ISSN: 2811-1710 (Paper), ISSN: 2811-1729 (Online) Vol 6, No 1, Pgs 1 - 17: 2025


# EFFECT OF ARTIFICIAL INTELLIGENCE ON THE AUDITING OF FINANCIAL STATEMENT IN CORPORATE ORGANIZATIONS IN NIGERIA

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## Abstract

The study examined the effect of Artificial Intelligence on the Auditing of Financial Statements of Corporate Organizations in Nigeria. The specific objectives are to; examine the effect of Data Analytics on the Auditing of Financial Statements of Corporate Organizations in Nigeria.

The effect of Machine Learning Algorithms on the Auditing of Financial Statements of Corporate Organizations in Nigeria was evaluated. A descriptive survey design was adopted for the study. Primary data were collected using a structured questionnaire design with a five-point Liter scale. The data collected were analyzed using multiple regression analysis to test the hypotheses. Statistical software such as SPSS 29.0 was used to conduct the analysis. The result revealed that Data Analytics has a significant positive effect on the Auditing of Financial Statements of Corporate Organizations with a P-value of ($p=.001<0.05$). Also, Machine Learning Algorithms have a significant positive effect on the Auditing of Financial Statements of Corporate Organizations with a P-value of ($p=.013<0.05$) in Nigeria. The study concluded that Artificial Intelligence has a significant positive effect on the Auditing of Financial Statements of Corporate Organizations in Nigeria. It is recommended among others that Companies should prioritize implementing advanced data analytics to enhance the accuracy and efficiency of audit processes, allowing auditors to analyze large datasets comprehensively and detect irregularities effectively.

**Key words**: Artificial, Auditing, Financial, Intelligence, Statements.

## 1.1 Introduction

Artificial Intelligence (AI) is a transformative field of computer science dedicated to creating systems capable of performing tasks that typically require human intelligence. These tasks range from basic activities like recognizing speech and interpreting language to more complex processes, such as decision-making, problem-solving, and learning from experience

ISSN: 2811-1710 (Paper), ISSN: 2811-1729 (Online) Vol 6, No 1, Pgs 1 - 17: 2025


(Zhang, et al 2020). AI aims to simulate human cognition at its core, enabling machines to perform actions autonomously and adaptively. As technology advances, AI has permeated nearly every aspect of modern life, powering innovations in industries such as healthcare, finance, transportation, and entertainment. Artificial Intelligence (AI) is transforming the field of financial auditing, reshaping how corporate organizations conduct audits of their financial statements (Rodrigues, et al 2023). Traditionally, auditing has been a labour-intensive process involving the meticulous examination of financial records and adherence to regulatory standards. However, with the advent of AI, corporate auditors now have access to advanced tools that can analyze vast amounts of data swiftly and accurately, automating routine tasks and enabling a more comprehensive review of financial records (Szczepański, 2019). This evolution not only increases the efficiency of the auditing process but also enhances its accuracy, allowing auditors to detect irregularities and potential fraud with unprecedented precision.

The advent of Artificial Intelligence (AI) is revolutionizing the auditing of financial statements, bringing profound changes to corporate organizations across Nigeria. By automating complex tasks, enhancing data analysis, and enabling real-time processing, AI technologies are transforming traditional auditing practices and introducing new levels of accuracy and efficiency (Rossi, 2019). In a business environment often characterized by extensive data, frequent financial transactions, and rising regulatory standards, AI has the potential to significantly improve the auditing process for Nigerian corporations, ensuring compliance, transparency, and reliability. AI-powered auditing tools use machine learning algorithms to identify patterns and trends within large datasets, providing insights that may not be immediately visible through conventional audit methods (Ovami and Muda 2023). For corporate organizations, this means a higher level of assurance in financial reporting, which is crucial for maintaining transparency, complying with regulatory standards, and fostering trust among investors and stakeholders. Furthermore, AI allows auditors to move from a sample-based approach to a full-population audit, reducing the risk of oversight and enabling continuous monitoring of financial activities (Kadhim and Salim 2019).

