Adoption of Artificial Intelligence: A Tool for Decision Making in Accounting Practice

Ayomide Gabriel IGE[1]
Department of Accounting, College of Social and Management Science,
Afe Babalola University Ado-Ekiti, Ekiti State, Nigeria.
igeag@pg.abuad.edu.ng

Adebimpe Funmilayo ALUKO[2]
Department of Accounting, College of Social and Management Science,
Afe Babalola University Ado-Ekiti, Ekiti State, Nigeria.
alukoaf@pg.abuad.edu.ng

Faith Oluwaleke ORIMAYE[3]
Department of Accounting, College of Social and Management Science,
Afe Babalola University Ado-Ekiti, Ekiti State, Nigeria.
ademulegunfaith@gmail.com

Olusola Bamidele ADEBAYO[4]
Department of Accounting, College of Social and Management Science,
Afe Babalola University Ado-Ekiti, Ekiti State, Nigeria.
abcolusola01@gmail.com

Taiwo ADENIRAN[5]
Department of Accounting, College of Social and Management Science,
Afe Babalola University Ado-Ekiti, Ekiti State, Nigeria.
adenirants@pg.abuad.edu.ng
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Abstract
Artificial intelligence (AI) is rapidly changing how financial institutions are operated and it is expected to increasingly take over core functions because of cost savings and operational efficiencies. In recent times, significant improvement has been made in artificial intelligence, especially as it relates to accounting profession which has changed its focus from paper and pencil entry to computer and software entry. It has, during the past few years, made many signs of progress which have enabled the creation of professional financing applications, which would, perhaps, enhance the decision-making process of accounting practice. The aim of this study is to examine the adoption of artificial intelligence as a tool for decision making in accounting practice in Nigeria. A structured questionnaire was employed in the study as part of the research design process 279 accountants with experience using systems for accounting and other financial transaction functions made up the sample size and targeted population. The respondents were chosen using a purposive sampling strategy. The study revealed that artificial intelligence (AI) has

a significant positive influence on quick decision-making in accounting practices at 5% of significance. The study recommended that accountants need to undergo training and retraining in a variety of AI technologies and accounting software programs, to improve their functional abilities, effectiveness, and efficiency.

***Keywords**: Accounting practice, Accounting profession, Artificial intelligence, Artificial intelligence technologies, Accounting software programs.*

1. INTRODUCTION

Globally, the act of decision making is an inherent human activity that has significant impacts (Akinadewo et al., 2024). Within an organization, choices are taken in a structured, unstructured, or semi-structured manner based on the degree of certainty of the problem representation and solution (Turban & Aronsone, 1998). In order to achieve this goal, businesses from all over the world use computer technology and applications to augment and extend human capabilities (Falana et al., 2023). Intelligent decision support systems (IDSS), also known as AI-integrated decision-making support systems, are increasingly utilized to help decision-making in a variety of fields, including command and control, accounting, finance, healthcare, marketing, and commerce (Busayo et al., 2023). Instead of relying on human intelligence, artificial intelligence (AI) uses an expert system (Askary, Saeed & Abu-Ghazaleh, 2018).

In today's rapidly evolving digital landscape, the integration of technology into accounting practices has become imperative for enhancing decision-making, efficiency, and accuracy (Dagunduro et al., 2023). Among the most transformative innovations is Artificial Intelligence (AI), which has redefined traditional accounting by automating complex tasks, analyzing vast amounts of data in real-time, and offering predictive insights (Owonifari et al., 2023). AI technologies such as expert systems, neural networks, genetic algorithms, natural language processing, and intelligent agents are increasingly being adopted by accounting professionals to support informed and timely financial decisions (Raji & Dagunduro, 2024). This shift reflects the global trend toward smarter, data-driven business environments where speed and precision are vital. Despite the global momentum, the adoption and practical application of AI in accounting practices in Nigeria remain at a developmental stage, often hindered by infrastructural, educational, and regulatory limitations (Dagunduro et al., 2023). Nonetheless, the growing awareness of AI's potential in enhancing decision-making processes presents an opportunity for Nigerian accounting firms to modernize and remain competitive.

Companies and financial services firms are increasingly using artificial intelligence (AI) to combine and convert data from multiple sources and extract better decision-relevant information in complicated contexts to generate economic benefits (Akinadewo et al., 2023; Joseph & Gaba, 2020). In this worldwide mega-trend, which also involves sophisticated machine learning (Gepp & Salijeni, 2018) and Big Data methods, AI can be thought of as an umbrella phrase (Igbekoyi et al., 2023). By enabling the decrease of inaccuracies and errors in the accounting information displays, artificial intelligence has enabled significant improvements in the accounting industry through the integration of emerging technologies like the blockchain and big data (Falana et al., 2023). This in turn has prompted several large accounting companies to contemplate integrating AI to efficiently and effectively carry out their audits and accounting operations (Zhang, Yingying & Xiong, Feng & Xie, Yi & Fan, Xuan & Gu, Haifeng ,2020).

A review of earlier literature found studies on the conceptualizations of cooperation between humans and artificial intelligence (AI). According to Agrawal et al. (2019), AI will only improve human decision-making in the near future. In contrast, Mulgan (2018), Lehneret al. (2021), and Jarrahi (2018) already envision a transition in the future towards partially autonomous digital agents as decision-makers.

