

Audit tasks Digitalization and quality of audit services in Nigeria

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CHRONICLE

ABSTRACT

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In today's dynamic business landscape, the audit profession encounters numerous obstacles, particularly in adapting to the necessity of computer-assisted audits due to the immense volume of data requiring scrutiny. Despite the emergence of different digital auditing tools, there is a gap in research regarding the level of adoption, and its effects on the quality of audit services especially in the context of developing countries. This study seeks to investigate the impact of digitalization of audit tasks on the quality of audit services of accounting firms in Nigeria. The study, which has its foundation on the Technology Acceptance Model (TAM) integrated with the Technology, Organization, and Environment (TOE) framework, adopted the survey research design. The population of study was made up practitioners of accounting firms in Abuja and Lagos, Nigeria. A self-designed questionnaire was used as a tool for data collection for the study. Findings of the study indicate that automation of audit tasks enhances the quality of audit services suggesting that adopting IT infrastructures leads to more reliable audit procedures, improved efficiency and accuracy, as well as mitigating audit risks. Results also revealed that Big Four auditors are significantly ahead in the adoption of digital technologies compared to the non-Big Four auditors, confirming the dominance of larger accounting firms in application of emerging technologies in performing audit tasks.

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1. Introduction

Digitalization and big data analytics are permeating every aspect of business and society in the modern world and fostering new forms of collaboration, communication, and work practices. Digitalization creates vastly accessible data sources by connecting people, businesses, governments, and technologies, and facilitating easier social engagement and collaboration. Integrating emerging technologies in business is one of the most significant developments and problems in the business environment over the past twenty years. This resulted in significant changes also in the auditing profession leading to the development of accounting systems and applications which contribute to raising audit quality and enhancing financial reporting practices. In the current era of big data and advanced analytics, Digitalization has become vital to the auditing process, integrating auditing and accounting software, and further new technologies have considerably advanced accounting operations, revolutionizing these procedures (Enholm et al. 2022; Faozi, 2024; Han et al. 2023; Qatawneh, 2024). Vărzaru (2022) asserts that automated regular chores free up auditors and accounting professionals to work on more strategic responsibilities like payroll management, data entry, and invoice processing. Large volumes of financial data can be processed fast using machine learning and big data (BD) analytics algorithms, which enhances financial forecasting, risk management, and decision-making (Schmitz & Leoni, 2019). In a similar vein, real-time reporting is made possible by cloud computing, and audit quality is enhanced by artificial intelligence (AI)-driven technologies that detect fraud and abnormalities (Faccia et al. 2019; Sledgianowski et al. 2017). By evaluating a company's specific data and market conditions, AI algorithms can also offer tailored financial advice, enabling businesses to adjust their financial strategies to meet their particular requirements (Cabrera-Sánchez et al. 2021; O'Leary & Daniel, 2022; Lee & Tajudeen, 2020).

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The adoption and implementation of audit task automation allows auditors to focus on higher-value tasks, such as risk assessment and analysis, by automating repetitive operations like data input, reconciliation, and report production, and by enabling them to quickly and accurately access, analyze, and interpret massive volumes of data. According to Deniz and Nikhilesh (2022), the volume of business transactions and the speed at which information technology is developing mean that traditional financial reporting procedures cannot keep up with the volume of transactions or the need for timely accounting information. In the view of Albawwat and Frijat (2021), disruptive technologies like artificial intelligence are needed to meet the demands of expert systems in audit quality, as worldwide corporate transactions have transitioned to digital platforms.

Moreover, the importance of data security and confidentiality in audit engagements cannot be overstated. Data encryption technologies play a crucial role in safeguarding sensitive audit information from unauthorized access, manipulation, or disclosure, thereby preserving the integrity and confidentiality of audit processes and findings (Wang et al., 2023). Additionally, the establishment of comprehensive audit trails serves as a fundamental component in maintaining accountability and transparency throughout the audit lifecycle. Audit trails provide a chronological record of audit activities, enabling auditors to trace the sequence of events, identify potential discrepancies, and facilitate audit review and validation (Fotoh & Lorentzon, 2023; ACCA-Big Four, 2019).

