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Artificial Intelligence (AI) in Accounting: Transforming the Role of Accountants and Internal Control System in Nigeria

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ABSTRACT
This study empirically investigated the use of artificial intelligence in transforming the roles of accountants and internal control system in Nigeria. In order to determine the relationship between AI and internal control system, AI (independent variable) was proxy using intelligent agents (IA) and neural network (NN) while internal control system was the dependent variable. Two hypotheses were formulated to guide the investigation and the statistical test of parameter estimates was conducted using least squares regression model operated with E-Views.12. Survey design was adopted and data for the study was obtained through e-questionnaire survey sent to the various Staff WhatsApp Group Platform of the selected audit firms in Anambra State Nigeria. The findings of the study indicate that intelligent agents and neural network have positive and significant effect on internal control system in Nigeria. Based on this, the study concludes that the use of AI in accounting ensures effective accounting practices and internal control system in Nigeria. The study therefore suggests that full adoption of AI in auditing practices should be encouraged since the reported results and implications of the findings are critical and greatly useful in dictation, risk assessments and timely reporting.
Keywords: Artificial Intelligence; Intelligent Agents; Neural Network

1. INTRODUCTION

The integration of artificial intelligence (AI) into auditing has catalyzed a paradigm shift in financial reporting and internal control systems, redefining the traditional role of accountants. AI technologies including machine learning (ML), expert system (ES), robotic process automation (RPA), and intelligent agents (IA) etc. are revolutionizing audit processes by enhancing accuracy, efficiency, and decision-making capabilities (Brown et al., 2024).

Historically, auditing relied on manual data verification and sampling methods, but the exponential growth of financial data and demands for real time insights have rendered these approaches insufficient (Smith & Johnson, 2021). AI addresses these challenges by enabling auditors to analyze entire datasets, detect anomalies, and automate repetitive tasks, thereby reducing human error and audit cycle times (Oseni et al., 2022). AI's impact extends to strengthening internal control systems**.** For instance, anomaly detection algorithms and blockchain-integrated tools now monitor transactions in real time, flagging potential fraud and ensuring compliance with governance policies (Chen et al., 2023). Empirical studies indicate that firms adopting AI report fewer material weaknesses in internal controls, particularly in IT-dependent processes, and achieve a 5% reduction in audit restatements (Smith & Johnson, 2021). Furthermore, AI adoption correlates with reduced audit fees (0.9–2.1%) and a gradual decline in junior accounting staff (3.6–7.1%), signaling efficiency gains and workforce restructuring (Lee & Kim, 2022).

The transformation of accountants' roles is equally profound. Professionals are transitioning from manual tasks to strategic advisory roles, leveraging AI-generated insights to oversee risk management and guide organizational decision-making (PwC, 2021). Predictive analytics, for example, allows auditors to shift from retrospective reviews to proactive, real-time financial monitoring (Al-Mansoori & Ahmed, 2023). This evolution demands new competencies, such as data literacy and ethical oversight, to ensure transparency in AI-driven processes (Brown et al., 2024).

Despite these advancements using AI as found in the developed economies, most accounting and audit firms especially in the developing economies like Nigeria have not adopted AI assisted techniques in audit process due to exceedingly reliance on manual data verification and sampling methods. Hence, the need for investigation on the usefulness of AI in transformation of accountants role and internal control system in Nigeria.

This study therefore explores how AI could assist the accountants in carrying out her responsibilities and roles. Its findings aim to guide firms, educators, and policymakers in fostering a collaborative future where human expertise and AI coexist to uphold financial integrity. The findings of this study will be valuable for accounting firms, corporate auditors, regulators, and educators seeking to navigate the evolving landscape of AI in accounting and prepare for a future where human expertise and artificial intelligence collaborate to ensure financial integrity. Hence, the following hypotheses were formulated to direct the flow of this study;

H_{01}: The use of intelligent agents has no significant effect on internal control system in Nigeria

H_{02}: The use of neural network has no significant effect on internal control system in Nigeria

This study includes several sections. Therefore, the remainder of this study is structured as follows: Section 2 addresses the business rationale (an overview of the current state of the relevant literature). This is followed by Section 3, which deals with the methodology. Section 4 presents and discusses the results, while Section 5 deals with conclusion and recommendations.

