

In what way does blockchain technology tie with the efficacy of accounting practice in Nigerian accounting firms?

Israel S. Akinadewo¹, Muyiwa E. Dagunduro², & Yemi A. Osatuyi³

^{1,2,3}Department of Accounting, Afe Babalola University, Ado-Ekiti, Ekiti State, Nigeria; ¹

doi: <https://doi.org/10.37745/ijbmr.2013/vol11n1196117>

Published December 26, 2023

Citation: Akinadewo I.S., Dagunduro M.E., and Osatuyi Y.A. (2023) In what way does blockchain technology tie with the efficacy of accounting practice in Nigerian accounting firms, *International Journal of Business and Management Review*, Vol.12, No.1, pp.96-117

ABSTRACT: *The digital transformation sweeping across industries in recent years has had a significant influence on the field of accounting. This study specifically aimed to assess the impact of blockchain technology on the effectiveness of accounting practices in Nigeria. This study used a qualitative approach and the study's primary data came from the distribution of a structured questionnaire to the targeted respondents, which comprised accountants, finance analysts, and blockchain experts. The total population was 178 registered accounting firms in Nigeria as of 31st December 2022. A purposive sampling technique was used to select 123 firms from which 3 questionnaires were distributed to each of the firms selected, totaling 369, which served as the sample size. Data were analyzed through descriptive statistics and inferential statistics. The overall results found that blockchain technology had a significant positive effect on the efficacy of accounting practice in Nigeria. Thus, this study recommends that accounting firms in Nigeria should consider investing in blockchain technology to improve data security, transparency, and efficiency.*

KEYWORDS: accounting information quality, blockchain technology, cost effectiveness, data immutability, efficacy of accounting practice.

INTRODUCTION

In recent years, the digital transformation that is emerging across industries has been heavily influenced by the profession and practice of accountants and other accounting practitioners (ICAEW, 2018). There is a pivotal role that accounting profession plays in ensuring the integrity and accuracy of financial data, thereby safeguarding the interests of stakeholders and promoting overall economic stability and to Akinadewo et al. (2023), this is also more effectively achieved with accounting information system. However, traditional accounting methods face challenges related to transparency, data security, and the need for multiple intermediaries to verify transactions (Feng, 2021). Blockchain technology presents a promising solution to address these

challenges by establishing a decentralized and tamper-resistant ledger, which can potentially revolutionize accounting practices and enhance the reliability of financial reporting (Kitsantas & Chytis, 2022).

The digital age has led to the use of various technologies that make accounting applications faster and more secure, being used for diverse operations in organisations, and enhances time management (Akinadewo, 2020; Osalomi et al., 2023). New technologies are making it easier for accountants to take a more active role in their clients' day-to-day operations, and equally brings transformation in accounting process from the traditional analog to digitalization (Adelowotan & Coetsee, 2021; Akinadewo et al., 2023). Blockchain technology, one such technology, is still a new technology, but given the potential impact on the accounting profession, accountants need to understand what this new technology will bring. Technological development can threaten the livelihoods of people in all professions. It is important to understand whether an opportunity or a threat to the accounting profession related to blockchain technology should be understood and addressed. (Atik & Kelten, 2021).

The use of blockchain technology, particularly in accounting functions such as tax, business valuation, financial consultancy, and auditing functions, has gained prominence as its use has expanded in financial markets and has become a key technological solution for many business functions (Kitsantas & Chytis, 2022). Blockchain is a cutting-edge technology poised to transform invoices, payment transactions, contracts, and documentation, with significant implications for accounting professionals such as accountants, auditors, tax practitioners, financial specialists, and regulators (Pedreno et al., 2021). The blockchain is a digital ledger in which transactions are recorded chronologically and anyone who has access to them can see them.

