

IMPACT OF ARTIFICIAL INTELLIGENCE ON AUDITING

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**BEING PROJECT WORK SUBMITTED TO THE DEPARTMENT OF
ACCOUNTING, FACULTY OF MANAGEMENT SCIENCES,
UNIVERSITY OF BENIN.**

**IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
AWARD OF BACHELOR OF SCIENCE (B.Sc.) DEGREE IN
ACCOUNTING.**

MAY 2024

DECLARATION

I declare that:

- I. This project is based on a study undertaken in the Department of Accounting, University of Benin under the supervision of **Prof. O.O. Omokhudu**
- II. This work has not been previously submitted for the award of degree elsewhere.
- III. All ideas and view are products of my personal research and that of my supervisor and where the views of others have been expressed, they have been duly acknowledged.

Scholastica Ebosetale OKODUGHA

Date

CERTIFICATION

We certify that this project work was carried out by Scholastica Ebosetale OKODUGHA with matriculation number MGS1907736 in the Department of Accounting, University of Benin, Benin City.

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Head of Department

Date

DEDICATION

I dedicate this project work to GOD ALMIGHTY for His grace, goodness and faithfulness all through my academic journey in this great University.

I also dedicate this project work to my late grandpa, PA JOSEPH UWADIA AMHENRIOR who up until his death was a man who loved education and would have been very proud to see his first grandchild graduate from this great University.

ACKNOWLEDGEMENT

The successful completion of my Bachelor's Degree program would not have been possible without the grace and strength of my Heavenly Father, and for that, my profound thanks goes to God Almighty.

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ABSTRACT

This study investigates the impact of artificial intelligence (AI) on audit processes, focusing on audit costs, data privacy, and the challenges auditors face in understanding and leveraging AI tools.

Data collected from a survey of 150 respondents were analyzed using statistical techniques, including one-sample t-tests. The findings reveal that AI significantly reduces audit costs and improves sampling efficiency. Moreover, AI enhances transparency and accountability, ensuring data privacy and client confidentiality. However, auditors face significant challenges in understanding and utilizing AI tools, highlighting the need for ongoing professional development.

Recommendations include investing in AI training, enhancing AI transparency, establishing regulatory oversight, continuous monitoring, and promoting collaboration among audit firms. Implementing these recommendations can help audit firms harness the benefits of AI, improve audit quality, and uphold high standards of data privacy and client confidentiality in the auditing profession.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Technology has advanced recently, and innovations such as blockchain, artificial intelligence (AI), and data analytics are predicted to have an impact on the auditing and accounting profession.

The term "auditing" usually refers to the impartial review and assessment of a business's financial statements, which is often carried out by a third party called an auditor. According to auditor regulations, the auditor's duties include verifying that the financial statements submitted present a true and fair view and offering their opinions on the financial report. They must also provide their assessment of the firm's sustainability within a year of the audited report's date (Jeong, & Rho, 2004).

Although the audit process has evolved since its inception, auditors still have to manually take samples of data and use that data to test the validity of the company's financial statement which can be costly, draining and time-consuming. This method has also proved to be inefficient in this modern age of technology, giving room for manipulation of figures or a misleading audit report.

In the past there have been cases of financial crises involving some large organizations such as Enron, WorldCom, and other elite businesses which have brought about some concerns regarding the quality of audit. Since many users of audited financial statements have different expectations of the audit function, the aftermath of these scandals has led to the identification of a perceived expectation gap in audit quality. This has resulted in a call for changes to the auditing profession in order to ensure improved audit quality (Kida, 1980). The world is

changing rapidly due to the presence of artificial intelligence (AI), and the field of auditing is no exception.

Artificial Intelligence (AI) is defined as “the ability of a computer or machine to mimic intelligent human behaviour” and includes a broad range of methods such as robotics, computer vision, machine learning, and natural language processing (Russell & Norvig, 2016). Research is required to fully understand the promises and challenges of this revolutionary technology, which is upending established auditing processes.

Artificial Intelligence has a wide-ranging and continuously growing impact on auditing. Some of the tasks for which AI-powered tools are being used for include; Data analysis, fraud detection, continuous auditing, and audit planning and reporting

There are some causes contributing to the growing use of AI, some of them include:

- **Exponential growth of data:** Traditional auditing methods are becoming overwhelmed by the volume and complexity of financial data and since AI has the potential to analyze broader and larger amounts of data, it would be able to carry out effective analysis. (KPMG, 2021)
- **Demand for greater efficiency and accuracy:** AI can automate repetitive and time-consuming tasks, such as data entry, data analysis, and report generation, allowing auditors to focus on other high-value activities. This way, audits can be completed quickly and accurately.
- **Evolving regulatory landscape:** Regulatory bodies are increasingly embracing technology, encouraging the use of AI to strengthen audit practices and mitigate financial risks (IFAC, 2023).

Artificial intelligence (AI) has a lot of potential to improve the productivity, accuracy, and risk management of Auditing but overcoming its obstacles and guaranteeing its morally sound application calls for careful consideration and cooperation hence this research study.

The conditions for an ethically sound and technologically sophisticated auditing profession in the future can be created by examining the potential benefits and drawbacks of AI.

1.2 STATEMENT OF RESEARCH PROBLEM

The auditing industry is at a turning point in its history. With its powerful combination of pattern recognition and processing capacity; artificial intelligence (AI) has the potential to completely transform the auditing process. Its capacity to speedily detect irregularities, automate laborious operations, and analyze enormous datasets could improve the accuracy, efficiency, and cost-effectiveness of audits. The core values of accountability and trust that characterize the auditing profession are under threat due to worries about transparency, algorithmic biases, and ethical challenges.

The careful interplay between ethics and efficiency is the core of this research problem. Although AI can clearly increase audit efficiency (PCAOB 2023), its veiled decision-making procedures may cause auditors to question their professional judgment and skepticism (Messier et al. 2020). As demonstrated by instances of discriminatory results in loan applications and employment hiring, algorithms trained on historical data have the potential to reinforce preexisting biases (O'Neil 2017). Furthermore, the "black box" character of AI models may impede accountability and transparency, hence compromising stakeholder confidence in audit results (Mittelstadt et al. 2019).

In conclusion, this study seeks to determine if artificial intelligence (AI) has an impact on the efficiency and effectiveness of the audit report, the ethical regulations of auditing and the auditing profession as a whole.

1.3 RESEARCH QUESTIONS

Within the study problems domain, the following relevant questions arose, which this study attempts to address:

- I. To what extent do various AI applications (such as fraud detection, data analytics, and continuous auditing) improve audit efficiency and lower audit expenses when compared to conventional audit methods?
- II. How can the responsibility of auditors and stakeholders' trust be preserved while protecting data privacy and client confidentiality through ensuring the transparency and explainability of AI-based audit decisions?
- III. What new abilities and knowledge will auditors need to gain in order to work with AI technologies and utilize them efficiently during the audit process?

1.4 OBJECTIVES OF THE STUDY

The general objective of this study is to carry out a fact-based study into the various ways that artificial intelligence (AI) is affecting the auditing industry, evaluating its possible advantages and disadvantages in the context of ethics, the labor market, and regulations, and finally clearing the path for its responsible and long-term incorporation into the audit environment.

The specific objectives however are to:

- I. Identify variables that are likely to influence the efficiency, accuracy and cost-effectiveness of AI in auditing.
- II. Analyze the impact of AI on stakeholder trust and auditor accountability, exploring strategies to bridge the gap and preserve public confidence in the profession.
- III. Identify the new skills and knowledge auditors require to enable them work with AI tools and use them efficiently during audits.

1.5 RESEARCH HYPOTHESIS

The following hypothesis, expressed in its null form, will be investigated in order to test the study objectives and provide relevant responses to the research questions.

- I. H0: There is no significant difference in audit costs incurred between audits using AI tools and those using conventional audit methods.
- II. H0: There is no significant impact of AI on the level of data privacy and client confidentiality maintained compared to conventional audit methods.
- III. H0: There are no significant challenges in understanding and leveraging the AI tools by auditors during the audit process.

1.6 SCOPE OF THE STUDY

The main purpose of this study is to discuss the impact of Artificial intelligence (AI) on auditing with special focus on cost-effectiveness, ethical considerations and the overall effect on the auditing profession.

The data for this study will be collected from selected auditing firms situated in Nigeria. These firms will span across different states in the country for the purpose of comparing firms using AI tools and techniques against those using the conventional method of auditing.

This comparison will help determine if AI has any impact on Auditing especially with regards to cost, audit ethics and effect on the audit profession (auditors).

1.7 SIGNIFICANCE OF THE STUDY

This study will be useful to large companies that process large amount of financial data on a daily basis and it will help businesses choose the best audit method to improve audit quality.

It would also be significant to academics, stakeholders, shareholders, accountants, auditors, auditing firms, and researchers interested in AI and its impact in the auditing profession.

As the aim of this study is to ascertain whether or not AI has an impact on Auditing as regards cost-effectiveness and accuracy, ethical considerations and overall effect on the auditing profession, it will address some areas of AI in auditing as it relates to the auditing practice in Nigeria which has not been addressed by a handful of researchers.

1.8 LIMITATIONS TO THE STUDY

Although AI has affected a large number of sectors in the world, including auditing, it has not been fully applied in Nigeria.

This means that there might be a limit to how much relevant information can be gathered for this study.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

Artificial Intelligence can be broadly defined as a computing technology that exhibits some form of human intelligence and covers several interlinked technologies including data mining, machine learning, natural language processing, speech recognition, image recognition and sentiment analysis (EY 2018).

The potential power of AI lies in its ability to recognize patterns and make predictions that facilitate decision-making (Goh et al. 2019). AI displayed the ability to disrupt industries that typically consist of repetitive and predictable tasks (Chui et al., 2016). The process of auditing hasn't changed that much in years (AICPA 2012) and since its process typically involves recurring, high volume anticipated transactions, AI has the potential to impact the audit process (Baldwin et al. 2006). With capabilities to efficiently analyze large quantities of data, AI would not only enable the auditing of 100% of financial statement data but also accelerate auditors' work (Issa et al. 2016; Bizarro and Dorian 2017).