Additionally, studies on the moral ramifications of AI-based decision-making, its related algorithms, and big data (Lombardi et al., 2015) were studied (Dignum, 2018; Leyer and Schneider, 2021; Vincent, 2021). However, there is a dearth of research on the use of AI in the (broader) domains of accounting and auditing as a tool for making quick decisions in accounting practice. In order for the accountants to make an effective and informed judgment, the financial information that is currently available has improved significantly thanks to technology (Ghanem & Ariff, 2016). As a result, this research offers an empirical analysis of AI tools that are utilized to enhance decision-making in accounting practice. The study uses qualitative research to close a gap in the body of knowledge. This study investigated the adoption of artificial intelligence as a tool for decision-making in accounting practice in Nigeria. It aimed to assess the extent to which AI components influence quick and accurate decision-making, thereby providing empirical evidence to support strategic investment in AI technologies across the accounting profession. Significantly, this study will improve the frontier of knowledge as well as being an added advantages to the accountants, entrepreneurs, regulators and the global community.

2. LITERATURE REVIEW

In line with the objectives and focus of this study, various existing and relevant literature from various authors were reviewed conceptually, theoretically, and empirically from which further lights were shed on the topic of the study and to also identify and specify the gap to literatures.

2.1 Conceptual Review

John McCarthy, who originated the term "artificial intelligence," and other computer scientists at the University of Dartmouth seminar in America can be credited with making the first formal proposal for artificial intelligence (AI) in 1956. (Luo et al., 2018; Bruun & Duka, 2018; Singh et al., 2013). Giles (2019), on the other hand, asserted that Logic Theorist, a software developed by Herbert Simon, Allen Newell, and John Shaw and intended to imitate a human's problem-solving abilities, was the first instance of AI. Greeman (2017) also asserted that the idea of intellectual machines can be found in Greek mythology, which includes tales of Hephaestus, a blacksmith who created mechanical robots. The realistic notion of AI then started at the first meeting in 1956 with regards to the development of stored-program computers in the middle of the 20th century (Greeman, 2017 cited in Akinadewo, 2021). Over the past four years, there has been an astounding increase in investment in AI on a global scale. Only 9% of firms, according to Gartner research from 2016, had really implemented AI technology. Enterprise Digital Research predicts that throughout the next five years, the percentage of AI implementations would almost quadruple, reaching 25% by 2019. (Rettas et al., 2019). Artificial intelligence (AI) has drawn a lot of attention recently and has been characterized as a disruptive factor for organizations across a variety of industries (Ransbotham et al., 2018; Davenport & Ronanki, 2018). Artificial intelligence (AI)-based digital, and disruptive technology is now a major force behind transformation across many industries (Agrawal et al., 2019).

2.1.1 Perspectives and Concepts of Artificial Intelligence

The definition of the term is always changing, just like artificial intelligence itself. In an effort to describe AI, various viewpoints have been used, each of which highlights a particular aspect of the idea. According to Martinez (2019), a general definition of AI can be used in a variety of contexts and applications as long as it is adaptable and takes into account the recent growth of autonomous AI. Different approaches to developing a generic description were described by Martinez (2019). These comprise the definitions of "Ambiguity & Descriptors," as well as prescriptive and descriptive definitions. Grewal (2014) proposed that artificial intelligence (AI) is a mechanical simulation system for learning and collecting information that also processes the intelligence of the universe after analyzing all of the definitions of the term at the time. It entails gathering, analyzing, and ultimately distributing knowledge, information, and intelligence to the appropriate parties in the form of actionable intelligence (Raji & Dagunduro, 2024). According to Haenlein and Kaplan (2019), cited in Zemánková (2019), artificial intelligence (AI) refers to a system's capacity to precisely grasp external input, learn from it, and then apply what it has learnt to accomplish specific goals and tasks through flexible adaptation. In a slightly different definition, Zhang et al. (2020) claim that artificial intelligence (AI) is the end result of successful applications of big data and machine learning (ML) technologies to understand the past and predict the future utilizing vast amounts of data. According to Lee & Tajudeen (2020), AI enables computers to accomplish tasks that are similar to those performed by humans, learn from their errors, and adapt to new data.

2.1.2 Functionalities of AI

In order to simulate human traits using computer systems, AI mixes physiology, computer science, philosophy, mathematics, statistics, and languages (Taghizadeh et al., 2013), which relates to its enormous contribution to corporate decision-making. Businesses that use AI applications should see improvements in terms of additional business value, such as higher revenue, lower costs, and better operational efficiency (AlSheibani et al., 2020; Awotomilusi et al., 2022). According to a recent MIT Sloan Management Review research, more than 80% of firms consider artificial intelligence (AI) as a strategic opportunity and almost 85% perceive it as a means of gaining a competitive edge (Ransbotham et al., 2017). Thus, many businesses are investing in AI technologies in an effort to gain a competitive edge (Owonifari et al., 2023). But despite the increased interest in AI, many businesses find it difficult to reap its benefits (Fountaine et al., 2019). Even when businesses devote time, energy, and resources to the adoption process, the benefits of AI may not materialize as anticipated (Makarius et al., 2020). Industry observers found the resurgence in 2015 when quick and powerful parallel processing became more accessible. It gave rise to the Big Data Movement, making it possible to store and analyze infinite data amounts. Barber (2021).The disruptive technology era is widespread and would noticeable gain more attention in the business community, both globally and domestically.