Despite the perceived benefits of Digitalization, there are concerns about its impact on the quality of audit services. As Brown-Liburd et al. (2015) argue, the use of Digitalization may lead to over-reliance on technology, reducing the auditor's critical thinking skills and judgment. Ozbaltan (2024) suggests that Digitalization may increase the risk of errors, especially if the data inputted into software is incorrect or incomplete. Furthermore, some studies (Ampofo et al., 2024; Loebbecke & Picot, 2015) have shown that the quality of audit work may be affected by the auditor's experience level and familiarity with the software.

There are two main motivations for this investigation. First off, information on how small audit firms are preparing for this issue is lacking, despite the top four accounting firms using audit software extensively to increase efficiency and accuracy. To emphasize, the main four accounting firms—Deloitte, Ernst & Young (EY), PwC, and KPMG—have taken the lead in digitizing audit tasks. This is because they have made significant investments in automation powered tools and solutions, enabling them to provide their clients more sophisticated and perceptive services. Majority of big accounting and tax organizations are employing GenAI tools, according to the Thomson Reuters Institute (TRI, 2024) Generative AI in Professional Services Report. Even though they might not have as many resources as the big four accounting firms, the report also stated that smaller auditing firms are embracing Digitalization in order to remain competitive and provide better audit services. Particularly in the context of developing economies like Nigeria, the degree to which smaller accounting companies are using IT solutions in comparison with the larger audit firms is thought to be a study gap.

This research was also driven by the lack of agreement on how digitization affects the quality of audit services. For example, Novita et al. (2023) and Akpan et al. (2024) observed a beneficial effect, but Dewi and Uliya (2023) found no discernible effect. According to claims made in two distinct studies by Malak et al. (2023) and Adiloglu and Gungor (2019), auditing has not yet fully benefited from digitization since stakeholders have not implemented it to the fullest extent, particularly in the context of developing nations. These divergent findings emphasize the necessity of additional research.

The remainder of this paper is organized as follows: The literature on the topic, including the theoretical foundation and the formulation of hypotheses, is reviewed in Section 2. While section four gives the data analysis and outcomes, section three explains the technique used for data collection and analysis for the study. The study is concluded in Section 5.

2. Literature review

2.1 Audit Task Digitalization

The use of digital technology to alter a company model and provide new prospects for revenue generation and value creation is known as Digitalization, according to Gartner (2020). The word "Digitalization" was first used by Zuboff (1988) to refer to the way that technological developments allow people to access modern worlds and open doors. According to Westerman et al. (2014), the Industrial Revolution saw the development of the first signs of Digitalization as new machinery altered the ways that business, trade, and actually human history were conducted. Digital tool technical breakthroughs are bringing in "the second machine age" for the world and its people, as outlined by Brynjolfsson and McAfee (2014) in their book. The term "audit Digitalization" describes how auditors use information technology to improve their work, especially when it may not be possible for them to visit locations in person. According to Fotoh and Lorentzon (2023), Digitalization makes audits more relevant and allows auditors to do their task more quickly. Digital auditing is believed to encourage innovation in professional accounting, creates new auditor profiles, and strengthens corporate governance by empowering managers to effectively manage several teams using digital platforms. The finance and accounting fields as well as the audit profession are evolving due to big data analytics, blockchain, artificial intelligence, and robotic process automation, which is transforming the roles of auditors and finance specialists. The audit services are therefore already experiencing and will continue to have an unavoidable impact from the disruption at various stages of evolution (Adiloglu & Gungor, 2019;

Douwe, 2021). The four key digital technologies and their capabilities—Big Data and Analytics, Blockchain, Artificial Intelligence, and Robotic Process Automation—are covered in further detail in the sections that follow.