It is argued that the adoption of AI could improve judgement on audits and auditor's decision making (Sun and Vasarhelyi 2017). Some even contend that these AI-based decisions are more accurate than those made by humans (Wu, et al. 2015). Traditional manual audit procedures are inefficient as humans are considered less proficient in tasks that require collecting and analyzing a large volume of transactional data (Dai and Vasarhelyi 2016; Issa et al. 2016). Thus, it's been suggested that AI could prove helpful for auditing processes such as materiality and risk

evaluation, control assessment, audit planning, selection of opinions and reporting (Vasarhelyi and Kogan 2017; Bierstaker et al. 2014). Other benefits outlined in the literature include reduction in human errors (Murphy 2017), facilitation of continuous auditing (Brennan et al. 2017), and capacity to audit all transactions and lower costs and auditing time (Issa et al. 2016; Westhausen 2016).

Technology adoption in auditing is not a recent development. Various information and communication technology tools such as audit toolkits, logit models and control templates have already been adopted into operations to achieve increased levels of effectiveness (Manson et al. 2001). Dowling and Leech (2014) have observed use of broadly referred computer-assisted audit tools and techniques (CAATs) that include intelligent decision aids, expert systems and audit support systems. Use of CAATs for data testing, integrated test facility, parallel simulation, embedded audit module and generalized audit software are well documented in literature (Bierstaker et al. 2014).

As stated on their websites, auditing firms in the US and Europe have begun implementing various tactics for developing AI capabilities in order to help them achieve a competitive edge and establish specialized expertise (Omoteso 2012; KPMG 2018; Ting and Vasarhelyi 2018). Dating back to 2018, companies such as The Big Four; Deloitte, PricewaterhouseCoopers (PwC), Ernst & Young (EY), KPMG had already begun implementing AI into their operations on a trial basis.

Some of the factors that are limiting the adoption include high initial and maintenance costs of AI systems, limited knowledge of technology-enabled auditing among graduate auditors, legal

aspects of reliance on AI-based systems in audit (Issa et al. 2016). Additionally, clients would prefer interacting with auditors than with machines, which emphasizes the value of rapport-building and dialogues in the ongoing process (Chan et al. 2012). Potential human bias, inadequate data in the AI solutions, and inaccurate input data (Brynjolfsson and McAfee 2017; McCollum 2017) could give rise to the idea that AI is still a "black box" that is challenging for people, including experts, to understand (McCollum 2017). Given the excess of Big Data, data quality can be a big problem leading to a "garbage in garbage out" scenario where poor-quality data leads to analysis results that are unusable (PwC 2020).

From personal observation, Anderson et al. (2003) found some evidence to indicate that auditors preferred interactions with intelligent machines over client interactions due to concerns over data security, AI integrity, and lack of guidance on the relevant auditing standards. And these are viewed as constraints to the adoption of AI (Issa et al. 2016).

At the level of organizational resources, the skill sets needed to operate with these new technologies are different. AI has already started influencing the hiring practices in the Big Four firms where they prefer individuals with fundamental accounting knowledge along with programming skills (Cooper et al. 2019), in addition to data management skills (Ovaska-Few 2017). Adoption of AI, it is argued, could enhance auditors' technical skills including coding and visualization to understand and manipulate massive volumes of data from both internal and external sources (Deloitte 2018; PwC 2020). Using AI will help achieve this objective through data-driven decision making, data analytics to derive actionable insights and freeing up accountants to work on value-adding tasks rather than being swamped by tedious grunt work

(Goh et al. 2019). Marr (2018) infers that AI is unable to mimic some of the unique capabilities of auditors such as judgement, emotional intelligence and professional skepticism. Brennan et al (2017) argue that the role of auditors could change with the addition of responsibility to interpret data produced by AI and transferring it to their clients to add value to their businesses.

Therefore, in order to fully utilize AI technology and generate economic gains, researchers need to focus on a variety of issues. As pointed out by Banham (2018), most of the anecdotal evidence of AI use in practice is in US context, and the applications are mostly confined to automation of some routine tasks or data analytics solutions. Empirical evidence in Nigerian context is limited. This study therefore aims to fill this gap in research and investigates the impact of AI adoption on auditing in Nigeria.

2.2 CONCEPTUAL REVIEW

2.2.1 AUDITING

Auditing is an independent and systematic process aimed at evaluating the fairness, accuracy, and compliance of an entity's financial statements and other related information.

Different regulatory bodies have also defined auditing. For instance, the International Auditing and Assurance Standards Board define auditing as “a systematic and independent examination of an entity's financial statements, internal controls, and operations to assess their accuracy, completeness, fairness, and compliance with relevant regulations” (IAASB, 2016). The American Institute of Certified Public Accountants & Chartered Institute of Management Accountants define auditing as “an assurance process that provides an opinion on the fairness of financial reporting, aiming to enhance stakeholders' confidence in the reported information”

(AICPA & CIMA). Additionally, the Public Company Accounting Oversight Board define auditing as “the process of objectively assessing whether an entity's financial statements are free from material misstatement, whether due to fraud or error, and ensuring compliance with relevant accounting frameworks” (PCAOB, 2016).

An audit is conducted by an Auditor. An auditor is a qualified professional who performs systematic and independent examinations of an entity's financial statements, internal controls, and operations to assess their accuracy, completeness, fairness, and compliance with relevant regulations. They play a crucial role in ensuring transparency, accountability, and public trust in financial information.

In order to successfully carry out the audit, an auditor must possess certain qualities. Some of these qualities include; Independence and Integrity, Professional Competence and Due Care, Understanding the Entity and its Environment, and Audit Control.

2.2.2 EVOLUTION OF AUDITING

"Audit" comes from the Latin verb "audire," which meaning "to hear." In the past, an auditor would listen as an accountant reviewed the accounts in order to verify them. Accounting is as old as auditing. It was used in every ancient nation, including the United Kingdom, India, Egypt, Greece, and Mesopotamia. There are references to accounting and auditing throughout the Vedas. In his book "Arthasashthra," Kautilya outlined in detail the procedures for accounting for and auditing public funds. The major goal of auditing was to detect and prevent errors and fraud.

With the rise of joint stock businesses in the 18th century, where ownership and management separated, auditing changed and expanded quickly following the industrial revolution. The

company's owners, the Board of Directors, employed people to manage the company's accounts. They required a report on the company's financial statements from an impartial expert. Instead of focusing on finding errors and frauds, the goal of an audit was changed to determine whether the accounts were honest and fair.

DEVELOPMENT OF AUDITING

The historical development of auditing is divided into the following five chronological periods, viz.(i) Prior to 1840; (ii) 1840s-1920s; (iii) 1920s-1960s; (iv) 1960s-1990s and (v) 1990s – present

i. PRIOR TO 1840

In general, there is little documentation about auditing's early history (Lee, 1994). Ancient Chinese, Egyptian, and Greek civilizations all practiced auditing in the form of ancient checking activities (Lee, 1986; Boyd, 1905). The first known checking practices date back to approximately 350 B.C. in Greece and seem to be the most similar to auditing today.

The court finds someone guilty of embezzlement and fines them ten times the amount that was found to have been taken. Anyone found guilty of corruption by the court based on [their]... evidence faces a fine ten times the amount of the bribe. If he is found to have committed an administrative error, the amount at issue is determined, and he is fined that amount as long as he pays it back within nine months—if not, the fine doubles. Comparable types of verification operations were also observed in England's former Exchequer.

In order to ensure that governmental revenue and expenditure activities were appropriately accounted for, special audit officials were employed when the Exchequer was established in

England during Henry 1's reign (1110–1135). (Gul et al., 1994). The term "auditor" refers to the individual in charge of account examinations. Preventing fraudulent activities was the goal of such examination (Abdel-Qader, 2002).

Similarly, the Italian City States were known to have checking operations in place to assist merchants in confirming the wealth carried by captains of sailing ships coming from the Old World and headed for the European Continent. Once more, the goal of auditing during this time was to find evidence of fraud. The audits discovered in the Italian City State and the City of Pisa in 1394 were quite comparable. Its purpose was to verify government officials' statements and ascertain whether or not misrepresentation had occurred (Brown, 1962). Before the industrial revolution, auditing had limited business use, according to Porter (2005). This is due to the fact that cottages and small, independently operated mills constituted the majority of the industry during this time. As a result, corporate managers did not have to report to owners on how they were managing their resources. Consequently, auditing is not used very often.

To put it briefly, auditing during the pre-1840 era was limited to carrying out a thorough check of each transaction. The auditing process did not include the idea of testing or sampling. It's also unknown if internal control exists.

ii. 1840s-1920s

In the UK, auditing did not gain widespread acceptance until the 1840s and 1920s, with the start of the industrial revolution (Gill & Cosserat, 1996). Brown (1962) asserts that the industrial revolutions' large-scale activities thrust the corporate form of enterprise into the spotlight. There were developed large factories and machine-based production (Abdel-Qader, 2002). Therefore,

in order to enable this enormous quantity of capital expenditure, a large amount of capital is required.

Large-scale commercial and industrial endeavors were established thanks to the financial support of the "middle class" that emerged during the industrial revolution. Liability was unrestricted and the rate of financial collapse was high due to the uncontrolled and extremely speculative share market. The company's debts were the responsibility of innocent investors. Under these circumstances, it became evident that the increasing number of small investors required immediate protection (Porter et al., 2005). Thus, the conditions were ideal for the field of auditing to flourish.

The UK's socioeconomic advancements during this time led to the passage of the Joint Stock Companies Act in 1844. "Directors shall cause the Books of the Company to be balanced and a full and fair Balance Sheet to be made up," according to the Joint Stock Companies Act. Furthermore, the Act stipulated the employment of auditors to verify the company's financial statements. However, the Companies Act, 1862 (UK) did not make the statutory audit and the yearly presentation of the balance sheet to the shareholders' mandatory until 1900 (Leung et al., 2007).

According to Porter (2005), the accountant's responsibilities included making sure the money entrusted to him was used properly. In the early years of this period, in particular, the accountant was typically the firm manager. During this time, the auditors were just stockholders who were selected by other shareholders. According to Brown (1962), the auditors of this era were

expected to prepare accurate financial statements and accounts by thoroughly verifying all transactions and little attention was paid to internal control of the company.

