Rakipi et al., 2021).

2.2. Empirical Literature Review

As the main aim of the research is to assess the effectiveness of internal audit in the public sector offices in Ethiopia, different authors' and researchers' ideas and recommendations regarding the related topic of internal audit effectiveness are analyzed and presented below.

The (IIA, 2017) paper gave two straightforward definitions to disperse any muddle. The former is labelled as the extent to which the set objectives are attained, whereas the latter as the extent to which resources have to be organized to achieve a convinced objective (Baldacchino, Fiteni, Bugeja, & Grima, 2021; Ta & Doan, 2022).

Alsabti and Khalid (2022), An effective internal audit function can be a valuable resource for enhancing community trust in financial reporting and corporate governance due to organizational independence, formal authority, unfettered access, adequate resources, good management, and qualified employees, presence of audit committee, stakeholder encouragement, qualified audit criteria, and unrestricted range.

Alsabti and Khalid (2022), the study conducted in Muscat results indicated that the technology factors have a significant influence on IAE. Also Shuwaili et al. (2023) The study identified 38 efficacy characteristics among major categories, such as communication

between internal and external auditors, giving internal auditors independence and authority, Model validation and confirmation took place in the qualitative portion, and quantitative outcomes showed that the creation of management support and the formulation of audit plans were the most important elements. According to Ta and Doan (2022) Internal, auditor independence and management support for internal audit were found to have a positive impact on internal audit effectiveness whereas internal auditor competence and the qualifications of their work had no bearing on internal audit effectiveness. The study used a qualitative research approach and obtained responses from 144 internal Vietnamese auditors of non-financial organizations.

Al-Akra, Abdel-Qader, and Billah (2016) In their investigation of the variables that influence the IAE, they carried out a number of surveys internationally. As shown in its latest survey, the Middle East and North Africa (MENA) revealed in their research the variables influencing internal audit effectiveness. Include the independence of the auditor and the department of the internal audit, support for the internal audit department from managers, and the quality of audit work.

According to Badara and Saidin (2014) stated that the issue of internal audit effectiveness has been lucrative over the last ten years. This is because internal auditors play critical roles in the success and survival of firms. They claimed that the majority of firms, both public and private, have internal audit departments in existence to reap the advantages of the internal audit service.

Mihret et al. (2010) declared that because IA's value-adding role assumes that IA is effective, IA efficacy should be investigated in order to gauge IA's potential for value-adding. It is crucial to assess IA efficacy for two main reasons. One is that it can be used to gauge performance quality and determine whether the IA function is functioning satisfactorily. The second is that an individual or organization may be inspired to do better because of the inspection.

In the global literature, internal audit plays a key role in organizations. Internal audit effectiveness is also examined in the literature like (Endaya & Hanefah, 2016) with key pillars outlined for achieving it. According to Dal Mas and Barac (2018) and Kotb, Halabi, and Elbardan (2018), internal audit quality must be increased to achieve audit effectiveness (2020). Evidence of benefit and efficacy is one way to be recognized as a valid function in the eyes of key stakeholders.

Gwilliam (2003), this study explained that internal audit is not very well developed in Saudi Arabia, with departments lacking funding and skilled personnel. There is a focus on compliance audit rather than performance audit, and a lack of management and auditee acceptance. The authors suggest that the government take a more active role by pressuring businesses to create internal audit departments.

Numerous empirical research identify factors that influence internal audit effectiveness (Afrah et al., 2022; Ahmad, 2015; GETACHEW, 2016; Gramling & Ramamoorti, 2003; Hailemariam, 2014; Joksimović & Alseddig, 2017; Marfo-Yiadom et al., 2016; Menza et al., 2019). These investigations revealed a plethora of variations in the methods and metrics used to determine internal audit effectiveness. Researchers' theoretical approaches to studying internal audit effectiveness vary, and there doesn't seem to be agreement on how to measure internal audit effectiveness. This is because there is no universally accepted way to determine what factors affect internal audit effectiveness, as stated by Mansor (2018). However, some previous studies (Almahuzi, 2020; Badara & Saidin, 2013; Singh et al., 2021; Yeboah, 2020).

According Hailemariam (2014), study the variables of internal audit effectiveness in selected Ethiopian public sector organizations were investigated. The study concentrated on 15 deliberately selected public sector offices that are believed to represent all other sectors. The management teams and internal auditors of the selected public sector office offered the researcher with the necessary data via questionnaires. Furthermore, the study's findings showed a distinct relationship. In the effects of management support, organizational independence of internal auditors, competent internal auditor's staff and the presence of internal audit charter with the internal audit effectiveness on the public sector management. According to the regression result the management support, the existence competent internal audit staff, and internal audit charter were contributed for the internal audit effectiveness in the public sector significantly and positively.

Badara and Saidin (2014) Internal auditors selected from Putrajaya ministries in Malaysia were investigated. The investigation aimed to ascertain auditors' perceptions of the effectiveness of internal audit work, as impacted by audit quality. It also sought to ascertain the relationship between factors that contribute to the efficacy and integrity in public administration's internal audit. A cross-sectional data was used in this study to examine the effectiveness of internal audit. The data was analyzed using a variety of statistical techniques, including the descriptive statistic, correlation, and regression analysis.

The study's findings revealed that there were substantial positive correlations among the elements examined in the study, such as auditor competency, auditors' independence and objectivity and management support to the effectiveness of internal audit. Thus, the effectiveness of internal audit depends strongly on the attributes of the factors analyzed in this study.

Alzeban and Gwilliam (2014) Factors affecting internal audit effectiveness (IAE) in Saudi Arabia were evaluated. 203 managements and 239 internal auditors from 79 Saudi Arabian public sector organizations provided data. The connection between IAE and five major factors is investigated using multiple regression analysis.

The findings imply that management support for IAE influences the function's effectiveness. And other factors like the consistency of internal auditors, such as hiring trained and experienced employees, establishing and implementing an internal audit charter, improving direct relationships with external auditors, and having an independent internal audit department, all are influenced by the management's support of internal audit.

Cohen and Sayag (2010) By creating a model of its determinants, the study investigated the factors that affect IA efficacy. The model consists of six potential factors that could affect the effectiveness of internal audits, including the organization's industry, internal auditors' level of competency, the audit's overall quality, organizational independence, career and advancement opportunities, and top management support. They claim that IA efficacy is a crucial issue that is little covered in academic literature. In the few studies that addressed the effectiveness of internal auditing, the external auditor and whether or not the external auditor makes use of the internal auditor's work were primarily the focus, the study suggests that there are very high correlations between perceptions and support of top management support and IA effectiveness.

2.3. Research Gap

In this review, the dynamics of the environment have an impact on internal audit efficacy. Furthermore, it was stated that effective internal auditing could assist Ethiopian governmental institutions in meeting their objectives. Using the literature review, the researcher notes the relevant gaps in the literature: The function and efficacy of internal auditors have received little attention. In other words, there has been very little study on the usefulness of IA in Ethiopia. Ethiopian's financial system is very weak and its findings cannot apply in the same way as those of developed countries.

A lot of research focuses on Developing countries and they are not applicable in the Ethiopian context. In past decades, limited studies have been conducted on IA effectiveness in East Africa.

Different works of literature argue different factors that influence the effectiveness of IA but have some in common. For instance, management support was identified as a significant influencing factor affecting internal audit effectiveness by five authors, which are Mihret and Yismaw (2007), Cohen and Sayag (2010), Hailemariam (2014), and Georg et al. (2015); internal audit quality was identified as a significant factor for internal audit effectiveness in two studies (Mihret and Yismaw (2007) and George et al. (2015)).

This literature review has limitations; mainly limited types of publications are used to review. Future research may extend the scope of the review to include contributions in other literatures to provide a broader understanding what type and to what extent the factors influences the effectiveness of IA and some researchers advocated further research to be conducted comprehensively. Some researchers have called for a more comprehensive study on the issue so variables like technology added meaning to this study so it filled this gap, as if there was no accessible published research conducted on Ethiopian internal audit.

Therefore, this research investigates the determinants of internal audit effectiveness in selected budgetary public sector offices. Which is based on the role of Technology, Size of the internal audit Departments, the role of management support of the internal auditors, internal audit quality, the relationship between internal and external auditors, and internal auditor 's independence on effectiveness on internal audit case of Ethiopian federal public institutions.

2.4. Hypotheses Development

In this section, the study outline the hypotheses formulated to test the various factors that may influence internal audit effectiveness. These hypotheses are derived from the theoretical framework and literature review, aiming to address key elements such as technology, size of internal audit departments, management support, internal audit quality, the relationship between internal and external auditors, and auditor independence.

The subsequent hypotheses provide a structured approach to examining these relationships and their potential impact on the effectiveness of internal audits. Accordingly, based on the above model, the following hypotheses were developed:

H1: Technology

- Null Hypothesis (H0): Technology does not significantly affect internal audit effectiveness.
- Alternative Hypothesis (H1): Technology significantly affects internal audit effectiveness.

H2: Size of Internal Audit Departments

- Null Hypothesis (H0): The size of internal audit departments does not significantly affect internal audit effectiveness.
- Alternative Hypothesis (H1): The size of internal audit departments significantly affects internal audit effectiveness.

H3: Management Support

- Null Hypothesis (H0): Management support does not significantly affect internal audit effectiveness.
- Alternative Hypothesis (H1): Management support significantly affects internal audit effectiveness.

H4: Internal Audit Quality

- Null Hypothesis (H0): Internal audit quality does not significantly affect internal audit effectiveness.
- Alternative Hypothesis (H1): Internal audit quality significantly affects internal audit effectiveness.

H5: Relationship Between Internal and External Auditors

- Null Hypothesis (H0): The relationship between internal and external auditors does not significantly affect internal audit effectiveness.
- Alternative Hypothesis (H1): The relationship between internal and external auditors significantly affects internal audit effectiveness.

H6: Auditor Independence

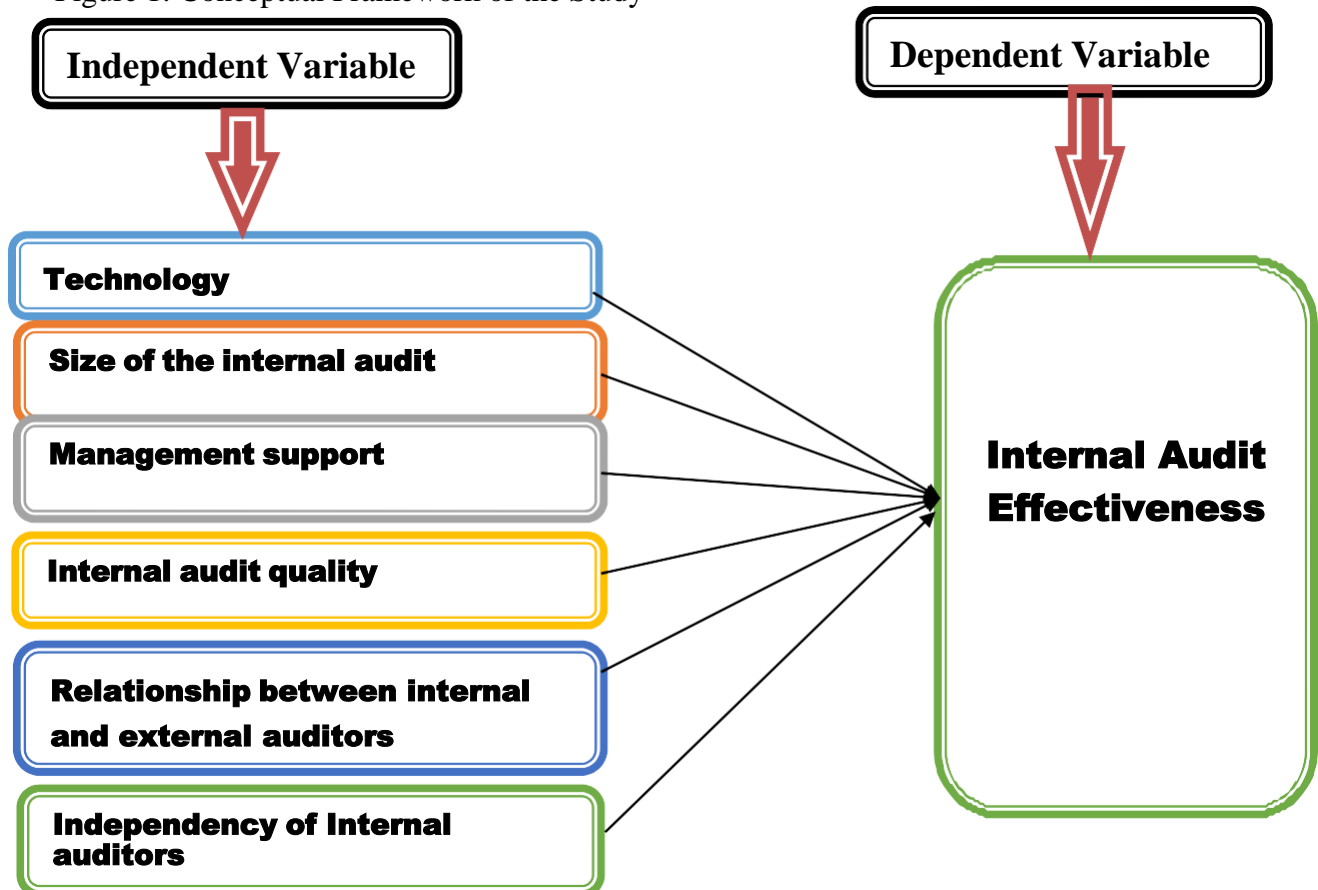
- Null Hypothesis (H0): Auditor independence does not significantly affect internal audit effectiveness.
- Alternative Hypothesis (H1): Auditor independence significantly affects internal audit effectiveness

2.5. Conceptual Framework

From the empirical literature studied it can be noted that effectiveness of internal audit function is determined by the role of Technology, Size of the internal audit Departments, the role of management support of the internal auditors, internal audit quality, the relationship between internal and external auditors. Internal audit function plays a key role in corporate governance. Therefore, this study also aims to establish the relationship between effectiveness of internal (IA) and the independent variables that affect the internal audit task accomplishments of the selected three federal public organizations in Ethiopia under study.