2.1.1 Big data and analytics

Big Data is in charge of datasets whose volume is more than what can be captured, stored, managed, and analyzed by standard database software procedures. According to Meuldijk (2017), big data is essential for auditors since it may enhance risk assessment, scoping, trend analysis, and decision-making. With regard to specific challenges, regulations, and restrictions, auditors can use prescriptive analytics with big data and analytics by putting into practice procedures that computationally validate current actions and their results. Examining financial statements through journal entries is thought to be one of an auditor's primary responsibilities. Auditors utilize analytics technologies to review journal entries that are taken from the clients' big data. Meuldijk (2017) outlines several uses for big data and analytics in the auditing environment, including risk analysis, benchmarking, and report generation. The purpose of risk analysis, according to Yoon et al. (2015) and Zhang et al. (2015), is to help auditors identify pertinent issues or outliers using big data and analytics. One implicit application of big data and analytics is to enhance auditing vision through the use of non-accounting data, such as benchmarking, which involves comparing one company's non-accounting historical data over time against those of other businesses of similar sizes or branches.

2.1.2 Blockchain

While blockchain technology is still in its infancy, it has the potential to drastically alter how businesses operate and, consequently, how they are audited (Schulman & Wilson, 2019). Blockchain can be defined as a decentralized digital ledger that encrypts and records transactions between two parties in a peer-to-peer (P2P) network. Distributed Ledger Technology (DLT) guarantees that "in a distributed ledger all participants are looking at a common view of the records". Furthermore, Hyperledger is primarily of relevance to the audit area because it is concentrated on creating an open source DLT network that would streamline company transactions (Hyperledger, 2018). Since distributed ledgers remove the need to cross-check different documents across multiple databases, they can serve as a universal bookkeeping service that makes it simple to trace an audit trail. Furthermore, one of the most important aspects of DLT is that its data is immutable, meaning that historical records cannot be removed or changed unless a balancing entry is made (McGhee & Grant, 2019). Smart contracts are yet another important aspect of blockchain technology. A smart contract is a blockchain code function that, upon the fulfilment of predetermined circumstances, initiates one or more specific activities. For firms that previously required the assistance of a third-party intermediary to transfer value or assets, this might result in significant time and cost savings.

2.1.3 Artificial Intelligence

According to Microsoft founder Bill Gates, artificial intelligence is unquestionably one of the most exciting and frightening human creations of recent years (Clifford, 2019). In contrast to the innate intelligence of people and animals, artificial intelligence, sometimes known as machine intelligence, is defined as the intelligence demonstrated by machines. It is a catch-all word for a group of technologies that can be employed separately or in conjunction with one another to simulate cognitive functions like learning and problem solving that are common to all people (Issa et al., 2016). Natural language processing (NLP), deep learning (DL), and machine learning (ML) are three examples of technologies that are relevant to auditing (SAS, 2018). Ernst and Young (2023) summarizes the effects of AI on auditing to include: (i) monitor financial transactions automatically, (ii) boost the identification process of fraud by forming models focused on sophisticated ML, (iii) interpret various sources of data such as emails, social media, and audio files from meetings for example, and (iv) enable auditors to optimize their resources, allowing them to utilize their intuition in order to evaluate documents on a larger scale and in more depth.

2.1.4 Robotic Process Automation

Robotic process automation (RPA) is a software technology that makes it easy to build, deploy, and manage software robots that emulate humans' actions interacting with digital systems and software. McGhee and Grant (2019) clarify that RPA is mistakenly mixed up with artificial intelligence and that these "robots" are nothing more than code programmed routines or scripts that resample advanced Excel macros rather than AI.

According to PriceWaterhouseCoopers (PwC) (2017), tasks that could be automated by RPA in the auditing service include: (i) sending emails, requesting follow-ups when deadlines pass; (ii) monitoring development towards the annual audit plan or tracking key risk indicators (KRIs); and (iii) automating reporting and dashboarding activities, including populating audit committee and management report templates or internal audit's balanced scorecard. According to Dewi and Uliya (2023), RPAs are more relevant to auditors than blockchains but still less relevant than big data and analytics. In addition, it is also apparent that RPA helps with the reduction of boring or repetitive tasks. Such a use case is when RPA is used in order to automatically copy data from one database or portal to another database settled up for auditors to make use of.