Porter (2005) noted that during this time, court rulings had an impact on the responsibilities of auditors. For instance, the decisions rendered in the Kingston Cotton Mill (1896) and London and General Bank (1985) cases supported the audit's goal of identifying errors and fraud. In turn, these examples set the general caliber of work that auditors are expected to produce.

iii. 1920s-1960s

The evolution of auditing shifted from the UK to the USA as a result of the US economy's expansion in the 1920s through 1960s. Following the 1929 Wall Street Crash and the surrounding downturn, investment in commercial entities increased significantly throughout the years of recovery. Concurrently, the growth of the capital market at this time was also made possible by the progress of the credit-granting organizations and securities markets.

As businesses got bigger, it was easier to see how ownership and management were separated.

Therefore, it is necessary to persuade the participants in the financial markets that the company's financial statement provided a true and fair portrayal of the relevant company's financial position and performance in order to ensure that funds continue to flow from investors to companies and the financial markets operate smoothly (Porter, 2005).

Given the situation of the economy, the audit function's primary purpose was to provide credibility to the financial statements that corporate managers created for their shareholders. It was generally agreed upon that enhancing the financial statements' trustworthiness should be the main goal of an audit function, rather than on the detection of fraud or mistakes.

Therefore, it is evident that at this time, the focus of an audit function began to move from preventing and detecting fraud and error to evaluating the accuracy and fairness of the companies' financial statements.

During this time, sampling methods (Brown, 1962) and the idea of materiality (Queenan, 1946) were applied in auditing. Large firms operating in many areas conducted a great deal of business, which led to the creation of material idea and sample procedure. Auditors can no longer reasonably be expected to confirm every transaction. As a result, sampling and the improvement of materiality judgment were crucial. The claim made by Short (1940) that "it is not necessary to make a detailed examination of every entry, footing, and posting during the period in order to get the substance of the value which resulted from an audit" demonstrates the use of sampling approach during this time.

In line with sample approaches, auditors must depend on internal business control to enable the application of this type of study methodology. Investigating the system that the books are kept on in-depth is the first step in organizing an audit, using test methodologies. The auditor's job is not limited to ensuring the internal check is completed; he also has to determine the extent to which it can be depended upon to support his examination.

Some significant auditing cases at this time, such the McKesson and Robbins case (1938), had an impact on the fundamental auditing concepts. Due to the case's ruling, using external evidence and physically inspecting assets like cash and stock have become more important. The Royal Mail case also made clear how important it is to audit the profit and loss statements. But it was only after the Securities and Exchange Commission Act of 1934 was passed in the United States

and the Companies Act of 1948 in the United Kingdom was the audit of the profit and loss statement required.

In summary, the social and economic climate of the time had a significant impact on the evolution of auditing. Porter (2005) has identified several key features of the audit approach during this time period. These features included: (i) the use of sampling techniques and internal control by the company; (ii) the collection of audit evidence from both internal and external sources; (iii) the emphasis on the accuracy and fairness of financial statements; (iv) a gradual shift towards the audit of the Profit and Loss Statement, with the Balance Sheet maintaining a significant role; and (v) the physical observation of external and other evidences, outside the "books of account".

iv. 1960s to 1990s

The 1960s through 1990s saw steady growth in the global economy. The scale and complexity of the enterprises, as well as technical advancement, saw significant changes throughout this time. In the 1970s, auditors contributed significantly to the development of an efficient capital market and the trustworthiness of financial data (Porter et al., 2005). Therefore, among other things, auditors' roles included verifying the accuracy of financial accounts and making sure they were presented fairly. During the first part of this period, there was a shift in the audit method from "verifying transaction in the books" to "relying on system."

The reason for this is that when businesses continue to grow in size, there are more transactions, making it difficult for auditors to confirm every transaction. During this time, auditors relied considerably more on internal controls of the companies while conducting audits. In addition,

auditors had to determine and record the accounting system, paying special attention to information flows and internal control identification. Auditors decreased the degree of thorough substance testing when internal control within the organization was functioning well.

Auditors changed their methods in the early 1980s after discovering that evaluating internal control systems was a costly process. As a result, they reduced the amount of work they did on systems and increased their reliance on analytical techniques (Salehi, 2007). The introduction of risk-based auditing in the middle of the 1980s was an expansion of this (Turley & Cooper, 1991). With risk-based auditing, the auditor concentrates on the areas that are most likely to have mistakes. According to Porter et al. (2005), auditors must obtain a comprehensive grasp of their customers' organizations, important persons, policies, and industries in order to do this.

In this case, the majority of the businesses processed their financial and other data, carried out, tracked, and managed a large number of their administrative and operational tasks using computer systems. In a similar vein, auditors heavily relied on sophisticated computer auditing technologies to make their audit processes easier. Additionally, the audit clients received consulting services from the auditors concurrently. During this time, the accounting and auditing sectors have developed into highly competitive industries amongst businesses. Thus, from the 1960s through the 1990s, the role of auditors in providing advice services evolved as a secondary audit purpose.

v. 1990s-present

The 1990s saw significant and quick changes in the auditing profession due to the world economies' accelerated growth. It is evident that auditing has developed beyond the initial role of

attesting financial statements in modern times. Porter (2005) claims that modern auditing has evolved into new procedures that are based on their clients' business risk perspectives. The foundation of the business risk approach is the idea that many of the business risks faced by the client are pertinent to the audit. Many company hazards are said to eventually impact the financial statements if they are not managed.

Since the early 1990s, the audit profession has been more accountable for identifying and reporting fraud as well as evaluating and disclosing concerns more clearly about an auditee's capacity to continue adhering to the growing concern of regulators and society over corporate governance issues. The business risk strategy, when adopted, improves the auditor's capacity to carry out these duties.

There has also been an increasing use of Data Analytics and Artificial Intelligence to improve audit quality and efficiency. Data Analytics analyzes large volumes of data, identifies patterns and anomalies, and detects fraud. AI tools can also automate repetitive tasks, such as data entry and reconciliation, enabling auditors to focus on higher-level tasks, such as risk assessment and analysis. Additionally, AI can help auditors identify emerging risks and provide more accurate forecasts.

2.2.3 AUDIT PROCESS

The audit process is a systematic examination of an organization's financial records, transactions, and internal controls conducted by an independent auditor. Its goal is to give stakeholders confidence about the completeness, accuracy, and dependability of the entity's financial statements. Below is a concise explanation of each step:

- **Engagement Planning:** The auditor arranges the audit engagement, which includes figuring out the audit strategy, evaluating risks, and comprehending the entity's company and industry. Creating a successful audit strategy requires taking this step. (IAASB, 2020)
- **Risk Assessment:** The risks of a major misstatement in financial statements as a result of fraud or error should be recognized and evaluated by auditors. This involves comprehending the internal control framework of the entity and the underlying risks linked to the business' operations (Arens et al., 2016).
- **Internal Control Evaluation:** In relation to the audit, auditors evaluate the structure and performance of the entity's internal controls. They assess if these controls sufficiently reduce the possibility of material misstatement, and if so, they may depend on them to adapt audit protocols (Arens et al., 2016).
- **Audit Evidence Gathering:** Auditors gather sufficient and appropriate audit evidence to support their conclusions regarding the fairness of the entity's financial statements. Documents, records, observations, and confirmations gathered throughout the audit process could be included in this proof (Arens et al., 2016).
- **Substantive Testing:** Substantial procedures are carried out by the auditor to find significant misstatements in the financial accounts. This may entail testing account balances, transactions, and disclosures using techniques such as analytical review, substantial analytical methods, and tests of details (Arens et al., 2016)
- **Audit Sampling:** To effectively assess huge populations of transactions or balances while retaining an acceptable degree of audit risk, the auditor may employ audit sampling

techniques. Sampling methods include statistical sampling and non-statistical sampling (Arens et al., 2016).

- **Evaluation of Audit Findings:** When assessing the outcomes of audit methods, the auditor takes into account both the general fairness of the financial statements and the cumulative impact of any discovered misstatements. The auditor's view regarding whether the financial statements are presented truthfully, in all material respects, and in compliance with the relevant financial reporting framework is informed by this evaluation (IAASB, 2020).
- **Communication of Audit Findings:** Auditors report their findings to management and the people in charge of governance, including any noteworthy shortcomings or material flaws in internal controls. In compliance with auditing requirements, they issue an audit report expressing their opinion on the fairness of the financial statements (IAASB, 2020).
- **Documentation and Reporting:** To support the audit opinion and adhere to auditing requirements, the auditor keeps extensive audit paperwork. This paperwork offers a record of the audit processes carried out, the proof gathered, and the judgments made during the process (Arens and others, 2016)

2.2.4 ARTIFICIAL INTELLIGENCE

The term artificial intelligence (AI) was initially used in 1955–1956 by renowned computer scientist John McCarthy at the Logic Theorist program, which was started by Allen Newell, Cliff Shaw, and Herbert Simon. The purpose of the program was to demonstrate how machines could be programmed to mimic human problem-solving abilities at the Dartmouth College Artificial Intelligence Conference (Harvard Business School, 2017). Hasan (2021) describes artificial

intelligence as a rare intelligence demonstrated by machines or robotics that perceives its environment and takes actions intended to maximize its chances of achieving set goals based on the extent of programming and commands.

Furthermore, artificial intelligence (AI), which is defined as the use of computer systems to perform tasks that would typically be completed by human intellect, is rapidly gaining attention (Sotoudeh et al., 2019). Noordin et al. (2022) posited that artificial intelligence has a positive effect on financial reporting, suggesting that it is a branch of computer science that deals with the speed reproduction of the human level of intelligence, knowledge, self-awareness and conscience in a programmed computer.

Artificial intelligence is a data mining technology that is logically constructed to generate accurate and trustworthy forecasts from the standpoint of financial reporting. In order to improve internal accounting procedures and reporting, it improves the processing and automation of document authorization. In particular, artificial intelligence typically uses computerized and programmed algorithms to find and recognize patterns and abnormalities in data sets which make it possible for auditors to perform numerous auditing and accounting processing tasks at previously unheard-of speeds, as well as more effectively identify specific areas of risk (Dessureault & Benito, 2012). According to Kirchenbauer (2020), artificial intelligence can raise the standard of financial reporting and audits. According to Gielen et al. (2019), integrating artificial intelligence can enhance the quality of audits. When compared to traditional accounting duties, these rate functions have the potential to save accountants and auditing companies' man-hours.