This conceptual framework for internal audit effectiveness is designed by the researcher with the help of study theories of, Agency, institutional, contingency, UTAUT theories, as well as empirical literature and the conceptual framework showing the interdependence between the variables is depicted below as follows.

Figure 1: Conceptual Framework of the Study



Source: Adopted from Mihret and Yismaw (2007)

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter embraces research design and methodology focused following themes: research approach, research design, target population, data collection instrument and measurement, validity test, reliability test and ethical consideration.

3.1. Research Approach

This study used quantitative research approach. The quantitative research design method was used to establish and study the relationship between two variables or concepts. These variables were measured numerically, and the results were analyzed numerically through statistics or graphs. Researchers who adapt this method usually tend to be more deductive in their research approach and tend to follow the positivism epistemological position, where highly structured data collection techniques are used (Creswell, 2014; Saunders, 2016).

3.2. Research Design

Research design is a plan, structure and strategy of investigation to obtain answer for research questions or problems. The plan is a complete scheme or program of the research (Kerlinger, 2016).

This study adopted a descriptive and explanatory research design to achieve a comprehensive understanding of determinants of internal audit effectiveness: in case of some selected federal public organizations in Ethiopia.

The researcher used descriptive research because it includes surveys and fact-finding enquiries of different kinds. When the purpose of the study is to answer who, what, where, how much and how many questions similar to the questions raised in this research, using descriptive type research was a typical choice (Saundres et al., 2009). Moreover, the main purpose of selecting explanatory research is that of formulating a problem for more precise investigation or of developing the working hypotheses from an operational point of view. Explanatory research design elaborates the cause and effect relationships among variables and characterized by the prior formulation of specific research questions and hypotheses (Kothari, 2004).

3.3. Target Population

The target population for this study comprises the Internal Audit Department staff of three Ethiopian public institutions. Conducting research across all such institutions would require extensive time and resources, so three institutions were selected based on specific criteria. These criteria include their internal audit practices and the volume of internal audit reports generated, as well as their relevance to finance-related activities, which are highly informative to the subject matter.

The total population of 130 individuals includes internal audit directorate directors, senior internal auditors, junior internal auditors, and managers from these organizations. The selected institutions are the Ministry of Health, General Audit, and the Ministry of Finance, with population sizes of 25, 75, and 30, respectively. Given that the total population is 130, the entire population was considered for the study, ensuring comprehensive coverage through a census approach. These three institutions were chosen for their robust internal audit practices and significant internal audit report generation, indicating a mature internal audit function suitable for studying internal audit effectiveness. Additionally, finance-related institutions, such as these, provide a wealth of information due to their complex financial activities and the critical nature of internal auditing in ensuring financial integrity and compliance. By focusing on these three institutions, the research aims to provide detailed insights into the factors influencing internal audit effectiveness, leveraging their extensive internal audit activities and their critical role in financial management.

Table 1: Population size determination

No.	Organization Name	Internal audit Directorate staff	Managers	Total
1	Ministry of health	23	2	25
2	General audit	69	6	75
3	Ministry of finance	27	3	30
	Total	119	11	130

Source: MoH, GA and MoF office database as of Jan 2024

Hence, by utilizing the Census, the population size was 130 employees, which are available for filling out questionnaires from those three selected federal public organizations.

3.4. Source of Data

This study used both primary and secondary sources of data. The term primary data refers to information that has been collected directly by the researcher. Thus, sources of primary data were internal audit staff, head internal auditors of selected institutions' Responses, which was collected through a structured self-administered questionnaire. Secondary data is information was gathered earlier by another party, personal interviews, observations, experiments, etc. Publications from the government, websites, books, journal papers, and internal documents (Ajayi, 2017).

3.5. Method of Data Collection

The type of data, which was used to prepare the report of this research, is Quantitative data. Hence, the structured questionnaire is being used as the means of data collection from the targeted group of respondents in the institutions. Thus, sources of primary data are internal audit staff, head of internal audit responses. In this study, the researcher applied self-administered questionnaire the self-administered questionnaire developed by Mihret et al. (2010) and Tadiwos (2016). The respondent profile is covered in the first section. The second part of the holds 27 Likert scales questions and the language of the questionnaire is English Mostly, Likert scale questions have five degrees namely Strongly Agree, Agree, Neutral (Undecided), Disagree, and Strongly Disagree that are combined into a single composite score/variable during the data analysis process (Boone & Boone, 2012).

The researcher used a Five-Point Likert-scale by indicating scores as follows: (5) Indicate strongly agree (4) agree (3) neutral (2) disagree and (1) indicate strongly disagree. The numbers, which was used in the questions to generate data suitable for quantitative analysis and to feed ordinary scale measurements (Boone Jr & Boone, 2012).

3.6. Methods of Data Analysis

The data was analyzed using both descriptive and inferential statistics. The data collected from questionnaires was systematically organized in a manner to facilitate the analysis. The data was analyzed using Statistical Package for Social Sciences (SPSS version 26.0) and summarized to relate the variables that are collected from questionnaires. Pearson correlation coefficient and Cronbach's Alpha coefficient was used to test goodness and internal consistency of the measure.

3.6.1. Descriptive Statistics

Descriptive statistics like mean, frequency, and percentage was used to profile sample characteristics and major patterns emerging from the data. As a result, the demographic characteristics of the respondents are easily visible to the reader.

3.6.2. Inferential Statistics

Inferential statistics was used to identify the degree of correlation between the variables using Pearson's Product. Inferential statistical analysis infers properties of a population whereas to decide the relationship among the variables and to test the research hypothesis correlation and regression analysis method used by meeting the ordinary least square (OLS).

Correlation analysis can tell the correlation among variables but it doesn't tell which relation is stronger.

Regression analysis was also used to measure the relative strength of independent variables on Dependent variable. Regression analysis was done to determine the degree of relationship between the independent variable (factors that determine IA effectiveness) and dependent variables (IA effectiveness).

3.6.3. Classical Linear Regression Assumptions

In this study, this, with the property of Ordinary Least Squares (OLS) under Classical Linear Model (CLM); The model was tested by Linearity Test, Homoscedasticity Test, Multicollinearity Test, Normality Test and Independent of Residuals.

3.6.4. Model specification

Model stated below was used to identify the factors determining effectiveness IA. A model is defined as any highly formalized representation of a theoretical system. Based on the variables defined above, the model of the study can be formulated as follows:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + e.$$

β_i & β_{ii} ($i = 0, 1, 2, 3, 4, 5, 6, \dots$) are the coefficients, ϵ is the error variable, Y is the dependent variable

$$IAE = f(TC, SIAD, TMS, IAQ, RBIEA, IAID) \dots\dots\dots$$

Where,

IAE = Internal Auditing Effectiveness

TC = Technology

SIAD =Size of the internal audit department

TMS = Top Management Support

IAQ = internal audit quality

RBIEA = the relationship between internal and external auditors

IAID = internal auditor 's independence

In this model, by making some standard assumptions, the above equation can be restructured into linear multiple regression equations as follows:

$$IAE = b_0 + b_1 TC + b_2 SIAD + b_3 TMS + b_4 IAQ + b_5 RBIEA + b_6 IAID + e_1.$$

Model *Where:* b_i & b_{ii} ($i = 0, 1, 2, 3, 4, 5, 6 \dots$) are the coefficients, ε is the error variable, Y is the dependent variable related to Internal Auditing Effectiveness, and TC, SIAD, TMS, IAQ, RBIEA, and IAID Independent variables.

3.7. Validity and Reliability

Validity and reliability of the measures need to be assessed before using the instrument of data collection (Hair 2003).

3.7.1. Validity

Validity refers to whether we are measuring or what we want to measure (Mooi and Sarstedt 2011). It is related to research methodology because its primary purpose is to increase the accuracy and usefulness of findings by eliminating or controlling as many confounding variables as possible, which allows for greater confidence in the findings of any given study (Marczyk et al. 2005). To protect the issue of validity the researcher followed scientific research procedures, every data collected from appropriate information providers and the collected data was measured by appropriate data analysis tools. Further, different theories and empirical studies were assessed to assure its validity.

3.7.2. Reliability

Reliability implies consistency, but not accuracy. Calderon (2003) stated that alternative measure of reliability, as internal consistency is the Cronbach alpha, frequently referred to as the alpha coefficient of reliability, or simply the alpha.

Table 2: Reliability Statistics

Variables	Cronbach's Alpha
Use of Technology	0.797
Size of the Internal Audit Departments	0.739
Management Support	0.731
Internal Audit Quality	0.775
Relationship between internal and external auditors	0.739
Independency of Internal Auditors	0.872
Internal Audit Effectiveness	0.736
Mean	0.769

Source: Result of Survey Data, (2024)

Due to the nature of the questionnaire construct, varying methods were applied for measuring the different variables considered. The researcher used a questionnaire whose validity and reliability were verified according to the specific topic, employing a standard questionnaire that was validated and deemed reliable with a Cronbach's alpha above 0.7. Questionnaires were distributed to respondents, and the returned 30 pilot instruments were coded, analyzed, and tested for reliability using Cronbach's alpha through SPSS IBM version 26.0. The performance audit questions underwent testing to determine the internal consistency of the questionnaire, revealing a Cronbach's alpha score of 0.769. As Cronbach's alpha ranges from 0 to 1, with values above 0.70 indicating acceptable reliability, the score of 0.824 demonstrates a strong level of internal consistency for the questionnaire. This suggests that the questions included in the performance audit instrument are reliable and consistent in measuring the intended construct, providing respondents with confidence in the coherence and accuracy of the questionnaire items for the purposes of the audit.

3.8. Ethical Consideration

Ensuring ethical considerations in research is essential for protecting the rights and well-being of participants. In this study, the researcher took several steps to uphold ethical conduct:

- ❖ **Confidentiality:** The researcher implemented a policy of confidentiality to safeguard the privacy of the participants. Access to private information was limited to the researcher, and all data collected was treated with strict confidentiality.
- ❖ **Informed Consent:** The researcher obtained informed consent from the participants. This involved providing clear and understandable explanations of the study's goals, methods, rewards, confidentiality measures, and the voluntary nature of participation.
- ❖ **Participants were given the opportunity to ask questions and provide their consent before participating in the study.**
- ❖ **Institutional Approval:** The researcher sought official approval from the Department of Accounting and Finance at St. Mary's University. This ensures that the study adheres to ethical guidelines and regulations set by the institution.
- ❖ **Privacy Protection:** Protecting the privacy of participants was a priority for the researcher. Measures were taken to anonymize data, ensuring that participants' identities were not disclosed. Safe data storage techniques were employed to prevent unauthorized access to the collected data.
- ❖ **Data Collection and Storage:** The researcher specified the methods for data collection and storage, ensuring that only authorized individuals had access to the data. This helps maintain the confidentiality and integrity of the participants' information.

By incorporating these ethical considerations, the researcher aimed to conduct the study in an ethical and responsible manner, prioritizing the well-being and rights of the participants.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRITATION

This chapter covers all the analysis undertaken with the data collected. Descriptive method of data analysis was employed to see characteristics of the sample, also identify, and discuss the relationship between the independent and dependent variables.

4.1. Response Rate

To answer those research questions and to meet the main objectives of the research 130 questionnaires were prepared and distributed to the respondents. Out of these 130 questionnaires 118 questionnaires were collected which is 91% response rate.

According to (Mulugeta, 2009) a 50% response rate is adequate, 118% is good and above 70% is rated very well. This implies that based on these assertions; the response rate for this study is very good.

Table 3: Response Rate

Description	Response Rate
Population size	130
Questionnaire Distributed	130
Questionnaire Retrieved	118
Response Rate	91%
Usable Response	118

Source: SPSS Result of survey data, 2024

4.2. Demographic Characteristics of Respondents

The respondent profile is one of the demographic features. This part of the analysis deals with respondents' personal information. The respondents' detailed background data is displayed in the table below.