2.1.3 The Concept of Artificial Intelligence and Human Intelligence

AI presents challenges for financial leaders, one of which is the definition of the phrase. One of the big four auditing firms in the nation, Ernst & Young, aids CFOs by defining AI as an umbrella term that includes automation technologies ranging from the most basic robotic process automation to specialized tools, able to mimic and outperform human intelligence in some niche

situations. The same EY report describes the development of technology up to the appearance of AI solutions. Rules-based automation, structured data processing, and unattended automation are examples of robotic process automation systems. Machine learning, unstructured data processing, and human-in-the-loop are all components of cognitive automation systems, which are the transitional stage between robot process automation and AI (Busayo et al., 2023; Stancu & Dutescu, 2021). Artificial intelligence solutions include deep learning, decision-making, machine reading, vision, and natural language creation, such as in chatbots (Akinadewo et al., 2023; Clarence et al., 2019).

Machine learning is an example of an artificial intelligence subfield. The ability of computers to program themselves, making their own judgments and predictions based on the data they gather is represented by this (Owonifari et al., 2023; Raji & Dagunduro, 2024). Reconciliation processes are an example of a routine accounting operation that currently necessitates human intervention (Dagunduro et al., 2023). This activity can be carried out automatically using machine learning because a machine is capable of making minor logical connections (Akinadewo et al., 2024). In this manner, the accountant can use the time spent on this activity to devote more time to its consulting position and enhance its services through the use of machine learning (Duffy, 2018).

2.1.4 The Accounting Profession

The demand for the accounting profession resulted from the need to manage limited resources wisely, amass riches, and provide high-quality goods and services in a market that was highly competitive (Dagunsuro et al., 2023). In layman's terms, the accounting profession is understood to be one that is in charge of gathering, classifying, documenting, summarizing, analyzing, and interpreting data for financial statement users (Awotomilusi et al., 2024). Financial information regarding economic entities is provided qualitatively by the accounting profession with the goal of aiding in the making of economic decisions (Awotomilusi et al., 2023; Owonifari et al., 2023). When conducting business and economic activities, this information enables users to make thoughtful decisions between various uses of limited resources (Kwarbi & Omojoye, 2021)

Professional accountants are those who have completed both their accounting education and further training from reputable professional accounting groups (Awotomilusi et al., 2022). They receive recognition from these professional accounting groups, which also grant them licenses to provide public accounting and financial services (Raji & Dagunduro, 2024). To ensure strict adherence to the best practice guidelines and ethical considerations, the accounting organizations constantly monitor and supervise them. Language skills, computer skills, interpersonal skills, leadership skills, analytical skills, multi-tasking skills, due diligence skills, and training skills are all necessary for an accountant (Dagunduro et al., 2023). According to Ronny and Yuanyuan (2013), a variety of skills necessary for the accounting profession include accounting, auditing, taxes, accounting software, business law, human resource management, retail/consignment business, operation & supply chain, project management, and strategic management. Ronny & Yuanyuan (2013) defined the accounting process as the creation of financial reports starting with documents and ending with financial statements. The study listed three components of the accounting process: designing, preparing, and handling the accounting process.

2.1.5 Adoption of AI in Accounting Profession for Decision –Making

Jason Fernando (2022) posited that accounting is the process of documenting a company's financial transactions. These transactions are summarized, examined, and reported to oversight organizations, regulatory bodies, and tax collection organizations as part of the accounting process (owonifari et al., 2023). The financial statements used in accounting are a succinct summary of financial events over an accounting period, outlining a company's operations, financial status, and cash flows (Dagunduro et al., 2023). Accounting is a tool, a support for management with a holistic viewpoint (Raji & Dagunduro, 2024). It is not an end in and of itself, but a way of gathering and processing economic and financial data that is useful for general and financial decision-making, which is the core and strategic managerial function of a business entity. (Florin Boghean, et al., 2010). The financial industry has seen a significant increase in activity in recent years, and it appears that one of the main areas of focus for the sector is the development of financial tools and practices that will increase the likelihood of more accurate results in banking, investment, and insurance products (Mirzaey et. al., 2018).

The need for firms to place a greater emphasis on financial health globally emerged starting in 2008, following the financial crisis, and the first two areas to improve were risk management and cost control. Accounting divisions started focusing on generating greater results while staying within the agreed-upon budget to support this transition (Smith, 2018). According to a 2020 UiPath study, the presence of finance experts has increased at the top echelons of an organization's strategic decision-making process due to their potential to advise business executives on commercial and technical business concerns. The finance and accounting industries began utilizing new technology to ensure stronger customer relationships, but they did so at the expense of giving more accurate findings, which are crucial in decision making, risk analysis, controlling, and reporting. Due to the new financial services regulatory structure implemented, considerable changes have been made in how services are planned, monitored, and supplied to clients. (Andrianopoulos et al., 2019)

2.1.6 Impact of AI on Accounting Profession

Artificial intelligence covers a wide range of topics, not all of which are significant or pertinent to accounting (Kokina & Davenport, 2017). Despite not falling under the purview of traditional business discipline on a technical level, artificial intelligence (AI) technology has become a topic of business education and practices due to its wide-ranging effects. There are many commercial functions where AI technology is being used, including production, distribution, procurement, sales and marketing, accounting and finance, audit, research and development, and human resource management. Due to their importance to corporate operations, accounting and auditing are likewise subject to the benefits and drawbacks of AI technology. Reddy et al. (2019) referred to AIS as an AI ontology. The widespread deployment of AI has significantly altered the transactional and functional operations of the global accounting profession, according to studies. Issa et al. (2016) claim that the adoption of AI and robotics has revolutionized accounting processes and presented obstacles for accountants to advance their technological competency (Odoh et al., 2018; Stancheva &Todorova, 2018). In general, applying AI to accounting-related tasks will make it possible to accomplish tasks effectively and efficiently (Issa et al., 2016).