2.2 *Quality of Audit Services*

In the field of accounting and auditing, the quality of audit is a fundamental idea. As stated by Otuya (2019), the main goal of an audit is to get a reasonable assurance that the financial statements are free from anomalies. Audit quality is defined as guaranteeing that the financial statements under audit are error-free. How much stakeholders may trust the financial data that a company's management provides depends on the quality of the audit. The characteristics of a high-quality audit have been studied by numerous academics in the field of auditing and accounting. Studying quality factors for financial audits was done by Carcello et al. (1992) and reported that knowledge of accounting, statistical methods, the examination of internal controls, the emphasis on facts, and stringent quality control protocols were among the traits recognized as quality audit service. The effectiveness of the audit is crucial to maximizing audit fee revenue and building enduring confidence in the roles and skills of auditors. Alawaqleh and Almasria (2021) contended that a wide range of factors, including audit fees, audit tenure, audit independence, the size of the audit firm, and others, significantly impact audit quality, in contrast to some studies (Albawwat, & Frijat, 2021; Akeem et al., 2020) that claim audit quality is subjective and perceptual. Albitar et al. (2020) and Otuya (2024) in separate studies reported that the audit market and audit concentration have an influence on the quality of audit services, suggesting that audits carried out by the Big Four are considered quality audits.

2.3 *Automation of Audit Tasks and Quality of Audit Services*

A number of empirical research on Digitalization have been conducted. For example, Hanfy et al. (2024) examined the impact of digitization on auditing through analytical methods such as structural equation modelling in a study. The findings of this study demonstrate that, whereas Digitalization increases audit productivity, safeguards data transfer, and improves audit quality, it also has an impact on the auditing process. In a different study, Qatawneh (2024) attempts to examine the moderating effect of natural language processing (NLP) on the relationship between auditing and fraud detection and AI-enabled AIS (data gathering, data analysis, risk assessment, detection, prevention, and investigation). According to the study, there is a substantial association between auditing and fraud detection, and artificial intelligence in AIS has a statistically significant impact on these processes.

Faozi (2024) looks into how IT governance affects the integration of artificial intelligence (AI) into accounting and auditing processes. The findings show that artificial intelligence (AI), big data analytics, cloud computing, and deep learning technologies greatly increase the efficiency and decision-making capabilities of accounting and auditing services, which in turn leads to better financial reporting and audit procedures. Ampolo et al. (2024) in another study found that Digitalization enhances risk assessment and allows auditors to proactively identify and mitigate potential issues. Additionally, their study found that predictive analytics can detect anomalies and patterns that might go unnoticed in traditional audits, thereby increasing audit effectiveness. Bojana et al. (2023) investigated the extent to which Serbian auditors use audit software in their work. The investigation used a specially designed questionnaire, which was completed by 110 respondents in total. The findings show that audit software has a very positive impact on audit quality in Serbia by altering audit users' attitudes, auditors' work, and auditors' professional profiles. This result was corroborated by Rahman and Ziru (2023) who looked at the effects of audit firms' information technology (IT) proficiency and the calibre of audit software their clients employ on audit quality (AQ). Data on Chinese A-share companies listed on the main board of the Shenzhen and Shanghai stock exchanges, collected between 2011 and 2019, comprised the sample. The audit software for the clients was found using digital technologies, blockchain, cloud computing, big data, and artificial intelligence. According to the survey, customers with good audit software scores produce work of a higher quality. Devi and Uliya (2023) discovered that audit digitization significantly enhances auditor performance in a study intended to assess the impact of Digitalization audits on auditor performance. However, it was found that professional ethics did not lessen the influence of audit digitization on auditor performance in Central Javan public accounting businesses. Moll and Yigitbasioglu (2019) also reported that automation has a positive effect on the quality of audit service, while Gentner et al. (2018) revealed that artificial intelligence influences audit quality.