2. Review of Related Literature

2.1. Artificial Intelligence (AI)

Okoye and Eze (2023) viewed artificial intelligence as a multidisciplinary field incorporating knowledge from various disciplines that includes computer science, biology, statistics, medicine, finance, arts in order to generate computer systems that can imitate human skills and abilities. It is believed that this computer systems created will possess some intellectual characteristics of humans such as ability to reason, discover meaning, generalize or learn from past experience.

According to OECD (2023), an AI system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their autonomy and adaptiveness after deployment. The broad field of creating machines or software capable of performing tasks that require intelligence when done by humans, while acknowledging that 'intelligence' itself remains an ill-defined and culturally contingent concept (Mordi & Omaliko, 2015; Mitchell, 2023).

2.1.1 Expert System (ES)

Intelligent agents are software or hardware systems capable of autonomous, flexible decision-making in pursuit of objectives, characterized by reactivity (responding to environmental changes), proactiveness (goal-directed behavior), and social ability (interacting with other agents) (Wooldridge, 2022).

According to IBM Research (2023), an intelligent agent is a computational system that employs machine learning, reasoning, and real-time data processing to autonomously adapt its strategies and achieve user-defined goals, often operating in complex, uncertain environments. Intelligent agents are adaptive systems that learn from interactions with their environment, improving their decision-making policies over time through reinforcement learning or imitation learning, while balancing exploration and exploitation (Mordi & Omaliko, 2016; Stone et al., 2023). The pictorial representation of intelligent agent is exposited on figure 1 below as thus:

Figure 1: Pictorial Representation of Intelligent Agents
Sources: https://www.oraclecms.com/blog/different-types-of-intelligent-agents/

The figure 1 above shows the pictorial representation of intelligent agent used to accomplish specific tasks and achieve desired goals, particularly in the accounting and audit related domain.
Intelligent agents in auditing work by automating and enhancing various stages of the audit process, focusing on tasks like data analysis, risk assessment, and report generation. It can perform these tasks autonomously, using pre-defined logic, data analysis, and contextual learning to achieve audit objectives. By leveraging AI, auditors can focus on more strategic tasks and gain a deeper understanding of the data.
The fig 1 above shows how AI Intelligent agents can conduct risk assessments by scanning regulatory updates and industry trends, automating planning by rolling forward audit programs and scheduling meetings, and even draft audit reports based on structured findings.

2.1.2 Neural Network (NN)

According to Collins (2023), neural networks are adaptive systems trained on large-scale datasets to perform tasks like image recognition, natural language processing, and decision-making, often deployed in cloud-based or edge computing environments for real-time inference. Modern neural networks, such as transformers, rely on self-attention mechanisms to model long-range dependencies in sequential data, enabling parallelized processing and state-of-the-art performance in tasks like language understanding and generation (Vaswani et al., 2023). Also, Goodfellow et al, (2020) opine that neural networks are parameterized functions that map inputs to outputs via compositions of affine transformations and nonlinearities, optimized through gradient-based methods to minimize a loss function over training data.

