EFFECT OF DIGITAL TRANSFORMATION ON THE EFFECTIVENESS OF FINANCIAL AUDITS OF SMALL AND MEDIUM-SIZED ACCOUNTING FIRMS IN NAIROBI COUNTY

BY

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MASTER OF SCIENCE IN DEVELOPMENT FINANCE

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OCTOBER, 2024

DECLARATION

I declare that this research report is my original work and has not been previously published or submitted elsewhere for the award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and the author duly acknowledged.

Sign:_____ Date: 14/10/2024

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I do hereby confirm that I have examined the master's Dissertation of

Catheryne Nyoero Ogendo

And have approved it for examination.

Sign:_____ Date: 14/10/2024

Dr. Caroline Ntara

ABSTRACT

This study aimed to investigate the effect of digital transformation on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. Specifically, it sought to evaluate the effect of computerized auditing, accounting automation, accounting internet technologies, and decision support technology (DST) on the effectiveness of financial audits of Small and Medium Audit Firms in Nairobi County. The theoretical framework was underpinned by the technology acceptance model, diffusion of innovation theory, unified theory of acceptance and use of technology, and decision support system theory. A descriptive research design was employed, targeting 448 partners working in all registered 340 Small and Medium Audit Firms in Nairobi County, using stratified sampling to select a sample size of 211 partners. Data on study variables-computerized auditing, accounting automation, accounting internet technologies, decision support technology, and effectiveness of financial audits were collected through structured questionnaires and analyzed quantitatively using SPSS, applying descriptive and inferential statistics. The study's findings were presented using APA-formatted tables. The study reveals that computerized auditing techniques enhance risk identification but show mixed effectiveness due to implementation challenges. Accounting automation significantly improves audit accuracy and efficiency, while internet technologies positively influence audit processes through enhanced flexibility. However, DST presents complexities, with a negative regression coefficient indicating challenges in full integration. The study concludes that while digital transformation enhances audit effectiveness, careful implementation is essential. Accounting automation and internet technologies offer notable benefits, but DST requires further improvement. It recommends firms prioritize proper training for computerized auditing and DST integration, alongside regular system evaluations. Future studies should explore the longitudinal impacts of digital transformation, extend research geographically, and examine emerging technologies like blockchain. Additionally, qualitative approaches can provide deeper insights into these complexities.

Key Words: Digital Transformation, Computerized Auditing, Accounting Automation, Accounting Internet Technologies, Decision Support Technology, Effectiveness of Financial Audits, Small and Medium Audit Firms, Nairobi County.

DEDICATION

I dedicate this research work to my beloved family, whose unwavering support has been my foundation throughout this journey. To my mother, whose love, encouragement, and sacrifices have shaped me into the person I am today, I am eternally grateful. Your belief in my potential has been a constant source of motivation, inspiring me to pursue my dreams with determination and resilience. To my spouse, Vincent, and our daughter, Stephanie, thank you for your endless patience and understanding during the long hours I devoted to this research. Your love and encouragement have made this achievement possible, and I hope to make you proud as I continue to strive for excellence in all that I do.

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ACROYNMS AND ABBREVIATIONS

CAGR: Compound Annual Growth Rate

DOI: Diffusion of Innovation

DSS: Decision Support System

DST: Decision Support Technologies

EMEA: Europe, Middle East, and Africa

ICPAK: Institute of Certified Public Accountants of Kenya

ICT: Information And Communication Technology

IDC: International Data Corporation

IFAC: International Federation of Accountants

PAFA: Africa Federation of Accountants

SMEs: Small and Medium-Sized Enterprises

TAM: Technology Acceptance Model

UTAUT: Unified Theory of Acceptance and Use of Technology

OPERATIONAL DEFINITION OF TERMS

Accounting Automation: Accounting automation refers to software designed to automate accounting processes, enabling the efficient and instant completion of manual tasks. These systems are essential components of an accounting team's workflow.

Accounting Internet Technologies: Accounting Internet Technology encompasses a wide range of programs and tools, including Enterprise Resource Planning (ERP), Robotic Process Automation (RPA), Artificial Intelligence (AI), and other software solutions. The main objectives of these technologies are to alleviate workload, automate routine tasks, and provide real-time insights and reports, among other functions.

Computerized Auditing: Computerized auditing involves utilizing technology to automate various aspects of the audit process, such as data collection, analysis, and reporting. This approach employs specialized software to access and evaluate financial data, identify potential risks and errors, and generate comprehensive audit reports.

Decision Support Technology: A computer software developed to aid in the making of decisions, assessments, and strategies for a company or organization. To help with problem-solving and making educated decisions, it processes and analyzes massive amounts of data, creating detailed reports.

Effectiveness Of Financial Audits: The effectiveness of financial auditing refers to the extent to which the auditing process achieves its intended objectives. This includes achieving transparency, reliability and accuracy of financial information, investigating and preventing fraud or errors, assessing compliance with regulatory standards and internal regulations, and providing stakeholders with reliable information to make decisions. An outcome of a financial audit enhances transparency, decision-making, and investor confidence.

CHAPTER ONE

INTRODUCTION

1.1 Background Information

In recent years, the rapid growth of the digital economy has become a significant driver of global economic expansion, intertwining with the traditional economy. According to a recent report by the International Data Corporation-IDC (2023), global expenditure on digital transformation is set to soar, reaching close to $3.9 trillion by 2027. This increase was driven by a strong CAGR of over 16 percent projected over the following five years. The research emphasizes the global focus on digital transformation, which was reflected in how digital transformation spending is distributed across different regions. In 2023, the United States accounted for 35.8% of global digital transformation spending, while the Asia/Pacific region has a 33.5% share. Counties making up UMEA (Europe, Middle East, and Africa) accounted for 26.8% in the same year.

The digitalization of business processes has become increasingly pervasive, with organizations in developed countries such as China integrating digital technologies into various aspects of their operations (Li, Ye, Lowry & Kumar, 2023). This digital transformation is reshaping traditional business models and strategies, necessitating adaptations in areas such as information technology, marketing, and supply chains (Monge & Soriano, 2023). In the USA, data analytics, as one facet of this digital revolution, is becoming increasingly prominent, presenting both opportunities and challenges for organizations (Monge & Soriano, 2023). According to Vitali and Giuliani (2024), as auditors in these developed countries embrace digital technologies like cloud-based platforms, they can conduct audits more efficiently and gain better insights from the data held by financial services organizations. This enables auditors to ask more challenging questions, enhance audit quality, and provide greater value to stakeholders (Darmawan, 2024).

The effect of digital transformation on financial audits in Africa, particularly in South Africa, is significant and multifaceted. In a book titled “Digital Transformation in South Africa” Moloi (2024) said that traditionally, in Africa, accounting practices relied heavily on manual systems for record-keeping, processing, and reporting financial data. However, with the advent of digitalization, there has been a transformative journey towards automation in accounting practices and auditing processes. This shift involves leveraging information and communication technology (ICT) to enhance the efficiency and effectiveness of accounting procedures (Thottoli, 2024). Digitalization has revolutionized audit practices by streamlining processes, improving access to data, and facilitating flexible working procedures (Leocádio, Malheiro & Gonçalves, 2024). In Nigeria, the impact of digitalization on accounting practices extends beyond audits to tax services and financial advisory, where real-time reporting, data analysis, and cloud computing applications are becoming increasingly essential (Fijabi & Lasisi, 2023).

The adoption of digitalization by audit firms and companies in Africa is driven by the need for faster, more efficient, and more reliable auditing processes (Thottoli, 2024). However, challenges remain in fully realizing the potential of digitalization, particularly in areas such as paperless accounting, data management, and real-time reporting (Moloi, 2024). Despite these challenges, the digital transformation of financial audits in Africa presents opportunities for improving audit quality, enhancing service delivery, and meeting the evolving information demands of stakeholders in a rapidly changing business environment (World Bank, 2024).

In Kenya, the digital transformation of audit services has revolutionized traditional audit practices. Digitalization has enabled the identification and implementation of audit software, replacing manual processes with paperless, remote-access systems tailored to specific client needs. This transformation extends to all stages of the audit process, from planning to fieldwork, review,

reporting, and follow-up (ICPAK, 2024). Audit planning now involves standardized templates stored within the software, facilitating risk assessment and evidence gathering. Fieldwork and review processes benefit from data analytics modules, reducing manual analysis time and enhancing efficiency (Mwitari & Shetty, 2023). The primary goal behind the adoption of digitalization on accounting and procurement processes is to minimize operational costs and enhance competitiveness within the industry (Mandala, Renson & Kipketer, 2024).

Thus, the financial audit function within organizations plays a crucial role in navigating the complexities and risks associated with digital transformation (Leocádio, Malheiro & Gonçalves, 2024). Traditionally, the financial audit function focused primarily on assurance activities, but the advent of Industry digitalization necessitates reevaluating its role (Moloi, 2024). As digital technologies permeate every aspect of organizational life, the financial audit function must adapt its practices to address emerging risks and leverage the advantages offered by digitalization (IDC, 2023).

Despite the growing importance of digital expertise for financial auditors, there appears to be a gap between the digitalization of the business environment and the alignment of audit activities. While digital tools such as data analytics present opportunities for enhancing audit effectiveness, audit providers often lag in their adoption of these technologies (Tiron-Tudor, Donțu & Bresfelean, 2022). This underscores the need for accounting firms to evolve and integrate digital knowledge into their practices to effectively address the risks and opportunities brought about by digitalization (ICPAK, 2024). The present study sought to explore how the adoption of digital transformation by small and medium-sized accounting firms in Nairobi affects their audit processes.

1.1.1 Digital Transformation in Financial Audits

Digital transformation encapsulates a multifaceted evolution encompassing digitization, digitalization, and strategic adaptation to emergent digital opportunities. While digitization involves the conversion of analog information into digital formats, digitalization pertains to the utilization of technology to overhaul business models (Mwitari & Shetty, 2023). Digital transformation embodies a holistic organizational shift that integrates technology with strategy, culture, and leadership. Essential to this transformation is the formulation of a coherent technology strategy, which navigates divergent perspectives regarding its relationship with overarching organizational strategies. This strategic alignment is paramount for fostering organizational agility and effectively managing disruptions in the digital ecosystem (Ismail (Omol, 2024).

Digital transformation in the context of financial audits involves the integration of advanced technologies such as mobile auditing applications and audit software into audit processes, to enhance efficiency and effectiveness. These technologies offer opportunities to automate previously manual audit tasks, introduce new forms of evidence, extend the scope of audit tests, and improve the quality of audit evidence (Hu, Pan, Yu & Chen, 2024). In financial audits, digital transformation reshapes traditional audit standards and practices, prompting a reevaluation of audit objectives, risk assessment, and evidence-gathering techniques. Advanced technologies offer auditors the opportunity to redefine the assurance concept by mitigating the inherent limitations of audits, such as time constraints and the persuasive nature of audit procedures (Njenga & Warui, 2023).

1.1.2 Effectiveness of Financial Audits by Accounting Firms

The effectiveness of financial audits entails several dimensions that collectively ensure adherence to professional standards, statutory obligations, and the provision of high-quality assurance. Key

metrics for measuring audit performance include delivery against the audit plan, which assesses the alignment between planned and actual audit coverage, thereby gauging the adaptability of audit teams to evolving risks and challenges (Nguyen & Nguyen, 2024). Additionally, the achievement of annual objectives serves as a yardstick for evaluating audit teams' contributions to organizational goals and overall service delivery. Quality assurance reviews, post-audit assessments, and client feedback mechanisms further ensure adherence to professional standards and the provision of value-added services. Ultimately, the effectiveness of financial audits hinges on the ability of audit firms to maintain high standards of performance, compliance, and professionalism, thereby fulfilling statutory obligations and contributing to sound governance arrangements (Alassuli, 2024).

In this study, the effectiveness of financial audits conducted by accounting firms will be measured through metrics such as delivery against the audit plan, quality assurance reviews, and speed of audit delivery. The study aims to evaluate how well accounting firms adapt to digital transformation, maintain performance standards, and contribute to sound governance in their clients, drawing insights from literature by Lenz, Sarens, Jeppesen (2018), and Hegazy et al. (2020).

1.1.3 Small and Medium-Sized Accounting Firms in Nairobi County

According to The Institute of Certified Public Accountants of Kenya (ICPAK) (2024), there are a total of 2,953 registered accounting firms across Kenya. Within Nairobi County specifically, there are 1,666 licensed accounting firms. Excluding the "big five" firms, namely Ernst & Young, KPMG, PKF, Deloitte, and PWC, there are 1,661 small and medium-sized accounting firms operating in Nairobi.

ICPAK is mandated to oversee and regulate accounting firms in Kenya, as per the Accountants Act of 1978, revised in 2008. ICPAK, a statutory body, licenses practicing accountants annually, enforcing strict regulations outlined in Section 18(1) of the Accountants Act. This mandates that practicing accountants must hold valid practicing certificates and licenses, with penalties for non-compliance. Moreover, ICPAK holds membership in global bodies like the Pan Africa Federation of Accountants (PAFA) and the International Federation of Accountants (IFAC), ensuring adherence to international standards (ICPAK, 2024).

Small- and medium-sized accounting firms play a vital role in the accounting profession, representing the majority of accounting practices globally. A robust presence of SMPs can enhance diversity and competitiveness within the professional services market. The criteria for defining small- and medium-sized accounting firms may differ across jurisdictions. According to IFAC, such firms typically serve predominantly SME clients, rely on external support to complement their internal technical capabilities, and maintain a modest number of professional staff members (IFAC, 2024).

1.2 Statement of the Problem

The implementation of digital transformation within small and medium-sized accounting firms in Nairobi County would seamlessly enhance the effectiveness of financial audits. According to KPMG (2024), The assurance provided through the utilization of technologies, coupled with IT audits, plays a crucial role in fostering trust, particularly as businesses increasingly transition to digital platforms to stay competitive. Further, KPMG established that finance executives have highlighted the pivotal role of external audit firms in leveraging advanced technology. These technological advancements not only enrich the audit experience but also uphold quality standards, offer comprehensive insights into areas of heightened risk, facilitate better benchmarking

practices, and broaden the scope of data coverage. This digital evolution should ideally empower auditors with advanced tools and resources to navigate complex financial landscapes, resulting in robust assessments that provide stakeholders with a true and fair view of companies' financial affairs (Ali & Mustafa, 2023). Moreover, such a transformation would ideally foster transparency, productivity, and informed decision-making, thereby bolstering investor confidence and maintaining the integrity of financial markets (Alassuli, 2024).

However, the reality presents significant deviations from this ideal scenario, indicating a pressing problem within the landscape of financial audits conducted by small and medium-sized accounting firms in Nairobi County. Large accounting firms in Kenya continue to adopt digital transformation. In a report prepared by PWC (2020), over 80 percent of accounting firms, whether small or large, have embraced digitization in their accounting services. An annual public sector accountants report by ICPAK (2023) shows that despite the digital transformation in the majority of small and medium accounting firms, many financial services especially for big clients are taken up by large audit firms, the "big five" firms, namely Ernst & Young, KPMG, PKF, Deloitte, and PWC. This means that 1,661 small and medium-sized accounting firms operating in Nairobi (ICPAK, 2024) face substantial challenges in winning the confidence of large companies, thus limiting their growth. Despite recognizing the potential benefits, these firms have struggled to bridge the gap between technological capabilities and operational realities (Hentati & Boulila, 2023).

A study conducted by He (2023) focused on how the digital revolution influences audit risks in accounting firms, specifically examining Grant Thornton. This research explored the mechanisms through which digital transformation impacts audit risk and identified strategies that accounting firms could employ to reduce audit costs, enhance audit efficiency, and mitigate audit

risk. Similarly, Angeles et al. (2023) delved into the advantages and challenges of digitalization within the audit profession, confirming auditors' expectations of increased digitalization in the future. In Kenya, Mwangi, Njiraini, and Waweru (2024) investigated the impact of digital transformation on SMEs. However, a review of the existing literature revealed a significant gap: while previous studies have addressed various aspects of digital transformation, they have not clarified how specific elements—such as technology adoption, operational integration, or audit quality metrics improve the effectiveness of financial audits in small and medium-sized accounting firms. For instance, while He (2023) discusses general audit risks associated with digital transformation, it lacks a focused analysis on how these risks specifically affect smaller firms in Nairobi County. Additionally, Angeles et al. (2023) highlights the potential benefits of digitalization but do not address how these benefits can be practically implemented in smaller firms or what challenges they might face. Moreover, Mwangi et al. (2024) provide insights into SMEs but fail to explore how contextual factors unique to Kenya influence the adoption of digital tools in auditing practices. Their findings do not clarify how specific aspects such as computerized auditing, accounting automation, accounting internet technologies, and decision support technology affect audit quality metrics or operational integration within small and medium-sized firms. This study aims to fill this gap by evaluating these specific variables to understand their influence on the effectiveness of financial audits conducted by small and medium-sized accounting firms in Nairobi County.