In light of this claim, it is anticipated that the application of AI will improve the efficiency of accounting tasks and remove certain associated costs (Odoh et al., 2018) Divergently asserting that

human tasks will be replaced by technological advancements, particularly in AI, Greenman (2017) predicted that this will result in job losses to experts with more experience and training. Processing speed will be greatly enhanced by growing computing power. Modern technology specialists have found that tasks that used to take weeks to complete a decade ago now only take minutes. Five years ago, they used to take hours. Due to its increased accessibility, portability, and speed, AI is currently being quickly implemented, modified, and used by enterprises (Gotthardt et. al., 2020). The accessibility of better algorithms and usage methods has significantly improved over the previous time period. The large amount of research devoted to improving and expanding the algorithms underlying artificial intelligence (AI) led to the emergence of a wide range of AI solutions capable of resolving various issues. The developer community is expanding, and they created free-to-use packages as well. (Dutescu & Stancu, 2021)

2.1.7 Components of AI adopted for Review

This recent development in technology has given rise to a number of components and features that are hugely beneficial to the accounting industry. According to Thomas-Bryant (2019), these key components and features include Predictive and Forecasting Solutions, Smart Assistants, Automatic Tagging and Allocation of Transactions, Anomaly Detection and OCR Solutions, and these are optimized by the functionality of machines that were developed and used for various operations in organizations. (Akinadewo, 2021). These few key technologies—Expert Systems (ES), Genetic Algorithm (GA), Neural Network (NN), Natural Language Processing (NLP), and Intelligent Agents (AI) are adopted for review in this study.

2.1.7.1 Expert Systems (ES)

According to Taghizadeh et al. (2013), ES are computer programs that replicate the behavior of an expert in a variety of fields. The researchers thought they could identify kinds of rationality, which might be used to choose an expert based on them and were modeled after how people make judgments. According to Odoh et al. (2018), ES are artificial intelligence (AI) systems that were introduced in the 1980s and have the capacity to replace human specialization in decision-making. As a result, knowledge engineering is the process of creating an expert system, which must guarantee that the design has all the information required to solve a problem; otherwise, the decisions may not be reliable (Taghizadeh et al., 2013).

2.1.7.2 Genetic Algorithm (GA)

These algorithms have tremendous capacity to solve issues, and they allow for the option of moving quickly across the problem space towards the desired area (Taghizadeh et al., 2013). GA is also thought to be a reliable AI search technique that needs little knowledge to operate efficiently in a big or poorly understood search field (Odoh et al., 2018). The experts contend that in order to find a better answer; it is necessary to consider both the encoding of candidate structures and a way for assessing how well their relatives perform. It has been hypothesized that evolutionary algorithms could be used to represent accountant or auditors' behaviors in fraud judgments. Other uses for genetic algorithms include predicting bankruptcy and making business decisions, to name a few (Zemánková, 2019).

2.1.7.3 Neural Network (NN)

A neural network is a type of machine learning system that mimics how neurons and connections are arranged in the human brain. It is also capable of changing its structure to better carry out the task it has been taught. The term "deep learning" can be applied more broadly as the more intricate neural networks get and the more frequently, they consist of numerous "layers" (Deloitte, 2018). The NN entails digital representations of the neuronal architecture of the human brain (Taghizadeh et al., 2013). In this tool, the teaching and learning methods rely heavily on experience, while the electronic models rely on the same pattern and models, which deal with various computational techniques that are typically used by computer systems (Taghizadeh et al., 2013; Odoh et al., 2018). According to studies, NN is a key component of AI and is interesting because it can mimic the activities of the human brain (Kuma & Thakur, 2012; Taghizadeh et al., 2013; Odoh et al., 2018, citing Kuma & Thakur, 2012 and Taghizadeh et al., 2013). However, Taghizadeh et al. (2013) emphasized further that the field of computational knowledge does not use any conventional programming techniques and that the process model serves as the foundation for modern computing, both in terms of data storage and model analysis.

2.1.7.4 Natural Language Processing (NLP)

According to Taghizadeh et al. (2013), NLP mimics genuine human languages and can be used to comprehend and analyze advice and assertions utilizing dialogue, which is primarily used for daily tasks. Thus, in order to properly comprehend and communicate in this area of IA, a knowledge of natural language is required (Odoh et al., 2018).

2.1.7.5 Intelligent Agents (IA)

Odoh et al. (2018) argued that the growth of a completely networked business environment has led to challenges with information overload, and this is one of the key answers to such problems. The academics went on to say that the IA software application goes via the internet and other known infrastructure at its own discretion, which might reach suppliers' gateway and be able to access suppliers' information in databases and other storage media.

2.2 Theoretical Review

The core theory underpinning this study on the adoption of AI as a tool for decision –making in the accounting profession is the Agency Theory.

2.2.1 Agency Theory

The agency theory has its roots in economic theory. This was created by Alchian & Demsetz in 1972 and improved upon by Jensen and Meckling (1976). According to the agency theory, the decision-making authority is transferred from the principal (owners and shareholders) to the agent (directors, managers, and management), who may pursue interests that are not always in the principal's best interests and may even work against the principal due to information asymmetry (Ogoun, 2020). The agency theory is concerned with entrusting products to the agent who is then expected to produce a statement in both a qualitative and quantitative manner and are expected to be in alignment with the interests of the owners and managers of a business in order for the organization's stated objectives to be achieved.