In a comparative study of extent of IT adoption between the big and small accounting firms, Lowe et al. (2018) found no significant difference in the level of IT adoption by Big 4 auditors compared to non-Big 4 auditors, which indicate that small auditing firms are bracing up to IT challenge in the auditing profession. Even though the inherent benefits of digitization have been reported in the above studies, investigations by Malak et al. (2023) and Adiloglu and Gungor (2019) indicate that auditing services are yet to fully reap the benefits of digitization due to poor infrastructural facilities needed to power full automation of accounting and auditing lending credence to lesser application of digital technologies for audit tasks in developing economies. Against the backdrop of the above, we frame our hypotheses thus:

Hypothesis 1: *Automation of audit tasks has not significantly improved the quality of audit services.*

Hypothesis 2: *There is no significant difference in the level of automation of audit tasks between the Big 4 and Non-Big 4 accounting firms.*

2.4 Theoretical Framework

In recent decades, researchers have endeavored to ascertain the variables that impact the process of technology adoption. Organizational adoption of innovation, as discussed by Pateli et al. (2020), is the use of an original idea that was developed internally or acquired from outside the organization at the moment of adoption. A product, gadget, system, procedure, policy, program, or service could all fall under this category. Moreover, organizational adoption can be handled at several organizational levels, including the business unit and the company as a whole. As a result, numerous theories and models have been put forth by researchers to examine the adoption of Digitalization. The social cognitive theory (SCT), the technology acceptance model (TAM), the theory of reasoned action (TRA), the theory of planned behavior (TPB), the motivation model (MM), the combined TAM and TPB (c-TAM-TPB), the model of PC utilization (MPCU), the diffusion of innovation theory (DOI), and the Technology-Organization-Environment Framework (TOE) are the nine major theories of this field, according to earlier studies like Li et al. (2020), Sastararuji et al. (2021), and Amini and Bakri (2015). These models can be used to examine how individuals or businesses are adopting digitization. Theories on technology adoption, however, that center on the organizational level of accounting firms—that is, Big Four and non-Big Four accounting firms—are of importance to this research. A survey of the literature reveals that the TAM and the TOE framework are the two main theories that are most frequently used in studies on adoption at the organizational level. These two models investigate the adoption of technology under the assumption that specific organizational characteristics are known (Li et al., 2020). As a result, they can also be used to investigate how digitization is being adopted by accounting firms.

2.4.1 The Technology Acceptance Model

The technological acceptance paradigm, first put forth by Fred Davis in 1989, serves as the theoretical basis for this investigation. When the model was first designed, it was intended for users to accept and apply information technology within businesses. According to the notion, perceived usefulness and perceived ease of use are two important attitudes that influence a user's acceptance. The initial section defined perceived usefulness (U) as the degree to which an individual believes a particular technology will enhance his or her performance at work, while perceived ease of use (EOU) was defined as the extent to which an individual believes a technology will be simple to use (Davis, 1989). Gains in productivity, improved performance, faster task completion, usefulness, and effectiveness are all indicators of perceived usefulness. The technology's perceived ease of use is based on how easy it is to understand, use, and acquire. It also depends on how simple it is to learn, use, and maintain proficiency with. The technology acceptance hypothesis focuses on how enterprises, workspaces, researchers, and the general public generally accept information technology. It means that new technological developments are occurring on a global scale, computers are being employed at a phenomenal rate, and technology is being accepted and applied in many areas of human endeavor. Technology can now be a helpful tool for addressing problems and finishing work swiftly thanks to these advancements.

In spite of TAM's strong theoretical underpinnings and continuous empirical backing by previous research, some contend that for a more comprehensive adoption strategy, the TAM ought to be combined with alternative models. As a result, in addition to the TAM, researchers have kept looking for additional circumstances that affect organizational innovativeness. The TOE framework, which is divided into three categories—technology, organization, and environment—is one such example. An improved explanation of intra-firm technology adoption is obtained by merging the environmental context, which is included in the TOE framework, with the Technology Acceptance Model (TAM) (Hoti, 2015). Therefore, the technological acceptance theory will be incorporated into the TOE framework for the purposes of this study.