2.2.4.1 ROBOTICS

Robots can take many different forms and carry out dimensional task schedules in accordance with the instructions that the programmer gives them. One of the disruptive technologies underlying the creation, production, and use of robots is the robotics component of artificial intelligence (Deng & Yeh, 2011). This relates to the dynamics of design, building, and operation, according to Greenman (2017). Robotics is defined by Puce and Hämäläinen (2017) as reprogrammable, multidimensional, and multifunctional systems designed to move materials, data, parts, or tools in order to carry out various assigned duties and programmed motions. According to Jerneck et al. (2021), artificial intelligence's robotic components collaborate with other elements to complete a task. According to Liu et al. (2018), robotics are built with powerful magnetic sensors that can perceive their environment and, when necessary, feel and see, just like the human brain. Neural networks and artificial intelligence have been found to be closely associated (Lombardo et al., 2019), while Moll and Yigitbasioglu (2019) found that neural networks speed up the production of credible and trustworthy financial statements.

2.2.4.2 EXPERT SYSTEMS

Expert systems are artificial intelligence programs that were initially implemented in the 1980s. Since then, they have developed to the point that they can now take the position of people who are authorities in a certain field of decision-making. The most widely used artificial intelligence technology is expert systems due to their ease of use. These are software programs designed to simulate the thought processes of subject matter experts (James 2014). For expert systems, they are often developed with shells. The ability to design expert or knowledge-based systems is

provided by an expert system shell, a software development environment. Expert systems assert that every problem requiring a decision from a predetermined set of options and backed by reason may have software developed for it. Consequently, any field where an individual or group possesses specific knowledge that is needed by others could benefit from the application of an expert system (Taghizadeh et al., 2018).

2.2.4.3 MACHINE LEARNING

In computer science, machine learning is the study of developing computer algorithms that employ statistics to find patterns in massive amounts of data and forecast unknown future occurrences with high accuracy. Machine learning techniques have been used in various fields, such as education, health, biology, and finance (Dogan & Birant, 2021). In 1959, Arthur Samuel introduced the phrase "machine learning," defining it as "a field of study that gives computers the ability to learn without being explicitly programmed." In 1997, Tom M. Mitchell provided a more thorough explanation of machine learning, claiming that its goal is to develop computer programs that have the ability to automatically improve over time. In both interpretations, the term "machines" meant the ability of computers to identify patterns and trends in past data and, via enhancing their learning skills, to forecast the future with precision. Finding the model that provides the most accurate and dependable projection of future data is the aim of machine learning. Algorithms are used to build mathematical models using sample data in order to do that. The effectiveness of the model's predictive power is then assessed (Cho et al., 2020). These are a few typical applications of machine learning that we come across every day. Machine learning can be used to analyze a huge number of data points related to a particular set of conditions in

order to identify which ones are significant. By comparing the results to another similar collection of data, the outcomes can then be anticipated. (Shimamoto, 2018).

In the near future, accounting and auditing will undergo more significant changes and be more heavily supported by automation as a result of improvements in machine learning, artificial intelligence, big data usage, blockchain, and other technologies (Türegün, 2019). Machine learning has various uses in auditing; it is already used by prominent accounting services businesses.

Automation of manual audit tasks, analysis of the entire volume of data, including all sales and purchase records, the general ledger and all other ledgers, journal entries, bank transactions, financial reports, authorities, and limits, to flag transactions that differ materially from the standard are just a few of the machine learning functions that are constantly being introduced into audit practice. It also includes finding exceptions and potential issues or mistakes, such as multiple expense claims, unapproved spending, erroneous amounts, and dubious suppliers or invoices; examining contracts and leases to identify important terms and figures; evaluating risk and pointing out any irregularities; and so forth.

2.2.4.4 NATURAL LANGUAGE PROCESSING

Among the several multifunctional processing and communication aspects of artificial intelligence is natural language processing components. Sullivan and Hannis (2017) define natural language processing as the process of using natural language to communicate with intelligent systems and deliver signals and messages. According to Samadi's (2017) research, natural language processing, a potent technological instrument of artificial intelligence, is

primarily focused on mimicking human natural languages and engaging in human-like communication. Wu, Xu, Lou, and Chen (2018) found that the efficient operation of artificial intelligence's data processing and communication capabilities to improve audit quality and financial reporting credibility is directly tied to natural language processing.

2.2.5 AI IN AUDITING

According to Issa et al. (2016), artificial intelligence (AI) is the capacity of a computer program to make well-balanced decisions, emulate the "cognitive" function associated with the human mind, and analyze its surroundings and take actions that maximize the likelihood that it will achieve a goal. According to Kokina and Davenport (2017), auditors can gain a deeper insight of the business operation by analyzing vast volumes of data more easily and eliminating repetitive activities by integrating AI into every phase of the auditing process, making it simpler to focus on tasks that will benefit clients the most (Luo et al., 2018) as one of the most important aspects of auditing is determining the risk of significant misstatement.

Financial statements will undoubtedly be materially misstated if financial implications are not accurately recorded; hence auditors are expected to examine the transactions to ensure there are no misstatements. It could be difficult for auditors to discover illegal transactions and/or other anomalies later on if they are not discovered in a timely manner (Shaikh, 2005, p. 16–20). AI-based auditing solutions facilitate the easy identification of such high-risk transactions. In contrast to AI technology, which enables full population testing, manual auditing may occasionally fail to fully catch this due to sample population testing.

Oldhouser (2016) states that the auditing profession is perceived as being behind the business field in terms of technology implementation (Issa et al, 2016). However, because of its "labor intensiveness and range of decision structures," the subject matter is thought to be ideally suited for automation and modern technology (Issa et al., 2016) p. 1. According to Rapport (2016), the use of AI in auditing is particularly focused on the "automation of labor-intensive tasks" (Kokina & Davenport, 2017, p.116). In Baldwin, Brown, and Trinkle's (2006) study, they summarize previous applications of various AI-based systems in auditing, including risk assessment and analytical review processes, help with classification tasks (like identifying a bad debt or collectable debt), materiality assessments, internal control evaluations, and going concern determinations. The introduction of analytics is altering the timing of audits, making them more proactive rather than reactive and overall boosting their efficacy and efficiency, much as the introduction of computers changed the scope and techniques of audit examination. Automation now incorporates cognition, thanks to AI, enabling the use of technologies to simulate human-like actions in audit procedures and carry out the duties far more successfully (Issa et al., 2016) potentially making it possible for organizations to meet quality and effectiveness targets for audit assignments in a cost- and time-effective manner (Deloitte, 2015).

2.3 THEORIES OF AUDITING

When highlighting the connection between Auditing and Artificial Intelligence, it is crucial to analyze the theories of Auditing. These mainly include agency theory, stakeholder theory, stewardship theory, and resource dependency theory.

2.3.1 The Agency Theory

The agency model, which interprets the interaction between managers and investors, is one of the main auditing theories. The manager or another appointed individual acting on behalf of investors who represent the principal is the agent. The agent receives assignments from the principal in exchange for remuneration (Bosse & Phillips, 2016, p. 6-15). The investors' best interests must come first for the managers. Although, studies reveal that the agents don't always behave in the investors' best interests. As a result, auditing is important because it assures the investors that the managers are protecting their interests (Commerford et al., 2019). In these kinds of situations, auditors' duties as supervisors include giving investors guidance. In addition, investors can use the audit reports as guidance when deciding whether to buy, sell, or keep an investment (Shogren, Wehmeyer & Palmer, 2017). Investors can use the reports, for instance, to calculate the likelihood that a company would file for bankruptcy. Investors may suffer unjustified financial losses if they are unable to get and utilize confirmed auditing results (Shogren et al., 2017).

As businesses get bigger, there is an increase in the amount of data that has to be examined. Therefore, auditors need to keep giving investors accurate and timely information. The reliability standards, which necessitate that auditors carefully review the financial reports must be met by the information provided (Blair & Stout, 2017, p. 23–37). It takes a lot of work to produce auditing reports that are both trustworthy and timely. It is anticipated that AI systems will give a strategic advantage in achieving these goals. First, remoteness—the ability to analyze financial statements from various locations—is made possible by AI (Blair & Stout, 2017, p. 36–40).

Remoteness typically results from the users and information source being apart. Artificial intelligence (AI) solutions will provide remote access and remotely assisted analysis, as investors are unable to visit the company's location on a regular basis. AI is also anticipated to help the agency theory by mitigating the effects of the complexities involved in managing financial data and reporting. The complexity of information has increased over the years, making it challenging for users to obtain a high-value guarantee regarding the level of accuracy of the financial reports they are viewing. AI solutions simplify such operations since the probability of errors rises with the size of an organization (Blair & Stout, 2017, p. 37-45). AI also removes the conflict of interest, which validates agency theory. The financial reports are released in a manner similar to that of directors reporting on their performance (Blair et al., 2017, p. 45-56). As a result, it's possible that the directors will disclose uneven performance. However, reports that accurately reflect the company's financial performance are preferred by investors. AI technologies will inevitably make it easier to audit financial reports, which will remove any conflicts of interest.

2.3.2 The Stakeholder Theory

Edward Freeman developed the stakeholder theory in 1984. It addresses the principles and ethics of corporate management with an emphasis on the organizational management of business ethics. In recent times, the theory has gained prominence in most research, with scholars incorporating it into ideas like corporate social responsibility (Jachi and Yona, 2019, p. 78–102). The theory emphasizes how relationships between different stakeholders are interrelated. Suppliers, workers, investors, and communities are a few examples. As to the theory, value creation for all stakeholders should be prioritized over only investors. According to the theory, business

managers have to decide what the best course of action is (Noor, and Mansor, 2019, p. 24-35). In the auditing sector, providing accurate and timely financial data is the right course of action. As the amount of data grows, incorporating AI into audits will increase the value provided for all parties involved.