Basic agency theory was developed in the economics literature in the 1960s and 1970s to assess the ideal level of risk-sharing among various parties (Jensen & Meckling, 1976). However, throughout time, the agency theory domain was expanded to the management sector in order to assess how well diverse employees with various goals cooperate inside the organization and achieve goal congruency (Kwafo, 2019). The agency theory was widely used in the 1980s in the auditing and accounting fields to build the best accounting control systems for observing the behaviors and activities of various parties and to find the best incentive contracts among them (Gotthardt, et al., 2020). This study will focus on the agency theory's final function. In its most basic form, agency theory refers to circumstances in which one person (referred to as the agent) is hired by another person (referred to as the principal) to carry out tasks on his or her behalf in exchange for a set payment schedule. Since both individuals are presumed to be utility maximizers and driven by both monetary and non-monetary factors, incentive issues may arise, especially in the presence of uncertainty and informational asymmetry (Longinus, 2018).

2.3 Empirical Review

Extant literature about the adoption of artificial intelligence and its relevance to decision-making in the accounting profession, by several researchers using different analytical methods have been studied. Kwarbai and Omojoye (2021) explored the influence of artificial intelligence (AI) on the accounting profession in Nigeria using a field survey research approach. Their study focused on accountants working in the "Big Four" accounting firms such as KPMG, Deloitte, PwC, and Ernst & Young. Findings indicated that AI has a significant impact on the accounting profession in the country. Similalrly, Odoh (2018) analyzed how AI affects accounting operations within firms located in Southeast Nigeria. Utilizing a descriptive research design, the study involved 185 accountants and managers from Anambra and Enugu States. Data collected through structured questionnaires revealed that expert systems and intelligent agents significantly enhance the performance of accounting functions in these firms.

Douglass and Holmes (2021) gathered insights from accounting professionals regarding the implications and risks associated with AI adoption in the profession. Based on survey results, respondents expressed generally positive views, noting that AI helps reduce repetitive tasks and human error. They also observed that AI's advancement may shift accounting education to emphasize technical and computer-based skills. Hasan (2022) conducted a narrative review of literature concerning the integration of AI in accounting and auditing. The findings emphasized that in light of the disruptive nature of emerging technologies, accounting and auditing must evolve. The study advocates for interdisciplinary collaboration in AI research and highlights that broader AI adoption can enhance efficiency, productivity, and accuracy in the field. Onwughai (2022) assessed how AI and machine learning influence accounting roles in business organizations. Using both survey questionnaires and a review of existing literature, the study revealed that while AI is likely to replace routine accounting tasks, it also presents opportunities for professionals to transition into more strategic roles. However, for Nigerian firms, the regression analysis showed no statistically significant link between AI adoption and accounting functions, as the p-value (0.846) exceeded the 0.05 threshold.

Sharma, Suthar, and Meharia (2021) investigated how accounting professionals, and related stakeholders perceive and accept AI in accounting. Data were collected from professionals, business owners, educators, and students via structured questionnaires. Analysis using Smart PLS

and structural equation modelling revealed that perceived insecurity, user attitude, and ease of use moderately influence the intention to adopt AI in accounting. The study concluded that while AI is seen as the future of accounting, concerns about privacy and security remain prevalent. Zhang and Ziong (2020) provided a comprehensive review of current developments in big data, machine learning, artificial intelligence, and blockchain utilized in general business practice and by specialized practitioners in the accounting profession worldwide. This paper explores the evolution of the accounting profession following these recent technological developments and assesses the impact of future developments. The research work adopted the review of relevant Literatures. The paper reflected how all these technologies and the associated requirements of job candidates will affect the desired capabilities of accounting graduates and provides further discussion regarding what higher institutions and their accounting graduates can do to adopt such changes.

Lehner et al. (2020) identified ethical challenges of using artificial intelligence (AI)-based accounting systems for decision-making. This research is rooted in the hermeneutics tradition of interpretative accounting research, in which the reader and the texts engage in a form of dialogue. To substantiate this dialogue, the authors conduct a theoretically informed, narrative (semi-systematic) literature review spanning the years 2015–2020. This review's narrative is driven by the depicted contexts and the accounting/auditing practices found in selected articles are used as sample instead of the research or methods. The study, in the thematic coding of the selected papers the authors identified five major ethical challenges of AI-based decision-making in accounting: objectivity, privacy, transparency, accountability and trustworthiness. Using Rest's component model of antecedents for ethical decision-making as a stable framework for our structure, the authors critically discuss the challenges and their relevance for a future human–machine collaboration within varying agency between humans and AI.

Rahman (2021) examined the importance and challenges of adopting artificial intelligence (AI) in the banking industry in Malaysia and examine the factors that are important in investigating consumers' intention to adopt AI in banking services. This qualitative research was carried out using in-depth interviews from officials in the baking industry to understand the importance and challenges of adopting AI in the banking industry. In the quantitative study, a total of 302 completed questionnaires were received from Malaysian banking customers. The data were analysed using SmartPLS 3.0 software to identify the important predictors of their intention to adopt AI. The qualitative results revealed that AI is an essential tool for fraud detection and risk prevention. The absence of regulatory requirements, data privacy and security, and lack of relevant skills and IT infrastructure are significant challenges of AI adoption. The quantitative results indicate that attitude towards AI, perceived usefulness, perceived risk, perceived trust, and subjective norms significantly influence intention to adopt AI in banking services while perceived ease of use and awareness do not. The results also show that attitude towards AI significantly mediates the relationship between perceived usefulness and intention to adopt AI in banking services.