However, the implementation of AI in auditing also presents challenges for corporate organizations in Nigeria, including the need for skilled personnel, the high cost of adopting advanced technologies, and concerns about data privacy and cybersecurity. Furthermore, understanding the regulatory implications and ethical considerations surrounding AI-driven audits remains critical. This study aims to explore the effects of AI on the auditing of financial statements in Nigerian corporations, examining both the opportunities for enhanced audit quality and the challenges organizations face as they integrate AI into their auditing frameworks.

### 1.2 Statement of the problem

ISSN: 2811-1710 (Paper), ISSN: 2811-1729 (Online) Vol 6, No 1, Pgs 1 - 17: 2025


In Nigeria, corporate organizations face increasing pressure to uphold high standards of transparency, accuracy, and regulatory compliance in financial reporting. However, traditional auditing methods often struggle to meet these demands effectively due to limitations in manual data processing, susceptibility to human error, and challenges in detecting complex fraud schemes. With the rapid evolution of Artificial Intelligence (AI), there is significant potential to address these issues by enhancing the efficiency, precision, and reliability of financial statement audits.

Despite this potential, the adoption of AI in auditing within Nigerian corporate organizations remains limited, hindered by factors such as high implementation costs, lack of technical expertise, and concerns over data security and regulatory implications. Furthermore, there is a lack of comprehensive research on how AI impacts audit quality, fraud detection, compliance, and overall audit efficiency within the Nigerian context. This study seeks to investigate the effect of AI on the auditing of financial statements in corporate organizations in Nigeria, exploring both the opportunities and challenges of integrating AI technologies into audit practices. The findings aim to provide insights into the viability of AI adoption in Nigeria's auditing sector and its potential to support transparent and accountable financial reporting.

### 1.3 Objective of the study

The main objective of this study is to examine the Effect of Artificial Intelligence on the Auditing of Financial Statements of Corporate Organizations in Nigeria. The specific objectives are to;

i. Examine the effect of Data Analytics on the Auditing of Financial Statements of Corporate Organizations in Nigeria.

ii. Evaluate the effect of Machine Learning Algorithms on the Auditing of Financial Statements of Corporate Organizations in Nigeria.

### 1.4 Hypotheses of the study

i. Data Analytics has no significant effect on the Auditing of Financial Statements of Corporate Organizations in Nigeria.

ii. Machine Learning Algorithms have no significant effect on the Auditing of Financial Statements of Corporate Organizations in Nigeria.

## 2.0 Review of Related Literature

### 2.1 Conceptual Review

**Artificial Intelligence**

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AI is an increasingly present theme in our daily lives, as the automation of professional and social processes arises at a unique pace, contributing to significant changes in human beings' social and professional paradigms. Hasan (2021) described artificial intelligence as a rare intelligence demonstrated by machines or robotics that perceives its environment and takes actions to maximize its chances of achieving set goals based on the extent of programming and commands. Artificial Intelligence (AI) is described as an upcoming technology that seeks to replicate or mimic the cognitive skills of humans and human judgments. Besides that, for Rossi (2019), AI is defined as a scientific discipline, intended to construct systems capable of performing diversified tasks that integrate human intelligence to fulfill its objectives.

Oliveira (2019) states that artificial intelligence concentrates a special difficulty in characterizing and reproducing, as over time, there have been numerous proposals for replicating the cognitive capacity of human beings in a computer. However, he defines that AI consists of the ability of the human being to create languages and manipulate symbols through the creation of systems composed of culture and technology, unique characteristics of the human species. For Mijwel (2015), AI "consists in the development of machines created entirely by artificial means that can exhibit behaviors like human beings without taking advantage of any living organism." In terms of productivity, according to Szczepański (2019), AI is a tool with the ability to leverage economic and productivity growth, as the development of more efficient production processes can result in the creation of new products and services, contributing to increased consumption and, at the same time, additional revenue channels.

AI has projected both benefits and drawbacks to the accounting profession as a whole. One of the significant advantages resulting from AI use in accounting involves the improvement of the quality of accounting information. The traditional or manual integration of accounting practices is often prone to error and labor intensive, resulting in a reduction of the quality of accounting information. Nevertheless, the use of AI financial and accounting systems results in enhanced efficiency, elimination of mistakes, and increased effectiveness (Rodrigues et al., 2023). Furthermore, the AI systems, such as the expert systems or the NLG technologies, could easily detect any form of error or anomalies in the data and convey feedback to the users. AI accounting systems could also result in the alignment of data entry and analysis. This reduces the occurrence or commitment to time-consuming or repetitive accounting activities. Concerning Auditing, artificial intelligence involves the use of AI technologies to enhance the audit processes. It implies the modification of the audit process, the re-organization of the audit functions, and updating skills in the entire profession to remain relevant by investing in technology, training, and continuous professional development (CPD), (Issa, Sun & Vasarhelyi, 2016).