Blockchain is essentially a ledger that can never be changed and the records of which can never be destroyed. Therefore, it can be useful as a reliable and constantly updated business register. In fact, blockchain technology can be used not only to transfer digital currencies between buyers and sellers but also to transfer ownership of the other two assets between two companies in a cheap, efficient, effective, and reliable way (Potekhina & Riumkin, 2017). As blockchain technology evolves and new areas of application are explored, the accounting profession is being defined as an area that can greatly benefit from the blockchain.

The digitalization of the accounting system is still in its early stages compared to other industries, many of which have experienced significant disruptions due to technological advancements (Akinadewo et al., 2023). This slower progress can be attributed, in part, to the rigorous regulatory requirements that demand high levels of validity and integrity in the accounting processes. The entire accounting system has been designed to prevent forgery, making it either impossible or extremely costly to manipulate. This is achieved through a

network of mutual control mechanisms, checks, and balances that impact day-to-day operations (Owonifari et al., 2023).

Consequently, there is a considerable amount of repetitive work, extensive documentation, and regular manual checks required. These tasks are labor-intensive and far from being fully automated (Busayo et al., 2023). As a result, revealing the truth in accounting has demanded these sacrifices up to this point. However, the exact results of blockchain-based accounting are yet to be known, the key benefits discussed include quality accounting information, which Akinadewo et al. (2020) opined is facilitated through accounting information system, and there is also a benefit of significant cost savings, and an elevation of accuracy in financial reporting. Blockchain facilitates bookkeeping and provides real-time reporting and auditing (Falana et al., 2023).

Thus, the study aimed to provide a comprehensive overview of the link between blockchain technology and the efficacy of accounting practice, focusing on the implications for the accounting profession as a whole. By examining the potential benefits, challenges, and opportunities that arise from integrating blockchain into accounting processes, this study seeks to shed light on how this disruptive technology can redefine the future of financial record-keeping and reporting. It is expected that the research will contribute to the growing body of knowledge surrounding blockchain technology's impact on accounting practices. By offering a comprehensive overview of the opportunities and challenges associated with its adoption, this study aims to assist accounting professionals, researchers, and policymakers in navigating the evolving landscape of modern financial record-keeping and reporting. Ultimately, a deeper understanding of blockchain's potential can help shape a more resilient and efficient accounting profession in the digital age.

LITERATURE REVIEW

This reviews the relevant variables, theories and the development of hypothesis.

Efficacy of Accounting Practice

The efficacy of accounting practice refers to the extent to which accounting processes, procedures, and methodologies are effective in achieving their intended objectives (Awotomilusi et al., 2022). Relating to this, accounts encompasses other reports prepared, such as annual accounts, payrolls, tax returns, payment statements, receipts, audit reports, etc. They are the basis of auditor confidence in the audit of financial statements (Awotomilusi et al., 2022; Igbekoyi et al., 2023). Traditionally, accounting has been defined as the art of capturing, classifying, summarizing, reporting, and interpreting financial records or data (money, transactions, and events) in order to improve user decision-making (Akinadewo et al., 2023). Accounting as a discipline is currently unthinkable without the support of accounting technology.

Accounting practice is currently undergoing a massive revolution due to the massive improvement in modern technology. According to Adelowotan and Coetsee (2018), Accounting represents a structured set of activities aimed at gathering, measuring, recognizing, processing, and communicating financial data pertaining to an economic entity. Atik and Kelten (2018) subscribe to this view, asserting that the primary function of the accounting system is to amass information regarding transactions and events using a variety of documents issued and received, traditionally known as source documents. This information is then compiled by accountants to create financial statements serving both internal users (such as management and employees) and external users for decision-making purposes (Dagunduro et al., 2023; Owonifari et al., 2023).

Nonetheless, the practice of bookkeeping entails numerous time-consuming tasks, and as organizational activities persist, accountants' responsibilities have become increasingly demanding. To meet the imperative of efficiency and effectiveness in the roles of accounting professionals, technological advancements have become essential. Besides catering to the informational needs of external users, accountants are also tasked with providing internal information (Busayo et al., 2023; Falana et al., 2023).