Table 4: Demographic characteristics of respondents

No.	Variable	Category	Frequency	Percent
1	Gender	Male	97	82.2
		Female	21	17.8
		Total	118	100.0
2	Age	Below 25	18	15.3
		26-35	67	56.8
		36-45	28	23.7
		Above 46	5	4.2
		Total	118	100.0
3	Work Experience in auditing sector	Less than 2 year	23	19.5
		2-3 years	59	50.0
		4-5 years	25	21.2
		6-10 years	11	9.3
		Total	118	100.0
4	Your level of education	Diploma	18	15.3
		Bachelor's Degree	130	55.1
		Masters	29	24.6
		PhD and above	6	5.1
		Total	118	100.0
5	Are you Certified like	CIA (Certified Internal Auditor)	18	15.3
		ACCA	67	56.8
		CPA	28	23.7
		Other (Including Audit Profession Certification)	5	4.2
		Total	118	100.0

Source: SPSS Result of survey data, 2024

The data presented in the table offers a detailed snapshot of the demographic profile of professionals within the auditing sector in a specific context. Understanding the composition and characteristics of the workforce can provide valuable insights into the current state of the profession and inform strategies for talent management, professional development, and enhancing diversity and inclusion.

Gender: The gender distribution shows a significant male dominance in the population, with 82.2% of the respondents being male and only 17.8% being female. This suggests that the auditing profession in this context may be male-dominated, which could have implications for gender diversity and representation within the industry.

Age: The age distribution indicates that the majority of the respondents (56.8%) are in the 26–35 age group, which is a relatively young age range for professionals in the auditing sector. The next largest group is the 36–45 age range, accounting for 23.7% of the population. This skew towards younger age groups may reflect the overall demographic trends in the auditing profession or could be specific to the organization or region sampled.

Work Experience: The work experience data reveals that half of the respondents (50%) have 2–3 years of experience in the auditing sector. This suggests a relatively junior-level population, as only 9.3% have 6–10 years of experience. The high proportion of respondents with less than 2 years of experience (19.5%) further reinforces the relatively junior nature of the population.

Education Level: The educational attainment of the respondents is dominated by Bachelor's degrees, which account for 55.1% of the population. This is followed by Master's degrees (24.6%) and Diploma-level qualifications (15.3%). The relatively low proportion of respondents with PhD or higher qualifications (5.1%) may indicate that advanced degrees are not necessarily a common requirement or pathway for career progression in the auditing sector within this context.

Professional Certifications: The prevalence of professional certifications, particularly the ACCA (56.8%) and CPA (23.7%), suggests a strong emphasis on formal accreditation and specialized training within the auditing profession. The high proportion of ACCA holders may point to the importance of this certification in the local or regional auditing landscape. The lower representation of CIA (15.3%) and other audit-related certifications (4.2%) could indicate that these are less common or valued in this specific context.

Overall, the demographic profile of the respondents highlights a male-dominated, relatively young, and junior-level population with a focus on bachelor's-level education and ACCA certification as the primary professional credential. These insights can inform our understanding of the auditing profession's composition and potential areas for diversity, experience, and credential enhancement within the studied context.

4.3. Descriptive Analysis

In order to see the general perception of the respondents, the researcher has summarized the measures with their respective means and standard deviations. Thus, the mean indicates to what extent the selected group averagely agrees or does not agree with the different statements. The lower the mean, the more the respondents disagree with the statements. The higher the mean, the more the respondents agree with the statement. On the other hand, the standard deviation shows the variability of an observed response from a single population (Marczyk and Festinger, 2005).

The researcher has conducted a detailed descriptive analysis to understand the general perceptions and attitudes of the 188 respondents. This involves calculating the mean and standard deviation for each measure or statement presented to the respondents.

The mean score is a crucial indicator here, as it reflects the average level of agreement or disagreement with the various statements. According to Zaidaton & Bagheri (2009), the mean score below:

- ❖ Mean scores below 3.39 are considered low, indicating that the respondents generally disagree with or do not strongly support that particular statement or measure.
- ❖ Mean scores in the range of 3.40 to 3.79 are considered moderate, suggesting a neutral or mixed perception, where respondents may have somewhat agreed or disagreed.
- ❖ Mean scores above 3.8 are interpreted as high, meaning the respondents tend to agree and show strong support for that statement or measure.

The standard deviation, on the other hand, provides information about the spread or variability of the responses. A lower standard deviation indicates the responses are clustered closely around the mean, while a higher standard deviation suggests more diverse or dispersed responses within the population.

The detailed results of this descriptive analysis, including the specific mean scores and standard deviations for each measure, are presented by the researcher to provide insights into the overall perspective of the population size.

Table 5: Use of Technology

No	Descriptive Statistics	Mean	Std. Deviation
1	Internal auditors effectively utilize technology (i.e., computers, laptops, applications, etc.) for their job-related activities.	3.94	0.899
2	The use of technology in internal audit has improved the overall effectiveness of the internal audit function in the organization.	3.58	1.15
3	Technology has enhanced the timeliness of information generated by the internal audit department.	4.05	0.825
4	The use of technology in internal audit has increased the reliability of the outcomes and findings produced by the internal audit function.	3.86	1.274
5	The internal audit team has access to adequate technological resources to perform their job effectively.	3.87	1.362
I	Use of Technology	3.86	1.102

Source: SPSS Result of survey data, 2024

The analysis of Table 5, which examines the use of technology in internal audit functions, provides insightful interpretations based on the mean classification by Zaidaton & Bagheri (2009). According to this classification, mean scores below 3.39 are considered low, indicating general disagreement or lack of strong support for a statement. Mean scores between 3.40 and 3.79 are considered moderate, suggesting a neutral or mixed perception. Mean scores above 3.8 are interpreted as high, reflecting strong agreement and support for the statement.

The first statement, "Internal auditors effectively utilize technology (i.e. computers, laptops, applications, etc.) for their job-related activities," received a high mean score of 3.94. This indicates that respondents strongly agree that internal auditors are proficient in using technology for their work. The high level of competence and integration of technology in their daily tasks enhances performance and efficiency within the audit function.

The statement, "The use of technology in internal audit has improved the overall effectiveness of the internal audit function in the organization," has a moderate mean score of 3.58. This suggests a mixed but generally positive perception among respondents regarding the impact of technology on audit effectiveness. While there is agreement that technology has improved the effectiveness of internal audits, the score indicates that there may still be areas where respondents feel improvements could be made or where the impact is not uniformly perceived.

With a high mean score of 4.05, the statement, "Technology has enhanced the timeliness of

information generated by the internal audit department," reflects strong agreement among respondents. This suggests that technology enables faster processing, analysis, and reporting of audit information, which is crucial for timely decision-making and responsiveness in the audit process.

The statement, "The use of technology in internal audit has increased the reliability of the outcomes and findings produced by the internal audit function," also received a high mean score of 3.86. This indicates strong agreement among respondents that technology has enhanced the reliability of audit outcomes and findings. Advanced technological tools likely contribute to more accurate and dependable audit results, reducing errors and increasing confidence in the audit process.

The final statement, "The internal audit team has access to adequate technological resources to perform their job effectively," with a high score of 3.87, reflects strong agreement that the internal audit team is well-equipped with the necessary technological resources. Adequate access to technology is essential for auditors to perform their duties efficiently and effectively, suggesting that the organization has invested sufficiently in technological infrastructure and tools for its audit team.

The overall mean score for the use of technology is 3.86, which signifies that respondents generally agree and show strong support for the integration and utilization of technology in internal audit functions. This indicates a positive perception of technology's role in enhancing various aspects of the audit process, including effectiveness, timeliness, reliability, and resource adequacy.

In conclusion, based on the mean classification by Zaidon & Bagheri (2009), the majority of statements related to the use of technology in internal audits received high mean scores. This indicates that respondents believe technology is effectively utilized, improving the timeliness and reliability of audit processes, and that the audit team is well-supported with technological resources. The one statement that received a moderate mean score reflects a somewhat mixed perception, with respondents acknowledging improvements but also recognizing areas for further enhancement.

The high scores suggest that the organization has made significant investments in technological

resources for its internal audit team, which is reflected in the positive perceptions of its effectiveness and reliability. Overall, the mean scores from Table 5 demonstrate a strong consensus on the beneficial role of technology in internal auditing, with some room for continued improvement in overall effectiveness.

4.3.1. Size of the Internal Audit Departments

Table 6: Size of the Internal Audit Departments

No.	Descriptive Statistics	Mean	SD
1	The internal audit department has an appropriate number of staff to handle the workload.	2.71	1.457
2	The skills possessed by the internal audit staff align with the requirements of the organization's internal operations.	2.76	1.388
3	The internal audit department is allocated sufficient budgetary resources to carry out its duties and responsibilities effectively.	2.69	1.589
4	The governance structure in the organization provides adequate support to the internal audit function.	2.82	1.494
5	The internal audit team collaborates effectively with other departments and stakeholders within the organization.	2.69	1.528
II.	Size of the Internal Audit Departments	2.734	1.491

Source: SPSS Result of survey data, 2024

The analysis of Table 6, which evaluates the size of internal audit departments, provides interpretations based on the mean classification by Zaidaton & Bagheri (2009). According to this classification, mean scores below 3.39 are considered low, indicating general disagreement or lack of strong support for a statement. Mean scores between 3.40 and 3.79 are considered moderate, suggesting a neutral or mixed perception. Mean scores above 3.8 are interpreted as high, reflecting strong agreement and support for the statement.

The first statement, "The internal audit department is adequately staffed to handle the volume of work," received a low mean score of 2.75. This indicates that respondents generally disagree with the adequacy of staffing in the internal audit department. It suggests concerns about whether the department has enough personnel to manage its workload effectively.

The statement, "The internal audit team has the right mix of skills and expertise to perform their tasks effectively," has a low mean score of 2.60. This score suggests that respondents do not strongly support the notion that the internal audit team has the appropriate mix of skills and expertise. This could imply a perceived need for better training or more diverse skill sets within the team.

The statement, "The internal audit department receives sufficient budgetary resources to perform their functions effectively," also received a low mean score of 2.72. This indicates that respondents generally disagree with the adequacy of budgetary resources allocated to the internal audit department. Insufficient funding might be perceived as a barrier to performing their functions effectively.

The statement, "There is adequate governance support for the internal audit function," received a low mean score of 2.88. This suggests that respondents perceive a lack of sufficient governance support for the internal audit function. Effective governance support is crucial for the internal audit function to operate independently and efficiently.

The final statement, "The internal audit department collaborates effectively with other departments within the organization," has a low mean score of 2.83. This indicates that respondents generally disagree with the effectiveness of collaboration between the internal audit department and other departments. Effective collaboration is important for comprehensive and coordinated auditing activities.

The overall mean score for the size of the internal audit departments is 2.73, which falls into the low range. This signifies that respondents generally do not strongly support the statements related to the adequacy of staffing, skills, budgetary resources, governance support, and collaboration within the internal audit departments. The low overall mean score highlights significant areas of concern and suggests the need for improvements in these aspects to enhance the effectiveness of the internal audit function.

In conclusion, based on the mean classification by Zaidon & Bagheri (2009), all statements related to the size of internal audit departments received low mean scores. This indicates that respondents generally disagree with the adequacy of various aspects such as staffing, skills, budgetary resources, governance support, and collaboration within the internal audit departments.

These low scores suggest areas that require attention and improvement to ensure that internal audit departments can function effectively. The findings highlight the need for organizational efforts to address these concerns and enhance the overall capacity and support for internal audit functions.

4.3.2. Management Support

Table 7: Management Support

No.	Descriptive Statistics	Mean	Std. Deviation
1	Top management actively supports and encourages the internal audit staff in performing their duties and responsibilities.	4.1	0.9
2	Top management demonstrates a clear understanding of the needs and requirements of the internal audit function.	3.82	1.075
3	Top management takes appropriate actions based on the recommendations, criticisms, and information provided by the internal auditors.	4.38	0.666
4	The management effectively utilizes the insights and findings from internal audit reports for decision-making purposes.	4.23	0.81
5	The internal audit function is considered an integral part of the organization's strategic decision-making process.	4.31	0.673
III.	Management Support	4.168	0.825

Source: SPSS Result of survey data, 2024

The analysis of Table 7, which evaluates the level of management support for internal audit functions, provides interpretations based on the mean classification by Zaidaton & Bagheri (2009). According to this classification, mean scores below 3.39 are considered low, indicating general disagreement or lack of strong support for a statement. Mean scores between 3.40 and 3.79 are considered moderate, suggesting a neutral or mixed perception. Mean scores above 3.8 are interpreted as high, reflecting strong agreement and support for the statement.

The first statement, "Top management actively supports the internal audit function," received a high mean score of 4.15. This indicates that respondents strongly agree that top management provides active support to the internal audit function. This strong endorsement suggests that top management values the internal audit function and is committed to its success.

The statement, "Top management understands the role and importance of the internal audit function," also received a high mean score of 4.14. This high score reflects strong agreement among respondents that top management comprehends the critical role and significance of internal audits. Understanding the importance of internal audits is essential for ensuring they receive the necessary support and resources.

The statement, "Top management takes appropriate actions based on internal audit recommendations," has a high mean score of 4.18. This indicates strong agreement that top management not only values the internal audit function but also acts on its recommendations. Implementing audit recommendations is crucial for improving organizational processes and controls.

The statement, "Top management effectively utilizes the insights provided by the internal audit function," received a high mean score of 4.19. This score suggests that respondents strongly agree that top management effectively uses the insights and findings from internal audits to inform decision-making and improve operations. Effective utilization of audit insights can lead to better risk management and organizational performance.

The final statement, "The internal audit function is integrated into the strategic decision-making process of the organization," also received a high mean score of 4.15. This high score indicates strong agreement that the internal audit function is an integral part of the organization's strategic decision-making process. Integrating internal audit into strategic decisions ensures that risk management and internal control considerations are embedded in the organization's strategy.