Al-Blooshi and Nobanee (2020) evaluated the application of AI in financial Decision making. A systemic content analysis methodology was used to evaluate related literature publications in this study. A selection of papers, including posts, has been collected. This research focuses on broad peer-reviewed publications, including Scopus and SSRN, which are listed in quality and impact rankings. This selection of the highest-ranking papers not only guaranteed the quality of papers that were most reviewed and validated but also provided the most up-to-date research state during

their publication periods. Some keywords are used to scan for artificial intelligence papers, such as artificial intelligence and financial articles such as corporate finance, artificial intelligence, digital finance, financial and artificial intelligence and so on. The study revealed that AI has been found to be used by organizations around the world for the detection of anomalies. It is used to establish optimal investment strategies. The other use of AI insecurities is algorithmic trading, programs that integrate information regarding changing market dynamics and price levels by using proprietary algorithms to make automated trading very rapidly.

Hashem & Alqatamin (2021) urrent study launched from the main objective of examining the impact of artificial intelligence (AI) and its role in supporting and improving the efficiency of AIS on one hand, and non-financial performance standards on the other. Quantitative approach was used, and a questionnaire were adopted as a study tool, the questionnaire was distributed electronically to a sample of (409) managers, heads of departments and accountants in industrial establishments operating in Jordan during the fiscal year 2020/2021. By analyzing the primary data based on SPSS. The qualitative results of the study revealed that AI is an essential tool for detection and risk prevention. The absence of regulatory requirements, data privacy and security, and lack of relevant skills and IT infrastructure are significant challenges of AI adoption. The quantitative results indicate that attitude towards AI, perceived usefulness, perceived risk, perceived trust, and subjective norms significantly influence intention to adopt AI in banking services while perceived ease of use and awareness do not. The results also show that attitude towards AI significantly mediates the relationship between perceived usefulness and intention to adopt AI in banking services.

Taha (2021) assessed the advantages and disadvantages of automation in the accounting sector. The article adopted a qualitative study design to examine prevailing thoughts on how the automation of accounting operations impacts the employability of qualified accountants, from the perception of financial instructors, employees, students, and business managers. The primary source of data for this research will be an in-depth literature review of relevant research articles that offer findings on the perceived impacts of computerization. Study posited that the use of robotics for corporate book-keeping will lead to the loss of consultancy jobs and those requiring fundamental analytical skills.

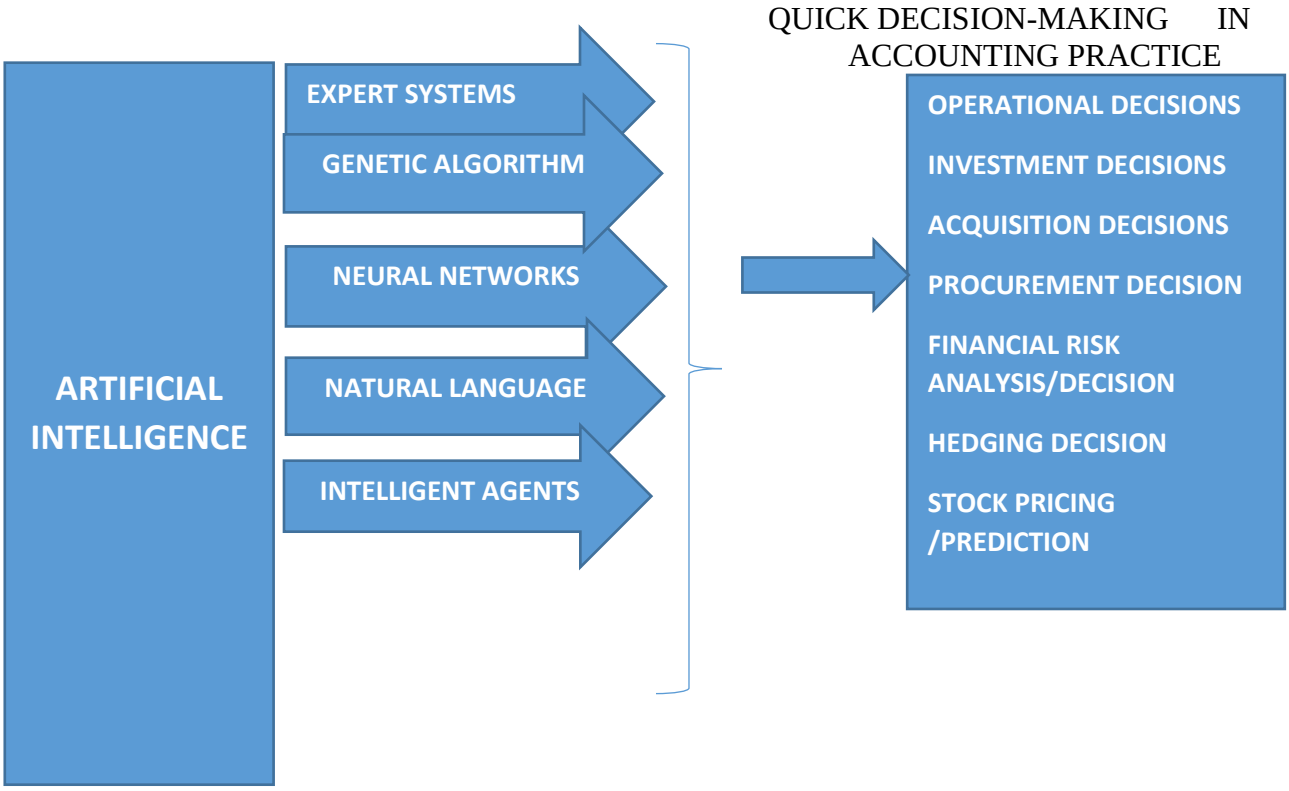
Several literatures have been reviewed both domestic and international with reference to the relevance of AI on decision –making in the accounting profession. However, none of the studies, particularly on decision-making, adopted primary data through the use of well-structured questionnaires as research instruments. Nigeria. In the same vein, there is also a scope gap, as this study aims to evaluate the significance of Artificial Intelligence to quick decision-making in accounting practice in industries in Lagos state, Nigeria. This study is thereby tailored to these methodological and scope gaps in achieving the objectives of this study.