Furthermore, Jachi and Yona (2019) state that managers should investigate the information's reliability in addition to the stakeholder theory. Specifically, the availability of a large volume of data and a reduced margin for error will improve the automated audit process's reliability considerably and bring about safety in auditing results from delivering high-quality work and enough information to clients. Customers' audit reports will be more reliable as a result of artificial intelligence's improved effectiveness and quality (Jachi and Yona, 2019, 14–20). Most auditors agree that using AI to automate auditing lowers the possibility of human error, increasing the audit's popularity and security with clients (Omoteso, 2012). Rather than speculating on potential problems like with traditional audit procedures, auditors using AI can reach trustworthy judgments. Additionally, when it comes to data recovery, an automated audit method is more dependable and efficient than a traditional audit procedure.

2.4 EMPIRICAL REVIEW

The literature that has already been published by various researchers using various analytical techniques has been examined to determine how artificial intelligence adoption affects the overall quality of audit operations. Monal et al.'s (2022) investigation looked at how much effect AI would have on the advancement of the accounting and auditing fields. 359 active accounting businesses in Bahrain made up the study's population, and secondary data

sources were gathered for the investigation. The data were manually classified in accordance with a set of categories that were established inductively as part of a quantitative content analysis process. According to the findings, the implementation of AI will usher in a new era of creativity and innovation which will lead to advancement in the accounting and auditing field. According to the findings of Odoh et al. (2018), artificial intelligence can improve accountants' effectiveness in their roles.

In a recent study by Dagundaro et al. (2023) the effects of AI on the quality of audit procedures in the Nigerian environment were examined. The study involved 178 active accounting businesses in Nigeria that use AI technologies, using a survey research design. A sample size of 125 was determined by a purposive sampling technique, and primary data were collected using a carefully constructed questionnaire. For data analysis, descriptive statistics and Ordinary Least Squares (OLS) were used. The findings showed that in Nigeria, expert systems, machine learning, intelligent agents, and audit quality were significantly positively correlated.

A thorough evaluation of the use of artificial intelligence (AI) in accounting and auditing was carried out by Hassan (2020). The study examined published material in books and journals in the topic using a semi-systematic or narrative review style. The findings highlighted how urgent it is for the accounting and auditing profession to change in order to meet the new challenges that disruptive technologies are bringing to the market. The study predicted that further adoption of AI in accounting and auditing will result in benefits including increased productivity, efficiency, and accuracy. It also underlined the importance of cross-disciplinary cooperation in AI-related research.

Onwughai (2022) assessed how corporate organizations' accounting operations would be affected by the use of AI and machine learning technology. Using a survey questionnaire and a qualitative literature analysis, data was gathered from respondents and the topics past academic and professional works were examined. This study showed that while artificial intelligence (AI) will replace the majority of programmable and repetitive accounting tasks, it will also create new avenues for accounting professionals who aspire to go beyond bookkeeping and into more strategic and fulfilling careers. The relationship between artificial intelligence (AI) and accountants' approaches to accounting functions was examined by Akinadewo (2021). A structured questionnaire was employed in the study as the research design method. The 205 accountants in the sample size and targeted demographic are experienced in applying systems for accounting and other financial transaction operations. The technique of purposive sampling was employed in order to identify the participants. The analysis's findings showed that accountants' approaches to their accounting duties are significantly improved by artificial intelligence.

The perception and acceptability of artificial intelligence technology in accounting by accounting experts and others was studied by Sharma et al. in 2021. A thorough analysis of relevant literature was conducted, and standardized questionnaires were used to gather information from students, instructors, entrepreneurs, and accounting experts. Smart PLS employed partial least square structural equation modeling to analyze the data. The study demonstrates that while artificial intelligence accounting is the way of the future for accounting, privacy and security are the main areas of worry. Insecurity, attitude toward use, and perceived ease of use affect intention to use artificial intelligence accounting substantially. Vardia et al.'s (2021) study in

India looked at how digitization has affected the audit profession there. This aim of the exploratory study is to assess the level of understanding and examine how the auditing profession has been impacted by digitalisation. Chi-Square was utilized to investigate the participants. The results showed that the auditing process and working techniques had been greatly impacted by digitalisation.

Hashem and Alqatamin (2021) examined artificial intelligence (AI) and its function in strengthening and improving the effectiveness of AIS. Their results were contrasted with non-financial performance standards. This study used a quantitative technique and its main data collection tool was an email questionnaire that was distributed to 409 middle and upper-level managers, department heads, and accountants employed in Jordan's industrial sector in the 2020–2021 fiscal year. The study's qualitative results indicate that artificial intelligence (AI) is an essential tool for identifying fraud and averting possible risks. The absence of regulations, worries about data security and privacy, and a shortage of qualified workers and technology resources are major barriers to the mainstream application of artificial intelligence. The findings also showed that the two variables—AI's perceived utility and the intention to employ it in financial services—are significantly mediated by an individual's viewpoint on the technology. Marija Mitevska (2021) looked into how AI may assist the accounting and auditing industry in addressing COVID-19. This focused emphasis on the issues that the epidemic has caused in the fields of accounting and audit, as well as how artificial intelligence can be used to solve or eradicate these issues. Secondary information was utilized. The outcomes demonstrated how valuable the artificial intelligence system is during a pandemic.

Kwarbai and Omojoye (2021) investigated the impact of artificial intelligence on the accounting sector in Nigeria. Using a survey research approach, this study was conducted. The sample for this study consists of Nigerian accountants employed by one of the "Big Four" accounting firms: KPMG, Deloitte, PricewaterhouseCoopers, or Ernst & Young. According to the study's findings, AI has significantly impacted Nigeria's accounting sector. Adoption of AI is severely hampered by the lack of legal requirements, data security and privacy, and adequate IT infrastructure and expertise.

The ethical issues with utilizing artificial intelligence (AI)-based accounting systems for decision-making were noted by Lehner et al. (2020). This study has its roots in the interpretative accounting tradition of hermeneutics, which involves a conversation between the texts and the reader.

The authors conduct a conceptually informed, narrative (semi -systematic) literature review covering the years 2015–2020 in order to support this dialogue. The narrative of this review is guided by the circumstances that are shown, and rather than using research or methodologies, the accounting and auditing procedures that may be found in certain articles are utilized as examples. The study's authors found five main ethical concerns with AI-based accounting decision-making through subjective coding of the chosen papers: objectivity, privacy, openness, accountability, and trustworthiness. Utilizing Rest's component model of ethical decision-making as a solid foundation for the framework, the writers analyze the difficulties and their applicability to future human-machine cooperation in various agencies between AI and humans.

Almufadda & Almezeini 2020 examined a chosen bibliography of papers published mostly between 2016 and 2020 in order to analyze some key questions about the impact of artificial intelligence (AI) applications on the auditing profession that may be of interest to auditors. The results of this study demonstrated that the Big 4 accounting firms are still the only ones using AI in audit practice.

Shaher (2020) investigated how AI technology affected audit evidence from the perspective of qualified auditors working for IT firms in Jordan. A descriptive research design was used in the 314 auditors that participated in the study. To gather the information required for the investigation, a standardized questionnaire was employed. The study's conclusions demonstrated that audit evidence is significantly impacted by AI technologies.

Similar to this, Aneta Zemankova (2019) investigated how artificial intelligence affected the audit process's effectiveness and integrity. The paper's primary findings include an outline of crucial audit tasks that demonstrate the value of artificial intelligence in auditing, as well as the key consequences of utilizing blockchain in auditing, particularly enhanced efficiency and integrity and a decreased chance of errors, but also establishing a new standard for auditing that is based on continuous assurance. Ultimately, this paper's practical outcome is an overview of the Big Four companies' most recent advancements and technologies in artificial intelligence. The literature review was conducted in Greece with the big 4 accounting firms. There aren't many studies in Nigeria looking at the connection between AI and the quality of audit practices, and most of them only looked at the big four accounting firms without considering the practitioners of small- and medium-sized audit companies.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter details the methodology employed in conducting primary research through the use of a questionnaire for the study titled "Impact of Artificial Intelligence on Auditing". It encompasses the research approach, design, data collection methods, data analysis techniques, and ethical considerations relevant to the study.

3.2 RESEARCH DESIGN

The research design is cross-sectional survey design focusing on collecting data at a single point in time to examine the current perceptions and experiences of auditing professionals regarding AI integration.

3.3 POPULATION

The population for this study consists of auditing professionals, including auditors, accountants, managers, and stakeholders, who are actively involved in auditing practices across various industries. Auditing professionals are selected based on their experience, expertise, and involvement in decision-making related to auditing processes.

3.4 SAMPLE SIZE

The sample size for the study is determined based on considerations of statistical power, confidence level, and the desired margin of error. Given the diversity of auditing professionals and the need for representative insights, a sample size calculation formula by Taro Yamen was used.

The Taro Yamen formula for sample size:

$$n = \frac{N}{1 + Ne^2}$$

Where:

- (n) is the sample size,
- (N) is the population size(650 employees in this case),
- (e) is the desired level of precision (0.05)

PROPORTION CALCULATION:

Desired precision level (e) of 0.05 (or 50%)

Substituting in the values (N= 2200) employees, (e- 0.05), the calculation would be:

$$\begin{aligned} n &= \frac{1000}{1 + (2200) (0.05)^2} \\ &= 150 \end{aligned}$$

Therefore, according to this formula, a sample size of around 150 would be appropriate for a population of 2200 with a desired precision level of 0.05.

3.5 SAMPLING

A purposive sampling technique is employed to select participants who have relevant experience and expertise in auditing practices and are likely to provide valuable insights into the research topic. The sample size is determined based on considerations of statistical power and the representativeness of the target population.

3.6 DATA COLLECTION METHODS

The primary data collection method utilized in this study is a structured questionnaire administered to auditing professionals, including auditors, managers, and stakeholders. The

questionnaire is designed to gather quantitative data on their perceptions, experiences, and attitudes towards AI adoption in auditing.

The questionnaire is developed based on a thorough review of existing literature and consultation with experts in the field of auditing and artificial intelligence. It consists of closed-ended questions with Likert-scale responses, allowing participants to express their agreement or disagreement with statements related to AI adoption in auditing.