2.4.2 Technology-Organization-Environment Framework

The acceptance and execution of digitization are influenced by the firm setting, as explained by the TOE framework. This concept was first presented by Tornatzky and Fleischer (1990), who discovered that technological reasons are not the only ones that influence a firm's decision to adopt Digitalization. Rather, organizational and environmental factors also have an impact on it (Alsheibani et al., 2018). Accordingly, the framework examines the organizational, technological, and environmental contexts of a corporation (Baker, 2012). Adoption of technological innovation is influenced by matching characteristics in each of these three environments. The technological context evaluates a company's capacity for technology adoption. This covers pertinent external and internal technology for the company (Alsheibani et al., 2018). In contrast, the firm's resources and features are included in the organizational environment. This context's characteristics include the employee connection structures, internal communication procedures, business size, and the quantity of spare resources (Baker, 2012). The term “environmental context” describes outside variables that could influence an innovation's adoption choice. This covers the regulatory framework, technology support infrastructure, and industrial structure.

This has led to a thorough examination of the framework in ICT and testing in domains like cloud computing, enterprise resource planning, and e-commerce. Because of this, it can be applied to research how organizations adopt both broad and specialized IT innovations. Thus, in addition to the TAM, TOE can be utilised to investigate how accounting firms are digitizing audit tasks in order to create an integrated framework and serve as the foundation for this research.

2.4.3 Integration of TAM and TOE frameworks

As discussed in the preceding section, the TAM is combined with the TOE framework to form the research model for this research. This is done in order to broaden the technological context and make it easier to assess. Together with the organizational and environmental contexts from the TOE framework, the technology context from TAM forms the integrated framework used in this research.