Significantly, advancements in information technology have significantly enhanced accounting practices, bringing about transformative changes in the business landscape. Computers and digital information tools have played a pivotal role in enhancing office productivity by expediting information exchange, enabling collaboration with remote business partners, and facilitating data collection and analysis. Presently, virtually every facet of the accounting process has been automated, encompassing tasks such as timing transactions, collecting and processing periodic data, and generating final reports. Accountants now rely extensively on these technologies to furnish the requisite information that streamlines the reporting process (Dagunduro et al., 2023; Igbekoyi et al., 2023).

Blockchain Technology

A blockchain is a digital ledger technology that operates in a decentralized and distributed manner, serving the purpose of recording and verifying transactions across multiple computers or nodes within a network. The core structure of a blockchain consists of a series of blocks, with each block containing a list of transactions (Vardia & Singh, 2022). Unlike traditional centralized systems, blockchain functions on a decentralized network of computers, meaning that no single entity or authority exercises complete control over the entire blockchain network. The ledger, which keeps a record of all transactions, is shared with all participating nodes in the network, ensuring transparency and security (Su et al., 2021).

Transactions are bundled into blocks, with each block typically encompassing a set of transactions, a timestamp, and a reference to the preceding block (except for the initial block, referred to as the genesis block). Within each block lies a unique cryptographic hash of the

preceding block, thereby establishing a chain of interconnected blocks. This feature safeguards the integrity of the data and makes it exceedingly challenging to manipulate or modify past transactions. To validate and reach consensus on the content of a new block before its addition to the chain, blockchain networks employ consensus mechanisms like Proof of Work (PoW) or Proof of Stake (PoS). These mechanisms serve to thwart fraudulent transactions and maintain the network's security. Once a transaction is incorporated into the blockchain, it becomes exceptionally resistant to alterations or deletions—a core characteristic of blockchain technology (Potekhina & Riumkin, 2017). All participants in the network possess access to the entire transaction history, while participant identities can be pseudonymous, preserving a degree of privacy.

Certain blockchains, such as Ethereum, support smart contracts—self-executing contracts with terms defined between buyer and seller directly within the code. These contracts automatically execute when predefined conditions are met (Kitsantas & Chytis, 2022). Beyond cryptocurrencies, blockchain technology finds a diverse array of applications, encompassing supply chain management, voting systems, healthcare records, identity verification, and more. These applications leverage blockchain's inherent security and transparency features. In essence, blockchain technology is engineered to deliver a secure, transparent, and tamper-resistant means of recording and verifying transactions and various other forms of data across a wide spectrum of uses (ICAEW, 2018).

Cost Effectiveness

Efficient and convenient records are stored just once, within blocks that remain accessible to authorized users at all times. This reduces the expenses associated with maintaining physical or digital records. The integration of blockchain into accounting and auditing processes has the potential to lower accounting and auditing costs (Igbekoyi et al., 2023; Su et al., 2021). Real-time transaction logging and immediate accounting updates eliminate the need for reconciliation within the logging process. Modern technologies like artificial intelligence and data analysis will further streamline various accounting procedures within the expanded blockchain system. All of these advancements are poised to enhance the efficiency and overall value of the accounting function (Awotomilusi et al., 2022; Owonifari et al., 2023).

Accounting Information Quality

The adoption of blockchain technology offers several advantages, including data authenticity and a significant reduction in fraud risk. Unlike physical or digital records, the data stored within blockchain blocks is immune to unauthorized alterations. This feature ensures the integrity of the information stored on the blockchain and substantially mitigates the risk of fraudulent activities (Adelowotan & Coetsee, 2021). In the realm of real-time blockchain accounting, the potential for errors is entirely eradicated. Under this framework, any user within the network or an external regulatory body can access real-time information about the organization. This shift towards real-

time accounting liberates the resources previously dedicated to traditional record-keeping, redirecting them toward the organization's value-adding activities (Falana et al., 2023).