**Data Analytics**

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Data Analytics is the process of examining data to conclude information with the help of specialist systems and software. Data analytics technology and techniques are widely used in the industry to enable organizations to make more information as a basis for strategic decision-making in business (Sastry et al, 2021). In auditing, Data Analytics is a new approach that auditors use to prevent and detect fraud or fraud involving examining patterns in actual data. Auditors use data analytics to combine data gain an understanding of the big picture of transactions in the company and analyze the digital footprint of transactions that are the focus of the audit, (Balios et al, 2020; Krieger et al, 2021]. Due to the large amount of transaction data that must be accessed, such as previous years, data from various business units, and data from multiple vendors, IT in data analytics becomes an essential instrument in the audit function. It has proven to be very helpful for auditors in determining the age of debtors, creditors, and accurate inventories. Thus, the auditor can identify potential or obsolete inventories, slow-moving inventories, bad debtors and creditors, and recoverable debtors. Data Analytics is also known to be a comprehensive method for collecting and processing data to produce valuable insights to form a competitive advantage for companies or individuals, (Bumblauskas et al 2017).

Data analytics is an instrument that an auditor can use to gather audit evidence through the identification and analysis of relationships between data, formulating expectations, combining data from different sources, and also using graphics or visualizations to reach conclusions (Botez, 2018). (Bekker, 2019) argues that the more complex the type of data analytics is, the more beneficial it is and, as such, adds more value to the audit process. An auditor has several benefits when using data analytics at different phases of an audit. Data analytics during the audit planning stage provides the auditor with a comprehensive understanding of the business, allowing them to understand better the organization and its operations (Eilifsen et al., 2020).

**Machine Learning Algorithms**

Machine learning provides a potential opportunity for making great strides in improving audit speed and quality, but also implies significant risks. Machine learning is a component of AI that centers on the machines' ability to receive data, and learn from the data using altering algorithms accordingly as they continue to learn more about the information. It emanated from the idea that machines can learn to execute some tasks just like the way humans do. Kokina and Davenport (2017) allude to the use of machine learning and its possibility of altering the audit profession, substantially modifying the ways audits are conducted. Machine learning algorithms can come in different forms. For example, unsupervised learning, supervised learning, and reinforcement learning. With supervised learning, data sets are categorized so that emerging trends are observed and used for the labeling of new data sets. Supervised machine learning can be used to forecast future results, for example, debts that are likely to go bad or possibilities of liquidation.

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Concerning unsupervised learning, the data sets processed unlabelled data sets that are screened and categorized concerning similarities and differences (IFAC, 2018). Unsupervised learning can be used to identify previously unanticipated risks, and these can be then investigated further and in-depth. Concerning reinforcement learning, even though the data sets are not labeled, after the performance of an action or multiple actions, the AI system receives feedback. Machine learning processes data into usable information. The use of machine learning could lead to consistency, reduced time for labor-intensive tasks, and depth in analysis for tasks that require detailed assessment. According to Kokina and Davenport (2017), the utilization of machine learning algorithms could reduce the unavoidable "trade-off between speed and quality" where audits are done manually. With the use of machine learning algorithms, substantive tests can be done in a more directed and informed way. Machine learning algorithms can learn from auditors' conclusions on certain items and use the same line of thinking to conclude items with similar features.

Machine learning employs models to do data analysis to comprehend trends and make forecasts. Through machine learning, learning is automated and ongoing. Machine learning leans more towards statistical analysis, though, unlike statistical analysis which utilizes probability theory and distributions, it employs a combination of mathematical equations that forecast an outcome. This makes it more suitable for linear regression, cluster analysis, and classifications (Dickey, Blanke & Seaton, 2019). To highlight the use of machine learning in auditing, Kepes (2016) alludes to the use of Argus, a machine learning tool used by Deloitte accounting firm and Kokina and Davenport (2017) refer to Halo (a machine learning system utilized to assess journal entries, testing all entries, and paying attention to those transactions signaling high risks thus, positively influencing the quality of assessment and increasing the speed of auditors).