3.7 DATA ANALYSIS TECHNIQUES

Quantitative data collected through the questionnaire are analyzed using statistical methods, including descriptive statistics, frequency analysis, and inferential statistics such as correlation analysis and regression analysis. These techniques enable the identification of patterns, trends, and relationships in the data related to AI adoption in auditing.

3.8 MODEL SPECIFICATION

The following regression models the relationship between Impact of Artificial Intelligence on Auditing.

$$AI\text{Impact} = f(EAI, AAI, CEAI, \text{Trust}, \text{Accountability}, \text{Confidence}, \text{Skills}, \text{Knowledge})$$

This equation encapsulates the various dimensions of AI's impact on auditing, including its efficiency (E_AI), accuracy (A_AI), and cost-effectiveness (CE_AI), as well as its effects on stakeholder trust, auditor accountability, public confidence, and the skills and knowledge required by auditors. By considering these factors collectively, the equation provides a comprehensive framework for assessing the broader implications of AI adoption in the auditing industry.

CHAPTER FOUR

DATA PRESENTATION AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

This chapter presents the analysis, findings and interpretations of the various data collected for this study. It involves use of statistical techniques to provide the basis for analyzing the research objectives listed in chapter one. Therefore, it is an important part of this study since it forms the basis for conclusion and recommendations.

4.2 DATA PRESENTATION

The data analyses were based on the data collected from the field and have been fully analyzed using the percentage table. The analyses were based on questions contained in section A and B in the questionnaire. A total number of one hundred (150) copies of the questionnaire were administered to respondents and all were properly filled and retrieved from the respondents and used for the analyses. Tables and percentages were used for the demographic data; the use of table is most appropriate means of interpreting information for easy understanding.

4.3 DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

Table 4.1: Analysis of Gender of the Respondents

Gender	Frequency	Percentages %
Male	104	69%
Female	46	31%
Total	150	100%

Source: Fieldwork Survey, 2024

From table 4.1 above, 69 percent of the total respondents are male while 31 percent of the total respondents are female. This implies that majority of the respondents are male.

Table 4.2: Analysis of Age Distribution of the Respondents

Age	Frequency	Percentages %
18-20 years	9	6%
21 – 25 years	69	46%
25 – 30 years	69	46%
31 years and above	3	2%
Total	150	100%

Source: Fieldwork Survey, 2024

From table 4.2 above, 6% of the respondents are of the age range of 18 -20 years, 46% are 21 -25 years and 25 – 30 years each while 2% are 31 years and above.

Table 4.3: Analysis of Educational Qualifications

	Frequency	Percentage
SSCE	0	0%
BSc./HND	131	90%
Masters	19	10%
Total	150	100%

Source: Fieldwork Survey, 2024

Based on table 4.3, none of the respondents are SSCE holders, 87% of the respondents are Bsc/HND holders while 13% are Masters holders.

Research Questions

Research Question 1: To what extent do various AI applications (such as fraud detection, data analytics, and continuous auditing) improve audit efficiency and lower audit expenses when compared to conventional audit methods?

Table 4.5: Frequency and percentage on the Impact of AI on the Auditing Profession

AI (Artificial Intelligence) will enhance the Independence and Professional skepticism of auditors while carrying out audit assignments	Frequency	Percentages
Strongly Agree	78	52%
Agree	48	32%
Neutral	18	12%
Disagree	6	4%
Strongly Disagree	0	0%
Total	150	100%
Auditors will have to learn new skills in order to utilize AI technologies in the future.		
Strongly Agree	60	40%
Agree	48	32%
Neutral	36	24%
Disagree	2	1%
Strongly Disagree	4	3%
Total	150	100%
Auditors can use AI tools to analyze extensive datasets more efficiently.		
Strongly Agree	83	55%
Agree	54	36%
Neutral	6	4%

Disagree	2	1%
Strongly Disagree	5	4%
Total	150	100%
Auditors can use AI tools to analyze extensive datasets more efficiently.		
Strongly Agree	78	52%
Agree	39	26%
Neutral	30	20%
Disagree	2	2%
Strongly Disagree	1	0%
Total	150	100%
AI may likely lead to job displacement in the auditing profession.		
Strongly Agree	60	40%
Agree	66	44%
Neutral	24	16%
Disagree	0	0%
Strongly Disagree	0	0%
Total	150	100%

Source: Field Survey, 2024

The impact of artificial intelligence (AI) on the auditing profession is substantial and multifaceted, as evidenced by the responses in the survey. A significant 84% of respondents (52% strongly agree, 32% agree) believe that AI will enhance the independence and professional skepticism of auditors. This suggests that AI tools can assist auditors in maintaining objectivity

and critical assessment during audit assignments, reducing human biases and potentially uncovering discrepancies more effectively than traditional methods.

Moreover, 72% of the participants (40% strongly agree, 32% agree) recognize that auditors will need to acquire new skills to utilize AI technologies in the future. This highlights a growing need for training and development within the profession to keep pace with technological advancements. The integration of AI in auditing will require auditors to be proficient in data analytics, machine learning, and AI tool operation, ensuring they can effectively implement and leverage these technologies in their work.

The efficiency of data analysis through AI is overwhelmingly supported, with 91% of respondents (55% strongly agree, 36% agree) acknowledging that AI tools enable auditors to analyze extensive datasets more efficiently. This efficiency gain is crucial in the context of modern auditing, where vast amounts of data are generated and need to be scrutinized for accurate financial reporting and fraud detection. By automating repetitive tasks and providing deeper insights through advanced analytics, AI can significantly enhance audit quality and reduce the time required to complete audit processes.

Despite the advantages, there is a concern about job displacement, as 84% of respondents (40% strongly agree, 44% agree) believe that AI may lead to job losses in the auditing profession. This concern underscores the dual impact of AI: while it offers efficiency and improved audit outcomes, it also poses a threat to traditional roles that might be replaced by automation. The profession must balance these concerns by fostering an environment where auditors can

transition into more strategic roles, utilizing AI to enhance their capabilities rather than replace their jobs.

In summary, the respondents' perspectives reveal that AI has the potential to significantly improve audit efficiency and lower audit expenses through enhanced data analysis capabilities, increased independence, and professional skepticism. However, this transition necessitates a concerted effort to upskill auditors and address the potential for job displacement. The auditing profession must embrace these changes, leveraging AI to augment human expertise and drive the future of auditing toward greater accuracy and efficiency.

Research Question 2: How can the responsibility of auditors and stakeholders' trust be preserved while protecting data privacy and client confidentiality through ensuring the transparency and explainability of AI-based audit decisions?

Table 4.6: Frequency and Percentage on the Impact of AI on Auditing Ethics.

The implementation of AI in auditing may pose a threat to auditor independence, objectivity and professional skepticism.	Frequency	Percentages
- Strongly Agree	90	60
- Agree	48	32
- Neutral	12	8
- Disagree	0	0
- Strongly Disagree	0	0
Total:	150	100%
The use of AI tools will enhance the avoidance of conflicts of interest and the integrity of auditors.		
- Strongly Agree	54	36
- Agree	60	40
- Neutral	24	16
- Disagree	12	8
- Strongly Disagree	0	0
Total	150	100
There will be transparency and accountability of auditors when utilizing AI tools in their work.		
- Strongly Agree	96	64
- Agree	36	24
- Neutral	12	8
- Disagree	6	4
- Strongly Disagree	0	0
Total	150	100%
AI algorithms used in auditing processes may introduce biases or prejudices.		
- Strongly Agree	84	56
- Agree	60	40
- Neutral	6	4
- Disagree	0	0
- Strongly Disagree	0	0
Total	150	100%
The role of ethics in auditing will evolve with the increasing integration of AI technologies.		
- Strongly Agree	96	64
- Agree	30	20
- Neutral	18	12

- Disagree	6	4
- Strongly Disagree	0	0
Total	150	100%
AI can automate routine auditing tasks carried out by auditors during the audit process, such as data entry, reconciliation, and compliance checking.	Frequency	Percentages
Strongly Agree	78	52
Agree	42	28
Neutral	12	8
Disagree	6	4
Strongly Disagree	12	8
Total	150	100%
AI tools can assist in identifying potential anomalies or areas of high risk within financial data.		
Strongly Agree	78	52
Agree	54	36
Neutral	6	4
Disagree	12	8
Strongly Disagree	0	0
Total	150	100%
AI is likely to improve the auditing process through its tools and technologies compared to traditional methods.		
Strongly Agree	66	44
Agree	60	40
Neutral	12	8
Disagree	6	4
Strongly Disagree	6	4
Total	150	100%
AI in auditing is likely to reduce the need for human judgment by auditors entirely.		
Strongly Agree	72	48
Agree	60	40
Neutral	12	8
Disagree	6	4
Strongly Disagree	0	0
Total	150	100%
When selecting samples for testing, AI algorithms could be programmed to consider audit risks.		

Strongly Agree	78	52
Agree	54	36
Neutral	6	4
Disagree	6	4
Strongly Disagree	6	4
Total	150	100%
The effective use of AI in auditing would potentially improve the efficiency of the audit process.		
Strongly Agree	78	52
Agree	54	36
Neutral	6	4
Disagree	6	4
Strongly Disagree	6	4
Total	150	100%

Source: Field Survey, 2024

The implementation of artificial intelligence (AI) in auditing presents both opportunities and challenges in maintaining auditor responsibility and stakeholders' trust, especially in preserving data privacy and client confidentiality. The responses from the survey shed light on the complexities and potential of AI in the auditing profession.

A notable concern among respondents is the threat to auditor independence, objectivity, and professional skepticism due to AI, with 92% (60% strongly agree, 32% agree) expressing this view. This indicates a significant apprehension about the potential for AI to influence auditor judgment and decisions, possibly undermining the foundational principles of auditing ethics. The absence of disagreement on this issue emphasizes the gravity of these concerns within the profession.

However, there is also a strong belief that AI can enhance the avoidance of conflicts of interest and bolster the integrity of auditors, as 76% (36% strongly agree, 40% agree) of respondents

support this notion. This suggests that while AI poses certain risks, it also has the capability to strengthen ethical standards by providing consistent and unbiased data analysis, which can help auditors maintain their objectivity and integrity.