1.3 Research Objectives

The study's main objective was to investigate the effect of digital transformation on the effectiveness of financial audits of small and medium-sized accounting firms in Nairobi County. Specifically, the study was guided by the following four objectives:

1. To evaluate the effect of computerized auditing on the effectiveness of financial audits of small and medium-sized accounting firms in Nairobi County.
2. To assess the effect of accounting automation on the effectiveness of financial audits of small and medium-sized accounting firms in Nairobi County.
3. To determine the effect of accounting internet technologies on the effectiveness of financial audits of small and medium-sized accounting firms in Nairobi County.
4. To analyze the effect of decision support technology on the effectiveness of financial audits of small and medium-sized accounting firms in Nairobi County.

1.4 Research Questions

1. What is the effect of computerized auditing on the effectiveness of financial audits of small and medium-sized accounting firms in Nairobi County?
2. What is the effect of accounting automation on the effectiveness of financial audits of small and medium-sized accounting firms in Nairobi County?
3. What is the effect of accounting internet technologies on the effectiveness of financial audits of small and medium-sized accounting firms in Nairobi County?
4. What is the effect of decision support technology on the effectiveness of financial audits of small and medium-sized accounting firms in Nairobi County?

1.5 Justification for the Study

This study was justified by the undeniable impact of digital transformation on audit practices within the accounting and finance sector. As businesses across various industries embrace digital tools and methodologies to enhance efficiency and accuracy, it becomes imperative to examine how these changes affect specific entities like accounting firms in Nairobi County. With traditional audit practices undergoing a radical transformation due to advancements such as AI, data analytics,

and blockchain, there is a need to understand how accounting firms are adapting to these changes and how digital transformation influences the effectiveness of financial audits by accounting firms. By investigating this relationship, the study aimed to provide insights into the challenges and opportunities the small and medium-sized accounting firms face in navigating the digital-first era of audit practices, ultimately contributing to the optimization of audit processes and the improvement of financial transparency and accountability within business organizations.

1.6 Significance of the Study

1.6.1 Significance in Accounting Firms

Within accounting firms, the study addresses a critical need to understand how digital transformation affects financial audits. Accounting firms, being in the financial sector, are subject to stringent regulatory requirements and demand high levels of professionalism. By investigating how digital transformation influences audit effectiveness by accounting firms, the study provides insights into optimizing audit processes, enhancing financial management practices, and ensuring compliance with industry standards.

1.6.2 Policy Makers

This research benefits policymakers by providing insights into how digital transformation, impacts audit practices within small and medium-sized accounting firms. By highlighting the challenges and opportunities posed by these technological advancements, the study can help policymakers develop more robust regulatory frameworks that encourage the adoption of digital tools to enhance audit accuracy, transparency, and compliance. Additionally, it informs the creation of support programs for Small and Medium Audit Firms and other SMEs to facilitate their digital transition and promotes policies that improve financial accountability and integrity within the broader business environment.

1.6.3 Contribution to the Literature

This research enhances the existing theoretical body by examining the relationship between audit methods of accounting firms and digital transformation. By applying established theoretical frameworks to the unique challenges and opportunities faced by small and medium-sized accounting firms in Nairobi County, the study builds upon previous research in digital transformation and auditing. It contributes to the theoretical understanding of accounting, finance, and digital transformation by suggesting the implications of these transformations in practical accounting scenarios. Additionally, the study provides valuable insights for future research in these domains.

1.7 Scope of the Study

The scope of this study entailed an investigation into the effect of digital transformation on the efficacy of financial audits conducted by small and medium-sized accounting firms in Nairobi County. The study will gather primary data from accountants, as they possess a deeper understanding of technological innovations in accounting. Additionally, secondary data were utilized to examine the performance of accounting firms' clients. Data were collected in one month. The target population for this research was all 448 partners working in 340 registered Small and Medium Audit Firms in Nairobi (ICPAK, 2024).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the research on the impact of digital transformation on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. It specifically examines the influence of computerized auditing, accounting automation, internet technologies in accounting, and decision support technology. Additionally, the chapter discusses various theories related to digital transformation and the effectiveness of financial audits. It also identifies research gaps in the literature, outlines the conceptual framework, and details the operationalization of variables.

2.2 Theoretical Review

2.2.1 Technology Acceptance Model

The Technology Acceptance Model (TAM), introduced by Davis (1989), aims to explain the processes behind technology acceptance, providing a theoretical framework to predict and understand user behavior about successful technology implementation. TAM asserts that perceived ease of use and perceived usefulness are the main factors influencing user acceptance. Building on the Theory of Reasoned Action, Davis created a model that connects external variables (such as system design features) to actual system use through these two mediating cognitive responses (Musa, Fatmawati, Nuryakin & Suyanto, 2024). Perceived usefulness refers to the degree to which users believe a technology will enhance their performance, while perceived ease of use pertains to the degree to which users believe the technology will be effortless to use. These concepts, supported by extensive empirical evidence, underscore the importance of a technology being seen as both beneficial and user-friendly to increase its chances of adoption (Lai, 2017).

Relating TAM to the first variable of this study, computerized auditing, it is seen how this model is particularly relevant. For small and medium-sized accounting firms in Nairobi County, the adoption of computerized auditing systems hinges on auditors' perceptions of these systems' usefulness and ease of use. If auditors believe that computerized auditing systems will significantly improve their audit efficiency and effectiveness, and if they find these systems user-friendly, they are more likely to embrace and effectively utilize them. This adoption, driven by positive attitudes formed from these perceptions, would consequently enhance the effectiveness of financial audits. The practical implications of TAM suggest that to foster acceptance of computerized auditing, firms should focus on demonstrating the tangible benefits of these systems and ensuring they are intuitive and easy to navigate (Musa et al., 2024). By doing so, they can positively influence auditors' attitudes and intentions toward using computerized auditing tools, thereby improving audit outcomes.

2.2.2 Diffusion of Innovation Theory

The Diffusion of Innovation (DOI) Theory, developed by E.M. Rogers in 1962, explores how new ideas, behaviors, or products gain momentum and spread within a specific population or social system. The theory highlights that adoption is a process wherein individuals adopt innovations at different rates, influenced by their perceptions of the novelty and benefits of the innovation. This process results in a social system adopting the innovation over time. DOI categorizes adopters into five groups: Innovators, Early Adopters, Early Majority, Late Majority, and Laggards. Each group has distinct characteristics, influencing their readiness to adopt new innovations. For instance, Innovators are eager risk-takers, while Laggards are conservative and skeptical. Understanding these categories helps in crafting targeted strategies to promote innovation adoption effectively (Rogers, 1962).

Applying DOI to accounting automation, the second variable of this study, it is seen how the theory provides insights into the adoption process of automated accounting systems within small and medium-sized accounting firms in Nairobi County. Innovators in these firms might be the first to experiment with and implement automated systems, driven by their interest in new technology and willingness to take risks. Early Adopters, as opinion leaders, would follow, likely requiring minimal persuasion due to their leadership roles and openness to change. The Early Majority would need concrete evidence of the benefits of accounting automation, such as improved accuracy and efficiency in financial audits, before adopting it. Late Majority adopters, more skeptical of change, would adopt these systems only after seeing widespread acceptance and success among peers. Finally, Laggards, deeply rooted in traditional methods, would be the most resistant, requiring substantial proof of the system's efficacy and pressure from other adopter groups to consider transitioning (García-Avilés, 2020). By understanding these dynamics, firms can tailor their strategies to effectively promote accounting automation, ensuring a smoother transition and greater overall adoption within the industry (Alyoubi & Yamin, 2021).

2.2.3 Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology (UTAUT) was developed by Venkatesh et al. (2003). The purpose was to explain why people intend to utilize information systems and what they really do when they do use them. A thorough framework is provided by the theory, which incorporates aspects of eight well-known theories of technology acceptance. Expectations of Performance, Effort, Social Influence, and Facilitating Conditions are the four main constructs identified by UTAUT. Both Performance Expectancy and Effort Expectancy are related to the ease of using technology and the idea that it would boost job performance. An individual's belief in the existence of an organizational and technological infrastructure to enable the use of the technology

is known as "Facilitating Conditions," while social influence refers to the extent to which they consider that important others believe they should adopt the new system. According to UTAUT, these characteristics impact people's attitudes and actions toward technology, with moderating roles played by age, gender, experience, and the degree to which people choose to use it voluntarily (Venkatesh et al., 2003).

Relating UTAUT to accounting internet technologies, the third variable of this study, it provides a valuable framework for understanding how these technologies are adopted and used by small and medium-sized accounting firms in Nairobi County. Performance Expectancy can be linked to the anticipated benefits of accounting internet technologies, such as improved accuracy, faster processing times, and enhanced audit effectiveness. If accountants believe these technologies will significantly improve their work performance, they are more likely to adopt them. Effort Expectancy plays a role in how easy accountants perceive these technologies to be. If accounting internet technologies are user-friendly and integrate seamlessly with existing systems, adoption rates are likely to be higher. Social Influence affects adoption, particularly if influential figures within the firm advocate for the use of these technologies, creating a culture that supports innovation. Lastly, Facilitating Conditions are crucial, as the presence of robust technical support and adequate training can significantly boost the acceptance and usage of accounting internet technologies. By considering these factors, firms can better understand and facilitate the adoption of new technologies, ultimately enhancing their operational efficiency and audit effectiveness (Xue, Rashid & Ouyang, 2024).

2.2.4 Decision Support System Theory

Decision Support System (DSS) theory focuses on interactive systems that aid decision-makers by leveraging data and models to solve unstructured and semi-structured problems. Unlike systems

designed to replace human decision-making, DSS aims to support and enhance the effectiveness of decision processes. Emerging in the early 1970s, DSS gained prominence for its ability to assist managers with complex decision-making tasks. Over the decades, DSS evolved into a robust academic field, although by the mid-1990s, its limitations in meeting diverse information needs led to the development of Business Intelligence Systems (BIS) (Wong, 1995). BIS, which integrates data warehousing and analytical environments, extends the capabilities of traditional DSS by harnessing advanced data analytics and big data technologies. This evolution reflects a shift from a focus solely on decision support to encompassing comprehensive business intelligence, with applications expanding into government and public administration, and increasingly relying on big data analytics and cloud computing to handle vast and complex datasets generated by modern digital networks (Sprague, 1986).

Relating DSS theory to the study's fourth variable, decision support technology, underscores its relevance to the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. Decision support technology can significantly enhance the audit process by providing auditors with advanced tools for data analysis and decision-making. For instance, by leveraging data warehousing and analytics, auditors can more efficiently identify discrepancies, trends, and potential fraud. The integration of big data analytics allows for real-time data processing and more accurate forecasting, which is crucial in dynamic financial environments. Furthermore, the incorporation of cloud computing facilitates greater accessibility and collaboration, enabling auditors to work with up-to-date information from any location. By utilizing decision support technologies, accounting firms can improve the thoroughness and reliability of their audits, ensuring that decisions are informed by comprehensive and timely data. This alignment with DSS theory highlights how technology not only supports but enhances the

decision-making capabilities of auditors, leading to more effective financial audits (Morrison et al., 2024).

2.3 Empirical Review

2.3.1 Computerized Auditing and Effectiveness of Financial Audits

According to Cesarz and Szczerbak (2020), financial auditors are generally positive about their role in enhancing financial audit effectiveness. However, they exhibit less confidence when it comes to the practical application of this role. Despite this uncertainty, auditors recognize their responsibilities and have significantly benefited from advancements in information technology (IT) across various business sectors. Thottoli et al. (2019) underscore the importance of IT, noting that it has significantly improved organizational performance. In particular, internal auditors have seen performance improvements through the use of Computerized Auditing, which has enabled them to maintain their crucial roles in corporate governance processes (Thottoli et al., 2019).

Purnamasari et al. (2022) describe Computerized Auditing tools as IT-based instruments designed to assist auditors in managing an organization's information systems and performing essential tasks, such as fraud detection. These tools have become increasingly integral to audit methodologies, contributing to robust corporate governance and, subsequently, to shareholder value creation. Despite the recognized importance of Computerized Auditing tools, previous studies, such as those by Mai et al. (2024), indicate that their use in internal audits is lower than expected. Karger and Kureljusic (2023) express similar concerns in the context of external auditing.

The Institute of Internal Auditors (IIA) standards advocate for the use of Computerized Auditing tools to enhance professional proficiency. These tools can be employed by external auditors for tasks like testing internal controls, conducting risk assessments during the planning

process, and carrying out forensic investigations (Lenz & O'Regan, 2024). Oyerogba (2021) highlights six key benefits of using Computerized Auditing tools: (1) they enable the auditing of entire datasets, helping auditors identify numerous red flags; (2) they utilize familiar commands and procedures, reducing the learning curve for auditors; (3) they facilitate report creation; (4) they are flexible, allowing data export in various formats; (5) they typically preserve data integrity by preventing edits; and (6) they allow auditors to automate test runs. Consequently, these tools enhance the efficiency and effectiveness of internal audits and are vital for the ongoing survival and competitiveness of organizations (Oyerogba, 2021).

In terms of fraud risk management and detection, Computerized Auditing tools are particularly effective. They can help internal auditors identify transactions with characteristics indicative of fraudulent activities—commonly referred to as red flags (Bonrath & Eulerich, 2024). These tools also enable auditors to uncover fraud cases and their underlying causes with greater evidence, thus improving audit quality (Rahman et al., 2023). Oyerogba (2021) found that audit software was the second most utilized instrument by Brazilian internal auditors for detecting fraud.

Abdulwahab Mujalli (2024) notes that the use of computerized auditing tools greatly improves internal audit performance by raising effectiveness and efficiency. Because of these tools, internal auditors can concentrate more often on high-risk areas, which enhances the accuracy of audit findings and produces more timely, accurate, and relevant information (Kamara, 2023). Moreover, the use of these instruments raises the possibility that financial auditors will spot irregularities, such fraudulent activity, that might otherwise go undiscovered, therefore raising the standard of their job overall (Bonrath & Eulerich, 2024).

Empirical studies by Adeyanju and Adenikinju (2023) highlight that Computerized Auditing tools have significantly improved external auditors' ability to detect fraudulent activities.

Given that both external and internal auditors are involved in oversight activities, the adoption of these tools is expected to enhance internal auditors' capacity to identify fraudulent activities. This improvement should lead to smaller financial losses and contribute to corporate sustainability (Fedyk et al., 2022). Moreover, internal auditing can influence the improvement of sustainability disclosures, and Computerized Auditing tools are among the most effective technological innovations for enhancing the reporting of sustainability indicators (Alqudah et al., 2023).

2.3.2 Accounting Automation and Effectiveness of Financial Audits

The impact of accounting automation has been the subject of a small but expanding body of research, most of which has concentrated on the context of external audits. Experimental research by Commerford et al. (2022) on auditors' AI usage uncovered a phenomenon called algorithm aversion. Algorithm aversion refers to the reluctance of humans to utilize algorithms, even when they demonstrate superior performance. This reluctance is likely to lower the overall quality of the audit. Research by Fedyk et al. (2022) shows that external auditors' use of AI technology typically results in better audit quality. Also, they saw a drop in the need for human auditors, even though Law and Shen (2022) pointed out that auditors' use of AI doesn't always mean fewer jobs for humans.

A study by Cooper et al. (2019) on partners at Big 4 businesses revealed that there is a growing trend of using robotic process automation (RPA) across various service areas of these organizations. The partners asserted that automation has improved the quality and efficiency of work. In addition, Cooper et al. (2022) discovered in a separate poll that both partners at the Big 4 accounting firms and employees at lower hierarchical levels have a favorable perception of Robotic Process Automation (RPA). While these studies do not specifically examine the quality of financial reporting or internal controls, they collectively emphasize the increasing significance of

automation in accounting and emphasize the necessity for extensive, universally applicable empirical evidence on whether firms' implementation of automation in their financial reporting processes is advantageous.

In recent years, automation has dramatically transformed business processes, adding significant value and becoming a foundational element in shaping business operations. Automation of business processes refers to the technological adoption of tasks that were previously controlled manually by humans (Elhajjar, Yacoub & Yaacoub, 2023). Automation, according to Handoyo et al. (2023), boosts efficiency and productivity while cutting operating expenses. This is because it makes staff and organizational levels of human engagement in business management procedures much smaller. Thus, at the organizational level of a company, there is less waiting time between jobs. The IT, manufacturing, utility, and facility operations sectors are just a few of the many modern businesses that rely on automation. Two technologies are often brought up when talking about accounting automation: RPA and AI (Ekuma, 2023).

According to Samson et al. (2024), RPA is a type of business process automation that employs software to simulate and combine human interactions with digital systems in order to carry out business activities. RPA improves the internal operations of a business. Adrianto, Tohang, and Tandiono (2023) cite a survey that found that RPA has the potential to automate 10% to 30% of general accounting activities within one of the Big 4 corporations. Because of this automation, the cost of internal control processes goes down, and workers are free to put their expertise to use in ways that benefit the company more (Cooper et al., 2018).