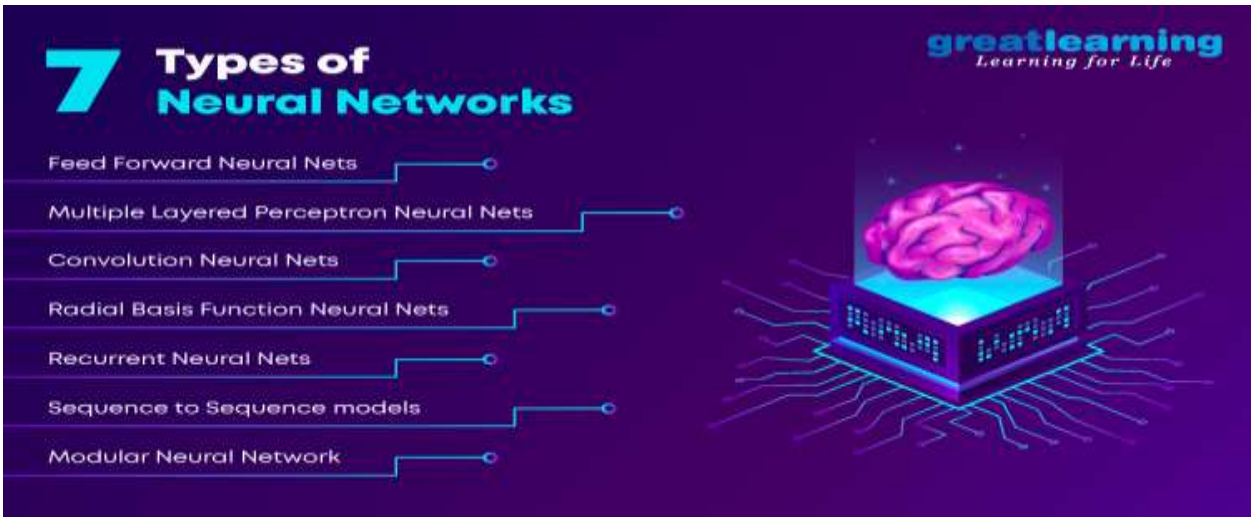

Figure 2: Pictorial Representation of Neural Network
Sources: https://www.mygreatlearning.com/blog/types-of-neural-networks/

The figure 2 above shows the pictorial representation of neural network used for image recognition, predictive modeling, decision-making, and natural language processing (NLP).
The 7 types of neural networks as shown in figure 4 is illustrated below as thus;
Feed Forward Neural Networks (FFNNs) are foundational in neural network architecture, particularly in applications where traditional machine learning algorithms face limitations. It facilitates tasks such as simple classification, face recognition, computer vision, and speech recognition through their uni-directional flow of data.
The Multi-Layer Perceptron (MLP) represents an entry point into complex neural networks, designed to handle sophisticated tasks in various domains such as: speech recognition, machine translation and complex classification tasks. MLPs are characterized by their multilayered structure, where input data traverses through interconnected layers of artificial neurons. This architecture includes input and output layers alongside multiple hidden layers, typically three or more, forming a fully connected neural network.
A convolutional neural network (CNN) specializes in tasks such as: image processing computer vision, speech recognition and machine translation. CNNs differ from standard neural networks by incorporating a three-dimensional arrangement of neurons, which is particularly effective for processing visual data.
A radial basis function (RBF) network comprises an input layer followed by RBF neurons and an output layer with nodes corresponding to each category. During classification, the input's similarity to training set data points, where each neuron stores a prototype, determines the classification.
Recurrent neural network is fed back to the input to help in predicting the outcome of the layer. The first layer is typically a feed forward neural network followed by recurrent neural network layer where some information it had in the previous time-step is remembered by a memory function. Forward propagation is implemented in this case. It stores information required for its future use.
A sequence to sequence model consists of two recurrent neural networks. Here, there exists an encoder that processes the input and a decoder that processes the output. The encoder and decoder work simultaneously either using the same parameter or different ones. This model, on contrary to the actual RNN, is particularly applicable in those cases where the length of the input data is equal to the length of the output data.
A modular neural network has a number of different networks that function independently and perform sub-tasks. The different networks do not really interact with or signal each other during the computation process. They work independently towards achieving the output.

2.1.3 The Contributions of AI in Transforming the Roles of Accountants in Nigeria

Artificial Intelligence (AI) has begun to reshape auditing practices in Nigeria, offering transformative contributions that address longstanding challenges while unlocking new opportunities for efficiency, accuracy, and transparency. One of the most significant impacts lies in the enhancement of audit efficiency. AI-powered tools, such as data analytics platforms and machine learning algorithms, have enabled auditors to process vast volumes of financial data with unprecedented speed. For instance, multinational firms like Deloitte Nigeria and KPMG Nigeria have reported reductions in manual data processing time by up to 40% through AI-driven anomaly detection systems, allowing auditors to focus on higher-value tasks like strategic analysis and stakeholder engagement (Okoye & Eze, 2023). This shift not only accelerates audit cycles but also reduces human error, improving the reliability of financial reporting.