Awotomilusi et al. (2022) examined how cloud computing influences the effectiveness of accounting practices in Nigeria. Their results revealed a strong positive correlation between cloud computing and improved accounting efficiency. The study also showed that both technological advancements and enhanced security contributed positively to accounting effectiveness, while cost-effectiveness was found to have a negative association. Dagunduro et al. (2023) explored the role of artificial intelligence in enhancing audit quality in Nigeria by analyzing components such as expert systems, machine learning, and intelligent agents. The study concluded that each of these AI technologies significantly improved audit quality. In a similar study, Owonifari et al. (2023)

analyzed the effects of AI on auditing procedures in Lagos State. The findings demonstrated that data mining, machine learning, and image recognition technologies all had a substantial positive impact on audit practices.

Busayo et al. (2023) evaluated the effect of AI on the service delivery quality of telecom firms in Nigeria. Their research found that technologies like data mining and chatbots improved service quality, whereas machine learning had a negative effect. Akinadewo et al. (2024) conducted a detailed investigation into how AI adoption influences auditing in Nigeria, focusing on tools such as data mining, machine learning, and image recognition. The study surveyed 159 accounting firms out of a targeted 251. Findings showed that both data mining and image recognition significantly boosted audit quality. However, machine learning demonstrated a weak and statistically insignificant negative relationship with audit quality, indicating potential challenges or limited integration of this technology in the current auditing landscape.

2.4. Conceptual Framework



Conceptual Framework of Quick Decision-Making in Accounting Practice due to the Adoption of AI
Authors' Concept (2022)

3. METHODOLOGY

A structured questionnaire that was given to a group of chosen accountants and computer professionals provided the primary data for this investigation. Purposive sampling was used to define the targeted demographic, for which 279 people made up the sample size. Nigeria's Lagos State is the subject of the study. Lagos is Nigeria's commercial capital, and many firms have

computerized accounting departments, therefore this population was chosen with that in mind. The accountants from the companies in Victoria Island in Lagos were the targeted respondents. Victoria Island (VI) is deemed important for this study being an affluent area, the main business and financial center of Lagos State. VI houses many companies in the financial sector, manufacturing industries, mineral and oil exploration companies, and the popular Globacom Limited Head office among others, with computerizeded accounting department. The questions raised in the questionnaire were streamlined to get reliable and validly measurable data, with a 5-points Likert scale method. This study's conceptual framework was purposed to establish the link between the dependent variable and the independent variable, as shown in the previous section. Quick Decision-Making in Accounting Practice (QDMAP) is the dependent variable. The independent variable is Artificial Intelligence (AI) proxied by Expert Systems (ES), Genetic Algorithm (GA), Neural Network (NN), Natural Language Processing (NLP), and Intelligent Agents (IA).

3.1 Model Specification

QDMAP = Quick Decision-Making in Accounting Practice = Dependent Variable
AI = Artificial Intelligence = Independent Variable
Meanwhile,
QDMAP = f (ES, GA, NN, NLP, IA) ……. (1)
$AAAF = \beta 0 + \beta 1ES + \beta 2GA + \beta 3NN + \beta 4NLP + \beta 5IA + \mu)$ ……. (2)

4. DATA PRESENTATION AND ANALYSIS

This research study examined the adoption of Artificial intelligence on decision making in accounting practices, using Lagos State, Nigeria, for the sampled area. The 5-point Likert scale questionnaire was employed and enabled the respondents to select between strongly agree (5), agree (4), undecided (3), disagree (2), and strongly disagree (1). In Table 1, the responses of the respondents to the questions raised in the questionnaire showed a high mean of at least 4.1326 from a minimum mark of 2.80 and maximum mark of 5.00 in the 5-point Likert scale method of questionnaire, the choices of the respondents, however, range from the least (strong disagree -1), to the highest (strongly agree – 5). The data presented further implies that majority of the respondents believed that the components of Artificial Intelligence (Experts systems, Neural Network, Genetic Algorithm, Natural Language Processing, Intelligent Agent) will influence changes in Decision making in accounting practice

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ES	279	3.00	5.00	4.1637	.45269	-.367	.146	.039	.291
GA	279	2.80	5.00	4.1326	.45995	-.136	.146	.175	.291
NN	279	3.17	5.00	4.1404	.38130	.306	.146	.348	.291
NLP	279	3.00	5.00	4.1900	.44062	.198	.146	-.324	.291
IA	279	2.83	5.00	4.1189	.45688	-.074	.146	.388	.291
QDM	279	2.86	5.00	4.1521	.41045	.158	.146	.401	.291
Valid N (listwise)	279								

Source: Authors' Computation (2025)

The collated data were analysed using multiple regression analysis with the results stated in Tables 2-4 below:

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.970[a]	.940	.939	.10140	.940	856.319	5	273	.000	2.311

a. Predictors: (Constant), IA, NLP, ES, NN, GA

b. Dependent Variable: QDM

Source: Authors' Computation (2025)

The regression analysis results in Table 2 shows R (0.970), R2 (0.940), adjusted R2 (0.939), and the standard error of estimate (0.10140). The value of R shows there is a very strong relationship between the observed and the predicted values of the variables, this implies that artificial intelligence has a strong positive effect on Decision making in accounting practices from the result of the coefficients 97.0%. The value of R shows that the proportion of variation in the dependent variable is explained by the model in Table 2. The value of R2 indicates that 94.0% of the variation in the dependent variable could be explained by ES, NN, GA, NLP, and IA. The remaining 6.0% could be as a result of other variables not captured in this model. The adjusted R2 value (93.9%), which is close to the R2 value (94.0%) indicates that the model is fit for generalisation.

Table 3 **ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44.026	5	8.805	856.319	.000[b]
	Residual	2.807	273	.010		
	Total	46.833	278			

a. Dependent Variable: QDM
b. Predictors: (Constant), IA, NLP, ES, NN, GA
Source: Authors' Computation (2025)

The Analysis of variance (ANOVA) in Table 3, tests the significance or otherwise, the fitness of the model. The F-calculated (856.319) is higher than the F-tabulated (0.000) at 5% significance level, hence, the null hypothesis was rejected.

Table 4: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	-.171	.076		-2.251	.025	-.321	-.021		
	ES	.011	.019	.012	.603	.547	-.026	.048	.517	1.935
	GA	-.059	.024	-.066	-2.425	.016	-.107	-.011	.295	3.387
	NN	.085	.027	.079	3.133	.002	.032	.138	.347	2.881
	NLP	.481	.017	.517	28.073	.000	.448	.515	.648	1.544
	IA	.522	.018	.582	28.350	.000	.486	.559	.522	1.916

a. Dependent Variable: QDM
Source: Authors' Computation (2025)

Hypothesis Testing
H_0: There is no significant positive relationship between artificial intelligence and quick decision making in the accounting practices.
Table 4 above showed that the relationship between artificial intelligence and decision making in accounting practices is statistically significant (P = .025 < .05) with t-statistics of -2.251. In consideration of these results, the study shows that Artificial Intelligence (AI) has a significant positive influence on decision making in accounting practices. at 5% level of significance. This shows that the null hypothesis should be rejected. This indicates that artificial intelligence will have a significant positive influence on decision making in accounting practices. This is also affirmed from the results of the respective level of significance of the components of Artificial intelligence, the independent variable. The individual level of significance for ES (0.547), GA (0.016), NN (0.002), NLP (0.000), and IA (0.000) are lower than 5% acceptable level of significance. This means that when artificial intelligence is applied to accounting practices, it will result in quick decision making to such activities. The output of the multiple regression shown in

the coefficient (Table 4) revealed that: QDM = -0.171 + 0. 011ES – 0.059GA + 0.085NN + 0.481NLP + 0.522IA.

5. CONCLUSION AND RECOMMENDATION

The findings of the study showed that various components of artificial intelligence (AI), such as expert systems, genetic algorithms, neural networks, natural language processing (NLP), and intelligent agents, contribute meaningfully to enhancing decision-making speed in accounting practices within Nigeria. These AI tools are capable of analyzing large volumes of financial data with speed and accuracy, identifying patterns, forecasting outcomes, and providing insights that support timely and well-informed decisions. For example, expert systems mimic human decision-making abilities to offer solutions based on historical data and established accounting rules, while neural networks and genetic algorithms optimize data processing and predictive accuracy. The application of these technologies minimizes delays associated with manual processing and reduces the likelihood of human error, ultimately promoting efficiency in accounting operations.

Moreover, the integration of natural language processing and intelligent agents further supports fast and reliable decision-making by improving how accounting systems interact with users and interpret financial data. NLP allows systems to understand and respond to human language, enabling accountants to interact more effectively with software tools for quick information retrieval and analysis. Intelligent agents, on the other hand, automate routine tasks, monitor financial systems, and provide real-time alerts on anomalies or trends. These capabilities not only streamline operations but also enable accountants to focus on strategic tasks and complex problem-solving. Overall, the study underscores the transformative potential of AI in modernizing accounting practices and positioning professionals to make quicker, data-driven decisions in a rapidly evolving business environment.

This study concludes that artificial intelligence (AI) technologies such as expert systems, genetic algorithms, neural networks, natural language processing, and intelligent agents have a significantly positive effect on enhancing rapid decision-making in accounting practices in Nigeria. These technologies streamline data analysis, reduce human error, automate routine processes, and facilitate timely financial reporting and strategic decision-making. Based on these findings, it is recommended that accounting firms and regulatory bodies in Nigeria invest in the adoption and integration of AI tools into their operations. This includes providing regular training for accounting professionals to improve their competence in using AI applications, as well as ensuring adequate infrastructure and data security measures to support AI deployment.

This research contributes to the growing body of literature on the intersection of AI and accounting by providing empirical evidence of AI's role in enhancing decision-making speed within the Nigerian accounting sector. It offers practical insights for policymakers, educators, and accounting firms regarding the implementation of AI for improved financial decision-making. For future studies, researchers are encouraged to explore the long-term effects of AI adoption on the quality and integrity of financial reporting. Additionally, further research could examine the challenges and ethical considerations associated with AI implementation in accounting, as well as conduct comparative studies between regions or sectors to assess variations in AI impact across different organizational environments.

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