AI is another important technology that allows automation. AI integrates machine learning with big data applications to comprehend previous occurrences and foretell future results (Bose et al., 2023). Accounting AI has been around since the 1980s, with expert systems being the most

researched application. Expert systems are programs that can do accounting-related tasks with the same level of precision and accuracy as a human accountant by learning from past mistakes and storing that information as rules. Despite their benefits, expert systems have been criticized for their lack of accuracy and flexibility compared to human capabilities (Berdiyeva et al., 2021). Moreover, expert systems can perpetuate mistakes repeatedly. Nonetheless, this study focuses on how accountants can benefit from AI technology and its impact on the accounting profession (Baiod & Hussain, 2024). The scholars' endorsement of AI and expert systems in accounting overlooks the persistent criticisms regarding these systems' accuracy, flexibility, and potential to perpetuate errors compared to human accountants.

Reflecting on the evolution of accountants' work over the past decade, it is challenging to predict the next ten years, especially regarding the accounting profession's evolution (Friday & Japhet, 2020). Technological disruption has spurred innovations that substantially change how tasks are performed. It is certain that emerging technologies will continue to significantly transform the accounting industry. According to a study by Asabeh et al. (2023), accountants in the United States faced proficiency challenges in the early 2010s due to discrepancies in accounting standards and technological limitations. Although automation is intended to manage repetitive and mundane tasks, the technology is still not flawless, and there remains some skepticism about its long-term effects.

2.3.3 Accounting Internet Technologies and Effectiveness of Financial Audits

The increasing integration of accounting internet technologies in audit tasks has garnered substantial attention from professionals (PwC, 2018). Despite this interest, the impact of these technologies on the tangible outcomes of audit effectiveness and efficiency remains under-explored. Professionals hold mixed views on the adoption of accounting internet technologies.

Some are optimistic, believing these technologies can enhance audit task outcomes. Ovami and Muda (2023) emphasize that auditors who have adopted sustainable analytics practices not only demonstrate and communicate the benefits of analytics but also achieve improved efficiency, effectiveness, and risk awareness. On the contrary, some remain skeptical about the advantages of audit technology. Vuković et al. (2023) point out that data and technological tool risks pose significant challenges for audit firms. Moreover, Eulerich et al. (2022) reveal that few organizations believe their audit teams understand the significance of technological innovation or view it as a fundamental value for external auditors. Many auditors reportedly struggle to find appropriate applications for emerging technologies in their work.

There have been conflicting findings from past archival research on the effects of clients' investments in technology on external auditors. As an example, Nurhidayah et al. (2024) discovered that audit report lags are shorter when audit clients invest more in IT. Additionally, Hay et al. (2023) observed that clients' IT capabilities do not impact audit delays, but they do limit audit fee increases. Client investments in auditing internet technologies are associated with reduced audit fees and shorter external audit delays, according to research by Lim et al. (2021) that looked at the effect of client investments on auditing outcomes.

Some of these sources report on the effects of audit internet technology for particular firms or engagements. The degree to which big public accounting firms use and adopt internet technology for audits is the subject of some studies. While Eilifsen et al. (2020) looked at when and how external auditors use data analytics, they didn't look at how these technologies affect the effectiveness and efficiency of audits. Instead of testing particular audit effectiveness or efficiency results at the engagement level, Dempsey and Dyk (2024) investigated auditors' views of these technologies' impact on performance. Taking into account both the total use of audit technologies

and audit internet technologies at different stages of the audit, the proposed study seeks to address this gap by offering precise, engagement-level metrics of the efficacy and efficiency of audit tasks.

Existing literature suggests several reasons why internet technology should enhance audit task effectiveness. Technology enables direct testing of more transactions, potentially improving audit effectiveness (Barr-Pulliam et al., 2021). Furthermore, internet technology allows for unique data gathering and display methods, facilitating better interpretation of audit evidence compared to traditional audit procedures (Werner et al., 2021). Moreover, if the time savings from increased efficiency are redirected towards additional testing, audit effectiveness could also improve (Koreff, 2021). These researchers emphasize the potential benefits of internet technology for enhancing audit task effectiveness but may underestimate the practical challenges and limitations of integrating these technologies into existing audit practices.

Using the internet could potentially make audits more efficient. Improved audit planning efficiency can be achieved by incorporating new risk assessment and planning techniques and expanding auditors' consideration of data sources (Koreff, 2021). Also, according to Eulerich et al. (2021), internet technology can simplify the conventional auditing process. As an example, Cooper et al. (2021) show that when an IAF uses RPA, compliance checks, document validation from ERP systems, and information extraction from ERP systems all take less time. Professionals in the field also think that using internet technologies can make audits more efficient. Clients, according to their recommendations, can improve audit efficiency by utilizing APIs to speed up data management procedures, NLP systems for analyzing legal contracts, and online technologies for digital confirmations (IDC Research, 2022).

Considering the impact of technology-based audit techniques on audit costs, as well as their effectiveness and efficiency, is essential (Eulerich & Masli, 2019). The use of such techniques can

potentially increase audit costs due to several factors: the expenses associated with internet technology, the need for system upgrades, training auditors, and hiring additional personnel with specialized skills in internet technology, who may command higher salaries compared to those required for traditional audits (Eulerich et al., 2022). On the other hand, audit costs might decrease as automation can reduce the number of auditors or the hours needed for an audit. Furthermore, audit technology can improve risk assessments, leading to more targeted and smaller audit programs, eliminate the need for certain procedures, or provide higher assurance at a similar cost, thus reducing the need for additional evidence (Commerford et al., 2022). Therefore, the adoption of Internet technology could either increase or decrease audit costs. Given this variability, investigating a non-directional hypothesis is justified.

2.3.4 Decision Support Technology and Effectiveness of Financial Audits

Decision support systems (DSSs) have been the subject of research since the 1970s when Scott et al. (1970) first suggested using computers to aid in decision-making and presented the idea of management decision systems (Jia et al., 2022). Decision support systems (DSS) have progressed through five distinct phases: model-based systems, intelligent decision support systems (IDSS) that integrate knowledge reasoning with model calculations, systems based on data warehouses (DWs), and finally, DSS based on client/server (C/S) and web services. In the 1980s, financial decision support systems started to gain momentum in organizations. Since then, researchers have been consistently coming up with new design frameworks to make these systems even better and broaden their use (Sànchez-Marrè, 2022). One example is the objective planning model multicriteria decision support system that Ali et al. (2023) developed to meet the demands of multinational firms' worldwide financial planning.

Most modern businesses depend significantly on a core Accounting Information System (AIS) to coordinate and regulate processes (Lutfi et al., 2022). Management information systems (MIS) like AISs gather, sort, analyze, and present a variety of financial data to stakeholders for decision-making (Moazzeni, 2023). A management information system (MIS) is a collection of interrelated documents, processes, and technologies that collect, process, and report data to the people, places, and things that need it to make decisions (Saad, 2023). The AIS makes it easier to record financial transactions and events, which helps with performance reviews and provides a record of the company's financial standing (Perifanis & Kitsios, 2023). This system helps the company keep track of its financial transactions and activities by combining computer and information-based technical resources.

According to Meredith et al. (2020), big data analytics significantly impact auditors' behaviors, influencing their understanding, analysis, and interpretation of financial information. This is particularly evident in using sophisticated analytical techniques for fraud detection in financial reports. Richins (2017) also underscores the potential of big data analytics, advocating for a hybrid approach that integrates traditional auditing methods with automatic fraud-detection mechanisms to enhance the identification of irregularities. However, it is important to note that the mere presence of extensive data may not necessarily result in more effective insights. As (Meredith et al. (2020) highlight, the increasing volume and complexity of data could pose challenges for auditors, potentially impeding the discovery of audit evidence necessary for detecting irregularities. This suggests that while big data analytics offer promising opportunities for improving audit quality, auditors must navigate the complexities of data analysis to ensure its effectiveness in enhancing audit outcomes.

Frey and Osborne (2017) suggest that auditors can benefit from increased time allocation to audit analysis, facilitated by technology platforms that streamline data collection processes. They argue that technology integration will enhance the relevance and value of the auditing profession and improve audit efficiency. Frey and Osborne findings indicate a transition from manual to automated auditing, driven by digital transformation, which is poised to revolutionize audit practices. Additionally, Hashid and Almaqtari (2024) emphasize the transformative potential of digitalization in auditing, particularly in streamlining data-gathering processes and facilitating the identification of irregularities in financial reports. The adoption of automated auditing procedures is expected to facilitate continuous audit practices, replacing traditional periodic audits (Penha, et al., 2023).

Tiberius and Hirth (2019) investigated the future trajectory of auditing practices in Germany through a Delphi study. Their findings suggest that significant changes in auditing practices are not anticipated over the next five to ten years. Instead, there is a projected shift towards continuous auditing, with digitalization playing a supportive role rather than supplanting auditors entirely (Angeles et al., 2023). While the study anticipates tighter and more stringent requirements for auditing professionals, Angeles et al do not foresee immediate troublesome effects stemming from this transition in the short term.

2.4 Critique of Existing Literature

The existing literature on computerized auditing and the effectiveness of financial audits highlights significant advancements and challenges in integrating technology into auditing processes. Cesarz and Szczerbak (2020) and Thottoli et al. (2019) recognize the positive impact of IT on audit effectiveness, yet also note auditors' uncertainty in practical applications. Purnamasari et al. (2022) and Mai et al. (2024) emphasize the critical role of computerized auditing tools in enhancing

corporate governance, despite their underutilization in internal audits. Karger and Kureljusic (2023) and Oyerogba (2021) outline the tools' benefits, such as comprehensive data auditing and report creation, but concerns remain regarding their integration and overall impact on audit quality (Bonrath & Eulerich, 2024; Rahman et al., 2023). Studies by Adeyanju and Adenikinju (2023) and Fedyk et al. (2022) affirm the tools' efficacy in fraud detection, though gaps persist in their widespread adoption. Additionally, while accounting automation and AI, as discussed by Commerford et al. (2022) and Samson et al. (2024), show potential for enhancing audit quality, issues like algorithm aversion and the need for human oversight present significant hurdles. The mixed views on internet technologies and decision support systems in auditing (PwC, 2018; Vuković et al., 2023; Meredith et al., 2020) further underscores the complexity of integrating new technologies, highlighting both opportunities for efficiency and challenges in practical implementation (Frey & Osborne, 2017; Tiberius & Hirth, 2019). Thus, while technological advancements promise substantial improvements in audit effectiveness and efficiency, their practical application and integration into existing systems remain areas requiring further empirical investigation and strategic development.

2.5 Summary of Literature Review

The review incorporates several theories to provide a comprehensive understanding of technology adoption and its effects on financial audits. The Technology Acceptance Model (TAM) suggests that perceived ease of use and usefulness are critical to technology adoption, relevant for computerized auditing systems in Nairobi. The Diffusion of Innovation (DOI) Theory by Rogers explains the varied adoption rates of accounting automation among different adopter categories within firms. The Unified Theory of Acceptance and Use of Technology (UTAUT) extends TAM by considering performance expectancy, effort expectancy, social influence, and facilitating

conditions, offering insights into the adoption of accounting internet technologies. Lastly, the Decision Support System (DSS) theory focuses on how decision-support technology enhances audit processes by providing advanced tools for data analysis and decision-making.

Empirical studies highlight the role of computerized auditing in enhancing financial audit effectiveness within small and medium-sized accounting firms in Nairobi County. Cesarz and Szczerbak (2020) found that auditors recognize their role in improving audit effectiveness, although they exhibit less confidence in its practical application. Despite this, advancements in information technology have significantly benefited auditors, enabling them to maintain crucial roles in corporate governance processes (Thottoli et al., 2019). Computerized auditing tools, which assist auditors in managing information systems and performing essential tasks such as fraud detection, have become integral to audit methodologies, contributing to robust corporate governance and shareholder value creation (Purnamasari et al., 2022). However, studies by Mai et al. (2024) and Karger and Kureljusic (2023) indicate that the use of these tools in internal and external audits is lower than expected.

The Institute of Internal Auditors (IIA) standards advocate for the use of computerized auditing tools to enhance professional proficiency, with tasks ranging from testing internal controls to conducting forensic investigations (Lenz & O'Regan, 2024). Oyerogba (2021) highlights six key benefits of these tools, such as auditing entire datasets, reducing the learning curve for auditors, and facilitating report creation. These tools significantly improve the efficiency and effectiveness of internal audits and are vital for organizational competitiveness. Additionally, computerized auditing tools are particularly effective in fraud risk management and detection, helping auditors identify transactions indicative of fraudulent activities (Bonrath & Eulerich, 2024; Rahman et al., 2023). Studies by Adeyanju and Adenikinju (2023) show that these tools have significantly

improved external auditors' ability to detect fraudulent activities, thereby enhancing corporate sustainability (Fedyk et al., 2022) and improving sustainability disclosures (Alqudah et al., 2023).

2.7 Research Gaps

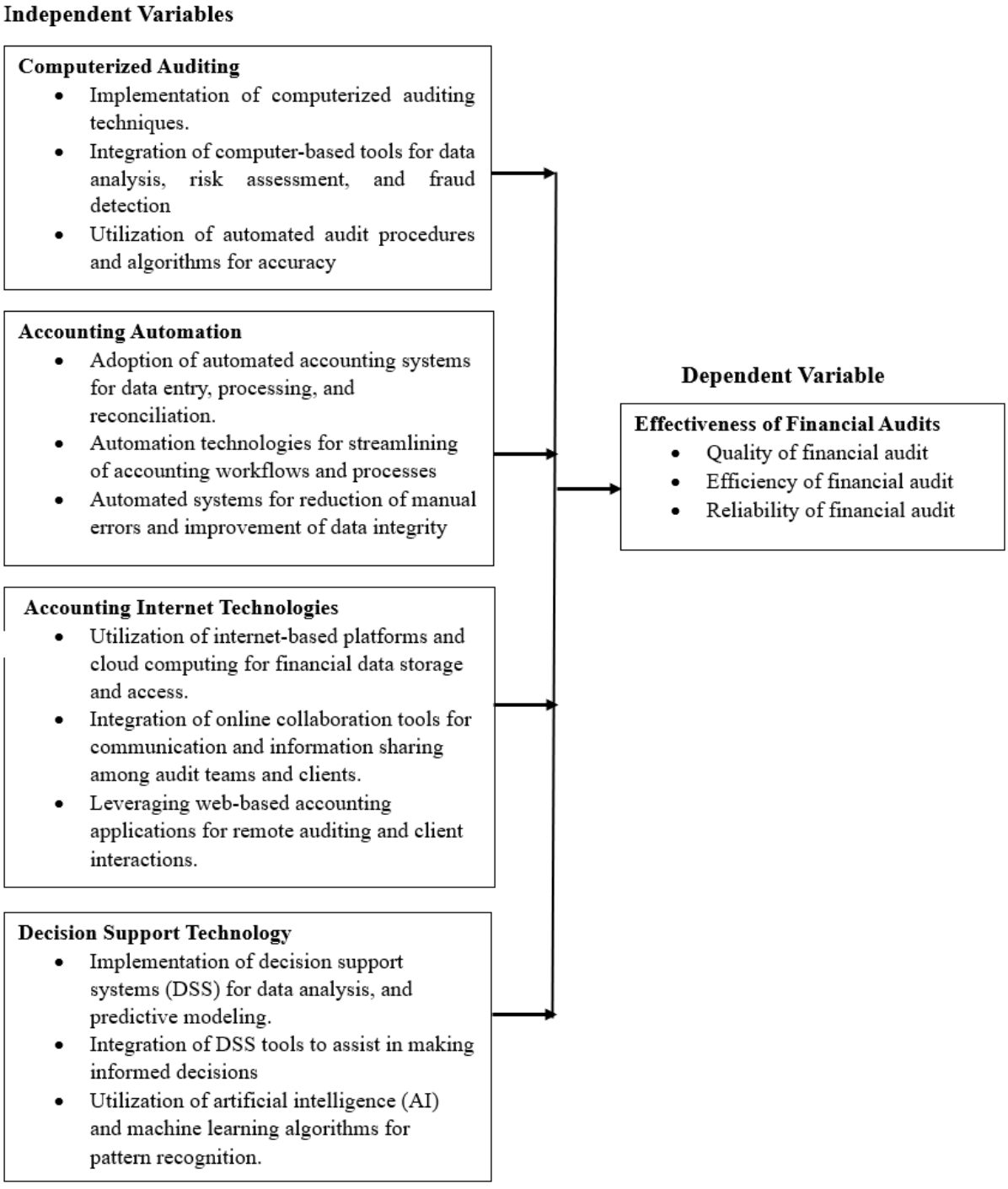
Despite the recognized benefits of computerized auditing tools and accounting automation, significant research gaps remain in their practical application and widespread adoption. Existing studies highlight auditors' uncertainty and underutilization of these tools (Cesarz & Szczerbak, 2020; Mai et al., 2024), indicating a need for more empirical research on overcoming implementation barriers. Additionally, while the impact of AI and automation on audit quality is well-documented (Commerford et al., 2022; Samson et al., 2024), the phenomenon of algorithm aversion and its long-term implications for human auditors warrant further exploration. The mixed views on internet technologies and decision support systems (PwC, 2018; Vuković et al., 2023) suggest a lack of consensus on their effectiveness, underscoring the necessity for engagement-level studies to provide precise metrics on audit efficiency and effectiveness. Moreover, while advancements in IT and big data analytics show promise (Meredith et al., 2020), the practical challenges in data analysis and the complexities of integrating these technologies into traditional audit practices remain underexplored, calling for research focused on developing and testing strategic frameworks for their seamless integration.