AI has also emerged as a critical tool in fraud detection and risk management, a pressing concern in Nigeria's audit landscape. By leveraging predictive analytics and pattern recognition, AI systems can identify irregularities in financial transactions that might evade traditional audit methods. For example, applications in Nigeria's public sector audits have demonstrated AI's potential to flag suspicious activities in real time, such as mismatched invoices or unauthorized expenditures, thereby curbing corruption and enhancing accountability (Okafor & Uadiale, 2021). These capabilities are particularly vital in sectors like banking and government, where financial malfeasance has historically undermined public trust.

Furthermore, AI contributes to strengthening regulatory compliance in Nigeria's evolving financial ecosystem. As the Financial Reporting Council of Nigeria (FRCN) gradually integrates AI into its guidelines, auditors are adopting AI tools to ensure adherence to evolving standards, such as data security protocols and ethical AI use (FRCN, 2021). Automated compliance checks, powered by natural language processing (NLP), enable auditors to cross-reference financial statements against regulatory requirements more accurately, minimizing non-compliance risks. Beyond technical advancements, AI is fostering capacity building and global integration within Nigeria's audit profession. Exposure to AI tools has prompted upskilling initiatives, with organizations like the Institute of Chartered Accountants of Nigeria (ICAN) incorporating AI literacy into training programs. This alignment with global best practices positions Nigerian auditors to compete in international markets while attracting foreign investment (World Bank, 2023).

However, the full potential of AI in Nigerian auditing hinges on addressing infrastructural gaps, such as unreliable internet access and cybersecurity vulnerabilities, as well as fostering collaboration between regulators, firms, and academia (Adeyemi & Owolabi, 2022). Despite these challenges, AI stands as a catalyst for modernizing Nigeria's audit sector, offering a pathway to greater transparency, resilience, and global relevance.

2.2 Theoretical Framework

2.2.1 The Theory of Mind (TM)

Theory of Mind was propounded by Premack and Woodruff in the year 1978. They viewed it as the cognitive capacity to attribute mental states to self and others, referred to by other names such as "commonsense, naive or folk psychology," "mindreading," and "mentalizing." This ability allows people to form beliefs or judgments about the mental states of others, which are not directly observable. Knowing that people have thoughts, feelings and emotions that affect their behavior, future AI systems must be able to understand that both people and AI objects have these mental states and adjust their behavior accordingly in order to coexist with us. Ultimately, theory of mind is the innate ability of humans to understand the thoughts and feelings of other conscious beings and interact with them accordingly (Omaliko et al., 2016; Omaliko et al., 2021).

2.3 Empirical Review

Similarly, Falana et al. (2023) conducted a study to assess the effect of big data on accounting information quality in selected firms in Nigeria. The study collected data from a primary source through the administration of well-structured questionnaires. The population of the study comprised 157 firms listed on the Nigeria Exchange Group as of 31st December 2021, and a sample size of 20 firms was

selected using the purposive sampling technique. The collected data were analyzed using regression analysis, and the results showed that data volume, data variety, and data velocity had a significant positive effect on the quality of accounting information.

Khaled et al. (2023) investigated the impact of using artificial intelligence applications on the performance of accountants and audit firms. The final sample for this study comprises 38 audit firms. This study uses a survey-based methodology in the context of Saudi Arabia. The results of the multiple regression revealed that the audit firms using artificial intelligence applications perceive them as useful instruments that increase the performance of accountants and audit firms.

Onwughai (2022) evaluated the impact of the adoption of artificial intelligence and machine learning technologies on the accounting functions of business organizations. In order to collect information from respondents and examine previous academic and professional works on the topic, a survey questionnaire and qualitative literature review were used. The study demonstrated that although AI will be used to replace most programmable and monotonous accounting activities, it will also open up new opportunities for the ambitious accounting professional to advance into a more strategic and rewarding career path than just being a bookkeeper.