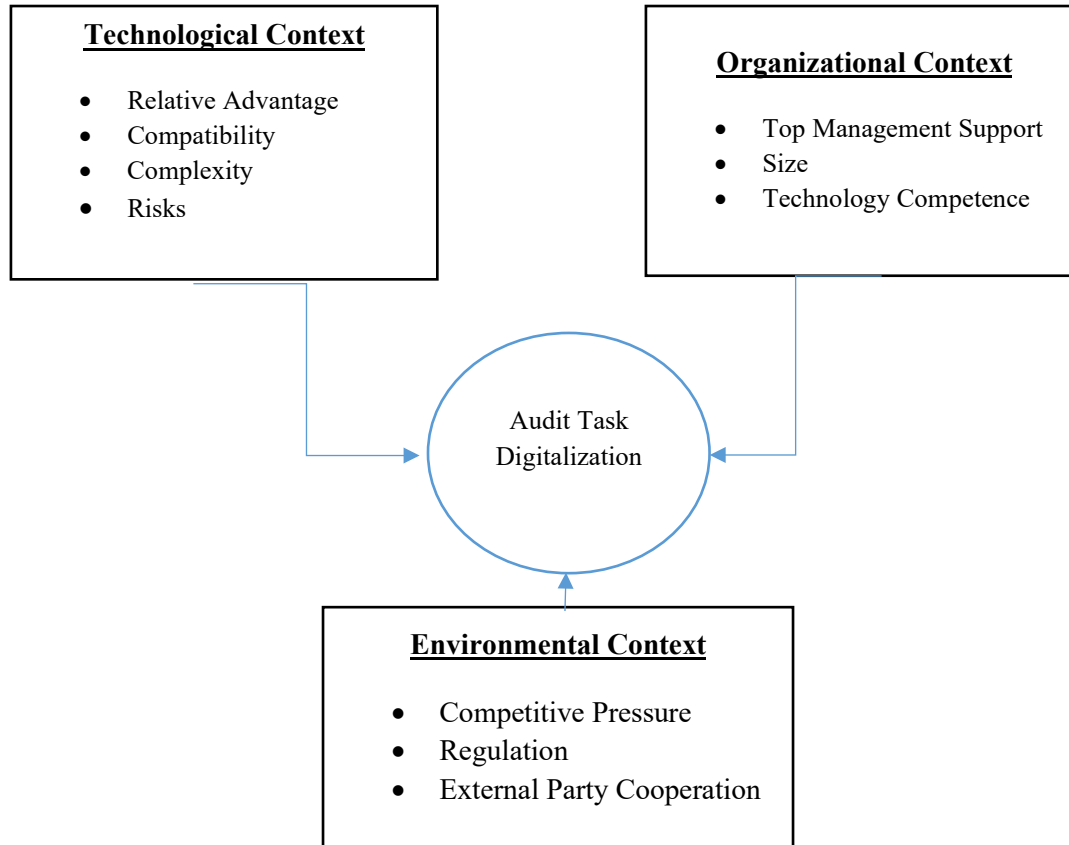


Fig. 1. Integrated Theoretical Framework for the Study

Source: Douwe (2021)

Fig. 1 is used to illustrate the integrated framework. It can be observed that the framework is made up of three categories namely: technological, organizational, and environmental contexts. The technological context further includes four categories, namely: relative advantage, compatibility, complexity and risks while the organizational context includes three categories: top management support, size, and technology competence. The environmental context entails three categories: competitive pressure, regulation and external party cooperation. This study therefore argues that the three categories of the integrated framework are perceived to have relative benefits to influence adoption of audit task Digitalization among accounting firms with a view to promoting the quality of audit services

3. Methodology

A survey research design with a quantitative approach was used for this study. The population of study is made up of practitioners of accounting firms in two key cities of Nigeria: the Federal Capital Territory, Abuja and Ikeja in Lagos State. FCT, Abuja is the political capital while Lagos is the economic and business hub of Nigeria. Using the directory of accounting firms registered with the Ikeja and District Society of the Institute of Chartered Accountants of Nigeria (ICAN), and that of the Abuja Municipal Area Council, one hundred and thirty (130) qualified and practicing chartered accountants were purposefully selected from thirteen (13) accounting firms for the study. The criterion for selection was that the accounting firm will possess at least ten auditing staff in its employ. This criterion was also used to control for the availability of technological infrastructures. This profiling was done using both websites of the accounting firms as well as review and assessment of documents from the relevant ICAN District Society. This research utilised primary data sources, where responses to a structured questionnaire were gathered from participants. The copies of the questionnaire were administered to the staff of the selected accounting firms. The data collected was analyzed using the descriptive and inferential statistics. Further, the hypotheses formulated for this study were tested using the regression and t-test analytical methods.

4. Data Presentation and Analysis

Initial assessments, including validity and reliability analyses of the survey items were carried out. Based on the findings of the validity test, all of the questionnaire items were found to be valid since they showed a strong correlation with the constructs that the items were meant to measure. The validity of each research variable was indicated by a p-value of less than 0.05 lending credence to the validity of the instrument. The Cronbach's Alpha tests were used to ascertain the reliability of the research instrument. A 0.678 value in the results revealed the reliability of the variables of this study.

4.1 Test of Null Hypotheses

Hypothesis One: Automation of audit tasks has not significantly improved the quality of audit services

Table 1
Model Summary for Automation of Audit Tasks

	Coefficient.	Std. Error.	T	P value	Decision
ATT	0.377	0.028	13.620	0.000	
_CONS	3.610	0.154	23.416	0.000	
Obs.	130				
F(1, 126)	50.361				Reject
Prob > F	0.0000				
R-Squared (R ²)	0.590				
Adj. R ²	0.348				