2.5 Conceptual Framework

The conceptual model in Figure 1 depicts the relationship between digital transformation and the effectiveness of financial audits of small and medium-sized accounting firms in Nairobi County.

FIGURE 1

Conceptual Framework



Source: Author (2024)

2.6 Operationalization of Variables

TABLE 1

Operationalization of Variables

Variable Type	Variable	Indicators	Scale	Analysis Tools
Independent variables: digital transformation	Computerized auditing	• Implementation of computerized auditing techniques and software by accounting firms. • Integration of computer-based tools for data analysis, risk assessment, and fraud detection. • Utilization of automated audit procedures and algorithms for enhanced accuracy and timeliness.	Ordinal scale 5-point Likert scale	Mean, standard deviation, regression analysis, correlation analysis F-Test
	Accounting automation	• Adoption of automated accounting systems and software for data entry, processing, and reconciliation. • Streamlining of accounting workflows and processes through automation technologies. • Reduction of manual errors and improvement of data integrity through automated systems.	Ordinal scale 5-point Likert scale	Mean, standard deviation, regression analysis, correlation analysis, F-Test
	Accounting internet technologies	• Utilization of internet-based platforms and cloud computing for financial data storage and access. • Integration of online collaboration tools for real-time communication and information sharing among audit teams and clients.	Ordinal scale 5-point Likert scale	Mean, standard deviation, regression analysis, correlation analysis, F-Test

		• Leveraging of web-based accounting applications for remote auditing and client interactions.		
	Decision support technology	• Implementation of decision support systems (DSS) for data analysis, trend identification, and predictive modeling. • Integration of DSS tools to assist auditors in making informed decisions during the audit process. • Utilization of artificial intelligence (AI) and machine learning algorithms for pattern recognition and anomaly detection in financial data.	Ordinal scale 5-point Likert scale	Mean, standard deviation, regression analysis, correlation analysis, F-Test
Dependent variable: effectiveness of financial audits	Effectiveness of financial audits	• Overall quality, efficiency, and reliability of financial audits conducted by small and medium-sized accounting firms in Nairobi County.	Ordinal scale 5-point Likert scale	Mean, standard deviation, regression analysis, correlation analysis, F-Test.

Source: Author (2024)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This project aimed to investigate the impact digital transformation has had on the efficiency of financial audits carried out by accounting firms located in Nairobi County and classified as small and medium companies. This chapter provides an overview of the research approach utilized in this study to achieve its goals. The chapter is structured as follows: the study design, the target population, the sampling and sampling strategy, the research instrument, the validity and reliability of the research instrument, the procedure for collecting data, and the processing and analysis of data, research ethics

3.2 Research Design

Research design is the foundational plan outlining the essential activities required to carry out the research project. This study employed a descriptive research design. As stated by Cooper and Schindler (2000), a descriptive study aims to determine the what, where, and how of a phenomenon. Consequently, this study can generalize the findings to all small and medium-sized accounting firms. This research design involves an in-depth examination of problem-solving situations pertinent to the research issue.

The research design is suitable for this study because the researcher aimed to determine the association between digital transformation and the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. According to Saunders, Lewis, and Thornhill (2013), this design is essential for exploring hypothetical constructs and identifying relevant variables. This approach provides clear definitions for variables, addressing the research questions

effectively. Consequently, it is an efficient method for gathering information on respondents' views, opinions, and attitudes concerning the study's objectives.

3.3 Target Population

The target population is a specific group of people, services, elements, events, or households that are being studied (Saunders, Lewis & Thornhill, 2013). According to Cooper and Schindler (2013), the population is a large group of entities, objects, or individuals that are the primary focus of a systematic study. The target population for this research was all 448 partners who own and run 340 registered Small and Medium Audit Firms in Nairobi (ICPAK, 2024). These firms were categorized based on the number of partners each firm has, as detailed in Table 3.1.

TABLE 2

Target Population Distribution

Number of Partners	Number of Firms	Number of Partners
1 Partner	261	(1x261) =261
2 Partners	57	(2x57) =114
3 Partners	15	(3x15) = 45
4 Partners	7	(4x7) = 28
Total	**340**	**448**

3.4 Sample Size and Sampling Procedure

3.4.1 Sampling Frame

A sampling frame comprises all the constituents of the population that are available for data collection or a comprehensive inventory of the population from which a sample is selected (Cooper & Schindler, 2013). A sampling frame, as defined by Saunders et al. (2013), is a comprehensive collection of components that represents either a portion or the entirety of the population, from which the sample is selected. The sampling frame consisted of all small and medium accounting

firms in Nairobi County registered with the Institute of Certified Public Accountants of Kenya (ICPAK) as of April 2024. This comprehensive list included the firm's contact information, categorized by the number of partners, ensuring an accurate representation for the study's sample selection.

3.4.2 Sampling Technique

A sampling technique outlines the method for selecting cases from the population for observation (Saunders et al., 2013). This study used a stratified sampling technique. Stratified sampling involves dividing the population into distinct and non-overlapping groups known as strata. Subsequently, a simple random sample is extracted from each stratum. Cooper and Shindler (2011) state that strata are formed based on factors other than the specific characteristic being measured. These factors are known or believed to vary together with the characteristics of interest. This approach helps to ensure that there is greater similarity within each stratum compared to the differences across different strata. For this study, the strata were defined by the number of partners in each Small and Medium Audit Firm as of April 2024, categorizing firms into groups with 1, 2, 3, or 4 partners. This approach ensured that all categories of Small and Medium Audit Firms were included, providing comprehensive results.

3.4.3 Sample Size

A sample is a subset of the target population selected for analysis to determine characteristics or facts about that population (Cooper & Schindler, 2013). The larger the population, the smaller the percentage needed to achieve a representative sample; however, Schindler and Cooper (2014) note that greater precision requires a larger sample size. This study's sample was calculated using the Yamane (1967) formula, ensuring a scientifically determined sample size that minimizes bias and accounts for error. The resulting sample size was 211, distributed as follows:

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

Where:

n = Sample Size

N = Population =448

e = Sampling Error =0.05

Therefore:

n= 448/((1+448(0.05)^2))

=211

TABLE 3

Sample Size Distribution

Number of Partners	Number	Number of Partners	Sample Size
1 Partner	261	261	123
2 Partners	57	114	54
3 Partners	15	45	21
4 Partners	7	28	13
Total	**340**	**448**	**211**

3.5 Research Instrument

A data collection instrument is a tool used to gather data systematically and objectively for research purposes. Examples of these instruments include questionnaires, interviews, schedules, and available records (Cooper & Schindler, 2012). This study used a survey method with a structured questionnaire as the data collection instrument. Questionnaires were favored because they effectively capture respondents' opinions and perspectives related to the research problem.

A structured questionnaire was developed in line with the research objectives and context for data collection. The questionnaire was divided into 4 parts. The first bit focused on demographics, the second bit assessed the effect of Computerized Auditing on the effectiveness of financial audits of small and medium audit firms, the third section evaluated the effect of Accounting Automation on effectiveness of financial audits of small and medium audit firms, the fourth section investigated the effect of Accounting Internet Technologies on the performance of small and medium audit firms, the fifth section investigated the effect of Decision Support Technology on the performance of small and medium audit firms in Nairobi.

The questionnaire consisted of closed-ended questions. Respondents were rank their levels of agreement using a five-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. This Likert scale was chosen to reduce external interference and minimize completion time. Respondents simply needed to tick the most appropriate answer.

3.6 Pilot Testing

3.6.1 Pilot Testing

The researcher pilot-tested the questionnaires to gather feedback for necessary adjustments before fully administering them to respondents. To ensure reliability, the questionnaire was pretested with 10 respondents who were professional accountants but not working with small and medium audit firms in Nairobi. The items in the research instruments were revised according to the results of the pilot study.

3.6.2 Validity

Validity is the ability of an instrument to measure what it is intended to measure (Cooper & Schindler, 2012). To ensure validity, the university-appointed supervisor's opinions will be sought to enhance the questionnaire. Test for the validity of the research instrument was done using face,

construct, and content validity. The supervisor and two other students conducting related research in separate fields assessed the validity of the questionnaires. They assisted in making sure that each questionnaire item appropriately captures the desired information in accordance with the study's objectives.

3.6.3 Reliability

Reliability is the degree to which instruments produce comparable answers for the same respondents over a common subject several times (Cooper & Schindler, 2012). The reliability of the instrument was tested using the Cronbach alpha test, retaining questions with an alpha value of 0.7 or higher.

3.7 Data Collection Procedure

The researcher obtained permission from the university's School of Business and the National Commission for Science, Technology, and Innovation (NACOSTI) to conduct the research. A letter of authority was acquired from these institutions. These permits, along with debriefing and consent forms, were presented to the respondents to ensure voluntary participation and adherence to all ethical standards in the study. The researcher collected data using the drop-and-pick method. The researcher also used online with the aid of Google documents which were shared with respondents through a link. The researcher obtained consent from the respondents, after which a link to the digital questionnaire was sent to their email addresses. Respondents were prompted to access the link through phone calls and SMS reminders. They were informed about the study's purpose and assured of confidentiality. To ensure a high response rate, follow-up calls were made to the respondents.

3.8 Data Processing and Analysis

The data analysis involved quantitative methods. The data obtained from the surveys were transformed into a coded format and subjected to analysis utilizing descriptive statistical methods, including frequencies, percentages, means, and standard deviations. The associations between elements were analyzed using inferential statistics, such as correlations and regression analysis, to ascertain their significance. The researcher employed the Statistical Package for Social Science (SPSS) to conduct this analysis. Results were presented in figures and tables. The regression model used was as follows:

Therefore, the overall regression equation is

$Y = \beta_0 + \beta_1 P_1 + \beta_2 P_2 + \beta_3 P_3 + \beta_4 P_4 + \varepsilon$

Y= Effectiveness Of Financial Audits

β_0= intercept

$\beta_{1,2,3,4}$ = Coefficients for $P_{1,2,3,4}$

P_1= Computerized Auditing

P_2= Accounting Automation

P_3= Accounting Internet Technologies

P_3= Decision Support Technology

ε = Error term

3.8.1 Diagnostic Tests

The researcher conducted a normality test, multicollinearity and heteroscedasticity

Multicollinearity. Multicollinearity occurs when independent and dependent variables are strongly correlated. For the purpose of this investigation, the variance inflation factor (VIF) will be utilized in order to carry out the evaluation of multicollinearity. When the value of the VIF is

greater than 10, it indicates the presence of multicollinearity (Velilla, 2018). As per this threshold, values equal to or greater than 10 indicate the presence of multicollinearity. In cases where such values were identified, corrective measures were applied by eliminating highly correlated independent variables.

Heteroscedasticity. Heteroscedasticity assigns equal importance to all observations, leading to varied standard errors and potentially incorrect conclusions during hypothesis testing. The Breusch-Pagan test will be employed to detect any presence of heteroscedasticity within the collected data. The underlying hypothesis posited the presence of homoscedasticity and was assessed at a significance level of 0.05. If the calculated p-value exceeded the critical value of 0.05, the inference was that the data did not exhibit heteroscedasticity (Williams, 2016).

Normality Test. The principle of normality assumption is essential for precise statistical inferences during hypothesis testing (Field, 2009). To check if the residuals are normal, this study will use the Jarque-Bera test statistic (Bera & Jarque, 1982). The data were assumed to follow a normal distribution in the hypothesis. The data were considered to follow a normal distribution if the p-value is greater than the crucial threshold of 0.05.

3.9 Research Ethics

Kothari (2011) defines research ethics as the steps done to guarantee that a study honors and defends the rights, privacy, and secrecy of all participants. Every source of the materials utilized in the study will be duly credited to prevent plagiarism. The researcher assured participants that the research was used only for academic reasons. Respondents were also requested to participate in the study voluntarily and they had a right to decline the request. The privacy of respondents and the confidentiality of their information were rigorously maintained. The researcher sought permission from the target organizations before embarking on data collection.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

Chapter four deals with data analysis, presentation of research findings, and in-depth discussions surrounding those findings. The chapter provides insights into the outcomes of the study titled "Effect of Digital Transformation on the Effectiveness of Financial Audits of Small and Medium-Sized Accounting Firms in Nairobi County." It follows this structure: response rate, demographic information, descriptive statistics, inferential statistics, and diagnostic tests. The findings of each study variable are thoroughly presented in this chapter.

4.2 Questionnaire Response Rate

TABLE 4

Response Rate

	Number	**Percent**
Questionnaires Distributed	211	100%
Questionnaires Dully Filled and Returned	174	82.5%
Incomplete and Non-Returned Questionnaires	37	17.5%

The response rate data indicates that out of 211 questionnaires distributed, 174 were duly filled and returned, resulting in an impressive response rate of 82.5%. This high level of engagement suggests that the participants were not only willing to provide feedback but also found the survey relevant to their experiences. Conversely, 37 questionnaires, accounting for 17.5%, were either incomplete or not returned, indicating a minor level of non-participation. According to Kothari (2004), a response rate of over 75% is considered sufficient to proceed with data analysis.

4.3 Pilot Study Results

The internal consistency of the six main constructs in the study was assessed using a scale test on repeated measures. The Cronbach's alpha values for decision support technologies (9.87), accounting internet technologies (0.77), computerized auditing (0.80), accounting automation (0.79), and effectiveness of financial audit (0.81) are presented in Table 5. The study concluded that all the main constructs investigated had Cronbach's alpha values over 0.7, indicating their reliability and ability to yield consistent answers on a later test.

TABLE 5

Test of Internal Consistency

Construct	Cronbach's Alpha
Decision Support Technologies	0.87
Accounting Internet Technologies	0.77
Computerized Auditing	0.80
Accounting Automation	0.79
Effectiveness of Financial Audit	0.81

4.4 Demographic Information

TABLE 6

Demographic Information

		Frequency	Percent	Valid Percent	Cumulative Percent
Years Organization Existed	4-6 years	54	31.0	31.0	31.0
	7-10 years	53	30.5	30.5	61.5
	Less than 3 years	10	5.7	5.7	67.2
	More than 10 years	57	32.8	32.8	100.0
	Total	174	100.0	100.0	
Years Worked Organization	4-6 years	78	44.8	44.8	44.8
	7-10 years	22	12.6	12.6	57.4
	Less than 3 years	53	29.9	30.5	87.9
	More than 10 years	21	12.1	12.1	100.0
	Total	174	100.0	100.0	
Years Worked in the Accounting Profession	4-6 years	53	30.5	30.5	30.5
	7-10 years	29	16.7	16.7	47.1
	Less than 3 years	73	42.0	42.0	89.1
	More than 10 years	19	10.9	10.9	100.0
	Total	174	100.0	100.0	
Gender	Female	91	52.3	52.3	52.3
	Male	83	47.7	47.7	100.0
	Total	174	100.0	100.0	
Education	Bachelor Degree	82	47.1	47.1	47.1
	Certificate	11	6.3	6.3	53.4
	CPA(K)	20	11.5	11.5	64.9
	Diploma	32	18.4	18.4	83.3
	Post Graduate	29	16.7	16.7	100.0
	Total	174	100.0	100.0	
Position Organization	Low-Level Manager	47	27.0	27.0	27.0
	Middle-Level Manager	52	29.9	29.9	56.9
	Regular Staff	22	12.6	12.6	69.5
	Senior Manager	27	15.5	15.5	85.1
	Supervisor	26	14.9	14.9	100.0
	Total	174	100.0	100.0	

Table 6 above shows the results on the demographic characteristics of respondents. The data presented indicates the distribution of the years organizations have existed, with a total of 174 respondents. The largest group, comprising 31.0% (54 respondents), has been in existence for 4-6 years, closely followed by those with 7-10 years of experience at 30.5% (53 respondents). Additionally, 5.7% (10 respondents) have been operational for less than 3 years, while 32.8% (57 respondents) have been established for more than 10 years. This distribution highlights a relatively balanced representation across different experience levels, suggesting that a significant portion of organizations in the study have been around for a substantial period, which may influence their ability to adapt to digital transformation.