The overall mean score for management support is 4.17, which falls into the high range. This signifies that respondents strongly agree and show strong support for the various statements related to management support for the internal audit function. The high overall mean score indicates a positive perception of management's role in supporting, understanding, acting on, utilizing, and integrating internal audit insights and recommendations.

In conclusion, based on the mean classification by Zaidaton & Bagheri (2009), all statements related to management support for the internal audit function received high mean scores. This indicates strong agreement among respondents that top management actively supports the internal audit function, understands its importance, takes appropriate actions based on its recommendations, effectively utilizes its insights, and integrates it into strategic decision-making. The findings highlight the strong backing of internal audits by top management, which is essential for the effectiveness and success of the internal audit function within the organization.

4.3.3. Internal Audit Quality

Table 8: Internal Audit Quality

No.	Descriptive Statistics	Mean	Std. Deviation
1	The internal audit function demonstrates a high level of compliance with internal audit standards and best practices.	4.17	0.766
2	Internal audit reports are accurate, clear, and logically structured.	3.64	0.722
3	The internal audit findings are well-supported by sufficient evidence and documentation.	3.70	0.830
4	External auditors find value in utilizing the internal audit working papers and reports during their audit engagements.	3.97	0.956
5	The internal audit function actively contributes to enhancing the overall quality of internal controls and risk management within the organization.	4.03	0.800
IV.	Internal Audit Quality	3.903	0.815

Source: SPSS Result of survey data, 2024

Table 8 evaluates Internal Audit Quality through various statements, each assigned a mean score and standard deviation. Let's delve into the discussion of Table 8 based on its descriptive statistics:

The first statement in Table 8, "The internal audit function demonstrates a high level of compliance with internal audit standards and best practices," received a remarkably high mean score of 4.17, with a relatively low standard deviation of 0.766. This high mean score indicates strong agreement and support among respondents regarding the internal audit function's adherence to established standards and best practices. The low standard deviation suggests a high level of consensus among respondents on this aspect of internal audit quality.

Moving on to the second statement, "Internal audit reports are accurate, clear, and logically structured," it received a mean score of 3.64 and a standard deviation of 0.722. While this mean score falls slightly below the high range, it still indicates a generally positive perception among respondents regarding the accuracy, clarity, and structure of internal audit reports. The standard deviation suggests a relatively consistent view among respondents, albeit with some variability.

The third statement, "The internal audit findings are well-supported by sufficient evidence and documentation," received a mean score of 3.70 and a standard deviation of 0.830. This mean score falls within the moderate range, indicating a neutral or mixed perception among respondents regarding the sufficiency of evidence supporting internal audit findings. The standard deviation reflects some variability in respondents' opinions on this aspect of internal audit quality.

Regarding the value external auditors derive from internal audit materials, the statement "External auditors find value in utilizing the internal audit working papers and reports during their audit engagements" received a mean score of 3.97 and a standard deviation of 0.956. This mean score, falling above 3.8, suggests strong agreement and support among respondents regarding the usefulness of internal audit materials for external audit processes. However, the higher standard deviation indicates more variability in respondents' views on this aspect compared to other statements.

Finally, the statement "The internal audit function actively contributes to enhancing the overall quality of internal controls and risk management within the organization" received a mean score of 4.03 and a standard deviation of 0.800. This high mean score reflects strong agreement among respondents regarding the active contribution of internal audit to improving internal controls and risk management practices. The standard deviation suggests relatively consistent opinions among respondents on this aspect of internal audit quality.

The overall mean score for Internal Audit Quality is 3.903, falling into the high range. This indicates that respondents generally perceive the internal audit function positively in terms of compliance, report quality, evidence support, value to external auditors, and contribution to internal controls and risk management. However, there are areas, such as the clarity and structure of audit reports and the sufficiency of evidence, where perceptions are more neutral or mixed, as indicated by the standard deviations. Addressing these areas of variability can further enhance the credibility and impact of the internal audit function within the organization.

4.3.4. Relationship between internal and external auditors

Table 9: Relationship between internal and external auditors

No	Descriptive Statistics	Mean	Std. Deviation
1	There is an effective and collaborative relationship between the internal and external auditors.	2.71	1.457
2	Internal and external auditors consult and coordinate on the timing of their work when they have mutual interests.	2.76	1.388
3	Internal auditors willingly share their working papers and relevant information with external auditors.	2.69	1.589
4	Senior management actively facilitates and promotes effective cooperation between the internal and external audit functions.	2.82	1.494
5	The internal auditors actively participate in major decisions that have an impact on the internal audit unit and its operations	2.69	1.528
V.	Relationship between internal and external auditors	2.736	1.491

Source: SPSS Result of survey data, 2024

The analysis of Table 9, which assesses the relationship between internal and external auditors, provides interpretations based on the mean classification by Zaidaton & Bagheri (2009). According to this classification, mean scores below 3.39 are considered low, indicating general disagreement or lack of strong support for a statement. Mean scores between 3.40 and 3.79 are considered moderate, suggesting a neutral or mixed perception. Mean scores above 3.8 are interpreted as high, reflecting strong agreement and support for the statement.

The first statement, "There is an effective and collaborative relationship between the internal and external auditors," received a low mean score of 2.71. This indicates that respondents generally disagree with the effectiveness and collaboration between internal and external auditors. This suggests a perceived lack of cooperation and synergy between the two groups, which could impact the overall efficiency and effectiveness of the audit processes.

The statement, "Internal and external auditors consult and coordinate on the timing of their work when they have mutual interests," also received a low mean score of 2.76. This score suggests that respondents generally disagree with the level of consultation and coordination on work timing between internal and external auditors. Effective coordination is important for optimizing audit resources and minimizing duplication of efforts.

The statement, "Internal auditors willingly share their working papers and relevant information with external auditors," received a low mean score of 2.69. This indicates that respondents generally disagree with the willingness of internal auditors to share their working papers and relevant information with external auditors. Sharing information is crucial for ensuring comprehensive audit coverage and for external auditors to rely on internal audit work.

The statement, "Senior management actively facilitates and promotes effective cooperation between the internal and external audit functions," received a low mean score of 2.82. This score reflects that respondents generally disagree with the level of facilitation and promotion of cooperation by senior management between internal and external auditors. Senior management's active role is essential for fostering a collaborative environment and ensuring aligned objectives.

The final statement, "The internal auditors actively participate in major decisions that have an impact on the internal audit unit and its operations," also received a low mean score of 2.69. This indicates that respondents generally disagree with the active participation of internal auditors in major decisions affecting their unit and operations. Active participation is necessary for internal auditors to contribute valuable insights and ensure their concerns are addressed.

The overall mean score for the relationship between internal and external auditors is 2.736, which falls into the low range. This signifies that respondents generally do not strongly support the statements related to the effectiveness, collaboration, coordination, information sharing, senior management facilitation, and active participation between internal and external auditors. The low overall mean score highlights significant areas of concern and suggests the need for improvements in these aspects to enhance the relationship and cooperation between internal and external audit functions.

In conclusion, based on the mean classification by Zaidaton & Bagheri (2009), all statements related to the relationship between internal and external auditors received low mean scores. This indicates that respondents generally perceive a lack of effective collaboration, coordination, information sharing, senior management facilitation, and active participation between internal and external auditors. These low scores suggest areas that require attention and improvement to ensure a more effective and collaborative relationship between internal and external audit functions. Improving these aspects is critical for enhancing the overall efficiency, effectiveness, and reliability of the audit processes within the organization.

4.3.5. Independency of Internal Auditors

Table 10: Independency of Internal Auditors

No.	Descriptive Statistics	Mean	Std. Deviation
1	Audit staff has free access to all information in all organizations.	3.03	1.648
2	Internal auditors rarely face interference from management while doing their work.	3.17	0.918
3	Internal audit provides reports to the audit committee.	3.16	1.198
4	Internal auditors actively participate in major decisions affecting the internal audit unit.	3.08	1.594
5	The internal audit function maintains a high level of objectivity and independence in its activities.	3.49	1.266
VI.	Independency of Internal Auditors	3.186	1.325

Source: SPSS Result of survey data, 2024

Table 10 assesses the Independency of Internal Auditors through various statements, each assigned a mean score and standard deviation. Let's discuss the findings of Table 10 based on its descriptive statistics:

The first statement in Table 10, "Audit staff has free access to all information in all organizations," received a mean score of 3.03, with a relatively high standard deviation of 1.648. This mean score falls within the moderate range, indicating a neutral or mixed perception among respondents regarding the extent of access that audit staff has to information. The high standard deviation suggests significant variability in respondents' opinions on this aspect of internal audit independence.

Moving on to the statement, "Internal auditors rarely face interference from management while doing their work," it received a mean score of 3.17 and a standard deviation of 0.918. This mean score falls within the moderate range, suggesting a neutral or mixed perception regarding the level of interference faced by internal auditors from management. The standard deviation indicates some variability in respondents' views on this issue.

The third statement, "Internal audit provides reports to the audit committee," received a mean score of 3.16 and a standard deviation of 1.198. This mean score falls within the moderate range, indicating a neutral or mixed perception among respondents regarding the reporting practices of the internal audit function to the audit committee. The standard deviation suggests variability in respondents' opinions on this aspect of internal audit independence.

Regarding internal auditors' participation in major decisions affecting the internal audit unit, the statement "Internal auditors actively participate in major decisions affecting the internal audit unit" received a mean score of 3.08 and a relatively high standard deviation of 1.594. This mean score falls within the moderate range, indicating a neutral or mixed perception among respondents regarding the level of participation of internal auditors in major decisions. The high standard deviation suggests significant variability in respondents' views on this aspect.

Finally, the statement "The internal audit function maintains a high level of objectivity and independence in its activities" received a mean score of 3.49 and a standard deviation of 1.266. This mean score falls within the moderate range, indicating a somewhat positive perception among respondents regarding the level of objectivity and independence maintained by the internal audit function. However, the standard deviation suggests variability in respondents' opinions on this aspect of internal audit independence.

The overall mean score for Independence of Internal Auditors is 3.186, falling within the moderate range. This indicates a neutral or mixed perception among respondents regarding various aspects of internal audit independence, including access to information, interference from management, reporting practices, participation in decisions, and overall objectivity and independence. The variability in standard deviations further emphasizes the diversity of opinions among respondents on these crucial aspects of internal audit independence. Addressing these perceptions and enhancing internal audit independence can contribute to strengthening the credibility and effectiveness of internal audit functions within organizations.

4.3.6. Independency of Internal Auditors and Procedures

Table 11: Independency of Internal Auditors and Procedures

No	Descriptive Statistics	Mean	SD
1	Internal audit work contributes significantly to the achievement of organizational goals.	2.41	1.469
2	The internal audit function provides valuable insights and recommendations for improving organizational performance.	2.51	1.419
3	The internal audit function effectively detects and prevents fraud and irregularities within the organization.	2.53	1.338
4	Internal auditors in my department possess the necessary skills and knowledge to perform their duties effectively.	2.92	1.572
5	The internal audit reports are clear, accurate, and provide valuable information for decision-making.	2.75	1.379
6	The internal audit function actively contributes to enhancing the organization's risk management practices.	2.75	1.426
7	The internal audit function is perceived as independent and objective within the organization.	3.08	0.966
8	The internal audit function effectively communicates its findings and recommendations to relevant stakeholders.	3.36	1.051
9	The internal audit department has sufficient resources and support to carry out its responsibilities effectively.	3.55	1.034
10	The internal audit function continuously improves its processes and methodologies to adapt to changing business environments and emerging risks.	2.28	1.383
VII.	Internal Audit Effectiveness	2.814	1.304

Source: SPSS Result of survey data, 2024

Table 11, focusing on the Independency of Internal Auditors and Procedures (RMPP), provides insights into respondents' perceptions regarding various aspects of internal audit effectiveness. The first three statements in Table 11 focus on the contribution of internal audit work to organizational goals, providing valuable insights for improving organizational performance, and effectively detecting and preventing fraud and irregularities.

These statements received mean scores of 2.41, 2.51, and 2.53, respectively, all falling within the low range. Additionally, their standard deviations indicate significant variability in respondents' opinions regarding these aspects of internal audit effectiveness. These low mean scores suggest a general perception among respondents that internal audit may not be highly effective in contributing to organizational goals, providing valuable insights, and detecting fraud and irregularities.

Moving on to internal auditors' skills and knowledge, the statement "Internal auditors in my department possess the necessary skills and knowledge to perform their duties effectively" received a mean score of 2.92, also falling within the low range, with a relatively high standard deviation. This suggests mixed opinions among respondents regarding the adequacy of skills and knowledge among internal auditors.

Regarding the clarity and value of internal audit reports, the statement "The internal audit reports are clear, accurate, and provide valuable information for decision-making" received a mean score of 2.75, falling within the low range, with a notable standard deviation. This indicates variability in respondents' opinions on the quality and usefulness of internal audit reports for decision-making.

Similarly, the statement "The internal audit function actively contributes to enhancing the organization's risk management practices" received a mean score of 2.75, also falling within the low range, with a standard deviation indicating varied opinions. This suggests that respondents may have mixed views on the effectiveness of internal audit in enhancing risk management practices.

Moving on to perceptions of internal audit independence and objectivity, the statement "The internal audit function is perceived as independent and objective within the organization" received a mean score of 3.08, indicating a moderate level of agreement among respondents. However, the standard deviation suggests some variability in this perception.