Accountants now find themselves in a position where they are expected to recommend optimal practices to management and propose cost-reduction strategies that concurrently boost profitability (Pedreno et al., 2021). Information, in this context, is characterized as a form of data that has undergone specific processing, organization, and structuring within data applications. This enhancement of data quality and reliability leads to improved comprehensibility and a marked reduction in uncertainty. As articulated by Falana et al. (2023), the quality of accounting information is contingent on its ability to accurately reflect a company's current operational performance, its utility in predicting future performance, and its contribution to estimating the company's overall value.

Data Immutability

Data immutability stands as a core characteristic of blockchain technology. In the long run, an increasing volume of records can be incorporated into the blockchain, providing auditors and regulators with real-time visibility into transactions while ensuring the verifiable origin of those transactions (ICAEW, 2018). Unlike conventional databases that centralize data storage on individual servers, blockchain databases are replicated and stored across all computers connected to the network. This eliminates the need for third-party validation of blockchain transactions' accuracy or existence, although careful consideration is always given to how these transactions are recorded and reported on financial statements.

Once a transaction finds its place within the blockchain, the prospect of alteration or deletion becomes exceedingly challenging (Atik & Kelten, 2021). Blockchain serves as a distributed digital ledger, offering enhanced security and global accessibility to insurance companies. Currently, its primary application resides in cryptocurrencies like Bitcoin and others. However, the complete integration of blockchain technology into accounting operations is anticipated in the very near future (Feng, 2021).

Blockchain Technology and Efficacy of Accounting Practices

Blockchain represents an accounting methodology involving the transfer of asset ownership and the maintenance of a precise financial record. The accounting profession is fundamentally centered on the measurement, reporting, and analysis of financial data. A substantial part of this profession pertains to establishing and quantifying property rights and obligations or devising optimal strategies for allocating financial resources (ICAEW, 2018). For accountants, the adoption of blockchain technology brings about enhanced clarity regarding asset ownership and the presence of liabilities, resulting in significant improvements in operational efficiency. Blockchain has the potential to revolutionize the accounting field by reducing costs associated

with accounting and reconciliation while ensuring absolute certainty regarding asset ownership and historical data (Potekhina & Riumkin, 2017).

Blockchain can assist accountants in delineating their organization's available resources and responsibilities, thereby liberating resources for strategic planning and pricing, as opposed to being tied up in record-keeping tasks. With the growing influence of automation trends like machine learning, blockchain is poised to increasingly drive transaction-level accounting, albeit with a different approach from accountants (Su et al., 2021). In this context, proficient accountants will be those who evaluate the true economic implications of blockchain records and establish connections between these records and economic realities and assessments. For instance, blockchain can confirm the existence of a debtor, but the attainable value and economic significance remain open questions. Similarly, while blockchain can verify asset ownership, aspects such as their condition, location, and actual worth still necessitate assurance. By eliminating reconciliation processes and delivering certainty regarding transaction histories, blockchain may also expand the scope of accounting to encompass other areas, hitherto seem too intricate or unreliable to gauge, such as the value of data held by a company (Vardia & Singh, 2022).

Blockchain technology has the potential to replace traditional accounting and reconciliation tasks, potentially reshaping the roles of accountants and empowering those engaged in value creation elsewhere. For instance, during M&A due diligence, the consensus reached through distributed ledger technology allows more time for assessing various areas and recommendations, expediting the process (Feng, 2021). Blockchain finds applications in external control, where the need for confirmations regarding a company's financial status may diminish if some or all of the transactions underlying that status are transparently recorded on the blockchain. This could usher in a profound transformation in audit practices. Combining blockchain solutions with effective data analysis could aid in addressing transaction-level claims associated with audits, allowing auditors to allocate their expertise to higher-level concerns. Audits, beyond verifying transaction details and amounts, also encompass considerations about how transactions are recorded and stored, such as discerning whether cash generated from a transaction is allocated to selling costs, expenses, debt repayment, or business initiation (Adelowotan & Coetsee, 2021).