Anna (2022) identified the benefits of applying the Artificial Intelligence (AI) in the audit sector. The study employed a questionnaire for a research sample including 206 auditing and accounting practitioners and students. Data were collected via an online survey. A principal axis factor analysis with the Promax rotation was conducted to assess the underlying structure for the points of the questionnaire. The research outcomes indicate that, in the opinion of the respondents, AI adoption increases audit efficiency, and enhances client communication and service. Finally, AI can also automate time-consuming and routine tasks. The three indicated factors account for 62.223% variance. The findings reveal the advantages of AI adoption and could support managers in deploying new technology in their organizations.

Al-Rifai (2022) investigated how the use of artificial intelligence could contribute to the improvement of the effectiveness and efficiency of electronic accounting disclosure. The participants in this study included accountants and auditors from companies that were traded on the Egyptian Stock Exchange as well as financial analysts from financial brokerage firms. The findings demonstrated that the application of techniques involving artificial intelligence has the potential to improve the efficacy and efficiency of electronic accounting disclosure. This study demonstrated, in particular, that artificial intelligence approaches are significant due to the myriad positive effects they may have and the significance of putting those effects to use in commercial settings. In addition, there is a statistically significant correlation between the employment of techniques based on artificial intelligence and the elements that affect the quality and efficiency with which financial reports are shared via electronic accounting.

Mohammed and Emre (2022) investigated the transformational effects of artificial intelligence (AI) on auditing procedures and financial reporting accuracy. This study looks at how artificial intelligence (AI) tools, such data analytics and machine learning, are changing auditing by making it more efficient, lowering the risk of human mistake, and boosting the ability to spot fraud. Using regression analysis, the study found that artificial intelligence on auditing procedures and financial reporting accuracy.

Marija (2021) investigated how artificial intelligence can help the sector of accounting and audit deal with Covid 19. This directed attention to the problems that arise in the field of accounting and audit due to the effect of the pandemic and how they can be fixed or eliminated with the use of artificial intelligence. Secondary data was utilized deployment of secondary evidence. The results of the study using OLS showed that the system of artificial intelligence is of enormous use in the time of the pandemic.

Kwarbai and Omojoye (2021) looked into how AI would affect the Nigerian accounting industry. A survey research strategy was used for this investigation. Accountants in Nigeria who work for one of the "Big Four" accounting firms (KPMG, Deloitte, PricewaterhouseCoopers, or Ernst & Young) make up the sample for this research. The found that AI has had significant effects on the Nigerian accounting industry.

3. METHODOLOGY

The study adopted a survey design in order to examine the effect of artificial intelligence in transforming the roles of accountants and internal control system in Nigeria using some selected audit firms in Anambra state as a reference point. It is a design that incorporates personal interview, observation, and questionnaire to ensure corroboration of facts, thus ensuring the validity and reliability of the data collected. The selected audit firms in Anambra State ranges from Ugochukwu Nwankwo and Co Chartered Accountants, Muobike & Co Chartered Accountants, Okwudili & Associates, Nnamdi Azikiwe University Consultancy Services (NAUCS) to Eze & Eze Chartered Accountants. Data for the study was collected through the use of e-questionnaire survey (Google Form) sent to the respondents through their employees WhatsApp group platform out of which 52 responses were recorded and received and were used in the data analysis. The e-questionnaire survey was designed where respondents were asked to assess the use of artificial intelligence in transforming the roles of accountants and internal control system in Nigeria using Likert five point scales referred as: (1) To a Very High Extent (THE), (2) To a High Extent (HE), (3) Neutral (N), (4) To a Very Low Extent (TLE) and (5) To a Low Extent (LE).

The collected data was transformed to scale measurement using Likert five point scale and the hypotheses were statistically tested using Least Squares Regression Model with the aid of E-Views 12.