Regarding communication and resources, the statement "The internal audit function effectively communicates its findings and recommendations to relevant stakeholders" received a mean score of 3.36, falling within the moderate range, with a standard deviation reflecting varied opinions. The statement "The internal audit department has sufficient resources and support to carry out its responsibilities effectively" received a mean score of 3.55, also falling within the moderate range, with a standard deviation indicating mixed opinions.

Lastly, the statement focusing on continuous improvement in internal audit processes received a mean score of 2.28, falling within the low range, with a notable standard deviation. This suggests that respondents may not strongly agree on the extent of continuous improvement efforts within the internal audit function.

The overall mean score for Internal Audit Effectiveness is 2.814, falling within the low range. This indicates that respondents generally perceive internal audit effectiveness as low across various aspects such as contribution to organizational goals, fraud detection, skills and knowledge, report quality, risk management contribution, continuous improvement, and resource sufficiency. The variability in standard deviations further emphasizes the diversity of opinions among respondents on these crucial aspects of internal audit effectiveness. Addressing these perceptions and enhancing internal audit effectiveness can contribute significantly to improving organizational governance and risk management practices.

4.3.7. Summary of Descriptive Analysis

Table 12: Summary of Descriptive Analysis

No.	Descriptive Statistics	Mean	Standard Deviation
1	Use of Technology	3.860	1.102
2	Size of the Internal Audit Departments	2.734	1.491
3	Management Support	4.168	0.825
4	Internal Audit Quality	3.903	0.815
5	Relationship between internal and external auditors	2.736	1.491
6	Independency of Internal Auditors	3.186	1.325
7	Internal Audit Effectiveness	2.814	1.304

Source: SPSS Result of Survey Data, (2024)

Table 12 provides a summary of the descriptive analysis for various aspects related to internal audit functions within organizations. Let us discuss the findings based on the mean and standard deviation values:

Use of Technology: The mean score for the use of technology is 3.860, indicating a relatively high level of agreement among respondents regarding the utilization of technology within internal audit processes. The standard deviation of 1.102 suggests some variability in opinions but overall shows a positive perception of technology's role in internal audits.

Size of the Internal Audit Departments: With a mean score of 2.734, respondents, indicating concerns or disagreement regarding the adequacy of staffing within these departments, perceive the size of internal audit departments relatively low. The standard deviation of 1.491 reflects significant variability in opinions about the size of internal audit teams.

Management Support: Management support receives a high mean score of 4.168, indicating strong agreement and support among respondents regarding the support provided by management to internal audit functions. The low standard deviation of 0.825 suggests a high level of consensus among respondents on this aspect.

Internal Audit Quality: Internal audit quality also receives a high mean score of 3.903, indicating strong agreement among respondents regarding the quality of internal audit processes and outcomes. The standard deviation of 0.815 reflects a relatively consistent view among respondents on internal audit quality.

Relationship between internal and external auditors: The relationship between internal and external auditors receives a mean score of 2.736, falling within the low range. This suggests a general disagreement or lack of strong support for the effectiveness of collaboration between internal and external audit functions. The standard deviation of 1.491 indicates significant variability in opinions on this aspect.

Independency of Internal Auditors: The mean score for the independency of internal auditors is 3.186, indicating a neutral or mixed perception among respondents regarding various aspects of internal audit independence. The standard deviation of 1.325 reflects variability in opinions about internal audit independence.

Internal Audit Effectiveness: Internal audit effectiveness receives a mean score of 2.814, falling within the low range. This indicates a general perception among respondents that internal audit effectiveness is relatively low across various aspects. The standard deviation of 1.304 suggests significant variability in opinions on internal audit effectiveness.

In summary, the summary table provides a snapshot of respondents' perceptions across different dimensions related to internal audit functions. While there is strong agreement regarding management support and internal audit quality, there are areas of concern or disagreement, such as the size of internal audit departments, the relationship between internal and external auditors, and internal audit effectiveness. These findings can guide organizations in identifying areas for improvement and enhancing the overall effectiveness and efficiency of their internal audit functions.

In conclusion, based on the mean classification criteria by Zaidaton & Bagheri (2009), the analysis of Table 12 reveals several key insights. Respondents strongly support the use of technology, management's support for internal audit functions, and the quality of internal audit processes, as evidenced by mean scores above 3.8. However, there are areas of concern such as the size of internal audit departments, the relationship with external auditors, and overall internal audit effectiveness, where respondents tend to disagree or show lower support, with mean scores falling below 3.39. Additionally, there is a mixed perception regarding the independency of internal auditors, with a mean score within the moderate range. These findings underscore the need for organizations to address staffing adequacy, collaboration issues, and continuous improvement in internal audit practices to enhance effectiveness and efficiency.

4.4. Inferential Analysis

4.4.1. Correlation of the dependent and independent variables

Correlations are indeed a fundamental and valuable measure for examining the relationship between variables. As stated by Marczyk, Dematteo, and Festinger (2005), correlation analysis allows us to assess the association between two or more variables. The correlation coefficient, denoted as "r," always falls within the range of -1 to +1. The sign of the correlation coefficient indicates whether the correlation is positive or negative, while the magnitude of the coefficient determines the strength of the correlation. According to Marczyk, Dematteo, and Festinger (2005), correlations ranging from .01 to .30 are considered small, correlations from .30 to .70 are considered moderate, correlations from .70 to .90 are considered large, and correlations from .90 to 1.00 are considered very large.

These thresholds provide guidelines for interpreting the strength of the relationship between variables based on the magnitude of the correlation coefficient.

Table 13: Pearson correlations between the dependent and independent variables

		Correlations						
		UT	SID	MS	IAQ	RIEA	IIA	IAE
Use of Technology	Pearson Correlation	1						
	Sig. (2-tailed)							
	N	118						
Size of the Internal Audit Departments	Pearson Correlation	.081	1					
	Sig. (2-tailed)	.383						
	N	118	118					
Management Support	Pearson Correlation	.445**	-.055	1				
	Sig. (2-tailed)	.000	.555					
	N	118	118	118				
Internal Audit Quality	Pearson Correlation	.540**	.177	.566**	1			
	Sig. (2-tailed)	.000	.055	.000				
	N	118	118	118	118			
Relationship between internal and external auditors	Pearson Correlation	.015	.154	.222*	.087	1		
	Sig. (2-tailed)	.870	.096	.016	.350			
	N	118	118	118	118	118		
Independency of Internal Auditors	Pearson Correlation	-.046	.142	-.001	-.063	.195*	1	
	Sig. (2-tailed)	.622	.125	.994	.495	.034		
	N	118	118	118	118	118	118	
Internal Audit Effectiveness	Pearson Correlation	.596**	.096	.784**	.711**	.192*	.137	1
	Sig. (2-tailed)	.000	.303	.000	.000	.037	.140	
	N	118	118	118	118	118	118	118
**. Correlation is significant at the 0.01 level (2-tailed).								
*. Correlation is significant at the 0.05 level (2-tailed).								

Source: SPSS Result of survey data, 2024

By conducting correlation analysis, researchers can gain insights into the degree and direction of the relationship between variables, enabling them to better understand the connections and patterns within their data. Such information can support decision-making, identify significant associations, and guide further investigation into the underlying dynamics of the variables being studied.

Correlation results presented in Table 13 show that:

- ❖ There is significant positive relation between **Use of Technology** and Internal Audit Effectiveness (sig=.000, r= **.596**) correlations of .30 to .70 are considered moderate.
- ❖ There is significant positive relation between **Size of the Internal Audit Departments** and Internal Audit Effectiveness (sig=.000, r= **.096**) correlations ranging from .01 to .30 are considered small.
- ❖ There is significant positive relation between **Management Support** and Internal Audit Effectiveness (sig=.000, r= **.784**) correlations from .70 to .90 are considered large.
- ❖ There is significant positive relation between **Internal Audit Quality** and Internal Audit Effectiveness (sig=.000, r= **.711**) correlations from .70 to .90 are considered large.
- ❖ There is significant positive relation between **Relationship between internal and external auditors** and Internal Audit Effectiveness (sig=.000, r= **.192**) correlations ranging from .01 to .30 are considered small.
- ❖ There is significant positive relation between **Independency of Internal Auditors and Procedures** and Internal Audit Effectiveness (sig=.000, r= **.137****) correlations ranging from .01 to .30 are considered small.

Accordingly, the below Pearson correlation coefficients shows that the five factors measuring independent variables were all positively related with Internal Audit Effectiveness within the range of 0.096 to .784, all were significant at $p < 0.05$ level. From the analysis, it is noted that independent variables are positively correlated with Internal Audit Effectiveness.

With regard to the direction of the relationship both variables have a positive sign that dictates a positive change in the independent variable can result in a positive change in the dependent variables. When we assess the level of significance, there is significant relationship between the independent variable and dependent variable.

4.4.2. Testing the assumptions of Regression model

According to Field (2005), multiple linear regression uses to estimate the effect of more than one independent variables over dependent variable or it estimates the coefficient of determination on the predicted one explained by the predictors. In order to have valid multiple regressions analysis, several key assumptions should be satisfied.

The key assumptions of multiple regressions that are identified as primary concern in the research include linearity, independence of errors, homoscedasticity, normality, and multicollinearity. For this study: each assumption was defined, assumptions were tested, and the results of these assumptions was briefly summarized and presented below.

Assumption 1: Linearity (The relationship between the independent variables and the dependent variable is linear)

Some researchers argue that this assumption is the most important as it directly relates to the bias of the results of the whole analysis (Keith, 2006). According to Keith (2006), linearity refers to the degree to which the change in the dependent variable is related to the change in the independent variables. To determine whether the relationship between the dependent variable and the independent variables; is linear; plots of the regression residuals through SPSS software had been used. Therefore, figure 2 showed the existence of linear relationship between the outcome variable and the independent variables.

Figure 2: Testing the linearity of dependent and independent variables

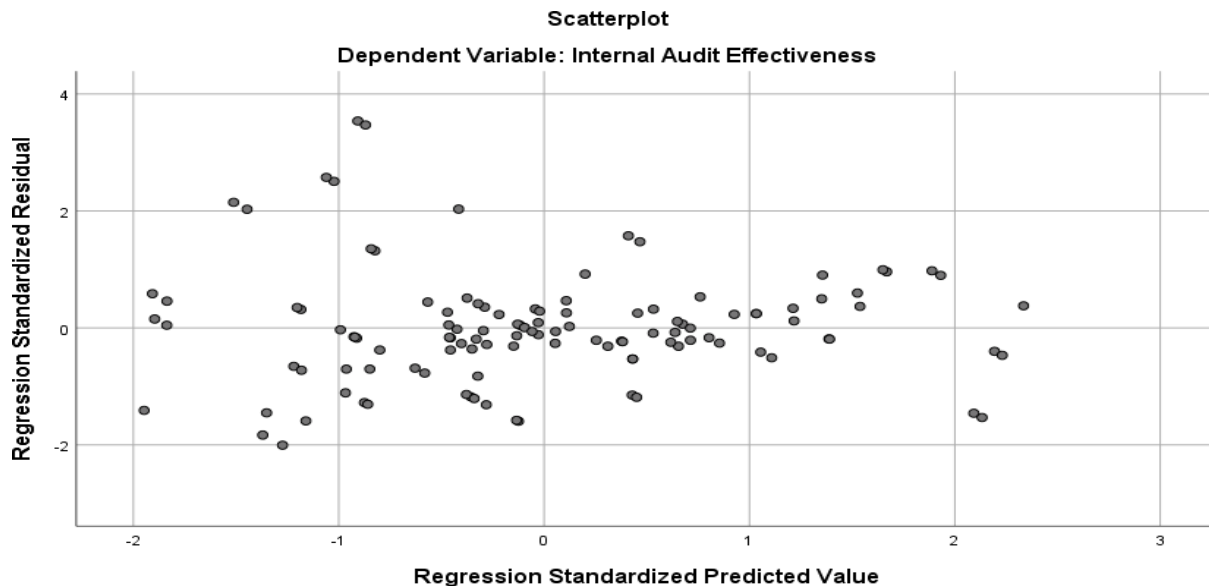


Source: SPSS Result of survey data, 2024

Assumption 2: Homoscedasticity

The assumption of homoscedasticity refers to equal variance of errors across all levels of the independent variables (Osborne & Waters, 2002). Ideally, residuals are randomly scattered around zero (the horizontal line) providing a relatively even distribution.

Figure 3: Scatter plot of homoscedasticity



Source: SPSS Result of survey data, 2024

This means that researchers assume that errors are spread out consistently between the variables (Keith, 2006). As depicted in the figure below, the spread of the residuals was constant at each point of the predictor variables (or across the linear model).

Assumption 3: Multicollinearity Tests

In this, section the correlation between Internal Audit Effectiveness and explanatory variables: Independency of Internal Auditors, Management Support, Size of the Internal Audit Departments, Relationship between internal and external auditors, Use of Technology and Internal Audit Quality have been presented and analyzed. A correlation matrix is used to ensure the correlation between explanatory variables. Multicollinearity is the assessment of the extent to which a variable can be explained by the other variables in the analysis (Hair, et al., 2010, p.93). It is a problem related to the correlation matrix in which three or more independent variables are highly correlated (i.e. 0.90 or above) to each other (Tabachnick and Fidell, 2007; Hair, et al., 2010).