Table 6 also shows the distribution of years the respondents have worked in their organizations, with a total of 174 respondents. The largest group, comprising 44.8% (78 respondents), has worked in their organizations for 4-6 years, followed by those who have worked for less than 3 years at 29.9% (52 respondents). Additionally, 13.2% (23 respondents) have worked for 7-10 years, while 12.1% (21 respondents) have been with their organizations for more than 10 years. This distribution suggests that the majority of the respondents have relatively short tenures in their current organizations, which may impact their experience with digital transformation and its effect on financial audits. The study aims to investigate how digital transformation affects the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. Understanding the work experience of the respondents can provide insights into their familiarity with traditional audit methods and their adaptability to new technologies and processes introduced through digital transformation.

Table 6 also presents the distribution of years respondents have worked in the accounting profession, with a total of 174 participants. The largest segment, comprising 42.0% (73

respondents), has less than 3 years of experience, indicating a significant number of relatively new entrants in the field. This is followed by those with 4-6 years of experience at 30.5% (53 respondents), while 16.7% (29 respondents) have worked in the profession for 7-10 years. Lastly, 10.9% (19 respondents) have more than 10 years of experience. The predominance of respondents with less than 3 years of experience suggests that many professionals in the accounting field may be adapting to new technologies and methodologies, which is particularly relevant to the study's focus on the impact of digital transformation on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. This relatively young workforce may be more receptive to embracing digital advancements, potentially influencing the outcomes of the study's objectives.

Table 6 also reveals the distribution of positions held by respondents within their organizations, totaling 174 participants. The largest group consists of middle-level managers, accounting for 29.9% (52 respondents), followed closely by low-level managers at 27.0% (47 respondents). Regular staff make up 12.6% (22 respondents), while senior managers represent 15.5% (27 respondents), and supervisors account for 14.9% (26 respondents). This distribution indicates a significant presence of middle and low-level managers, suggesting that a considerable portion of the workforce is involved in operational and tactical decision-making roles. The study aims to investigate the effect of digital transformation on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. Understanding the positions of respondents is crucial, as it may influence their perspectives on digital transformation initiatives and their potential impact on audit effectiveness, given that managers typically have a more strategic view compared to regular staff.

Table 6 also shows the results on gender distribution among respondents indicating that 52.3% (91 respondents) are female, while 47.7% (83 respondents) are male, with a total of 174 participants. This slight majority of female respondents suggests a relatively balanced representation of genders in the study. The study's main objective is to investigate the effect of digital transformation on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. The gender composition of the respondents may provide insights into diverse perspectives on digital transformation and its implications for audit practices, as different genders may have varying experiences and attitudes toward technology adoption in the accounting profession. Understanding these dynamics can enhance the study's findings and contribute to more inclusive recommendations for implementing digital transformation strategies in the sector.

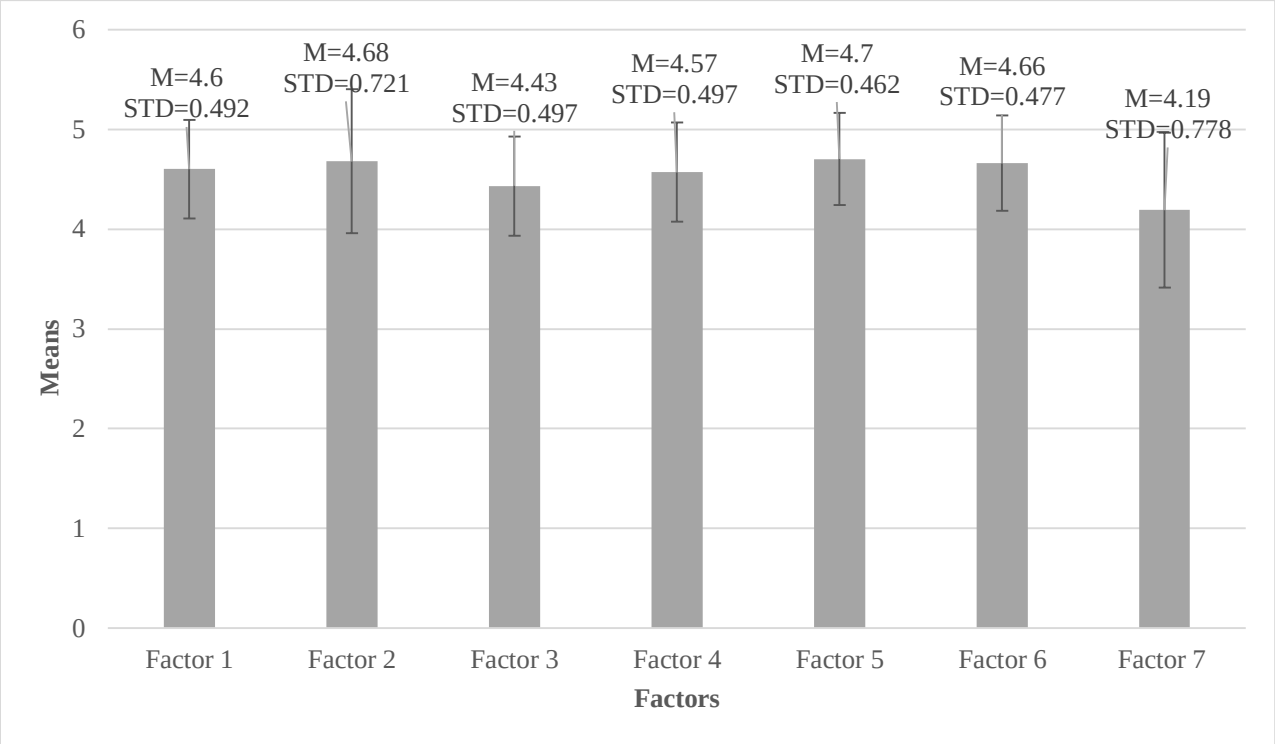
The results presented in Table 6 also illustrate the educational qualifications of respondents in the study, which totaled 174 participants. The largest group holds a Bachelor's degree, comprising 47.1% (82 respondents), indicating a strong foundation of higher education among the participants. Following this, 18.4% (32 respondents) possess a Diploma, while 16.7% (29 respondents) have completed postgraduate studies. Additionally, 11.5% (20 respondents) are certified as CPA(K), and 6.3% (11 respondents) hold a Certificate. This distribution highlights a well-educated respondent pool, predominantly with Bachelor's degrees, which is relevant to the study's objective of investigating the effect of digital transformation on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. The educational background of the respondents may influence their understanding and adaptation to digital tools and methodologies in financial auditing, potentially impacting the study's findings regarding the effectiveness of such transformations in the accounting profession.

4.5 Descriptive Statistics

4.5.1 Computerized Auditing and Effectiveness of Financial Audits

FIGURE 2

Effect of Computerized Auditing on Effectiveness of Financial Audits



Key:

Factor 1: Implementing computerized auditing techniques and software has enhanced the effectiveness of financial audits in our organization.
Factor 2: Integration of computer-based tools for data analysis, risk assessment, and fraud detection has improved the quality of financial audits.
Factor 3: Utilization of computerized auditing has increased the accuracy and timeliness of audit processes
Factor 4: Use of computerized auditing in repetitive audit tasks has freed up time for auditors to focus on more complex issues
Factor 5: The use of computerized auditing has enhanced the ability to identify and mitigate financial risks.
Factor 6: Computerized auditing tools have improved the overall efficiency of our audit processes
Factor 7: The implementation of computerized auditing has resulted in cost savings for our organization.

The data presented in Figure 4.1 indicates that computerized auditing has had a positive effect on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. The mean scores for all factors related to computerized auditing are above 4, suggesting that respondents agree or strongly agree with the statements. The highest mean score of 4.70 is for

"The use of computerized auditing has enhanced the ability to identify and mitigate financial risks," followed by "Integration of computer-based tools for data analysis, risk assessment, and fraud detection has improved the quality of financial audits" with a mean of 4.68. These findings suggest that the implementation of computerized auditing techniques, such as data analysis tools and risk assessment software, has significantly improved the quality and effectiveness of financial audits. Additionally, the use of computerized auditing has freed up time for auditors to focus on more complex issues and has resulted in cost savings for organizations. The lowest mean score of 4.19 is for "The implementation of computerized auditing has resulted in cost savings for our organization," indicating that while cost savings are achieved, respondents are less certain about this factor compared to others.

Respondents expressed strong agreement with the benefits of these technologies, as reflected in high mean scores for various factors related to their implementation. However, the mixed results from correlation and regression analyses suggest potential challenges in their practical application. This aligns with findings by Cesarz and Szczerbak (2020), who noted that while auditors generally recognize the advantages of computerized auditing, they often lack confidence in its practical implementation. Such complexities may lead to a decrease in effectiveness despite the perceived benefits, highlighting the need for careful consideration during the integration of these technologies into audit processes.

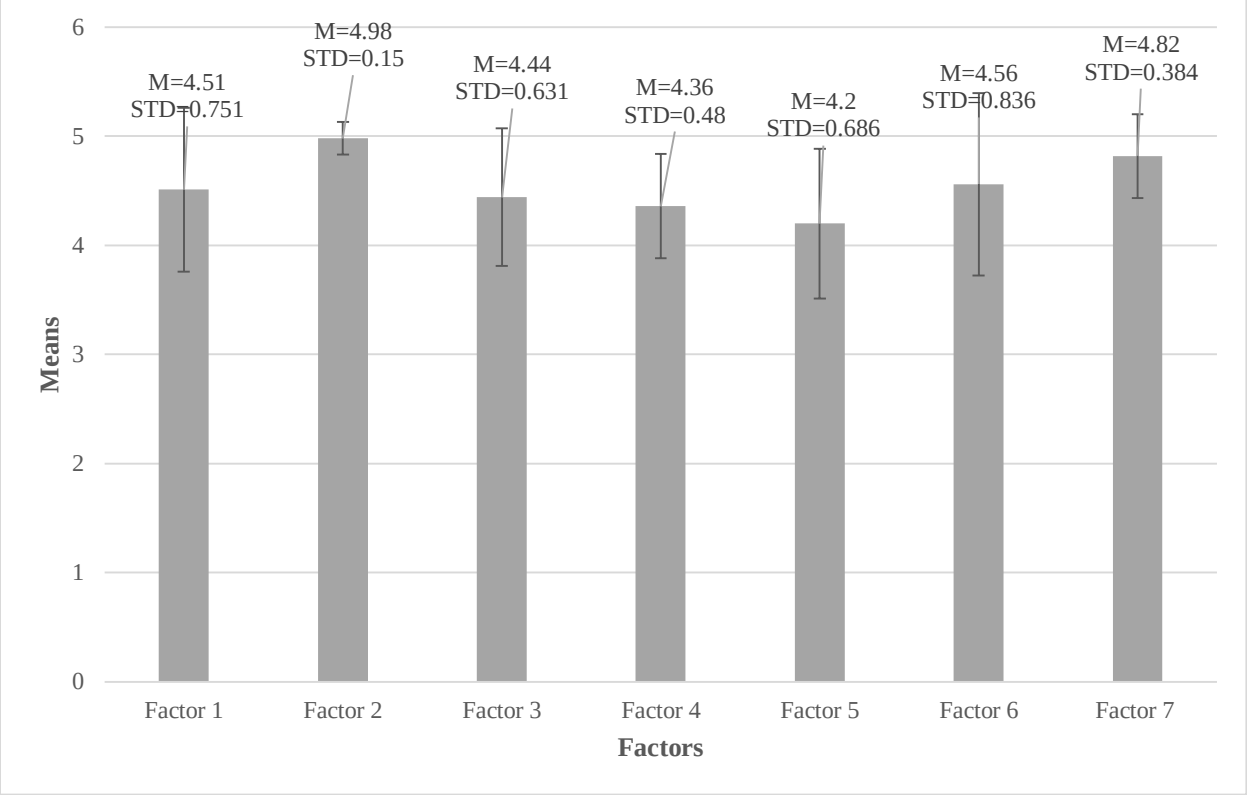
Moreover, the study supports the notion that advancements in information technology significantly improve organizational performance, as emphasized by Thottoli et al. (2019). The substantial reduction in manual errors and improved data integrity associated with computerized auditing tools corroborates Purnamasari et al. (2022), who describe these tools as essential for managing information systems and performing critical tasks like fraud detection. Despite these

advantages, some concerns remain regarding the extent of cost savings achieved through computerized auditing, suggesting that firms may need to further explore how to optimize these tools effectively. Overall, while computerized auditing has the potential to enhance audit effectiveness significantly, ongoing training and support for auditors are crucial to overcoming implementation challenges and maximizing the benefits of these technologies (Oyerogba, 2021).

4.5.2 Accounting Automation and Effectiveness of Financial Audits

FIGURE 3

Effect of Accounting Automation on the Effectiveness of Financial Audits



Key:

Factor 1: The adoption of automated accounting systems has streamlined financial data entry and processing, enhancing the efficiency of financial audits.
Factor 2: Automated reconciliation processes have reduced manual errors and improved data integrity in financial audits.
Factor 3: Automated workflow tools have facilitated smoother coordination and communication among audit teams, leading to more effective audit outcomes.
Factor 4: The implementation of accounting automation has increased the speed of financial reporting, contributing to timelier audit processes.

Factor 5: Automated systems have enhanced the accuracy of financial data analysis, aiding auditors in identifying potential risks and discrepancies.
Factor 6: The implementation of accounting automation has resulted in cost savings for our organization.
Factor 7: Overall, the adoption of accounting automation technologies has improved the effectiveness of financial audits in our organization.

The data in Figure 4.2 highlights the impact of accounting automation on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. The mean scores for the various factors related to accounting automation are all above 4, indicating a strong positive agreement among respondents regarding the benefits of automation. The highest mean score of 4.98 is for the statement "Automated reconciliation processes have reduced manual errors and improved data integrity in financial audits," suggesting that respondents perceive significant improvements in accuracy and reliability due to automation. Additionally, the overall adoption of accounting automation technologies received a mean score of 4.82, reflecting a consensus that these technologies have enhanced the effectiveness of financial audits in their organizations. The lowest mean score of 4.20 pertains to "Automated systems have enhanced the accuracy of financial data analysis, aiding auditors in identifying potential risks and discrepancies," indicating that while automation is beneficial, there may still be room for improvement in the accuracy of data analysis.

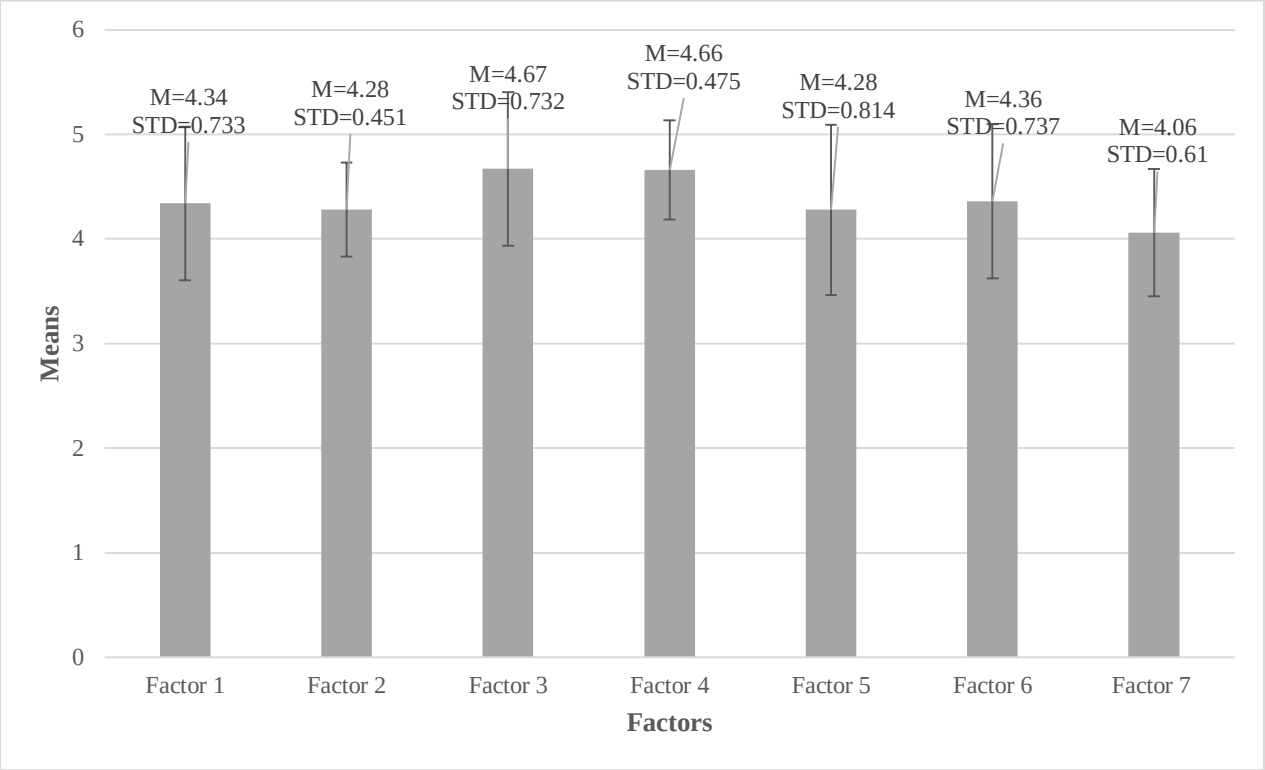
The highest mean score for automated reconciliation processes underscores the notable reduction in manual errors and improved data integrity, aligning with research by Fedyk et al. (2022), which indicates that the use of AI technology in external audits generally leads to better audit quality. This improvement is further supported by studies showing that automation can streamline financial data entry and processing, ultimately enhancing the efficiency of audits (Elhajjar et al., 2023). Moreover, the overall high mean score for the adoption of accounting automation technologies reflects a consensus among auditors regarding their positive impact on audit effectiveness.