3.1 Model Specification

In line with the previous studies, the present study designed a model to examine the use of artificial intelligence in transforming the roles of accountants and internal control system in Nigeria. The functional model for the study is shown below as thus:

ICS = F (IA, NN)

The explicit form of regression designed for the study is shown in equation below as thus:

$$\mathbf{ICS = \beta_0 + \beta_1 IA + \beta_2 NN + \varepsilon}$$

ICS = Internal Control System
IA = Intelligent Agent
NN = Neural Network
μ = Stochastic Term
$\beta_1 - \beta_2$ = Coefficient of Regression Equation
β_0 = Constant coefficient (intercept) of the model
'*A Priori*' is given as: $\beta_0, \beta_1, \beta_2 > 0$
Decision Rule: accept Ho if P-value >1-5% significant level otherwise reject Ho

4. DATA ANALYSIS AND RESULTS

4.1 Distribution of Respondents Responses

The distribution of the respondents responses was exposited on table 1 below as thus:

Table 4.1.1: Analysis of the Respondents Responses

	Item	Respondents	Percentage
	Audit Firms		
1	Ugochukwu Nwankwo and Co Chartered Accountants	9	18
2	Muobike and Co Chartered Accountants	11	21
3	Okwudili and Associates	8	15
4	Nnamdi Azikiwe University Consultancy Services (NAUCS)	14	27
5	Eze & Eze Chartered Accountants	10	19
	Total	**52**	**100.00**

Source: Field Survey (2025)

Table 4.1.1 above shows that 9 respondents representing 18% of the respondents were the staff of Ugochukwu Nwankwo and Co Chartered Accountants; 11 respondents representing 21% of the respondents were the staff of Muobike and co Chartered Accountants, 8 respondents representing 15% of the respondents were the staff of Okwudili and Associates, 14 respondents representing 27% of the respondents were the staff of Nnamdi Azikiwe University Consultancy Services (NAUCS) while the remaining 10 respondents representing 19% of the respondents were the staff of Eze & Eze Chartered Accountants.

4.2 Descriptive Statistics

The descriptive summary is a set of methods used to summarize and describe the main features of a dataset such as its central tendency, variability and distribution. Thus provides an overview of the data and help identify patterns and relationships between variables. This is shown on table 4.2.1 as thus:

Table 4.2.1: Descriptive Statistics

	ICS	IA	NN
Mean	4.54	3.96	4.32
Median	4.55	4.10	4.50
Maximum	4.60	4.30	4.60
Minimum	4.50	3.40	3.90
Std. Dev.	0.12	0.36	0.30
Skewness	0.89	-0.71	-0.51
Kurtosis	2.76	2.05	1.53
Jarque-Bera	0.84	0.61	0.66
Probability	0.93	0.73	0.71
Sum	25.2	19.8	21.6
Sum Sq. Dev.	0.14	0.53	0.36
Observations	5	5	5

Source: E-View 12 Computational Results (2025)

From Table 4.2.1 above, the mean (average), maximum values, minimum values, standard deviation and Jarque-Bera Statistics (Normality Test) were shown. The results provide some insight into the determinants AI (intelligent agents and neural network) and its effect on internal control system in Nigeria. Firstly, it can be observed that the sampled respondents were characterized by a positive internal control system (ICS) value of 4.54. This implies that ICS is determined by artificial intelligence in Nigeria. The distribution is platykurtic since the kurtosis (2.76) is less than 3, implying that the outliers are few. The Jarque-Bera probability of 0.93 is greater than 0.05, which means that the distribution of internal control system comes from a normal distribution. The average value of intelligent agents (IA) for the sampled respondents was 3.96. This implies that intelligent agents is a determinant of effective internal control system. Thus, intelligent agents ensures effective internal control system in Nigeria. There is also a variation in maximum and minimum values of IA which stood at 4.30 and 3.40 respectively. This wide variation in IA values among the sampled respondents justifies the need for this study that intelligent agents determines effective internal control system in Nigeria at a degree risk of 36%. The distribution is platykurtic since the kurtosis (2.05) is less than 3, implying that the outliers are few The Jarque-Bera probability of 0.73 is greater than 0.05, which means that the distribution of intelligent agents is not different from normal distribution.