The presence of a higher level of multicollinearity results in lowering the unique variance explained by each independent variable (β -value) and increases the shared prediction percentage (Hair, et al., 2010). This means that the presence of multicollinearity limits the size of regression value and makes it difficult to understand the contribution of each individual independent variable (Field, 2009).

Table 14: Multicollinearity Tests

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Use of Technology	.674	1.484
	Size of the Internal Audit Departments	.882	1.134
	Management Support	.586	1.705
	Internal Audit Quality	.540	1.851
	Relationship between internal and external auditors	.881	1.135
	Independency of Internal Auditors	.938	1.066
a. Dependent Variable: Internal Audit Effectiveness			

Source: SPSS Result of survey data, 2024

There are two common methods to detect multicollinearity; firstly, by inspecting the bivariate and multivariate correlation matrix and, secondly, by calculating the variance inflation factors (VIF) and tolerance effect (Tabachnick and Fidell, 2007; Field, 2009; Pallant, 2010).

According to Pallant (2010, p.158), tolerance is an indicator of how much of the variability of the specified independent is not explained by the other independent variables in the model, whereas VIF is the inverse of the tolerance effect. The larger the VIF (i.e. above 10) and the lower the tolerance (i.e. below 0.1) indicate the presence of multicollinearity (Pallant, 2010).

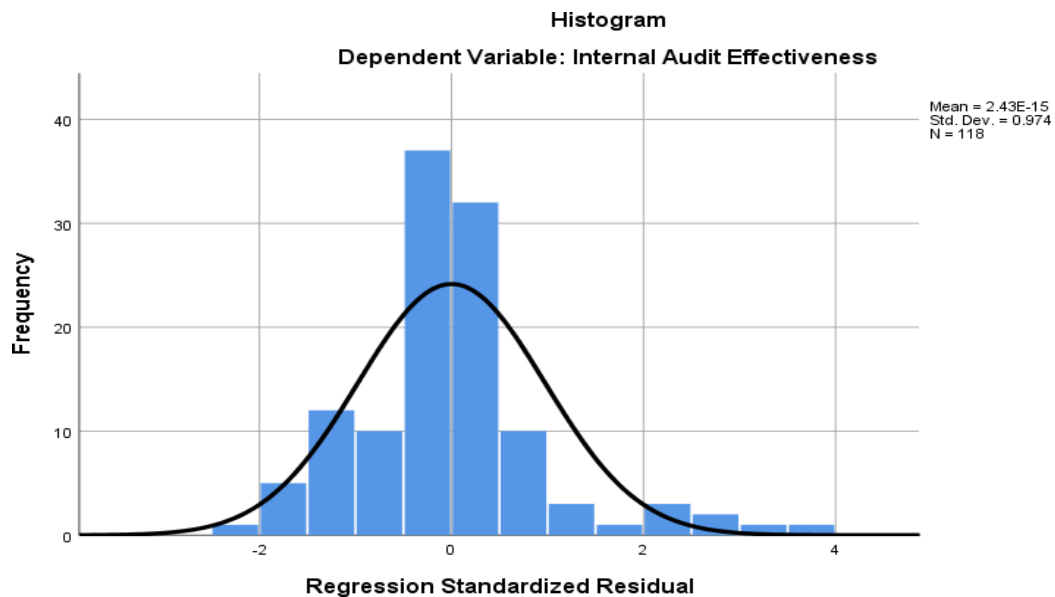
In the present study, bivariate correlation matrix was computed using Pearson's correlation.

The results of the correlation matrix presented in Table 13 suggested that none of the bivariate correlation was above 0.90 (Tabachnick and Fidell, 2007; Hair, et al., 2010) for independent collinearity diagnostic option, as shown in Table 8. The VIF values were less than 10, which revealed the absence of multicollinearity with independent variables, while the tolerance showed values of above 0.1. Hence, the researcher assumed multicollinearity was not a problem.

Assumption 4: Normality Test

This assumption can be tested through histograms of the standardized residuals (Stevens, 2009). Histograms are bar graphs of the residuals with a superimposed normal curve that showed distribution.

Figure 4: Frequency distribution of standardized residual



Source: SPSS Result of survey data, 2024

Figure 4 shows the frequency distribution of the standardized residuals compared to a normal distribution. As you can see, although there are some residuals (e.g., those occurring around 0) that are relatively far away from the curve, many of the residuals are close.

Moreover, the histogram is bell shaped which lead to infer that the residual (disturbance or errors) are normally distributed. Thus, no violations of the assumption normally distributed error term.

Assumption 5: Independent of Residuals

This is the same as saying that the observations (individual data points) to be independent from one another (uncorrelated). The Durbin-Watson statistic is used to test for independence of residuals. The value of the Durbin-Watson statistic ranges from zero to four.

As a general rule, the residuals are independent (not correlated) if the Durbin-Watson value is approximately closer to 2, and values below 1 and above 3 are causes for concern and may render the analysis invalid.

Table 15: Independent Residual Assumption

Model Summary^b	
Model	Durbin-Watson
1	1.990^a
a. Predictors: (Constant), Independency of Internal Auditors, Management Support, Size of the Internal Audit Departments, Relationship between internal and external auditors, Use of Technology , Internal Audit Quality	
b. Dependent Variable: Internal Audit Effectiveness	

Source: SPSS Result of survey data, 2024

In this case the Durbin-Watson statistics showed (Durbin-Watson = 1.990^a). Hence, the result falls between 1 and 3, the researcher assumed independence of residuals assumption is satisfied.

In conclusion, from an examination of the information presented in all the five tests the researcher concludes that there are no significant data problems that would lead to say the assumptions of classical linear regression have been seriously violated (Field, 2006).

4.4.3. Linear Regression Analysis

Regression analysis is a systematic method that can be used to investigate the effect of one or more predictor variables on dependent variable. Regression analysis helps in order to measure the relative strength of independent variable on dependent variable. In order to see contribution each independent variables traits on Internal Audit Effectiveness, standard multiple regression analysis was employed. The regression model presents how much of the variance in Internal Audit Effectiveness is explained by the selected Independent variables. To what extent the variance in the dependent variables (Internal Audit Effectiveness) was explained by the independent variable are discussed here.

Table 16: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.880^a	.774	.762	.242
a. Predictors: (Constant), Independency of Internal Auditors, Management Support, Size of the Internal Audit Departments, Relationship between internal and external auditors, Use of Technology , Internal Audit Quality				

Source: SPSS Result of survey data, 2024

The regression analysis model summary provides valuable insights into the relationship between several key variables and the dependent variable. The high correlation coefficient

- ❖ R of 0.880 indicates a robust positive relationship between the independent variables and the dependent variable. This suggests that changes in the independent variables are strongly associated with changes in the dependent variable.
- ❖ Moreover, the R Square value of 0.774 is particularly noteworthy as it signifies that approximately 77.4% of the variance in the dependent variable can be explained by the independent variables included in the model. This level of explanatory power is quite substantial and implies that the model captures a significant portion of the variability in the outcome variable.
- ❖ The Adjusted R Square value, accounting for the number of predictors in the model, remains high at 0.762. This adjusted value is crucial as it helps prevent overfitting and provides a more accurate reflection of the model's predictive power. The fact that 76.2% of the variance in the dependent variable is still explained after adjusting for the complexity of the model reinforces the model's reliability.
- ❖ Additionally, the standard error of the estimate, at 0.242, indicates the average distance between the observed values and the values predicted by the model. A smaller standard error suggests that the model's predictions are generally close to the actual data points, further supporting the model's goodness of fit.

The predictors used in the model, including the independency of internal auditors, management support, size of the internal audit departments, the relationship between internal and external auditors, use of technology, and internal audit quality, are all crucial factors that contribute significantly to explaining the variability in the dependent variable.

Overall, these results suggest that the regression model has a strong explanatory power, with the independent variables accounting for a significant portion of the variation in the dependent variable. The high R-squared and adjusted R-squared values, along with the relatively low standard error of the estimate, indicate a well-fitted model.

Table 17: Multiple Regression Coefficients

Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.339	.204		1.661	.100
	Use of Technology	.139	.038	.203	3.690	.000
	Size of the Internal Audit Departments	.016	.029	.027	.565	.574
	Management Support	.423	.048	.514	8.736	.000
	Internal Audit Quality	.226	.044	.315	5.127	.000
	Relationship between internal and external auditors	.009	.038	.012	.248	.805
	Independency of Internal Auditors	.094	.027	.160	3.435	.001
a. Dependent Variable: Internal Audit Effectiveness						

Source: SPSS Result of survey data, 2024

The above table shows the extent to which each independent variables influence the dependent variable. The relative importance of (independent variables) in contributing to the variance of the (dependent variable) is explained by the standardized beta coefficient.

The beta value is positive that means a higher positive effect of independent variables associated with higher Internal Audit Effectiveness (dependent variable). The Sig. value should be below the tolerable level of significance for the study i.e. below 0.05 for 95% confidence interval in this study. However, the relative importance of each independent variable was different.

Based on the above table using “ β ” value (standardized) coefficients, the regression result is discussed as follows: This regression result has its own interpretation to this study. Accordingly, the regression constant value showed that when the independent variables (Independency of Internal Auditors, Management Support, Size of the Internal Audit Departments, and Relationship between internal and external auditors, Use of Technology, Internal Audit Quality) are constant at zero, the Internal Audit Effectiveness would be at beta value of 0.339.

Examining the multiple regression coefficients provided in Table 17, we could further interpret the relationships between the independent variables and the dependent variable, Internal Audit Effectiveness. The unstandardized regression coefficients (B) represent the change in the dependent variable associated with a one-unit change in the independent variable, holding all other variables constant. The standardized regression coefficients (Beta) allow for a comparison of the relative importance of each independent variable in the model. These coefficients are standardized, meaning they are measured in units of standard deviation. Based on the results:

Use of Technology (B = 0.139, p < 0.05): The positive and statistically significant relationship between the use of technology and internal audit effectiveness suggests that organizations that invest in and utilize advanced technologies within their internal audit functions are likely to experience greater effectiveness in their internal audit processes. This finding highlights the importance of adopting and integrating technology-driven tools, such as data analytics, automation, and audit management software, into the internal audit function. These technological advancements can enhance the efficiency, accuracy, and comprehensive nature of audit activities, ultimately leading to more effective internal audits.

Management Support (B = 0.423, p < 0.05): The regression results indicate that management support is the strongest predictor of internal audit effectiveness among the variables examined.

This finding underscores the critical role that organizational leadership and upper management play in fostering an environment that enables and empowers the internal audit function to operate effectively. Factors such as providing adequate resources, granting appropriate authority and autonomy, and actively engaging with and supporting the internal audit team can significantly contribute to the effectiveness of the internal audit process. Strong management support sends a clear message to the organization about the value and importance placed on the internal audit function, which can enhance its influence and impact.

Internal Audit Quality (B = 0.226, p < 0.005): The positive and significant relationship between internal audit quality and internal audit effectiveness suggests that organizations that invest in and maintain high-quality internal audit practices are more likely to experience greater effectiveness in their internal audit activities. Factors that contribute to internal audit quality may include the competence and expertise of the audit team, the rigor and thoroughness of the audit methodology, the quality of audit planning and execution, and the effectiveness of audit reporting and recommendations.

Independency of Internal Auditors ($B = 0.094$, $p < 0.05$): The positive and significant relationship between the independence of internal auditors and internal audit effectiveness highlights the importance of maintaining a high degree of autonomy and objectivity within the internal audit function. When internal auditors are granted appropriate independence and are able to perform their duties without undue influence or interference from management or other organizational entities, they are better positioned to provide objective and unbiased assessments, recommendations, and insights. This independence allows the internal audit function to effectively challenge existing practices, identify areas for improvement, and provide valuable input to the organization's decision-making processes, ultimately enhancing the overall effectiveness of the internal audit activities.

The remaining variables, Size of the Internal Audit Departments and Relationship between internal and external auditors, did not demonstrate statistically significant relationships with internal audit effectiveness based on the provided results. This suggests that while these factors may play a role in internal audit effectiveness, their influence is relatively less significant compared to the other key variables examined in the study.

The Multiple Regression Coefficients table provides a detailed breakdown of the coefficients for each predictor in the regression model for Internal Audit Effectiveness. The constant value of .339 represents the baseline when all predictors are zero. Among the predictors, Management Support emerges as the most influential with a substantial unstandardized coefficient (B) of .423 and a high-standardized coefficient (Beta) of .514, indicating its strong positive impact on Internal Audit Effectiveness. Similarly, Internal Audit Quality, Use of Technology, and Independency of Internal Auditors also exhibit significant coefficients (.226, .139, and .094 respectively), suggesting their meaningful contributions to explaining variations in Internal Audit Effectiveness. On the other hand, the Size of the Internal Audit Departments and Relationship between internal and external auditors show relatively smaller coefficients with p -values indicating non-significance, implying that these factors may not play a significant role in this particular model. These coefficients offer valuable insights into the relative importance of different predictors in influencing Internal Audit Effectiveness, aiding in strategic decision-making and resource allocation within the context of internal audit management.