However, despite the favorable perceptions of accounting automation, there remains room for improvement, particularly in accurately identifying risks and discrepancies. This concern is echoed in the literature, where studies have highlighted challenges such as algorithm aversion, which refers to auditors' reluctance to fully embrace automated systems despite their potential advantages (Commerford et al., 2022). Additionally, while robotic process automation (RPA) and artificial intelligence (AI) are seen as transformative technologies within accounting, there are ongoing debates about their limitations, including potential inaccuracies and inflexibility compared to human oversight (Berdiyeva et al., 2021; Baiod & Hussain, 2024). As organizations continue to integrate these technologies into their audit processes, it is crucial to address these challenges through targeted training and support for auditors to maximize the benefits of automation while mitigating risks associated with its implementation.

4.5.3 Accounting Internet Technologies and Effectiveness of Financial Audits

FIGURE 4

Effect of Accounting Internet Technologies on the Effectiveness of Financial Audits



Key:

Factor 1: Utilization of internet-based platforms has improved accessibility to financial data, facilitating more efficient audit processes.
Factor 2: Integration of online collaboration tools has enhanced communication and information sharing among audit teams and clients, leading to better audit outcomes.
Factor 3: Leveraging web-based accounting applications has facilitated remote auditing, allowing for greater flexibility and accessibility in conducting audits.
Factor 4: Internet technologies have improved the speed of data retrieval and analysis, enabling auditors to conduct more thorough and timely audits.
Factor 5: The integration of internet technologies has contributed to increased transparency in audit processes, enhancing stakeholders' confidence in financial reporting.
Factor 6: Internet technologies have facilitated more efficient client interactions, leading to smoother audit processes and better client satisfaction.
Factor 7: Overall, the adoption of accounting internet technologies has positively impacted the effectiveness of financial audits in our organization.

The data in Figure 4.3 highlights the impact of accounting internet technologies on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County.

The mean scores for the various factors associated with the utilization of internet technologies are generally favorable, with all scores above 4, indicating strong agreement among respondents regarding the benefits of these technologies. The highest mean score of 4.67 is attributed to the statement "Leveraging web-based accounting applications has facilitated remote auditing, allowing for greater flexibility and accessibility in conducting audits," reflecting the significant advantages of remote capabilities in the auditing process. Additionally, the mean score of 4.66 for "Internet technologies have improved the speed of data retrieval and analysis, enabling auditors to conduct more thorough and timely audits" further emphasizes the efficiency gains brought by these tools. Conversely, the lowest mean score of 4.06 is for "Overall, the adoption of accounting internet technologies has positively impacted the effectiveness of financial audits in our organization," suggesting that while the specific benefits are recognized, there may be some reservations regarding the overall impact.

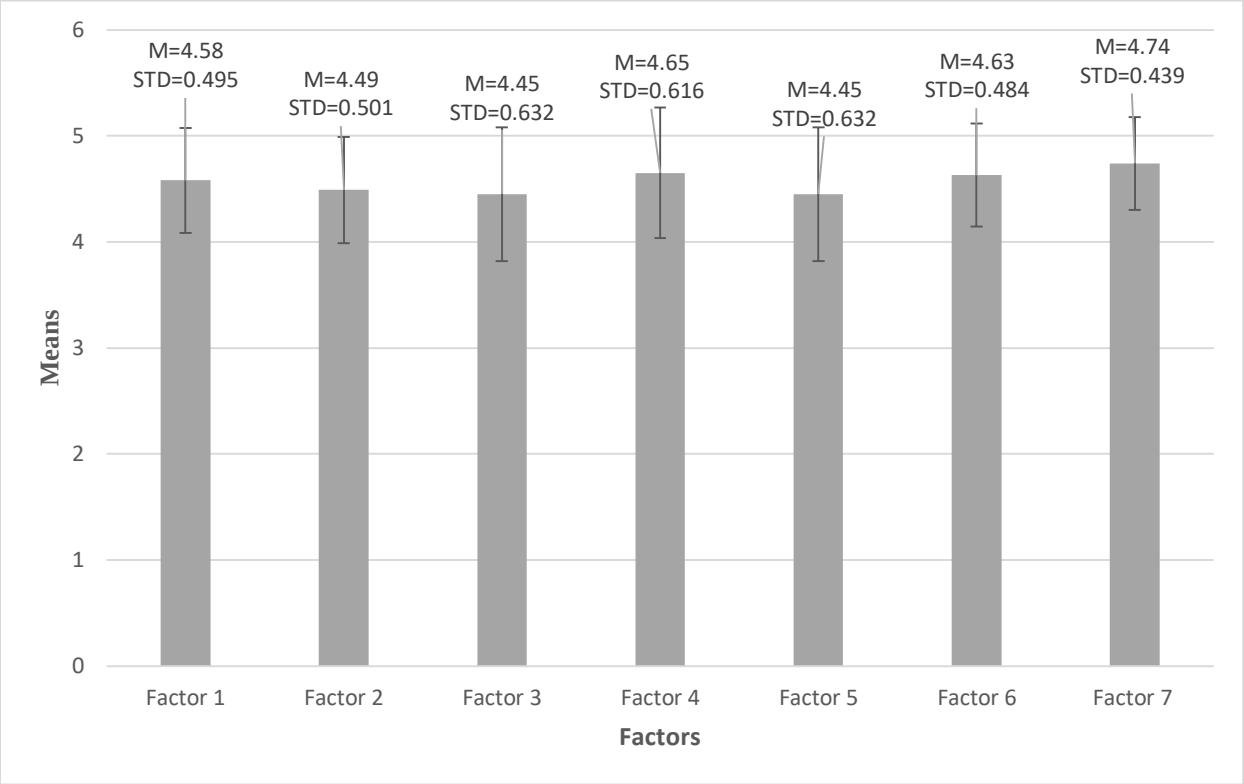
The findings on the impact of accounting internet technologies on the effectiveness of financial audits reveal a generally positive perception among respondents, with high mean scores indicating strong agreement regarding the benefits of these technologies. The significant advantages of remote auditing facilitated by web-based applications reflect a trend noted in the literature, where the integration of Internet technologies is increasingly recognized for its potential to enhance audit efficiency and flexibility (PwC, 2018). Specifically, the ability to improve data accessibility and facilitate communication among audit teams aligns with research by Ovami and Muda (2023), who emphasize that adopting sustainable analytics practices can lead to improved efficiency and effectiveness in audit tasks. Furthermore, the improvements in data retrieval speed and analysis underscore the transformative role of technology in enabling auditors to conduct more thorough and timely audits, as highlighted by Barr-Pulliam et al. (2021).

However, despite these positive outcomes, the lowest mean score regarding the overall impact of accounting internet technologies on audit effectiveness suggests that some skepticism remains. Vuković et al. (2023) point out that risks associated with data and technological tools pose significant challenges for audit firms, which may contribute to reservations about fully embracing these technologies. Additionally, Eulerich et al. (2022) found that many auditors struggle to understand the significance of technological innovations, indicating a knowledge gap that could hinder effective implementation. This highlights the necessity for ongoing training and support for audit professionals to ensure they can leverage internet technologies effectively.

4.5.4 Decision Support Technology and Effectiveness of Financial Audits

FIGURE 5

Effect of Decision Support Technology on the Effectiveness of Financial Audits



Key:

Factor 1: Implementation of decision support systems (DSS) has improved data analysis capabilities, allowing for more comprehensive evaluation of financial information.
Factor 2: Integration of DSS tools has assisted auditors in identifying trends and patterns in financial data, enhancing the detection of anomalies and irregularities.
Factor 3: Utilization of artificial intelligence (AI) and machine learning algorithms has facilitated predictive modeling, enabling auditors to anticipate potential risks and issues in financial audits.
Factor 4: Decision support technology has improved decision-making during the audit process, leading to more accurate and informed conclusions.
Factor 5: Integration of DSS has enhanced collaboration among audit team members, facilitating knowledge sharing and collective problem-solving.
Factor 6: Decision support technology has improved the efficiency of audit processes, resulting in faster turnaround times and increased productivity.
Factor 7: Overall, the adoption of decision support technology has positively impacted the effectiveness of financial audits in our organization.

The data in Figure 4.4 presents the impact of decision support technology (DST) on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County.

The mean scores for the various factors indicate a strong positive perception among respondents regarding the benefits of implementing DST. The highest mean score of 4.74 is associated with the statement "Overall, the adoption of decision support technology has positively impacted the effectiveness of financial audits in our organization," suggesting a consensus that DST significantly enhances audit effectiveness. Additionally, the statement "Integration of DSS tools has assisted auditors in identifying trends and patterns in financial data, enhancing the detection of anomalies and irregularities" received a mean score of 4.49, indicating that respondents recognize the value of these tools in improving data analysis capabilities. The lowest mean score of 4.45 is for both "Utilization of artificial intelligence (AI) and machine learning algorithms has facilitated predictive modeling, enabling auditors to anticipate potential risks and issues in financial audits" and "Integration of DSS has enhanced collaboration among audit team members, facilitating knowledge sharing and collective problem-solving," suggesting that while these technologies are beneficial, there may be some variability in their perceived impact.

Respondents indicated substantial benefits from implementing decision support systems (DSS), particularly in improving data analysis capabilities and enhancing decision-making accuracy. The high mean scores, especially for the overall impact of DST, suggest a consensus among auditors that these technologies significantly contribute to more accurate and informed conclusions during the audit process. This aligns with the historical perspective on DSS, which has evolved since the 1970s to include advanced tools that integrate knowledge reasoning with model calculations, thus enhancing decision-making in complex environments (Jia et al., 2022).

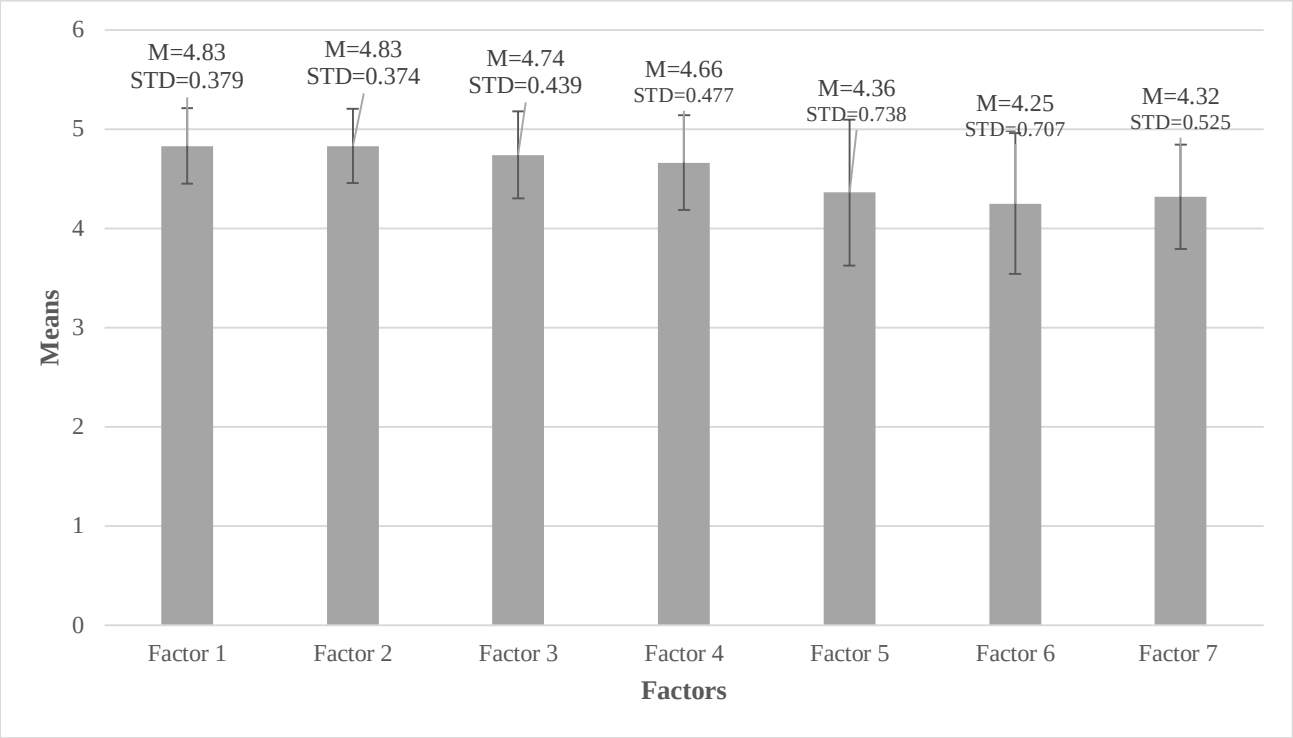
Despite the overall positive perception, some areas, such as the utilization of artificial intelligence (AI) and machine learning for predictive modeling, received slightly lower mean scores, indicating variability in perceived effectiveness. This reflects findings by Meredith et al.

(2020), who noted that while big data analytics can enhance auditors' understanding and analysis of financial information, the complexity of data can also pose challenges in effectively identifying irregularities. Furthermore, while DST facilitates increased collaboration among audit teams and improves efficiency, Frey and Osborne (2017) emphasize that technology integration must be managed carefully to enhance the relevance and value of auditing practices. Overall, while DST shows promise in enhancing audit effectiveness, ongoing training and adaptation are necessary to fully leverage these technologies and address any implementation challenges that may arise (Hashid & Almaqtari, 2024).

4.5.4 Effectiveness of Financial Audits

FIGURE 6

Effectiveness of Financial Audits



Key:

Factor 1: The accuracy of financial audits conducted by our organization meets industry standards.
Factor 2: Our organization's financial audits are conducted in a timely manner, meeting deadlines set by regulatory bodies and stakeholders.
Factor 3: The reliability of financial information provided in audit reports is consistently high.
Factor 4: Financial audits conducted by our organization effectively identify and address areas of financial risk.
Factor 5: The audit findings and recommendations provided by our organization contribute to improved financial management practices within client organizations.
Factor 6: Stakeholders (e.g., investors, regulators, shareholders) trust the findings and conclusions of financial audits conducted by our organization.
Factor 7: Overall, our organization's financial audits effectively fulfill their intended purpose of providing assurance on financial reporting and accountability.

The data presented in Figure 4.5 assesses the effectiveness of financial audits conducted by organizations, with a total of 174 respondents. The mean scores for various factors related to audit effectiveness are notably high, indicating strong agreement among respondents regarding the quality of their financial audits. Both the accuracy of financial audits and the timeliness of their

completion received the highest mean score of 4.83, suggesting that respondents feel confident that their audits meet industry standards and deadlines set by regulatory bodies. The reliability of financial information in audit reports also scored well, with a mean of 4.74, indicating a high level of trust in the audit findings. However, the lowest mean score of 4.25 pertains to the statement "Stakeholders (e.g., investors, regulators, shareholders) trust the findings and conclusions of financial audits conducted by our organization," suggesting that while the audits are effective, there may be some concerns regarding stakeholder trust.

The highest mean scores were observed in the accuracy and timeliness of audits, reflecting strong confidence in meeting industry standards and deadlines. These results align with the empirical literature emphasizing the importance of IT advancements in auditing. Cesarz and Szczerbak (2020) highlight that auditors generally view their role positively, while Thottoli et al. (2019) underscore how computerized auditing improves performance by enhancing the accuracy and reliability of audits. This adoption of IT tools not only ensures adherence to regulatory timelines but also strengthens auditors' ability to identify and mitigate risks, thereby reinforcing audit effectiveness.

However, the relatively lower score for stakeholder trust in audit findings suggests room for improvement in gaining full confidence from external parties. This finding echoes concerns in by Karger and Kureljusic (2023) about the gap between audit effectiveness and stakeholder perception. Despite technological advancements, Karger and Kureljusic highlight skepticism among external stakeholders about the practical application of computerized auditing. Stakeholder trust is vital for ensuring that audits fulfill their role in enhancing corporate governance and financial transparency. As noted by Bonrath and Eulerich (2024), computerized tools can help

uncover fraud and boost audit quality, but their potential must be effectively communicated to enhance stakeholder confidence in audit results.