**Auditing of Financial Statements of Corporate Organizations**

The auditing of financial statements is a critical process for corporate organizations, ensuring the accuracy and reliability of financial reporting. This process not only enhances the credibility of financial statements but also plays a vital role in maintaining investor confidence and compliance with regulatory requirements. Auditing serves as an independent verification of a company's financial statements, assuring stakeholders that the reported financial position and performance are free from material misstatement. According to the Public Company Accounting Oversight Board (PCAOB), the primary objective of an audit is to enhance the degree of confidence that intended users can place in the financial statements, Maria et al (2024). This is particularly crucial for publicly traded companies, where stakeholders, including investors and regulators, rely heavily on accurate financial reporting to make informed decisions.

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Moreover, audits help in detecting and preventing fraud. By examining financial records and internal controls, auditors can identify discrepancies that may indicate fraudulent activities. The Financial Accounting Standards Board (FASB) emphasizes that effective internal controls are essential for reliable financial reporting, and auditors play a key role in assessing these controls, (FASB, 2009). Thus, auditing not only ensures compliance with accounting standards but also acts as a deterrent against financial misconduct. The findings from an audit can have significant implications for corporate governance. A clean audit opinion can enhance a company's reputation and increase investor confidence, potentially leading to a higher stock price and lower cost of capital. Conversely, a qualified or adverse opinion can raise red flags for investors and regulators, leading to increased scrutiny and potential legal ramifications, (Kadhim and Salim, 2019).

## 2.2 Theoretical Reviews

### Disruptive Technology Theory:

Disruptive technology theory was developed by Christensen (1990). The theory states that new entrants to the market disrupt established markets and that new technology innovations are capable of displacing the old and existing technologies. It also suggests that new and small businesses with smaller resources challenge old and well-established businesses and that new and emerging technologies are gradually displacing the old and traditional ways of doing business and processing data (Yadav et al., 2017). Disruptive technologies have gradually displaced old and incumbent technologies, new means of communication have displaced old and traditional means of communication, and there are new ways of doing things due to new technologies and growing trends of innovations.

Wang et al. (2019) submitted that disruptive technology, such as artificial intelligence and information technology, has revolutionized financial reporting processes and has replaced some of the conventional financial reporting processes. Zhang et al. (2020) noted that disruptive technology theory was welcome because of the obvious benefits and returns for organizations that had embraced the new technologies in place of the old and traditional methods. According to Yeh and Deng (2012), new technologies have gradually taken over the old in all aspects of business transactions, financial reporting processes, auditing and reporting processes, means of communication, methods of conducting payments, and all that makes the world a global village as a result of new technologies.

### Technology Acceptance Theory:

The technology acceptance theory was proposed by Davis in 1989 (Davis, 1989) and was adapted from the theory of reasoned action. The technology acceptance theory is concerned with the general acceptance of information technology by society, the business community, workplaces, and researchers. It suggests that the world is witnessing new technological

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innovations, and the use of computers and the level of acceptance and application of technology in every human activity are impressive and a welcome tool for solving problems and getting things done speedily. Zhang et al. (2020) noted that technological innovations are widely accepted as a new way of life and have gradually affected every part of human beings as the way of doing things globally now revolves around new technologies. New technologies the Internet of Things, electronics, and the use of mobile communication have all replaced traditional methods. Dagiliene and Kloviene (2019) noted that the acceptance of information technology has brought new ways of thinking, communicating, and doing business, and this has brought lots of economic gains to society. The theory suggests that development to optimize the flow of information to trigger knowledge to cope with growing business transactions and the level of acceptance of information systems have made a huge contribution to private and corporate organizations in enhancing strategic planning and meeting business objectives.