The shift toward a financial system heavily influenced by blockchain technology presents numerous opportunities for accountants. Accountants, renowned for their record-keeping prowess, application of intricate rules and business logic, and setting of standards, are poised to take the lead in shaping how blockchain integrates into the financial landscape. They can play a pivotal role in developing blockchain-based solutions and services (Vardia & Singh, 2022). To become an integral part of this evolving financial ecosystem, blockchain must undergo

development, standardization, and optimization, a process anticipated to span many years—akin to the ongoing journey of Bitcoin.

Accountants can also serve as advisors to companies considering adopting blockchain technology, offering guidance on evaluating the costs and benefits of adopting such a system. Their fusion of commercial and financial expertise positions them as indispensable advisors to companies venturing into these novel technologies in search of opportunities (Atik & Kelten, 2021). The aspects of accounting linked to transaction security and property transfer execution are undergoing transformation due to blockchain and smart contracts. The reduction in the need for arbitration and dispute management, coupled with increased certainty regarding rights and obligations, paves the way for a more extensive focus on resolving and overseeing transactions, thereby expanding the scope of functions (Kitsantas & Chytis, 2022).

Many of the current processes within accounting departments can be streamlined through blockchain and contemporary technologies like data analytics and machine learning. This transformation promises heightened efficiency and value within the accounting profession, altering the skill set required. Certain roles, such as postal and provenance insurance, may decrease or vanish, while other domains like consulting and value-added businesses are poised to expand. To conduct effective audits of companies with substantial blockchain-based transactions, auditors may need to adjust their focus and approach (Atik & Kelten, 2021).

Theoretical Review

This study reviewed and underpinned this study on Technology Acceptance Model (TAM)

Technology Acceptance Model

The Technology Acceptance Model (TAM), originally formulated by Fred Davis in 1986, offers valuable intuitions on the efficiency and effectiveness of blockchain technology within the accounting field. TAM, a well-established theory, was initially crafted to predict and elucidate how individuals engage with or reject Information and Communication Technology (ICT). Rooted in the Theory of Reasoned Action (TRA), TAM centers on two pivotal factors influencing the adoption of technology: perceived usefulness and perceived ease of use. These factors now play a crucial role in comprehending how professionals in the accounting domain perceive and employ blockchain technology.

Perceived usefulness, in the context of blockchain technology, refers to an individual's belief in how much blockchain can enhance accounting practices. Blockchain's transparent and immutable ledger capabilities hold the potential to transform traditional accounting by improving efficiency and transparency. On the other hand, perceived ease of use concerns how effortlessly individuals believe they can integrate blockchain technology into their accounting routines. Blockchain technology has brought about substantial changes in accounting practices and financial

management. Particularly in financial reporting, the widespread adoption and effective utilization of blockchain are essential to uphold the integrity of financial records. Institutional efforts are instrumental in promoting blockchain adoption, but the willingness and active engagement of individuals within accounting organizations are equally crucial for its success and institutionalization. To gain a comprehensive understanding of how accountants perceive and embrace blockchain technology, various theoretical models, including TAM, have been employed. TAM, building upon the Theory of Reasoned Action, posits that an individual's intention to use technology primarily hinges on their perception of its usefulness and ease of use. In the context of blockchain adoption, this implies that accountants are more inclined to embrace blockchain technology if they view it as beneficial for their accounting tasks and find it user-friendly.