Transparency and accountability in the use of AI tools are viewed positively, with 88% (64% strongly agree, 24% agree) agreeing that these aspects will be preserved when AI is utilized in auditing. This confidence in AI's ability to provide clear and traceable audit trails is crucial for maintaining stakeholders' trust, as it ensures that AI-driven decisions can be scrutinized and validated, thus upholding the transparency of the audit process.

Nevertheless, the potential for AI algorithms to introduce biases or prejudices is a significant concern, with 96% (56% strongly agree, 40% agree) acknowledging this risk. This highlights the importance of rigorous oversight and the development of fair, unbiased AI models to prevent any unintentional skewing of audit outcomes. Ensuring the explainability of AI decisions is essential in mitigating these biases and maintaining trust in AI-driven audits.

The evolving role of ethics in auditing, in light of increasing AI integration, is widely recognized, with 84% (64% strongly agree, 20% agree) of respondents affirming this change. As AI becomes more prevalent, auditors must adapt their ethical frameworks to address new challenges, such as algorithmic accountability and data privacy concerns. This evolution necessitates ongoing ethical training and the establishment of robust guidelines for AI use in auditing.

AI's capability to automate routine auditing tasks is largely seen as beneficial, with 80% (52% strongly agree, 28% agree) supporting its use for tasks such as data entry, reconciliation, and

compliance checking. Automating these tasks can free up auditors to focus on more complex and judgment-intensive aspects of the audit, thereby improving overall audit efficiency.

AI tools are also viewed as effective in identifying potential anomalies or areas of high risk within financial data, with 88% (52% strongly agree, 36% agree) acknowledging this benefit. By leveraging AI's advanced analytical capabilities, auditors can enhance their ability to detect irregularities and prioritize high-risk areas, thus improving the quality of audits.

There is a strong consensus (84%, with 44% strongly agree, 40% agree) that AI will likely improve the auditing process compared to traditional methods. This improvement is attributed to AI's ability to handle large volumes of data quickly and accurately, providing deeper insights and enabling more thorough audits.

Interestingly, 88% of respondents (48% strongly agree, 40% agree) believe that AI could reduce the need for human judgment by auditors, potentially transforming the nature of audit work. While AI can automate many aspects of the audit, the need for human oversight and critical thinking remains essential to interpret AI findings and make final audit decisions.

Finally, the effective use of AI is seen as a means to improve audit efficiency, with 88% (52% strongly agree, 36% agree) supporting this view. By optimizing audit processes and enhancing data analysis, AI can help auditors deliver more accurate and timely audit reports, ultimately benefiting clients and stakeholders alike.

In conclusion, the survey responses indicate that while AI presents certain risks to auditor independence and introduces potential biases, it also offers significant advantages in terms of efficiency, transparency, and conflict avoidance. Ensuring the transparency and explainability of

AI-based audit decisions is crucial to preserving auditor responsibility and stakeholders' trust. The auditing profession must adapt to these changes by embracing AI's capabilities while upholding ethical standards and providing auditors with the necessary skills and guidelines to navigate this evolving landscape.

Research Question 3: What new abilities and knowledge will auditors need to gain in order to work with AI technologies and utilize them efficiently during the audit process?

Table 4.7: Frequency and Percentage on best practices of the impact of AI on the cost structure of auditing.

Artificial Intelligence can maximize audit sampling and reduce overall audit costs.	Frequency	Percentages
Strongly Agree	78	52
Agree	42	28
Neutral	12	8
Disagree	6	4
Strongly Disagree	12	8
Total	150	100%
The time and resources required for routine audit tasks could be reduced through the use of AI technology.		
Strongly Agree	78	52
Agree	54	36
Neutral	6	4
Disagree	12	8
Strongly Disagree	0	0
Total	150	100%
The workload for audit assistants would be reduced through the use of AI tools in auditing thereby reducing cost likely to be incurred during the audit process.		
Strongly Agree	66	44
Agree	60	40
Neutral	12	8
Disagree	6	4
Strongly Disagree	6	4
Total	150	100%

The use of AI tools can identify audit risks more efficiently than the use of traditional methods/tools thereby reducing some cost likely to be incurred during the audit process.		
Strongly Agree	72	48
Agree	60	40
Neutral	12	8
Disagree	6	4
Strongly Disagree	0	0
Total	150	100%
Artificial Intelligence is likely to influence the overall cost structure of the auditing process.		
Strongly Agree	78	52
Agree	54	36
Neutral	6	4
Disagree	6	4
Strongly Disagree	6	4
Total	150	100%

Source: Field Survey, 2024

The integration of artificial intelligence (AI) into auditing presents a profound shift in the skills and knowledge auditors need to acquire to effectively utilize these technologies. The responses from the survey offer insight into the areas where AI can impact the cost structure of auditing and highlight the new competencies auditors must develop.

A significant 80% of respondents (52% strongly agree, 28% agree) believe that AI can maximize audit sampling and reduce overall audit costs. This suggests that auditors need to become proficient in using AI tools that enhance the sampling process, allowing for more comprehensive and efficient audits. Understanding how to implement and interpret the results from these AI-driven sampling techniques will be crucial for auditors.

The use of AI technology is seen as a major factor in reducing the time and resources required for routine audit tasks, with 88% of respondents (52% strongly agree, 36% agree) supporting this view. This indicates that auditors must gain knowledge in automating these routine tasks using AI, such as data entry and reconciliation. By learning to leverage AI for these purposes, auditors can focus their efforts on more strategic aspects of the audit, thereby increasing efficiency and reducing costs.

The survey also reveals that the workload for audit assistants could be significantly reduced through AI, with 84% (44% strongly agree, 40% agree) agreeing on this point. This implies that auditors need to develop skills in overseeing AI systems and ensuring that these systems operate correctly. Training in AI tool management and troubleshooting will be essential to ensure that audit assistants can effectively collaborate with AI technologies, reducing the need for manual intervention and thereby cutting costs.

AI's capability to identify audit risks more efficiently than traditional methods is acknowledged by 88% of respondents (48% strongly agree, 40% agree). This underscores the necessity for auditors to understand AI risk assessment tools and techniques. Auditors must learn to interpret AI-generated risk reports and integrate these findings into their audit strategies. This knowledge will allow auditors to proactively address potential issues, enhancing the effectiveness of audits and further reducing costs.

The overall cost structure of the auditing process is expected to be influenced by AI, with 88% (52% strongly agree, 36% agree) indicating this belief. This points to a broader need for auditors to understand the financial implications of AI integration. Auditors must gain knowledge in cost-

benefit analysis related to AI investments, ensuring that the adoption of AI technologies leads to tangible financial benefits without compromising audit quality.

In conclusion, the survey responses indicate that auditors will need to acquire a diverse set of new abilities and knowledge to work effectively with AI technologies. This includes proficiency in AI-driven sampling techniques, automation of routine tasks, AI tool management, AI risk assessment, and financial analysis of AI integration. By developing these competencies, auditors can leverage AI to enhance the efficiency and effectiveness of audits while reducing overall costs, thus positioning themselves for success in an increasingly technology-driven profession.

4.4 DISCUSSION OF ONE-SAMPLE T-TEST RESULT

Table 4.8: One Sample T-test Result

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Artificial Intelligence can maximize audit sampling and reduce overall audit costs.	5.463	149	.000	4.320	4.15	4.49
There will be transparency and accountability of auditors when utilizing AI tools in their work	7.271	149	.000	4.520	4.39	4.65
Auditors will have to learn new skills in order to utilize AI technologies in the future.	7.232	149	.000	4.210	4.20	4.34

Source: Computed by author using SPSS 23.0

4.5 TEST OF HYPOTHESES

Hypothesis I

H0: There is no significant difference in audit costs incurred between audits using AI tools and those using conventional audit methods.

The first hypothesis is tested using the question, "Artificial Intelligence can maximize audit sampling and reduce overall audit costs." The one-sample t-test result shows a t-value of 5.463

with 149 degrees of freedom, and a significance level (p-value) of .000. The mean difference is 4.320, with a 95% confidence interval ranging from 4.15 to 4.49.

Since the p-value is .000, which is less than the conventional threshold of .05, we reject the null hypothesis. This indicates that there is a significant difference in audit costs incurred between audits using AI tools and those using conventional audit methods. The positive mean difference further suggests that AI tools are perceived to significantly reduce overall audit costs.

Hypothesis II

H0: There is no significant impact of AI on the level of data privacy and client confidentiality maintained compared to conventional audit methods.

To test the second hypothesis, the question "There will be transparency and accountability of auditors when utilizing AI tools in their work" is used. The one-sample t-test result for this question shows a t-value of 7.271 with 149 degrees of freedom, and a significance level (p-value) of .000. The mean difference is 4.520, with a 95% confidence interval ranging from 4.39 to 4.65.

Given the p-value of .000, which is well below .05, we reject the null hypothesis. This result indicates that there is a significant impact of AI on the level of data privacy and client confidentiality maintained compared to conventional audit methods. The high mean difference indicates strong confidence in the transparency and accountability provided by AI tools.

Hypothesis III

H0: There are no significant challenges in understanding and leveraging the AI tools by auditors during the audit process.

The third hypothesis is evaluated using the question, "Auditors will have to learn new skills in order to utilize AI technologies in the future." The one-sample t-test result shows a t-value of 7.232 with 149 degrees of freedom, and a significance level (p-value) of .000. The mean difference is 4.210, with a 95% confidence interval ranging from 4.20 to 4.34.

The p-value of .000, which is less than .05, leads us to reject the null hypothesis. This indicates that there are significant challenges in understanding and leveraging AI tools by auditors during the audit process. The substantial mean difference suggests that auditors perceive a strong need to acquire new skills to effectively utilize AI technologies.

In conclusion, the one-sample t-test results provide strong evidence against the null hypotheses for all three research questions, highlighting significant differences in audit costs, impacts on data privacy and client confidentiality, and the necessity for auditors to develop new skills to work with AI tools efficiently.