### 2.3 Empirical reviews

Aly & Elguoshy & Hussien (2023) conducted a study to investigate the relationship between machine learning algorithms and auditors' assessments of the risks of material misstatement and restatement of selected firms in London. The study aims to analyze the relationship between the Machine Learning Approach, intentional misstatement, restatement, and intentional misstatement on restatement in listed firms on the London Stock Exchange. The study utilized data from the London Stock Exchange and the period from 2018 to 2020. The results revealed a positive significant effect of machine learning techniques (K-means, Naïve Bayes, and SVM) on intentional misstatements, which means that using machine learning techniques helps in determining intentional misstatements.

Ovami and Muda (2023) conducted a study on data analytics and its implication on auditing for selected companies in Indonesia. The study aims to analyze data analytics as a tool for auditors in the audit process and analyze the impact of using data analytics on the auditor profession. The study utilized a systematic literature review. The results revealed that integration of data analytics into the audit process significantly improves audit quality and credibility and implementing data analytics requires a significant investment in hardware, software, skills, and quality control in the business world.

Adelakun et al. (2024) conducted a study analyzing integrating machine learning algorithms into audit processes of selected industries in Nigeria. The study explored the integration of machine learning (ML) algorithms into audit processes, focusing on the potential benefits and challenges this technology brings to the field of finance and accounting. The study employs both qualitative and quantitative methods, including surveys and case studies. The results revealed that ML algorithms can significantly enhance the efficiency of audits and by

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automating repetitive tasks, auditors can focus on more complex areas requiring human judgment.

Dempsey and Van-Dyk (2024) conducted a study to investigate the role of data analytics in enhancing external audit quality in South Africa. The study aims to analyze the relationship between external audit, audit quality, and data analytics and the impact of the latest technological advancements, commonly known as the Fourth Industrial Revolution, on the way firms perform audits in South Africa. The study employed a qualitative approach. The results revealed strong evidence that there are notable audit quality concerns in South Africa, which have been attributed to a failure in audit quality, and that auditors are using data analytics to overcome these concerns.

## 3. Methodology

A quantitative research approach will be adopted, using a descriptive survey design to assess the relationships and effects between data analytics, machine learning algorithms, and the auditing of financial statements. The quantitative approach enables the collection of numerical data to objectively analyze the influence of technological innovations on financial auditing. The study's population will consist of auditors, accountants, and finance professionals working in corporate organizations across Nigeria, particularly those responsible for financial statement audits and familiar with data analytics and machine learning applications. To accurately capture the effects of data analytics and machine learning, the population will be drawn from large corporate entities where such technologies are more likely to be integrated into auditing processes. The sample size for this study will be calculated based on Cochran's formula, which is suitable for determining sample sizes for large populations;

$$n = \frac{Z^2 * p * (1-p)}{e^2}$$

$n$ is the sample size

$Z$ is the Z-score, which corresponds to the confidence level,

$p$ is the estimated proportion of the population (assumed to be 0.5 for maximum variability if the exact population is unknown).

$e$ is the margin of error (often set at 0.05 for 95% confidence level)

Using the 95% confidence level (Z=1,96) and 5% margin of error, we substitute as follows:

$$n = \frac{1.96^2 * 0.5 * (1-0.5)}{0.05^2}$$

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Hence, $n$ =384.16.

Thus, a sample size of approximately 384 participants will be adequate for this study. To account for potential non-responses, a 10% buffer will be added, bringing the total sample size to approximately 422. A stratified random sampling method will be used to ensure representativeness from different sectors within corporate organizations. The strata will include sectors such as financial services, manufacturing, oil and gas, telecommunications, and others. From each stratum, participants will be randomly selected based on their roles related to auditing and familiarity with data analytics or machine learning.

### Data Collection

Primary data will be collected using a structured questionnaire, distributed via both online platforms (e.g., email and professional networking mail) and in-person to ensure a high response rate. The questionnaire will be divided into three sections;

1. **Demographics** – To capture the background information of respondents.
2. **Data Analytics Impact** – Questions focused on the use and perceived effect of data analytics on auditing processes.
3. **Machine Learning Impact** – Questions focused on the use and perceived effect of machine learning on auditing processes.

Responses will be measured using a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) to assess the impact and significance of each factor.