4.7 Diagnostic Tests

4.7.1 Collinearity Diagnostics

TABLE 7

Collinearity Diagnostics

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	Computerized Auditing	Accounting Automation	Accounting Internet Technologies	Decision Support Technologies
1	1	4.989	1.000	.00	.00	.00	.00	.00
	2	.007	26.108	.08	.00	.00	.49	.00
	3	.003	43.545	.29	.01	.00	.39	.19
	4	.001	66.090	.20	.12	.01	.03	.47
	5	9.132E-5	233.734	.43	.87	.99	.08	.34

a. Dependent Variable: Effectiveness of Financial Audits

The collinearity diagnostics presented in Table 16 provide insights into the multicollinearity among the predictors—Computerized Auditing, Accounting Automation, Accounting Internet Technologies, and Decision Support Technologies about their impact on the effectiveness of financial audits. The eigenvalues indicate the variance captured by each dimension, with the first dimension showing an eigenvalue of 4.989 and a condition index of 1.000, suggesting a strong and stable relationship among the predictors. However, as we move to the second dimension, the eigenvalue drops to 0.007 with a condition index of 26.108, indicating potential multicollinearity issues. The variance proportions reveal that 49% of the variance in the second dimension is attributed to Accounting Automation, which has a high variance proportion of 99% in the fifth dimension with a condition index of 233.734. This suggests that Accounting Automation is highly correlated with other predictors, raising concerns about its independence in the model. Given these

findings, the data justifies the use of linear regression, as the significant relationships among the predictors and their impact on the dependent variable—Effectiveness of Financial Audits—indicate that a linear model is appropriate for understanding how digital transformation influences audit effectiveness. The presence of multicollinearity, while a concern, does not negate the model's overall validity but suggests careful interpretation of the coefficients.

4.7.2 Tests for Heteroskedasticity

TABLE 8

White Test for Heteroskedasticity

Chi-Square	df	Sig.
137.228	9	.000

a. Dependent variable: Effectiveness of Financial Audits

b. Tests the null hypothesis that the variance of the errors does not depend on the values of the independent variables.

c. Design: Intercept + Computerized Auditing + Accounting Automation + Accounting Internet Technologies + Decision Support Technology + Computerized Auditing * Computerized Auditing + Computerized Auditing * Accounting Automation + Computerized Auditing * Accounting Internet Technologies + Computerized Auditing * Decision Support Technology + Accounting Automation * Accounting Automation + Accounting Automation * Accounting Internet Technologies + Accounting Automation * Decision Support Technology + Accounting Internet Technologies * Accounting Internet Technologies + Accounting Internet Technologies * Decision Support Technology + Decision Support Technology * Decision Support Technology

TABLE 9

Modified Breusch-Pagan Test for Heteroskedasticity

Chi-Square	df	Sig.
31.896	1	.000

a. Dependent variable: Effectiveness of Financial Audits

b. Tests the null hypothesis that the variance of the errors does not depend on the values of the independent variables.

c. Predicted values from design: Intercept + Computerized Auditing + Accounting Automation + Accounting Internet Technologies + Decision Support Technology

TABLE 10

Breusch-Pagan Test for Heteroscedasticity

Chi-Square	df	Sig.
28.941	1	.000

a. Dependent variable: Effectiveness of Financial Audits

b. Tests the null hypothesis that the variance of the errors does not depend on the values of the independent variables.

c. Predicted values from design: Intercept + Computerized Auditing + Accounting Automation + Accounting Internet Technologies + Decision Support Technology

TABLE 11

F Test for Heteroskedasticity

F	df1	df2	Sig.
38.607	1	172	.000

a. Dependent variable: Effectiveness of Financial Audits

b. Tests the null hypothesis that the variance of the errors does not depend on the values of the independent variables.

c. Predicted values from design: Intercept + Computerized Auditing + Accounting Automation + Accounting Internet Technologies + Decision Support Technology

TABLE 12

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	16.520[a]	4	4.130	306.853	.000
Intercept	.123	1	.123	9.150	.003
Computerized Auditing	1.610	1	1.610	119.589	.000
Accounting Automation	1.638	1	1.638	121.719	.000
Accounting Internet Technologies	3.774	1	3.774	280.417	.000
Decision Support Technology	.218	1	.218	16.224	.000
Error	2.275	169	.013		
Total	3651.122	174			
Corrected Total	18.795	173			

a. R Squared = .879 (Adjusted R Squared = .876)

b. Dependent Variable: Effectiveness of Financial Audits

TABLE 13

Parameter Estimates with Robust Standard Errors

Parameter	B	Robust Std. Error[a]	t	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	.587	.131	4.486	.000	.329	.846
Computerized Auditing	-1.203	.145	-8.314	.000	-1.489	-.918
Accounting Automation	1.867	.197	9.465	.000	1.478	2.257
Accounting Internet Technologies	.437	.007	59.119	.000	.423	.452
Decision Support Technology	-.211	.047	-4.527	.000	-.302	-.119

a. HC3 method
b. Dependent Variable: Effectiveness Financial Audits

The results of the tests for heteroskedasticity presented in Tables 17 to 22 indicate significant issues with the assumption of constant variance in the residuals, which is crucial for the validity of linear regression analysis. The White Test for heteroskedasticity shows a Chi-Square statistic of 137.228 with 9 degrees of freedom and a significance level of .000, leading to the rejection of the null hypothesis that the variance of the errors does not depend on the values of the independent variables. Similarly, the Modified Breusch-Pagan Test yields a Chi-Square value of 31.896 ($p < 0.001$) and the Breusch-Pagan Test shows a Chi-Square of 28.941 ($p < 0.001$), both confirming the presence of heteroskedasticity. The F Test for heteroskedasticity further corroborates these findings with an F-statistic of 38.607 ($p < 0.001$), indicating that the variance of the errors is significantly related to the independent variables.

Given these results, the presence of heteroskedasticity suggests that the ordinary least squares (OLS) estimates may be inefficient, and the standard errors could be biased, leading to unreliable hypothesis tests. To address this, robust standard errors were employed in the parameter estimates, as shown in Table 4.18. The robust standard errors provide more reliable estimates of

the coefficients, allowing for valid inference even in the presence of heteroskedasticity. The coefficients for the predictors, such as Computerized Auditing (-1.203, $p < 0.001$) and Accounting Automation (1.867, $p < 0.001$), remain significant, indicating that the relationships between these variables and the effectiveness of financial audits are robust despite the heteroskedasticity.

The tests for heteroskedasticity justify the choice of linear regression with robust standard errors in this study, as they allow for a more accurate assessment of the impact of digital transformation on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. The significant relationships identified among the independent variables and the dependent variable reinforce the study's objective of understanding how these technological advancements influence audit quality and efficiency.

4.7.3 Normality Test

TABLE 14

Tests of Normality: Computerized Auditing and Effectiveness of Financial Audits

	Computerized Auditing	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Effectiveness of Financial Audits	4.00	.	13	.	.	13	.
	4.14	.	3	.	.	3	.
	4.29	.	26	.	.	26	.
	4.43	.315	42	.000	.735	42	.000
	4.57	.257	43	.000	.830	43	.000
	4.86	.	18	.	.	18	.
	5.00	.452	29	.000	.561	29	.000

a. Lilliefors Significance Correction

TABLE 15

Tests of Normality: Accounting Automation and Effectiveness of Financial Audits

	Accounting Automation	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Effectiveness of Financial Audits	4.00	.492	16	.000	.484	16	.000
	4.29	.	27	.	.	27	.
	4.57	.258	84	.000	.803	84	.000
	4.86	.276	47	.000	.716	47	.000

a. Lilliefors Significance Correction

TABLE 16

Tests of Normality: Accounting Internet Technologies and Effectiveness of Financial Audits

	Accounting Internet Technologies	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Effectiveness Financial Audits	3.29	.	27	.	.	27	.
	4.00	.	3	.	.	3	.
	4.14	.	13	.	.	13	.
	4.57	.316	107	.000	.749	107	.000
	4.71	.	5	.	.	5	.
	5.00	.	18	.	.	18	.

a. Lilliefors Significance Correction

b. Effectiveness Financial Audits is constant when Accounting Internet Technologies = 4.43. It has been omitted.

TABLE 17

Tests of Normality: Decision Support Technology and Effectiveness of Financial Audits

	Decision Support Technology	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Effectiveness	3.57	.	13	.	.	13	.
Financial Audits	4.00	.	3	.	.	3	.
	4.14	.	27	.	.	27	.
	4.57	.492	26	.000	.484	26	.000
	4.71	.492	46	.000	.486	46	.000
	4.86	.268	41	.000	.834	41	.000
	5.00	.	18	.	.	18	.

a. Lilliefors Significance Correction

The normality tests conducted for the variables related to computerized auditing, accounting automation, accounting internet technologies, and decision support technology about the effectiveness of financial audits are summarized in Tables 23 to 26. The results from the Kolmogorov-Smirnov and Shapiro-Wilk tests indicate significant deviations from normality across the different measures. For instance, in the normality test for Computerized Auditing, the Shapiro-Wilk statistic for the effectiveness of financial audits is 0.735 with a significance level of .000, indicating that the data does not follow a normal distribution. Similar results are observed for other variables, such as Accounting Automation, which has a Shapiro-Wilk statistic of 0.484 ($p < 0.001$), and Decision Support Technology, with a Shapiro-Wilk statistic of 0.484 ($p < 0.001$). These findings suggest that the residuals from the regression analysis may not be normally distributed, which is a key assumption for linear regression analysis.

Given the significant departures from normality, the choice of linear regression remains justified, particularly when robust standard errors are employed to mitigate the effects of non-normality on the estimates. The presence of heteroskedasticity, as indicated by analyses, further supports the need for robust methods in regression analysis. The results from the normality tests

highlight the importance of validating the assumptions underlying linear regression, ensuring that the conclusions drawn about the effects of digital transformation on the effectiveness of financial audits are reliable.

4.6 Inferential Statistics

4.6.1 Correlation Analysis

TABLE 18

Correlations

		Computerized Auditing	Accounting Automation	Accounting Internet Technologies	Decision Support Technologies	Effectiveness Financial of Audits
Computerized Auditing	Pearson Correlation	1	.949**	.585**	.768**	.516**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	174	174	174	174	174
Accounting Automation	Pearson Correlation	.949**	1	.697**	.876**	.692**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	174	174	174	174	174
Accounting Internet Technologies	Pearson Correlation	.585**	.697**	1	.714**	.884**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	174	174	174	174	174
Decision Support Technologies	Pearson Correlation	.768**	.876**	.714**	1	.685**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	174	174	174	174	174
Effectiveness of Financial Audits	Pearson Correlation	.516**	.692**	.884**	.685**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	174	174	174	174	174

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

The correlation analysis presented in Table 12 examines the relationships between various aspects of digital transformation—specifically computerized auditing, accounting automation, accounting

internet technologies, decision support technologies—and the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. The results indicate strong positive correlations among all factors, with the highest correlation of 0.949 ($p < 0.01$) between computerized auditing and accounting automation, suggesting a very strong relationship where improvements in one are associated with improvements in the other. Accounting internet technologies show the strongest correlation of 0.884 with the effectiveness of financial audits, followed by accounting automation with a correlation of 0.692. Decision support technologies have a correlation of 0.685 with audit effectiveness. The lowest correlation is 0.516 between computerized auditing and the effectiveness of financial audits, indicating that while there is a positive relationship, it is comparatively weaker than the correlations with other factors.

The highest correlation between computerized auditing and accounting automation is supported by Cesarz and Szczerbak (2020), who argue that technological integration in auditing streamlines processes and improves accuracy, enabling auditors to perform their tasks more efficiently. Thottoli et al. (2019) also highlight how computerized auditing can significantly elevate audit quality, especially when paired with automation technologies. The high correlation between accounting internet technologies and audit effectiveness further reflects the importance of internet-based tools in modern accounting practices, as Karger and Kureljusic (2023) suggest that such technologies enhance real-time data access and reporting capabilities, thus improving overall audit quality. Despite the generally strong correlations, the comparatively weaker correlation between computerized auditing and audit effectiveness suggests that while computerized systems are beneficial, they may not fully realize their potential without the support of other technologies. This finding echoes concerns raised by Bonrath and Eulerich (2024), who note that while digital tools

like computerized auditing can uncover fraud and improve audit quality, their success largely depends on effective implementation and integration with other decision support systems.

4.6.2 Regression Analysis

TABLE 19

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.938[a]	.879	.876	.11601

a. Predictors: (Constant), Decision Support Technologies, Accounting Internet Technologies, Computerized Auditing, Accounting Automation

The regression analysis results presented in 13 indicate a strong relationship between the predictors—Decision Support Technologies, Accounting Internet Technologies, Computerized Auditing, and Accounting Automation—and the effectiveness of financial audits. The model shows an R value of 0.938, suggesting a very high correlation between the predictors and the effectiveness of financial audits. The R Square value of 0.879 indicates that approximately 87.9% of the variance in audit effectiveness can be explained by these four digital transformation factors. The adjusted R Square value of 0.876 accounts for the number of predictors in the model, reinforcing the model's robustness. The standard error of the estimate is 0.11601, which indicates the average distance that the observed values fall from the regression line.

TABLE 20

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.520	4	4.130	306.853	.000[b]
	Residual	2.275	169	.013		
	Total	18.795	173			

a. Dependent Variable: Effectiveness of Financial Audits

b. Predictors: (Constant), Decision Support Technologies, Accounting Internet Technologies, Computerized Auditing, Accounting Automation

The regression analysis results presented in table 14 indicate the overall fit of the model examining the impact of digital transformation on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. The regression model shows a sum of squares for regression of 16.520 with 4 degrees of freedom, resulting in a mean square of 4.130. This leads to an F-statistic of 306.853, which is highly significant with a p-value of .000 ($p < 0.01$), indicating that the model is statistically significant and that the predictors—Decision Support Technologies, Accounting Internet Technologies, Computerized Auditing, and Accounting Automation—collectively have a significant effect on the effectiveness of financial audits. The low residual sum of squares of 2.275 and a mean square of .013 suggest that the model has a good fit, as the residual variance is minimal in comparison to the regression variance.

Accounting Internet Technologies, Computerized Auditing, and Accounting Automation—collectively contribute to the effectiveness of financial audits. This finding is consistent with existing literature, which emphasizes the critical role of digital transformation in enhancing audit quality. For example, Perols and Lougee (2011) highlight how Decision Support Technologies provide auditors with advanced analytics, improving risk assessments and decision-making processes. Similarly, Anastasakis et al. (2022) argue that the integration of Accounting Internet Technologies allows for real-time data exchange and error minimization, resulting in more accurate and timely audits.

The low residual sum of squares further supports the model's strong fit, indicating minimal residual variance, which suggests that most of the variation in audit effectiveness is explained by the predictors. This aligns with observations made by Thottoli et al. (2019), who emphasize that tools such as Accounting Automation and Computerized Auditing enhance accuracy, reduce human error, and increase audit efficiency. The statistically significant p-value also reflects the

growing consensus that digital tools are essential for the future of auditing. According to Bonrath and Eulerich (2024), computerized auditing and automation technologies allow auditors to manage large volumes of data, leading to improved audit outcomes. Hence, the regression results underscore the necessity of incorporating digital transformation technologies in audit practices to enhance their overall effectiveness.

Table 4.11: Coefficients[a]

TABLE 21

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.587	.194		3.025	.003		
Computerized Auditing	-1.203	.110	-1.055	-10.936	.000	.077	12.999
Accounting Automation	1.867	.169	1.441	11.033	.000	.042	23.830
Accounting Internet Technologies	.437	.026	.676	16.746	.000	.440	2.274
Decision Support Technologies	-.211	.052	-.250	-4.028	.000	.186	5.386

a. Dependent Variable: Effectiveness of Financial Audits

The regression coefficients presented in table 15 reveal the impact of various digital transformation factors on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. The constant term is 0.587 ($p = 0.003$), indicating baseline effectiveness when all predictors are zero. Among the predictors, Computerized Auditing has a negative unstandardized coefficient of -1.203 ($p < 0.001$), suggesting that increases in computerized auditing are associated with a decrease in audit effectiveness, which may indicate challenges in implementation or integration. In contrast, Accounting Automation has a positive coefficient of 1.867 ($p < 0.001$), indicating that it significantly enhances audit effectiveness. Accounting Internet Technologies also

shows a positive effect with a coefficient of 0.437 ($p < 0.001$), demonstrating its contribution to improving audit processes. Decision Support Technologies has a negative coefficient of -0.211 ($p < 0.001$), which suggests that while it is beneficial, its effect is less favorable compared to the other factors. The collinearity statistics indicate potential multicollinearity issues, particularly with Accounting Automation (VIF = 23.830) and Computerized Auditing (VIF = 12.999), which could affect the reliability of the coefficient estimates. Overall, these findings highlight the complex relationships between digital transformation technologies and the effectiveness of financial audits, supporting the study's objective of understanding how these technologies impact audit quality and efficiency.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

Chapter five provides a summary of findings, conclusions, and recommendations. This chapter is organized into the following sections: summary, conclusions, recommendations, limitations of the study, and suggestions for future research.