The average value of neural network (NN) for the sampled respondents was 4.32. This implies that neural network ensures effective internal control system. There is also a variation in maximum and minimum values of NN which stood at 4.60 and 3.90 respectively. This wide variation in NN values among the sampled respondents justifies the need for this study that neural network is a determinant of effective internal control system in Nigeria at a degree risk of 30%. The distribution is platykurtic since the kurtosis (1.53) is less than 3, implying that the outliers are few The Jarque-Bera probability of 0.71 is greater than 0.05, which means that the distribution of neural network is not different from normal distribution

4.3 Correlation

Table 4.3.1: Correlation Matrix

	ICS	IA	NN
ICS	1.0000		
IA	0.3031	1.0000	
NN	0.2563	0.0357	1.0000

Source: E-Views 12 (2025)

Table 4.3.1 above shows the relationship between all pairs of independent variables and dependent variables used in the regression model. It reveals that all the independent variables have positive correlation with the dependent variable (ICS). The values on the diagonal are all 1.0000 which shows that each variable is perfectly correlated with itself.

In checking for multi-collinearity, we noticed that no two explanatory variables were perfectly correlated. This means that there is an absence of multi-collinearity in our models. Multi-collinearity between the explanatory variables may result to wrong signs or implausible magnitudes in the estimated model coefficients and the bias of the standard errors of the coefficients.

4.4: Test of Hypothesis

Table 4.4.1: Result on the Role of AI on Internal Control System in Nigeria

Dependent Variable: ICS
Method: Least Squares
Date: 0319/25 Time: 10:48
Sample: 1-5
Included observations: 5

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IA	3.149192	0.594258	5.299371	0.0000
NN	0.986443	0.143765	6.862212	0.0000
C	0.133516	0.031570	4.427409	0.0001

R-squared	0.757441	Mean dependent var	1.028979
Adjusted R-squared	0.049419	S.D. dependent var	3.015098
S.E. of regression	2.939653	Akaike info criterion	5.006985
Sum squared resid	2030.766	Schwarz criterion	5.050753
Log likelihood	592.8312	Hannan-Quinn criter.	5.024624
F-statistic	7.160587	Durbin-Watson stat	2.230972
Prob(F-statistic)	0.000958		

Source: E-View Computational Results (2025).

4.5: DISCUSSION OF FINDINGS

The coefficient of determination R^2 shows 0.76 indicating that the overall model explained 76 percent of the total variations in the dependent variable (internal control system). Thus shows that these variables (IA & NN) can only explain 76 percent of change in internal control system in Nigeria leaving 24 percent unexplained. This is to say that there are other factors that can contribute to effective internal control system in Nigeria other than the use of AI. The sig. (or p-value) is .0001 which is below the .01 level; hence, we conclude that the overall model is statistically significant, or that the variables have a significant and joint effect on the dependent variable. With this, the researcher affirms the validity of the regression model adopted in this study.

The results of the regression are therefore slated below as follows:

H_{01}: The use of intelligent agents has no significant effect on internal control system in Nigeria

This hypothesis was tested and the result of this regression as exposited on table 4.4.1 indicates that the relationship between IA and ICS is positive and significant. This is justified with the P-value (significance) of 0.0000 which is less than the 1% level of significance adopted. Likewise the result of positive coefficient of 3.149 indicates that intelligent agent is a determinant of effective internal control system in Nigeria. We consequently rejected null hypothesis and accepted the alternate hypotheses which contends that the use of intelligent agents has significant effect on internal control system in Nigeria. This is in consonance with the priori expectations of Sharma et al. (2021), Vardia et al. (2021) and Akinadewo (2021) who found that AI ensures effective accounting practices.