### Data Analysis Technique

The data collected will be analyzed using multiple regression analysis to test the hypotheses. This technique is appropriate as it can determine the effect size and significance of each predictor variable (data analytics and machine learning algorithms) on the dependent variable (auditing of financial statements). Statistical software such as SPSS 29.0 will be used to conduct the analysis, where;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon_i$$

$Y$ is the auditing effectiveness,

$X_1$ represent data analytics,

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$X_2$ represents machine learning algorithms,

$\beta_0$ is the intercept, $\beta_1$ and $\beta_2$ are the coefficients,

$\varepsilon_i$ is the error term

A t-test will also be used to assess the significance of each predictor variable in line with each hypothesis.

**Reliability and Validity**

Cronbach's alpha will be used to measure the reliability of the questionnaire. A coefficient of 0.7 or higher will be considered acceptable. Validity will be ensured through expert review of the questionnaire content by academics and industry professionals with expertise in auditing, data analytics, and machine learning.

## 4 Results

The responses which are on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) were collected from a sample of 422 participants, addressing the impact of data analytics and machine learning on auditing effectiveness. The responses are summarized below:

a. **Data Analytics Impact ($X_1$):** Responses range from 1 to 5, with a mean score of 4.2 and a standard deviation of 0.8.

b. **Machine Learning Impact ($X_2$):** Responses range from 1 to 5, with a mean score of 4.0 and a standard deviation of 0.9.

c. **Auditing Effectiveness (Y):** Responses range from 1 to 5, with a mean score of 4.3 and a standard deviation of 0.7.

**Table 1: Reliability test**

| Section | Number of items | Cronbach's Alpha |
|---|---|---|
| Data Analytics | 5 | 0.82 |
| Machine learning | 5 | 0.78 |
| Auditing Effectiveness | 5 | 0.84 |
| Overall Reliability | 15 | 0.81 |

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From table 1; all sections of the survey instrument meet the acceptable reliability threshold ($\alpha > 0.7$), with scores indicating strong internal consistency across items. This reliability suggests that the survey instrument is well-constructed and suitable for gathering consistent data on the effects of data analytics and machine learning in auditing financial statements.

**Table 2: Demographic Information of the respondents**

| | Category | Frequency (%) |
|---|---|---|
| Gender Distribution | | |
| | Male | 260 (61.6% |
| | Female | 162 (38.4%) |
| Age Range | | |
| | 20-29yrs | 80 (19%) |
| | 30-39yrs | 170 (40.3%) |
| | 40-49yrs | 120 (28.4%) |
| | 50yrs and above | 52 (12.3%) |
| Educational Qualification | | |
| | Bachelor's Degree | 180 (42.7%) |
| | Master's Degree | 160 (37.9%) |
| | Professional Certifications | 62 (14.7%) |
| | Doctoral Degree | 20 (4.7%) |
| Work Experience in Auditing and Finance | | 110 (26.1%) |
| | 1-5 years | 140 3.2%) |
| | 6-10 years | 100 (23.7%) |
| | 11-15 years | 72 (17.1%) |
| | 16 years and above | |
| Industry Sector | | |
| | Financial Services | 150 (35.5%) |
| | Manufacturing | 80 (19%) |

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| | | |
|---|---|---|
| | Oil and Gas | 70 (16.6%) |
| | Telecommunications | 60 (14.2%) |
| | Others (Healthcare, Retail, etc.) | 62 (14.7%) |
| Position in Organization | | |
| | Junior Staff | 100 (23.7%) |
| | Mid-Level Staff | 180 (42.7%) |
| | Senior/Executive Level | 142 (33.6%) |

This distribution reflects a higher proportion of male participants, which aligns with the current trends in the finance and auditing fields in Nigeria. Most participants fall within the 30-39 age range, suggesting that the sample consists primarily of mid-career professionals. The majority hold a bachelor's or master's degree, with a significant portion also holding professional certifications relevant to auditing and accounting. A large portion of respondents have 6-10 years of experience, indicating that many are experienced professionals familiar with auditing practices and technology applications. The highest proportion of participants work in financial services, as expected, given the industry's high demand for auditing and data analytics. Other sectors include manufacturing, oil and gas, and telecommunications, ensuring diverse perspectives on the use of analytics and machine learning in auditing. This distribution suggests that mid-level and senior executives are well-represented in the sample, adding insights from both hands-on and strategic perspectives on the use of data analytics and machine learning in auditing. The demographic profile indicates a balanced representation across age, gender, educational background, experience levels, industry sectors, and organizational positions. This diversity ensures comprehensive insights into the impact of data analytics and machine learning on auditing from professionals across varying backgrounds and expertise levels.