4.5. Discussion of the Findings

The findings from the descriptive, correlation and regression analysis and ANOVA tests provide valuable insights into the factors influencing Internal Audit Effectiveness. The regression model, with predictors such as Management Support, Internal Audit Quality, Use of Technology, and Independency of Internal Auditors, demonstrates a strong ability to explain variations in Internal Audit Effectiveness, as indicated by the high R-squared value and significant F-value.

The findings from the descriptive, correlation, regression analysis, and ANOVA tests shed light on the factors influencing Internal Audit Effectiveness. The regression model, incorporating predictors like Management Support, Internal Audit Quality, Use of Technology, and Independency of Internal Auditors, demonstrates a robust capability to elucidate variations in Internal Audit Effectiveness, supported by a high R-squared value and significant F-value.

The results emphasize the critical roles of organizational support, internal audit process quality, technological utilization, and auditor independence in enhancing internal audit outcomes. Management Support emerges as a pivotal driver with a substantial positive impact on Internal Audit Effectiveness, highlighting the significance of leadership and commitment in fostering an effective audit environment. Similarly, Internal Audit Quality significantly contributes to audit effectiveness, encompassing factors like audit methodology, risk assessment, and reporting practices. Utilizing technology also proves advantageous, showcasing the role of digital tools and data analytics in streamlining audit processes.

Notably, the Size of Internal Audit Departments and the Relationship between internal and external auditors exhibit limited influence in this study, evidenced by their non-significant coefficients. While these factors may still hold relevance in certain contexts, their impact on Internal Audit Effectiveness appears less pronounced compared to key drivers identified in the model.

Descriptive analysis based on mean classification criteria by Zaidaton & Bagheri (2009) reveals valuable insights. Respondents strongly support technology use, management's backing for internal audit functions, and internal audit process quality, with mean scores above 3.8. However, areas such as internal audit department size, external auditor relationships, and overall audit effectiveness show lower support, indicating areas for improvement. Addressing staffing adequacy, collaboration issues, and continuous internal audit practice enhancement are crucial for augmenting effectiveness and efficiency.

Correlation analysis highlights significant positive relationships between independent variables and Internal Audit Effectiveness, with management support and internal audit quality showing the strongest associations. Regression analysis underscores the model's explanatory power, with independent variables explaining 77.4% of variance in Internal Audit Effectiveness. Management support has the strongest positive effect, followed by internal audit quality, while technology use, auditor independence, and internal-external auditor relationships also contribute positively, albeit to varying degrees.

In conclusion, the analysis underscores key factors contributing to Internal Audit Effectiveness, guiding organizations to prioritize management support, continuous audit quality improvement, effective technology use, auditor independence, and internal-external auditor relationships. These insights offer actionable strategies for enhancing internal audit functions, with opportunities for further research into nuanced effects across diverse organizational contexts.

Overall, these findings provide actionable insights for organizations seeking to enhance their internal audit functions. Emphasizing management support, continuous improvement in audit quality, leveraging technology effectively, and maintaining auditor independence are pivotal strategies for achieving and sustaining high levels of Internal Audit Effectiveness. Further research could delve deeper into specific aspects of these drivers and their nuanced effects on internal audit outcomes across diverse organizational settings.

4.6. Testing Hypothesis with Regression analysis

A hypothesis is an educated and testable guess about the answer to a research question, often involving a prediction about the variables being studied. These predictions are tested by gathering and analyzing data, and the hypotheses can be either supported or refuted based on the data. This study tested five hypotheses using regression analysis, focusing on the Beta coefficients and significance (p) values. Based on the multiple regression coefficients presented in Table 16, we can discuss the hypotheses tested regarding Determinants of Internal Audit Effectiveness: In Case Selected Federal Public Organizations in Ethiopia.

H1: Technology Effect on Internal Audit Effectiveness

The null hypothesis (H0) posits that technology does not have a significant effect on the effectiveness of internal audit, while the alternative hypothesis (H1) suggests that technology has a significant positive effect. The analysis yielded a standardized coefficient (Beta) of 0.203 and a highly significant p-value of 0.000. This strong relationship indicates that effective use of technology substantially improves internal audit functions. Consequently, the null hypothesis is rejected in favor of the alternative hypothesis, confirming that technology significantly enhances internal audit effectiveness.

This finding resonates with previous research studies conducted by (Commission, 2013), (Alqaraleh et al., 2022), and (Orkaido & Moges), which have consistently highlighted the positive influence of technology on internal audit outcomes. The significant p-value of 0.000 reinforces the rejection of the null hypothesis, indicating that technology indeed plays a significant role in enhancing audit effectiveness. These results underscore the importance of investments in technological infrastructure and digital tools to optimize internal audit processes and outcomes in modern organizations.

H2: Size of Internal Audit Departments on Internal Audit Effectiveness

The null hypothesis (H0) asserts that the size of internal audit departments does not significantly affect the effectiveness of internal audit, whereas the alternative hypothesis (H1) contends that it does. The results show a standardized coefficient (Beta) of 0.027 with a non-significant p-value of 0.574. These findings imply that the size of internal audit departments does not have a meaningful impact on audit effectiveness. As a result, the null hypothesis cannot be rejected, indicating that department size is not a significant determinant of internal audit effectiveness in this context. This finding is contrary to some previous research findings, such as those by (Cohen and Sayag, 2010; Georg et al, 2015; Shewamene, 2014; Mihret and Yismaw, 2007), which emphasized the importance of management support in driving internal audit effectiveness. The lack of statistical significance regarding department size highlights the complexity of factors influencing audit outcomes. While size may be important in certain contexts, this study suggests that other factors, such as management support and technological capabilities, may have a more substantial influence on audit effectiveness.

H3: Management Support on Internal Audit Effectiveness

Under the null hypothesis (H0), management support is believed to have no significant effect on internal audit effectiveness, while the alternative hypothesis (H1) claims a positive effect. The analysis reveals a substantial standardized coefficient (Beta) of 0.514 and a highly significant p-value of 0.000. This strong positive relationship highlights the critical role of management support in enhancing internal audit outcomes. Therefore, the null hypothesis is rejected, supporting the alternative hypothesis that effective management support significantly boosts internal audit effectiveness. This aligns with previous studies by (Mihret and Yismaw, 2007; Cohen and Sayag, 2010), which emphasized the critical role of management support in enhancing internal audit outcomes. The highly significant p-value of 0.000 further validates the rejection of the null hypothesis, confirming that effective management support significantly impacts audit effectiveness. This underscores the importance of organizational leadership in providing resources, guidance, and strategic direction to internal audit teams, thereby enabling them to perform their functions more effectively.

H4: Internal Audit Quality on Internal Audit Effectiveness

The null hypothesis (H0) states that internal audit quality does not significantly impact the effectiveness of internal audit, whereas the alternative hypothesis (H1) suggests a positive effect. The study found a standardized coefficient (Beta) of 0.315 with a significant p-value of 0.000. This moderate positive relationship underscores the importance of maintaining high internal audit quality standards for improving audit effectiveness. As a result, the null hypothesis is rejected, confirming that internal audit quality significantly enhances audit effectiveness. This finding is consistent with previous studies conducted by (Mihret & Yismaw, 2007), (Alemzewed, 2019), and (Mihret, 2020), which emphasized the importance of maintaining high standards of internal audit quality. The highly significant p-value of 0.000 supports the rejection of the null hypothesis, indicating that internal audit quality significantly influences audit effectiveness. This highlights the critical role of robust audit methodologies, adherence to professional standards, and continuous improvement initiatives in enhancing the impact of internal audit activities within organizations.

H5: Relationship Between Internal and External Auditors on Internal Audit Effectiveness

The null hypothesis (H0) proposes that the relationship between internal and external auditors does not significantly affect internal audit effectiveness, while the alternative hypothesis (H1) suggests a positive impact. The analysis shows a low standardized coefficient (Beta) of 0.012 and a non-significant p-value of 0.805. These findings indicate that this relationship does not have a meaningful impact on audit effectiveness. Consequently, the null hypothesis cannot be rejected, implying that the relationship between internal and external auditors is not a significant factor in determining internal audit effectiveness. This finding is consistent with some previous research, indicating that other factors may have a more substantial influence on audit outcomes than this specific relationship. The lack of statistical significance regarding this relationship emphasizes the need for organizations to focus on factors such as technology adoption, management support, and audit quality to drive improvements in audit effectiveness.

H6: Auditor Independence on Internal Audit Effectiveness

The null hypothesis (H0) posits that auditor independence does not significantly affect the effectiveness of internal audit, while the alternative hypothesis (H1) suggests a positive impact. The analysis results reveal a standardized coefficient (Beta) of 0.160 with a significant p-value of 0.05, indicating a moderately strong positive relationship between auditor independence and internal audit effectiveness. This finding highlights the crucial role of auditor independence in enhancing internal audit outcomes. The significant p-value of 0.05 supports the rejection of the null hypothesis, confirming that auditor independence significantly influences audit effectiveness. This result aligns with previous auditing research conducted by Adhista (2015), Hella and Mohamed (2016), and Alhassan (2018), which also emphasized the importance of auditor independence in improving audit outcomes. Ensuring auditors' autonomy, objectivity, and freedom from undue influence is essential for upholding the integrity and effectiveness of internal audit functions.

In conclusion: the regression analysis on internal audit effectiveness in Ethiopian federal public organizations shows that technology, management support, internal audit quality, and auditor independence significantly enhance audit outcomes. Investments in technology, strong management support, high audit quality, and auditor autonomy are crucial for improving internal audit function effectiveness.

Table 18: Summary of Tested Hypothesis

Hypothesis	Null Hypothesis (H0)	Alternative Hypothesis (H1)	Beta	p-value	Decision	Interpretation
H1: Technology	Technology does not significantly affect internal audit effectiveness.	Technology significantly affects internal audit effectiveness.	0.203	0.000	Reject H0	Technology significantly enhances internal audit effectiveness.
H2: Size of Internal Audit Departments	The size of internal audit departments does not significantly affect internal audit effectiveness.	The size of internal audit departments significantly affects internal audit effectiveness.	0.027	0.574	Fail to reject H0	The size of internal audit departments does not significantly impact internal audit effectiveness.
H3: Management Support	Management support does not significantly affect internal audit effectiveness.	Management support significantly affects internal audit effectiveness.	0.514	0.000	Reject H0	Management support significantly enhances internal audit effectiveness.
H4: Internal Audit Quality	Internal audit quality does not significantly affect internal audit effectiveness.	Internal audit quality significantly affects internal audit effectiveness.	0.315	0.000	Reject H0	Internal audit quality significantly improves internal audit effectiveness.
H5: Relationship Between Internal and External Auditors	The relationship between internal and external auditors does not significantly affect internal audit effectiveness.	The relationship between internal and external auditors significantly affects internal audit effectiveness.	0.012	0.805	Fail to reject H0	The relationship between internal and external auditors does not significantly affect internal audit effectiveness.
H6: Auditor Independence	Auditor independence does not significantly affect internal audit effectiveness.	Auditor independence significantly affects internal audit effectiveness.	0.160	0.05	Reject H0	Auditor independence significantly enhances internal audit effectiveness.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

This chapter presents summary of findings, conclusion and recommendation of the study. Then, conclusion and recommendations derived from the discussion and findings. Then, because of limitation of the study, the researcher forwarded suggestion for future researcher and further studies.

5.1. Summary of Findings

The main objective of the study is to examine determinants of Internal Audit Effectiveness: In Case Of Selected Federal Public Organizations in Ethiopia. The analysis was made by using SPSS and output carried out through descriptive and inferential statistics.

The major findings of the study were summarized as follows:

- **Response Rate:** out of 130 questionnaires distributed, 118 were collected, resulting in a response rate of 91%. This response rate is considered very good based on the referenced source.
- **Demographic Characteristics of Respondents:** The demographic profile of the respondents provided valuable insights. The majority of the respondents were male respondents (82.2%) suggests that the industry may have challenges in terms of gender diversity and representation. The relatively young age distribution, with over 56% of the population in the 26-35 age range, indicates that this may be a sector with a relatively junior workforce. This could have implications for talent management, knowledge retention, and succession planning within the industry. The educational and professional certification profiles reveal a focus on Bachelor's-level education and ACCA certification, which could inform training, development, and credentialing strategies for the auditing profession in this context. Overall, these demographic insights can help inform human resource practices, diversity and inclusion initiatives, and the development of targeted professional development programs to address the needs and challenges faced by the auditing workforce.

- **Descriptive Analysis:** the mean scores derived from the survey data, interpreted according to Zaidaton & Bagheri's guidelines, offer a nuanced understanding of respondents' perspectives on various internal audit factors. Notably, management support (Mean: 4.168) and internal audit quality (Mean: 3.903) received high scores, indicating substantial agreement and support among the respondents. Similarly, the use of technology (Mean: 3.860) garnered a strong positive response, suggesting a favorable outlook on technological advancements in audit processes. Conversely, factors such as the size of internal audit departments (Mean 2.734), internal audit effectiveness (Mean 2.814), and the relationship between internal and external auditors (Mean: 2.736) registered lower mean scores, reflecting disagreement or less enthusiastic support from respondents. Interestingly, the independence of internal auditors (Mean 3.186) fell into the moderate range, implying a mixed or neutral perception. These findings underscore both areas of strength and potential areas for improvement within internal audit practices, emphasizing the need to address concerns surrounding effectiveness, resource allocation, inter-auditor relationships, and technological integration to enhance overall audit performance and perception.
- **Regarding the correlation analysis:** The Pearson correlation analysis presented indicates that the independent variables examined in the study were all positively correlated with Internal Audit Effectiveness. Specifically, the results show a significant positive moderate correlation between Use of Technology and Internal Audit Effectiveness ($r = .596$, $p < .001$), a significant positive large correlation between Management Support and Internal Audit Effectiveness ($r = .784$, $p < .001$), and a significant positive large correlation between Internal Audit Quality and Internal Audit Effectiveness ($r = .711$, $p < .001$). The analysis also reveals significant positive small correlations between Size of the Internal Audit Departments ($r = .096$, $p < .001$), Relationship between internal and external auditors ($r = .192$, $p < .001$), and Independency of Internal Auditors and Procedures ($r = .137$, $p < .001$) with Internal Audit Effectiveness. These findings suggest that improvements in the independent variables, such as enhanced use of technology, stronger management support, and higher internal audit quality, can contribute to positive changes in the overall effectiveness of the internal audit function within the given context.