H_{02}: The use of neural network has no significant effect on internal control system in Nigeria

This hypothesis was tested and the result of this regression as exposited on table 4.4.1 indicates that the relationship between NN and ICS is positive and significant. This is justified with the P-value (significance) of 0.0000 which is less than the 1% level of significance adopted. Likewise the result of positive coefficient of 0.986 indicates that the use of neural network ensures effective internal control system in Nigeria. We consequently rejected null hypothesis and accepted the alternate hypotheses which contends that the use of neural network has significant effect on auditing practices in Nigeria. This aligns with the findings of Ugo (2023), Monal et al. (2023) and Khaled et al. (2023) who are of the opinion that artificial intelligence adoption has aided accounting practices.

5. CONCLUSION

The study examined the use of artificial intelligence in transforming the roles of accountants and internal control system in Nigeria. Therefore, the study employed a survey research design, using e-questionnaire sent through an online platform seeking responses from accountants and staff of the selected auditing firms in Anambra State. The results from the inferential analysis revealed that internal control system and the role of accountants in Nigeria are positively affected by the application of artificial intelligence in accounting.

5.1 RECOMMENDATION

In lieu of the findings of the study, the following recommendations were made:

1. Full adoption of AI in auditing practices should be encouraged since the reported results and implications of the findings are critical and greatly useful in dictation, risk assessments and timely reporting.
2. Accounting firms should train their accountants and auditors to keep pace with technological advances in AI applications in collecting audit guides representing knowledge, and controlling the search for such evidence within databases.

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Appendix 1
QUESTIONNAIRE

SECTION A: Personal Data of Respondent

Sex: Male [ ] Female [ ]

Table Water Brands: Ugochukwu Nwankwo and Co Chartered Accountants [ ], Muobike & Co Chartered Accountants [ ], Okwudili & Associates [ ], Nnamdi Azikiwe University Consultancy Services (NAUCS) [ ], Eze & Eze Chartered Accountants [ ]

SECTION B: Questionnaire Items

Instruction: Kindly read through all the item statements carefully and indicate your response against each statement by ticking [√] in the appropriate column using the following response:

To a Very High Extent (TVHE)
To a High Extent (THE)
Neutral (N)
To a Low Extent (TLE)
To a Very Low Extent (TVLE)

CLUSTER I: Internal Control System (Dependent Variable)

S/N	STATEMENTS	TVHE	THE	N	TLE	TVLE
1	How does the integration of AI tools influence the accuracy and efficiency of fraud detection in auditing processes?					
2	How does organizational culture, regulatory frameworks, or resource limitations contribute to these challenges of AI adoption?					
3	To what extent do AI-driven auditing systems introduce ethical risks, such as algorithmic bias or reduced transparency, and how can auditors mitigate these concerns?					
4	How are AI technologies reshaping the roles and skill requirements of auditors, and what training or reskilling strategies are necessary to bridge emerging competency gaps?					
5	Does future trends in AI hold the greatest potential to revolutionize audit methodologies, and how might auditors adapt to these innovations?					

CLUSTER II: Intelligent Agents

S/N	STATEMENTS	TVHE	THE	N	TLE	TVLE
1	How do intelligent agents streamline real-time monitoring and reporting in Nigerian audit workflows?					
2	Transaction tracking, documentation review) are most automated by intelligent agents in Nigeria?					
3	How do Nigerian auditors view the balance between intelligent agent autonomy and human oversight?					
4	Cybersecurity risks emerge from deploying intelligent agents in Nigeria's auditing ecosystems?					
5	To what extent could intelligent agents reduce operational costs for audit firms in Nigeria?					

CLUSTER III: Neural Network

S/N	STATEMENTS	TVHE	THE	N	TLE	TVLE
1	How do neural networks enhance predictive analytics for financial risk assessment in Nigerian audits?					
2	Do neural networks have on identifying subtle anomalies in large-scale financial datasets in Nigeria?					
3	How does the quality and availability of training data affect neural network performance in Nigerian auditing contexts?					
4	To what extent does What disparities exist in outcomes between neural network-aided audits and conventional methods in Nigeria?					
5	Advancements in neural network technology could address current limitations in Nigeria's auditing sector?					