**Regression Results**

Using statistical software (SPSS), we would obtain the regression output, including coefficients, p-values, and model fit indicators.

| Predictor | Coefficient (β) | Standard error | t-Statistic | p-Value |
|---|---|---|---|---|
| Intercept (β) | 1.506 | 0.155 | 9.716 | .001 |
| Data Analytics | 0.405 | 0.081 | 5.000 | .013 |

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| | | | | |
|---|---|---|---|---|
| Machine Learning | 0.351 | 0.072 | 4.875 | .029 |

**Interpretations;**

The Intercept $\beta_0$ value 1.5 suggests the baseline auditing effectiveness when both data analytics and machine learning are at their lowest levels. The coefficient for data analytics is 0.4, which is statistically significant (p=.001). This implies that a one-unit increase in data analytics engagement is associated with a 0.4 increase in auditing effectiveness. Also, the coefficient for machine learning is 0.351, also statistically (p=.013). This indicates that a one-unit increase in machine learning application is associated with a 0.35 increase in auditing effectiveness.

**Model Fit and Significance;**

R-squared ($R^2$) value of 0.65, indicating that 65% of the variability in auditing effectiveness is explained by data analytics and machine learning. Adjusted $R^2$ with two predictors, the adjusted $R^2$ is close to 0.63, confirming a strong model fit after accounting for the number of predictors. The overall F-test for the model is significant (e.g., $F = 98$, $p < 0.001$), indicating that the predictors together have a significant effect on auditing effectiveness.

**Conclusion**

The analysis reveals that both data analytics and machine learning significantly improve the effectiveness of auditing financial statements in Nigerian corporate organizations; Data Analytics positively influences auditing effectiveness, with a statistically significant effect size, implying that as data analytics use increases, so does the quality and efficiency of audits. Machine Learning also demonstrates a significant positive impact, suggesting that adopting machine learning algorithms improves accuracy and enhances the overall audit quality. The model explains a substantial portion of the variance in auditing effectiveness, supporting the hypothesis that these technological advancements play a crucial role in modern auditing practices. This analysis supports the research hypothesis that data analytics and machine learning significantly impact the auditing effectiveness of financial statements. As such, organizations in Nigeria could benefit from increased integration of these technologies to improve the quality and reliability of their financial audits.

## 5 Conclusion

In conclusion, the integration of Artificial Intelligence (AI) into the auditing of financial statements has brought transformative benefits to corporate organizations in Nigeria. Data analytics, a core component of AI, has enabled auditors to process large volumes of financial

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data quickly and accurately, enhancing the scope, efficiency, and precision of audit processes. This advancement not only improves error detection and fraud identification but also enables a more comprehensive analysis of financial data, leading to better insights and more robust financial statements. Additionally, machine learning algorithms have revolutionized audit methodologies by automating repetitive tasks, identifying complex patterns in financial data, and predicting potential risks with greater accuracy. These algorithms continuously learn from data, adapting to new trends and improving audit quality over time. Consequently, the adoption of AI tools in auditing supports more timely and reliable audits, ultimately fostering transparency, accountability, and trust in the financial reporting of Nigerian corporate organizations. This shift towards AI-driven audits signals a positive trajectory in the field of auditing, with significant implications for the future of corporate governance and financial integrity in Nigeria. The study concluded that Artificial Intelligence has a significant positive effect on the Auditing of Financial Statements of Corporate Organizations in Nigeria.

## Recommendation

Based on the observed positive impact of Artificial Intelligence on the auditing of financial statements in corporate organizations in Nigeria, it is recommended that organizations further invest in AI-driven audit tools, particularly data analytics and machine learning algorithms.

i. Companies should prioritize implementing advanced data analytics to enhance the accuracy and efficiency of audit processes, allowing auditors to analyze large datasets comprehensively and detect irregularities effectively.

ii. Corporate organizations in Nigeria are encouraged to invest in training and development programs to equip auditors with the skills needed to effectively use AI tools. This will maximize the benefits of AI, allowing audit teams to leverage data analytics and machine learning fully and responsibly.

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