- The linear regression analysis provides a robust and insightful model for understanding the factors influencing Internal Audit Effectiveness. The model demonstrates a strong positive relationship between the independent variables and the dependent variable, with an R-value of 0.880. Notably, the R-Square of 0.774 indicates that the independent variables included in the model account for approximately 77.4% of the variance in Internal Audit Effectiveness, a substantial level of explanatory power. The regression coefficients offer valuable insights, with Management Support emerging as the most influential predictor, followed by significant contributions from Internal Audit Quality, Use of Technology, and Independency of Internal Auditors. These findings provide a solid foundation for strategic decision-making and resource allocation within the internal audit management context, enabling organizations to prioritize and address the key factors driving the effectiveness of their internal audit functions.

5.2. Conclusion

In conclusion, the study on determinants of Internal Audit Effectiveness in selected Federal Public Organizations in Ethiopia has provided valuable insights into various aspects of internal audit practices and their impact on organizational performance. The high response rate and detailed demographic analysis shed light on the composition of the auditing workforce, indicating areas for improvement in terms of gender diversity, talent management, and professional development strategies.

The analysis of internal audit factors using mean scores and correlation analysis revealed strong support for management support, internal audit quality, and the use of technology, while highlighting areas of concern such as the size of internal audit departments and the relationship between internal and external auditors. These findings underscore the need for organizations to focus on enhancing resource allocation, inter-auditor relationships, and technological integration to improve overall audit effectiveness.

The regression analysis further confirmed the significant influence of management support, internal audit quality, technological use, and auditor independence on Internal Audit Effectiveness, providing a solid basis for strategic decision-making within internal audit management contexts. Overall, the study's findings contribute to the existing body of knowledge in internal audit practices and offer actionable insights for organizations seeking to optimize their audit functions and drive organizational success.

5.3. Recommendations

Based on the findings and analysis conducted in the study on determinants of Internal Audit Effectiveness in selected Federal Public Organizations in Ethiopia, several recommendations can be proposed to enhance internal audit practices:

- ❖ **Enhance Management Support:** Given the significant positive correlation between management support and internal audit effectiveness, organizations should prioritize strengthening support from top management for the internal audit function. This can be achieved through clear communication of the importance of internal audit, provision of adequate resources, and fostering a culture that values and encourages internal audit activities.
- ❖ **Invest in Technology:** The strong positive response towards the use of technology indicates an opportunity to leverage technological advancements in audit processes. Organizations should invest in suitable audit software, data analytics tools, and automation solutions to improve audit efficiency, accuracy, and overall effectiveness.
- ❖ **Improve Internal Audit Quality:** Building on the positive perception of internal audit quality, organizations should continuously strive to enhance the quality of audit processes, methodologies, and reporting. This includes regular training and development programs for internal auditors, adherence to professional standards, and conducting quality assurance reviews of audit activities.
- ❖ **Strengthen Inter-Auditor Relationships:** The lower mean score for the relationship between internal and external auditors indicates room for improvement in fostering collaboration and communication between these two audit functions. Organizations should facilitate regular interactions, joint training sessions, and alignment of audit objectives to enhance coordination and effectiveness in audit activities.
- ❖ **Promote Auditor Independence:** While the independence of internal auditors received a moderate score, efforts should be made to strengthen and safeguard auditor independence. This includes establishing clear reporting lines, implementing ethical guidelines, and ensuring that auditors have the autonomy and authority to carry out their duties objectively and impartially.

- ❖ **Continuous Monitoring and Evaluation:** Organizations should implement robust monitoring and evaluation mechanisms to regularly assess the effectiveness of internal audit activities. This includes conducting periodic audits of the internal audit function, soliciting feedback from stakeholders, and benchmarking performance against industry standards and best practices.

5.4. Recommendation for further Study

Based on the findings and limitations of the study on the determinants of Internal Audit Effectiveness in selected Federal Public Organizations in Ethiopia, several areas for further research can be recommended:

- ❖ **Sectorial Comparative Analysis:** Further studies should conduct a comparative analysis of internal audit practices and effectiveness across different sectors or industries within Ethiopia. This comparative study can offer valuable insights into sector-specific challenges, best practices, and opportunities for enhancing internal audit functions tailored to each industry's needs.
- ❖ **Longitudinal Examination:** Further studies should undertake a longitudinal study to track changes and trends in internal audit effectiveness over time. This would involve periodic assessments of internal audit practices, factors influencing effectiveness, and organizational outcomes to identify patterns, improvements, and areas requiring continuous attention.
- ❖ **Qualitative Exploration:** Further studies should complement quantitative analyses with qualitative research methods such as interviews, focus groups, or case studies to gain deeper insights into the factors shaping internal audit effectiveness. Qualitative data can provide context, explanations, and rich narratives that enhance the interpretation of quantitative findings.
- ❖ **Cross-Cultural Impact Study:** Further studies should explore the influence of cultural factors on internal audit effectiveness through a cross-cultural analysis across different regions or countries. This research can examine how cultural norms, values, and practices influence internal audit processes, stakeholder perceptions, and organizational outcomes, offering a nuanced understanding of cultural influences.

- ❖ **Regulatory Impact Assessment:** Further studies should investigate the impact of regulatory changes or reforms on internal audit practices and effectiveness. This could involve studying how new regulations, standards, or governance frameworks influence audit methodologies, reporting requirements, and the overall value proposition of internal audit functions in compliance and risk management.
- ❖ **Technology Adoption Trends Analysis:** Further studies should analyze emerging trends and patterns in technology adoption within internal audit functions. This research can assess the effectiveness of new audit technologies, integration of data analytics, and artificial intelligence, and their implications for audit quality, efficiency, and risk management strategies.
- ❖ **Global Comparative Benchmarking:** Further studies should conduct a benchmarking study to compare internal audit practices and effectiveness between Ethiopian organizations and global counterparts. This benchmarking analysis can identify areas of strength, opportunities for improvement, and strategies to learn from leading global practices in internal audit management.

By pursuing these avenues for further study, researchers can contribute significantly to advancing knowledge in internal audit management, addressing evolving challenges, and identifying tailored strategies for enhancing audit effectiveness across different organizational contexts in Ethiopia.

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APPENDIX



ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF ACCOUNTING AND FINANCE

Dear Respondents - First, I would like to convey my gratitude for giving your precious time and energy to fill this questionnaire and contribute your part for the completion of this study.

Objective: The objective of the study is to examine 'Determinants of Internal Audit Effectiveness: In case of some selected Federal Public Organizations in Ethiopia' the Research is done as a partial fulfillment of academic requirements of M.A. degree in Accounting and Finance. The purpose of this study is to identify *the Determinants of Internal Audit Effectiveness*.

General Guideline - Please put check mark (✓) adjacent to your choice of answer. Write your short answer for open-ended questions. The scales are described as follows:

1= Strongly Disagree (SD), 2= Disagree (D), 3= Neutral (N), 4= Agree (A), 5 = Strongly Agree (SA)

Confidentiality - Any information gathered in this questionnaire is used strictly for academic purpose only. There is no necessity for respondents to mention your name, position, department or branch and any response gathered from this questionnaire is kept in private and treated with utmost secrecy. Therefore, I request your cooperation to properly complete all the items covered in the questionnaire since your genuine feedback is of utmost importance in determining the study's outcome. I thank you in advance for sharing your valuable experience and time in completing the questionnaire.

Yours faithfully,

Derartu Biratu Hordofa

Mob: +2519-20-72-09-86

Part I: General Information

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

1. Sex

Male ☐ Female ☐

2. Age

Below 25 ☐ 25-35 ☐ 36-45 ☐ Above 45 ☐

3. Work Experience in auditing sector

Less than 2 years ☐ 2-3 years ☐ 4-5 years ☐ 6-10 years ☐ More than 10 years ☐

4. Educational Background

Diploma ☐ Bachelor's Degree ☐ Masters ☐ PhD and above ☐

5. What is the field of your highest educational level?

Accounting and Finance ☐

Economics ☐

Information Technology ☐

Public Administration ☐

If other, please specify _____

6. Are you Certified like:

CIA (Certified Internal Auditor), ☐ ACCA, ☐ CPA, ☐

Other (Including Audit Profession Certification) Specify _____.

Part II: Question's related to Determinants of Internal Audit Effectiveness

Please put right mark (✓) on the spaces that specify your choice from the options that range from strongly agree to strongly disagree.

5-Strongly Disagree (**SD**) 4-Disagree (**D**) 3- Neutral (**N**) 2- Agree (**A**) 1- Strongly Agree (**SA**).

A	Technology	SD	D	N	A	SA
1.	Internal auditors effectively utilize technology (i.e., computers, laptops, applications, etc.) for their job-related activities.					
2.	The use of technology in internal audit has improved the overall effectiveness of the internal audit function in the organization.					
3.	Technology has enhanced the timeliness of information generated by the internal audit department.					
4.	The use of technology in internal audit has increased the reliability of the outcomes and findings produced by the internal audit function.					
5.	The internal audit team has access to adequate technological resources to perform their job effectively.					
B	Size of the internal audit Departments	SD	D	N	A	SA
6.	The internal audit department has an appropriate number of staff to handle the workload.					
7.	The skills possessed by the internal audit staff align with the requirements of the organization's internal operations.					
8.	The internal audit department is allocated sufficient budgetary resources to carry out its duties and responsibilities effectively.					
9.	The governance structure in the organization provides adequate support to the internal audit function.					
10.	The internal audit team collaborates effectively with other departments and stakeholders within the organization.					
C	Management Support	SD	D	N	A	SA
11.	Top management actively supports and encourages the internal audit staff in performing their duties and responsibilities.					
12.	Top management demonstrates a clear understanding of the needs and requirements of the internal audit function.					
13.	Top management takes appropriate actions based on the recommendations, criticisms, and information provided by the internal auditors.					
14.	The management effectively utilizes the insights and findings from internal audit reports for decision-making purposes.					
15.	The internal audit function is considered an integral part of the organization's strategic decision-making process.					

D	Internal Audit Quality	SD	D	N	A	SA
16.	The internal audit function demonstrates a high level of compliance with internal audit standards and best practices.					
17.	Internal audit reports are accurate, clear, and logically structured.					
18.	The internal audit findings are well supported by sufficient evidence and documentation.					
19.	External auditors find value in utilizing the internal audit working papers and reports during their audit engagements.					
20.	The internal audit function actively contributes to enhancing the overall quality of internal controls and risk management within the organization.					
E	Relationship between internal and external auditors					
21.	There is an effective and collaborative relationship between the internal and external auditors.					
22.	Internal and external auditors consult and coordinate on the timing of their work when they have mutual interests.					
23.	Internal auditors willingly share their working papers and relevant information with external auditors.					
24.	Senior management actively facilitates and promotes effective cooperation between the internal and external audit functions.					
25.	The internal auditors actively participate in major decisions that have an impact on the internal audit unit and its operations					
F	Independency internal auditors					
26.	Audit staff has free access to all information in all organizations.					
27.	Internal auditors rarely face interference from management while doing their work.					
28.	Internal audit provides reports to the audit committee.					
29.	Internal auditors actively participate in major decisions affecting the internal audit unit.					
30.	The internal audit function maintains a high level of objectivity and independence in its activities.					

Part III: Questions related to internal audit effectiveness

Instruction: Please tick your answer or level of agreement or disagreement with each of the following statements inside the given table below

5-Strongly Disagree (**SD**) 4-Disagree (**D**) 3- Neutral (**N**) 2- Agree (**A**) 1- Strongly Agree (**SA**)

	Internal audit effectiveness	SD	D	N	A	SA
1	Internal audit work contributes significantly to the achievement of organizational goals.					
2	The internal audit function provides valuable insights and recommendations for improving organizational performance.					
3	The internal audit function effectively detects and prevents fraud and irregularities within the organization.					
4	Internal auditors in my department possess the necessary skills and knowledge to perform their duties effectively.					
5	The internal audit reports are clear, accurate, and provide valuable information for decision-making.					
6	The internal audit function actively contributes to enhancing the organization's risk management practices.					
7	The internal audit function is perceived as independent and objective within the organization.					
8	The internal audit function effectively communicates its findings and recommendations to relevant stakeholders.					
9	The internal audit department has sufficient resources and support to carry out its responsibilities effectively.					
10	The internal audit function continuously improves its processes and methodologies to adapt to changing business environments and emerging risks.					

Thank you for taking time to complete this Questioner!