Source: Author's Own Elaboration from Data Analysis

Hypothesis one of this study was tested by examining respondents' opinion on the effect of automation of audit tasks on the quality of audit services of selected accounting firms. As shown above, the coefficient obtained for automation of audit tasks (ATT) is 0.377 with a corresponding p-value of 0.000. This result indicates clearly that automation of audit tasks has a significant positive effect on the quality of audit services of sampled accounting firms. With an R² of 0.590, it is evident that the model is able to explain 59% of changes in audit quality due to higher automation of audit tasks. This establishes that there is a significant positive effect of automation of audit tasks on the quality of audit services of accounting firms. By leveraging automated audit tools and technologies, accounting firms can improve the accuracy, efficiency, and effectiveness of audit procedures, leading to higher-quality audit outcomes. This result is consistent with prior studies such as Deniz and Jeffrey (2022), Novita et al. (2023), Akpan et al. (2024), Qataweh (2024), and Moll and Yigitbasioglu (2019) that found automation of audit task to significantly improve the quality of audit service. Ampolo et al. (2024) corroborated this finding as their study found that digitalization enhances risk assessment and allows auditors to proactively identify and mitigate potential issues. Findings by Hanfy et al. (2024) also demonstrate that Digitalization increases audit productivity, safeguards data transfer, and improves audit quality. Automation is found to reduce the likelihood of human error, enhances data analysis capabilities, and streamlines audit processes, ultimately enhancing overall audit quality.

Hypothesis Two: There is no significant difference in the level of automation of audit tasks between the Big 4 and Non-Big 4 accounting firms.

Table 2
t-test analysis of difference in level of audit tasks automation between the Big 4 and non-Big 4 accounting firms

Variable	Period	N	Mean	SD	t	df	p	Decision
Audit Task Automation	Big Four	39	0.7311	0.2317	8.236	121	0.000	Significant
	Non-Big Four	87	0.5278	0.1084				

Source: Author's Own Elaboration from Data Analysis

Table 2 results were used to test hypothesis two. From the t-test statistical estimates, there was a significant difference in the level of audit task automation for the Big Four (M=0.7311, SD=0.2317) and non-Big Four (M=0.4278, SD=0.1084) conditions; $t(8.236)=121$, $p = 0.0000$. These results suggest that there is a significant difference in the level of automation of audit tasks between Big Four and non-Big Four auditing firms. This serves as empirical evidence to reject the null hypothesis of no significant difference in the level of adoption of audit task automation of the sampled audit firms. The alternative hypothesis was therefore accepted and upheld which states that there was a significant difference in the level of adoption of automation of audit tasks between the Big Four and non-Big Four accounting firms. This finding is in tandem with Douwe (2021) which reported that the Big Four accounting firms are incorporating the newest technologies into their audit procedures. Manita et al. (2020) research which indicates that employing robotic technologies, new analytics, and digitizing audit businesses will raise the caliber of audit services supports this finding. Ampofo et al. (2024) also reported that the Non Big Four accounting firms do not have the resources to invest in IT hence are not able to fully deploy digital infrastructure into the auditing process as compared to the established Big Four. However, Lowe et al. (2018) found no significant difference in the level of IT adoption between the Big 4 auditors and non-Big 4 auditors, suggesting that small auditing firms are bracing up to IT challenges in the auditing profession. In addition, studies by Malak et al. (2023) and Adiloglu and Gungor (2019), claim that auditing has not yet fully benefited from digitization in the developing economies since stakeholders have not implemented it to the fullest extent.

5. Conclusion

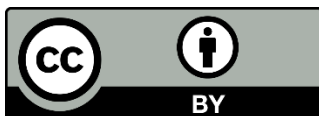
The study was conducted to examine the effect of Digitalization on quality of audit services among selected accounting firms in Nigeria. The study findings indicate that automation of audit tasks has a positive and significant impact on the quality of audit services of the selected accounting firms. The study also found a significant difference in the extent of adoption of automation of audit tasks between the Big Four and non-Big Four accounting firms in Nigeria. Based on the findings of the study, the study concludes that Digitalization has contributed to improvements in the quality of auditing services in Nigeria. Automation of audit tasks, data encryption, and audit trails significantly contribute to improving the accuracy, efficiency, and reliability of audit procedures. By adopting these IT infrastructures, accounting firms can strengthen their audit processes, mitigate risks, and uphold high standards of audit quality, ultimately enhancing stakeholder confidence and trust in audit outcomes.

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