5.2 Summary

5.2.1 Computerized Auditing and Effectiveness of Financial Audits

The study indicates that while computerized auditing techniques are perceived to enhance audit effectiveness, correlation, and regression analyses reveal mixed results. Respondents strongly agreed that computerized auditing improves risk identification, with a mean score of 4.70, but regression analysis showed a negative coefficient of -1.203, suggesting potential challenges in implementation that may decrease effectiveness. Conversely, accounting automation and internet technologies positively impact audit processes, enhancing accuracy and efficiency. Accounting automation received a positive coefficient of 1.867, indicating significant improvements in audit effectiveness. Overall, the findings highlight the complexities of integrating digital transformation technologies into financial audits, emphasizing the need for careful implementation to maximize benefits.

5.2.2 Accounting Automation and Effectiveness of Financial Audits

The analysis of accounting automation reveals a strong positive correlation with audit effectiveness, with all related factors receiving mean scores above 4, indicating respondents' agreement on its benefits. The highest mean score of 4.98 highlights significant reductions in manual errors and improved data integrity due to automated reconciliation processes, while the

overall adoption score of 4.82 reflects enhanced audit effectiveness. Correlation analysis shows a robust relationship (0.692) between accounting automation and audit effectiveness, and regression analysis further confirms this with a positive coefficient of 1.867 ($p < 0.001$), underscoring the critical role of automated systems in improving efficiency and accuracy in financial audits. However, the lowest mean score of 4.20 suggests there is still room for improvement in accurately identifying risks and discrepancies through automation.

5.2.3 Accounting Internet Technologies and Effectiveness of Financial Audits

The findings on accounting internet technologies indicate a positive influence on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County, with all factors related to their use receiving mean scores above 4. The highest mean score of 4.67 highlights the significant flexibility and accessibility improvements facilitated by remote auditing through web-based applications. Correlation analysis reveals a strong relationship (0.884) between internet technologies and audit effectiveness, suggesting that these tools enhance data accessibility and communication among audit teams, leading to more thorough audits. Regression analysis further confirms this positive contribution with a coefficient of 0.437 ($p < 0.001$), indicating that the integration of accounting internet technologies significantly improves overall audit processes, although the overall adoption score of 4.06 suggests some reservations about their comprehensive impact on audit effectiveness.

5.2.4 Decision Support Technology and Effectiveness of Financial Audits

The findings on decision support technology (DST) reveal its significant positive impact on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County, with all mean scores exceeding 4, particularly a high score of 4.74 indicating strong consensus on its overall effectiveness. The implementation of DSS notably enhances data analysis capabilities

(mean = 4.58) and decision-making accuracy (mean = 4.65), while the use of artificial intelligence (AI) for predictive modeling received a slightly lower mean score of 4.45, still reflecting its value in identifying potential risks. Correlation analysis shows a strong positive relationship (0.685) between DST and audit effectiveness, indicating that these technologies aid in more accurate audit conclusions. However, regression analysis presents a negative coefficient of -0.211 ($p < 0.001$), suggesting that despite their benefits, DST's impact on audit effectiveness is less favorable compared to other factors, highlighting the complexities involved in their implementation and integration into audit processes.

5.3 Conclusions

5.3.1 Computerized Auditing and Effectiveness of Financial Audits

The findings suggest that while computerized auditing techniques are generally perceived to enhance audit effectiveness, the correlation and regression analyses reveal mixed results, leading the study to conclude that potential challenges in their implementation. Specifically, although respondents noted improvements in risk identification, the regression analysis showed a concerning negative coefficient, leading the study to conclude that increased reliance on computerized auditing may inadvertently decrease effectiveness.

While this conclusion acknowledges improvements in areas such as risk identification and efficiency, the negative coefficient in the regression analysis suggests potential drawbacks in over-reliance on computerized auditing. This finding mirrors Cesarz and Szczerbak's (2020) observation that auditors are generally positive about computerized auditing but remain uncertain about its practical application. Thottoli et al. (2019) and Abdulwahab Mujalli (2024) highlight enhanced audit effectiveness and efficiency from these tools, yet studies like those of Mai et al. (2024) and Karger and Kureljusic (2023) caution that computerized auditing's actual usage falls short of

expectations, reflecting the mixed results seen in this study. This suggests that while computerized auditing has clear potential, proper implementation and human oversight remain crucial for its success.

5.3.2 Accounting Automation and Effectiveness of Financial Audits

The study concludes that accounting automation plays a crucial role in enhancing audit effectiveness, as evidenced by strong positive correlations and high mean scores reflecting respondents' agreement on its benefits. The significant reduction in manual errors and improved data integrity highlight the effectiveness of automated reconciliation processes. While the overall adoption of automation is viewed positively, the study concludes that there remains room for improvement in accurately identifying risks and discrepancies.

The conclusion of this study, which highlights the strong positive correlation between accounting automation and audit effectiveness, aligns with findings in previous research. For instance, Fedyk et al. (2022) emphasized that AI technology in audits improves audit quality, corroborating this study's observation of enhanced accuracy and reduced manual errors due to automation. Similarly, Cooper et al. (2022) found that Robotic Process Automation (RPA) has positively impacted efficiency within Big 4 firms, reflecting the benefits noted in this study's high adoption score. However, the study also identifies room for improvement in risk identification, which resonates with concerns from Commerford et al. (2022) regarding algorithm aversion, where auditors may hesitate to fully embrace automation despite its advantages. These mixed results suggest that while automation significantly enhances audit effectiveness, its full potential may not yet be realized due to implementation challenges.

5.3.3 Accounting Internet Technologies and Effectiveness of Financial Audits

The study concludes that accounting internet technologies have a positive influence on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. Respondents expressed strong agreement about the benefits of these technologies, particularly in enhancing flexibility and accessibility through remote auditing. The correlation analysis indicates a robust relationship between internet technologies and audit effectiveness, suggesting that these tools improve data accessibility and communication among audit teams, leading to more thorough audits. However, some reservations about the overall impact on audit effectiveness were noted, indicating that while these technologies contribute positively, the study concludes that there may still be areas for improvement in their comprehensive application within audit processes.

The conclusion that accounting internet technologies positively influence financial audit effectiveness in small and medium-sized accounting firms aligns with several studies that emphasize the benefits of digital tools in audit processes. For example, Barr-Pulliam et al. (2021) argue that internet technologies enhance audit effectiveness by enabling direct testing of more transactions, consistent with this study's findings on improved data accessibility and communication. Similarly, Ovami and Muda (2023) highlight that sustainable analytics improve audit efficiency and risk awareness. However, like this study's acknowledgment of remaining areas for improvement, Vuković et al. (2023) and Eulerich et al. (2022) note challenges related to the risks and underutilization of audit technologies, particularly by audit teams that struggle to fully leverage their capabilities. Thus, while internet technologies enhance audit effectiveness, their comprehensive application still faces obstacles in practice.

5.3.4 Decision Support Technology and Effectiveness of Financial Audits

The findings on DST indicate a significant positive impact on the effectiveness of financial audits in small and medium-sized accounting firms in Nairobi County. Respondents recognize the benefits of implementing DST, particularly in enhancing data analysis capabilities and decision-making accuracy. However, despite the overall positive perception, regression analysis reveals a less favorable impact compared to other factors, leading the study to conclude that there could be complexities in the implementation and integration of these technologies. This highlights the need for careful consideration and improvement in utilizing DST to maximize its benefits in auditing processes while addressing any challenges that may arise.

The conclusion that DST positively impacts audit effectiveness but faces complexities in implementation aligns with findings in the existing literature. Studies such as those by Frey and Osborne (2017) and Hashid and Almaqtari (2024) similarly emphasize that while DST and digitalization streamline data gathering and enhance decision-making accuracy, the full integration of these technologies into auditing processes remains challenging. Moreover, like the regression analysis in this study, Meredith et al. (2020) caution that the sheer volume and complexity of data in DSTs can impede the discovery of audit evidence, highlighting the need for improved implementation. This aligns with Tiberius and Hirth (2019), who argue that while digital tools support auditors, significant shifts in audit practices will require time and adaptation.

5.4 Recommendations

5.4.1 General Recommendations

To enhance the effectiveness of financial audits in small and medium-sized accounting firms, organizations should prioritize the careful implementation of computerized auditing techniques. While these technologies offer many benefits, their effectiveness varies, so firms must invest in

continuous training and support for staff to address challenges and maximize potential. Regular evaluations of computerized systems should also be conducted to identify areas for improvement and ensure the systems maintain high performance in risk identification and data integrity. This proactive approach will help mitigate the risks of over-reliance on technology, which could otherwise decrease audit effectiveness.

Moreover, firms should leverage advancements in accounting automation and internet technologies, given their strong correlation with improved audit outcomes. By refining automated processes, organizations can improve the accuracy of risk detection and data analysis. Continuous staff training will ensure audit teams are capable of utilizing these technologies effectively, leading to more accurate, thorough, and efficient audits.

5.4.2 Policy Recommendations

At the policy level, firms should establish protocols that mandate integrating decision-support technologies in auditing processes. These systems will enhance data analysis and improve decision-making accuracy by offering deeper insights into financial discrepancies and risks. Policies should also be put in place to require ongoing professional development and training in auditing technologies. Ensuring that audit staff are regularly upskilled will maintain high standards of audit quality and effectiveness across the firm.

Additionally, policies should mandate periodic reviews of computerized auditing systems to ensure they align with evolving industry standards and technological advancements. These evaluations will help firms avoid potential issues and continuously enhance their auditing processes, ensuring compliance and competitiveness in an increasingly digital financial landscape.

5.5 Limitations of the Study

The study has several limitations. First, the study was conducted within a limited geographical area (Nairobi County), which may restrict the generalizability of the findings to other regions with different levels of technological adoption or audit practices. Second, while the study evaluated key aspects of digital transformation, it may have overlooked other technological advancements or external factors (such as cybersecurity threats) that could affect the audit process. Lastly, the cross-sectional design only captured a snapshot of the current state of digital transformation, leaving out the possibility of observing long-term effects.

5.6 Suggestions for Further Studies

Future research could address these limitations by conducting longitudinal studies that examine the long-term impact of digital transformation on audit effectiveness over time. This would provide a more dynamic understanding of how accounting firms adapt to new technologies and the evolving nature of digital tools in audits. Expanding the scope to include a wider geographic area or comparing different regions may offer more generalizable insights. Additionally, future studies could explore the impact of emerging technologies like blockchain or artificial intelligence on audit practices, as these were not thoroughly examined in the current study. Finally, future research could incorporate qualitative methods, such as interviews or case studies, to gain deeper insights into the challenges and opportunities that accounting firms face when integrating digital tools.

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APPENDICES

Appendix I: Introduction Letter

Dear Respondent,

I am a graduate student currently pursuing a master's degree at KCA University. As part of my academic requirements, I am conducting a research study titled "Effect of Digital Transformation on the Effectiveness of Financial Audits of Small and Medium-Sized Accounting Firms in Nairobi County."

You are kindly requested to participate in this study by filling out the attached questionnaire. Your responses will be treated with the utmost confidentiality and will be used solely for academic purposes.

Thank you for your time and valuable contribution to this research.

Sincerely,

Catheryne Ogendo

Appendix II: Research Questionnaire
Section 1: Demographic Information

1. How long has your organization been in existence?
   Less than 3 years [ ]
   4-6 years [ ]
   7-10 years [ ]
   More than 10 years [ ]
2. How long have you worked in this organization?
   Less than 3 years [ ]
   4-6 years [ ]
   7-10 years [ ]
   More than 10 years [ ]
3. How many years have you worked in the accounting professional's industry?
   Less than 3 years [ ]
   4-6 years [ ]
   7-10 years [ ]
   More than 10 years [ ]
4. What is your position in the organization?
   Senior Manager [ ]
   Middle-Level Manager [ ]
   Low-Level Manager [ ]
   Supervisor [ ]
   Regular Staff [ ]
5. Kindly indicate your gender
   Male [ ]
   Female [ ]
6. Kindly indicate your highest level of education
   Certificate [ ]
   Diploma [ ]
   Bachelor Degree [ ]
   Post Graduate [ ]
   CPA(K) [ ]

Section 2: Computerized Auditing and Effectiveness of Financial Audits

Please rate the following statements on Computerized Auditing based on your experience and perception. Use a scale of 1-5 where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree.

Statement	**1**	**2**	**3**	**4**	**5**
Implementing computerized auditing techniques and software has enhanced the effectiveness of financial audits in our organization.					
Integration of computer-based tools for data analysis, risk assessment, and fraud detection has improved the quality of financial audits					
Utilization of computerized auditing has increased the accuracy and timeliness of audit processes					
Use of computerized auditing in repetitive audit tasks has freed up time for auditors to focus on more complex issues.					
The use of computerized auditing has enhanced the ability to identify and mitigate financial risks.					
Computerized auditing tools have improved the overall efficiency of our audit processes.					
The implementation of computerized auditing has resulted in cost savings for our organization.					

Section 3: Accounting Automation and Effectiveness of Financial Audits

Please rate the following statements on Accounting Automation based on your experience and perception. Use a scale of 1-5 where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree.

Statement	**1**	**2**	**3**	**4**	**5**
Adoption of automated accounting systems has streamlined financial data entry and processing, enhancing the efficiency of financial audits.					
Automated reconciliation processes have reduced manual errors and improved data integrity in financial audits.					
Automated workflow tools have facilitated smoother coordination and communication among audit teams, leading to more effective audit outcomes.					
The implementation of accounting automation has increased the speed of financial reporting, contributing to timelier audit processes.					
Automated systems have enhanced the accuracy of financial data analysis, aiding auditors in identifying potential risks and discrepancies.					
The implementation of accounting automation has resulted in cost savings for our organization.					
Overall, the adoption of accounting automation technologies has improved the effectiveness of financial audits in our organization.					

Section 4: Accounting Internet Technologies and Effectiveness of Financial Audits

Please rate the following statements on Accounting Internet Technologies based on your experience and perception. Use a scale of 1-5 where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree.

Statement	**1**	**2**	**3**	**4**	**5**
Utilization of internet-based platforms has improved accessibility to financial data, facilitating more efficient audit processes.					
Integration of online collaboration tools has enhanced communication and information sharing among audit teams and clients, leading to better audit outcomes.					
Leveraging web-based accounting applications has facilitated remote auditing, allowing for greater flexibility and accessibility in conducting audits.					
Internet technologies have improved the speed of data retrieval and analysis, enabling auditors to conduct more thorough and timely audits.					
The integration of internet technologies has contributed to increased transparency in audit processes, enhancing stakeholders' confidence in financial reporting.					
Internet technologies have facilitated more efficient client interactions, leading to smoother audit processes and better client satisfaction.					
Overall, the adoption of accounting internet technologies has positively impacted the effectiveness of financial audits in our organization.					

Section 5: Decision Support Technology and Effectiveness of Financial Audits

Please rate the following statements on Decision Support Technology based on your experience and perception. Use a scale of 1-5 where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree.

Statement	**1**	**2**	**3**	**4**	**5**
Implementation of decision support systems (DSS) has improved data analysis capabilities, allowing for more comprehensive evaluation of financial information.					
Integration of DSS tools has assisted auditors in identifying trends and patterns in financial data, enhancing the detection of anomalies and irregularities.					
Utilization of artificial intelligence (AI) and machine learning algorithms has facilitated predictive modeling, enabling auditors to anticipate potential risks and issues in financial audits.					
Decision support technology has improved decision-making during the audit process, leading to more accurate and informed conclusions.					
Integration of DSS has enhanced collaboration among audit team members, facilitating knowledge sharing and collective problem-solving.					
Decision support technology has improved the efficiency of audit processes, resulting in faster turnaround times and increased productivity.					
Overall, the adoption of decision support technology has positively impacted the effectiveness of financial audits in our organization.					

Section 6: Measurement of Effectiveness of Financial Audits

Please rate the following statements on the Effectiveness of Financial Audits based on your experience and perception. Use a scale of 1-5 where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree.

Statement	**1**	**2**	**3**	**4**	**5**
The accuracy of financial audits conducted by our organization meets industry standards.					
Our organization's financial audits are conducted in a timely manner, meeting deadlines set by regulatory bodies and stakeholders.					
The reliability of financial information provided in audit reports is consistently high					
Financial audits conducted by our organization effectively identify and address areas of financial risk.					
The audit findings and recommendations provided by our organization contribute to improved financial management practices within client organizations.					
Stakeholders (e.g., investors, regulators, shareholders) trust the findings and conclusions of financial audits conducted by our organization.					
Overall, our organization's financial audits effectively fulfill their intended purpose of providing assurance on financial reporting and accountability.					