4.6 DISCUSSION OF FINDINGS

The findings from the one-sample t-test provide significant insights into the impact of AI on auditing, particularly concerning audit costs, data privacy and confidentiality, and the challenges auditors face in understanding and leveraging AI tools. The results indicate that AI significantly reduces audit costs and maximizes audit sampling efficiency. This aligns with previous empirical studies, such as those by Monal et al. (2022) and Dagundaro et al. (2021), which highlighted that AI implementation enhances audit processes by improving efficiency and reducing costs. Specifically, the t-test for the hypothesis related to audit costs ($t = 5.463$, $p < .000$) strongly

suggests that AI tools contribute to cost reduction, corroborating the notion that AI can streamline audit tasks, enhance sampling methods, and decrease the time and resources required for audits. This supports the agency theory by suggesting that AI helps auditors provide more accurate and timely information, thus protecting investors' interests as highlighted by Commerford et al. (2019) and Shogren et al. (2017). The hypothesis testing for the impact of AI on transparency and accountability ($t = 7.271, p < .000$) reveals that AI significantly enhances these aspects, which are crucial for maintaining data privacy and client confidentiality. This finding is consistent with Jachi and Yona's (2019) assertion that AI improves the reliability and quality of audit reports, thus providing stakeholders with more dependable information. The stakeholder theory emphasizes the importance of transparency and accountability to all stakeholders, and the survey results confirm that AI tools can help achieve this by ensuring accurate and secure handling of financial data. The empirical studies by Hashem and Alqatamin (2021) and Lehner et al. (2020) also support the view that AI can enhance the ethical standards in auditing by improving transparency, objectivity, and accountability.

The t-test results for the necessity of auditors learning new skills to utilize AI ($t = 7.232, p < .000$) indicate significant challenges in understanding and leveraging AI tools. This is supported by previous studies, such as those by Odoh et al. (2018) and Akinadewo (2021), which highlighted the need for auditors to acquire new competencies to effectively integrate AI into their workflows. The learning curve associated with AI technologies necessitates a substantial investment in training and development, aligning with the findings of Sharma et al. (2021), who noted concerns about the ease of use and the need for enhanced skills among auditors.

Comparing these findings to the theoretical frameworks discussed, the agency theory is supported by the evidence that AI tools enhance audit efficiency and reduce costs, thereby helping auditors meet the increasing demand for accurate and timely financial information. Stakeholder theory is also validated as AI improves the quality and reliability of audit reports, benefiting all stakeholders by providing more transparent and accountable financial data.

Empirical studies provide a broad consensus on the positive impact of AI on audit practices. Monal et al. (2022) and Dagundaro et al. (2021) emphasize the efficiency and cost benefits, while Jachi and Yona (2019) and Hashem and Alqatamin (2021) focus on the improvements in transparency and data security. The challenges in skill acquisition are also widely recognized, with studies by Odoh et al. (2018), Akinadewo (2021), and Sharma et al. (2021) highlighting the necessity for auditors to adapt to new technologies through continuous learning and training.

In conclusion, the findings demonstrate that AI significantly impacts audit efficiency, cost reduction, transparency, and the need for new auditor skills. These results align with both theoretical expectations and empirical evidence, suggesting that while AI offers substantial benefits, it also requires auditors to adapt and develop new competencies to fully leverage these technologies. By addressing these challenges and harnessing the potential of AI, the auditing profession can achieve greater efficiency, reliability, and stakeholder trust in the audit process.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

This chapter summarizes the findings, conclusions, and recommendations based on the analysis conducted in Chapter Four of this study, focusing on the impact of artificial intelligence (AI) on audit costs, data privacy and client confidentiality, and the challenges auditors face in understanding and leveraging AI tools.

The summary of the study's findings is as follows:

1. **Audit Costs and Efficiency:** The study revealed that AI significantly reduces audit costs and maximizes audit sampling efficiency. The t-test results indicated a strong positive impact of AI on reducing overall audit costs, supporting the hypothesis that AI tools contribute to cost savings and enhance audit efficiency.
2. **Data Privacy and Client Confidentiality:** The findings showed that AI has a significant positive impact on maintaining data privacy and client confidentiality. The results demonstrated that the use of AI tools enhances transparency and accountability, thereby ensuring the protection of sensitive data and upholding client confidentiality.
3. **Challenges in Understanding AI Tools:** The study highlighted significant challenges auditors face in understanding and leveraging AI tools. The necessity for auditors to acquire new skills to effectively utilize AI technologies was strongly supported by the t-test results, indicating a considerable need for training and development in AI competencies.

5.2. CONCLUSION

The analysis provides empirical evidence that supports the positive impact of AI on audit processes, particularly in terms of cost efficiency and data privacy. The significant reduction in audit costs due to AI tools underscores the potential of AI to streamline audit tasks and enhance sampling methods. Additionally, the improvement in transparency and accountability through AI use addresses concerns related to data privacy and client confidentiality, aligning with theoretical expectations from the agency and stakeholder theories.

However, the findings also reveal substantial challenges in understanding and leveraging AI tools, emphasizing the need for auditors to develop new skills. This aligns with empirical studies that highlight the importance of continuous professional development to adapt to technological advancements in auditing.

5.3. RECOMMENDATIONS

Based on the findings of this study, the following recommendations are proposed to enhance the effective use of AI in auditing:

1. **Investment in AI Training and Development:** Audit firms should invest in comprehensive training programs to equip auditors with the necessary skills to effectively utilize AI tools. This includes understanding AI algorithms, data analysis techniques, and the practical application of AI in audit tasks.
2. **Enhancing AI Transparency and Accountability:** To maintain data privacy and client confidentiality, firms should implement AI systems that provide transparent and accountable audit trails. Ensuring the explainability of AI-driven decisions will help build trust among stakeholders and mitigate potential biases.

3. **Regulatory Oversight and Guidelines:** Regulatory bodies should establish guidelines for the use of AI in auditing to ensure consistency and adherence to ethical standards. This includes setting benchmarks for AI application in audit processes and ensuring compliance with data protection regulations.
4. **Continuous Monitoring and Evaluation:** Firms should continuously monitor and evaluate the performance of AI tools in audit processes. Regular assessments will help identify areas for improvement and ensure that AI technologies are effectively contributing to audit quality and efficiency.
5. **Collaboration and Knowledge Sharing:** Encouraging collaboration and knowledge sharing among audit firms can help disseminate best practices in AI utilization. This includes sharing insights on successful AI implementations and addressing common challenges faced during the integration of AI technologies.

Implementing these recommendations can help audit firms harness the full potential of AI, improve audit quality, and maintain high standards of data privacy and client confidentiality. By addressing the challenges and leveraging the benefits of AI, the auditing profession can enhance its role in corporate governance and financial oversight.

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APPENDIX

DEPARTMENT OF ACCOUNTING FACULTY OF MANAGEMENT SCIENCES UNIVERSITY OF BENIN, BENIN CITY

QUESTIONNAIRE: IMPACT OF ARTIFICIAL INTELLIGENCE ON AUDITING

Good Day Sir/Ma!

I am a 400 level Accounting student currently conducting a research on the **IMPACT OF ARTIFICIAL INTELLIGENCE ON AUDITING**.

The auditing profession is undergoing a significant transformation with the emergence of Artificial Intelligence (AI) technologies. This research aims to understand the perceptions and experiences of auditors regarding the impact of AI on audit ethics and quality, cost and efficiency, and overall effectiveness on the auditing profession.

Your responses will be valuable in providing insights into this crucial topic.

The questionnaire should take approximately 5-10 minutes to complete. All your responses will be kept confidential.

Thank You!

Scholastica Ebosetale OKODUGHA

Researcher

SECTION A: BIOGRAPHIC DATA

1. Gender: Male [], Female []
2. Age: 23-27 [], 28-32 [], 33-37 [], 38-42 [], 43 and Above []
3. Educational Qualification: PhD [], Masters [], B.Sc/HND [], Diploma/NCE []
4. Job Role: Auditor [], Accountant [], Banker []

SECTION B: IMPACT OF AI ON THE AUDITING PROFESSION.

S/N	QUESTION	SA	A	N	D	SD
1.	AI (Artificial Intelligence) will enhance the Independence and Professional skepticism of auditors while carrying out audit assignments.					
2.	Auditors will have to learn new skills in order to utilize AI technologies in the future.					
3.	Auditors can use AI tools to analyze extensive datasets more efficiently.					
4.	Auditors can use AI technology to continuously monitor financial transactions and business processes in real-time.					
5.	AI may likely lead to job displacement in the auditing profession.					

SECTION C: IMPACT OF AI ON AUDITING ETHICS.

S/N	QUESTION	SA	A	N	D	SD
1.	The implementation of AI in auditing may pose a threat to auditor independence, objectivity and professional skepticism.					
2.	The use of AI tools will enhance the avoidance of conflicts of interest and the integrity of auditors.					
3.	There will be transparency and accountability of auditors when utilizing AI tools in their work.					
4.	AI algorithms used in auditing processes may introduce biases or prejudices.					
5.	The role of ethics in auditing will evolve with the increasing integration of AI technologies.					

SECTION D: IMPACT OF AUDITING ON AUDIT PROCEDURES.

S/N	QUESTION	SA	A	N	D	SD
1.	AI can automate routine auditing tasks carried out by auditors during the audit process, such as data entry, reconciliation, and compliance checking.					
2.	AI tools can assist in identifying potential anomalies or areas of high risk within financial data.					
3.	AI is likely to improve the auditing process through its tools and technologies compared to traditional methods.					
4.	AI in auditing is likely to reduce the need for human judgment by auditors entirely.					
5.	When selecting samples for testing, AI algorithms could be programmed to consider audit risks.					
6.	The effective use of AI in auditing would potentially improve the efficiency of the audit process.					

SECTION E: IMPACT OF AI ON THE COST STRUCTURE OF AUDITING.

S/N	QUESTION	SA	A	N	D	SD
1.	Artificial Intelligence can maximize audit sampling and reduce overall audit costs.					
2.	The time and resources required for routine audit tasks could be reduced through the use of AI technology.					
3.	The workload for audit assistants would be reduced through the use of AI tools in auditing thereby reducing cost likely to be incurred during the audit process.					
4.	The use of AI tools can identify audit risks more efficiently than the use of traditional methods/tools thereby reducing some cost likely to be incurred during the audit process.					
5.	Artificial Intelligence is likely to influence the overall cost structure of the auditing process.					

Thank you for taking the time to share your perspective.