Moreover, TAM suggests that external variables, such as the design characteristics of the blockchain system, can influence individuals' intentions through the mediation of perceived ease of use and perceived usefulness. In essence, a well-designed blockchain system that is user-friendly and offers clear advantages for accounting practices is more likely to be adopted. Over time, the Technology Acceptance Model (TAM) has received extensive empirical support, demonstrating its applicability and robustness across various contexts, populations, and technologies, including blockchain. As blockchain continues to gain prominence in the accounting profession for its potential to enhance security, transparency, and efficiency in financial transactions, TAM provides a valuable framework for understanding and predicting the acceptance and utilization of blockchain technology by accountants and financial professionals (Venkatesh & Davis, 1996).

Empirical Review

There is a wealth of literature addressing the intersection of blockchain technology and accounting practices. These studies have delved into the impacts of blockchain on various facets of accounting. However, some of these studies have relied on contextual analysis. For instance, Akinadewo et al. (2023) investigated the influence of disruptive technology on the effectiveness of accounting practice in Nigeria. This research employed a survey research approach and distributed a structured questionnaire among professional bodies in the Southwestern states of Nigeria. Ordinary Least Squares and correlation analysis were used to analyse data. The results unveiled substantial positive impact between the independent variables through the proxies and the effectiveness of accounting practices in Nigeria.

Similarly, Igbekoyi et al. (2023) evaluated the consequences of big data on the efficiency of accounting practices in Nigeria. Survey research design, through structured questionnaire was used as the primary data collection tool. Population was all the 35 registered accounting firms in Lagos State. The sample size was determined through a census sampling technique, which included 100% of the population. Given the manageable population size, six respondents were

selected from each accounting firm, resulting in a total of 210 respondents. Of this sample, 197 responses were returned, representing an impressive 94% response rate. Descriptive statistics and ordinary least squares (OLS) regression analysis techniques used for the analysis of data. Results revealed the significant influence of the proxies of the independent variable such as data validity, etc., on the efficiency of accounting practices in Nigeria.

Kishor (2022) conducted an inquiry into the ramifications of blockchain technology for accounting and auditing. This study relied on secondary data collected from various journals and websites. The research paper aimed to contribute valuable insights to the existing body of literature on blockchain technology and triple-entry accounting. The findings indicated that blockchain technology is not poised to replace accounting and audit professionals. Instead, it presents an opportunity for accountants and auditors to transition into consultancy roles and offer advisory services.

In another dimension, Akinadewo et al. (2023) investigation how accounting information system (AIS) could enhance firm's performance in Nigeria. survey research design through structured questionnaire was used to obtain data, whilst the later was analysed with descriptive and inferential statistics. Purposive sampling was used to identify 50 chartered accountants in practice with only 46 respondents returned the questionnaire. The finding revealed that AIS has a positive significant relationship with firm's performance.

Kitsantas and Chytis (2022) endeavored to delineate and scrutinize the implementation of an innovative architecture known as the Blockchain as an Ecosystem (BaaE) platform. They proposed a conceptual model of Triple Entry Accounting (TEA), envisioning a transformation of contemporary accounting practices. Their exploration also encompassed the integration of cost management, supply chain operations, and inventory management within the Blockchain Technology (BT) framework. The study acknowledged significant challenges and benefits associated with this integration, while also charting out a roadmap for future research. Through an exhaustive qualitative analysis of a substantial corpus of literature drawn from 81 journals, the research unveiled that the adoption of blockchain technology augmented the quality of work conducted by accounting practitioners and enhanced various accounting processes.

Atik and Kelten (2021) conducted a systematic literature review with the aim of anticipating the potential ramifications of blockchain technology on the field of accounting. They employed specific keywords to conduct searches within the Scopus database. Their findings indicated that a majority of the studies in this domain primarily focused on technical aspects and software application development. Only a minority of studies attempted to establish connections between blockchain and accounting. While many authors expressed optimism about blockchain technology's capacity to potentially revolutionize the double-entry accounting system, some adopted a more cautious stance and voiced critical perspectives.

Osalomi et al. (2023) researched on the nexus between the adoption of ICT and the efficiency in accounting practice in Nigeria. The study administered structured questionnaire to 130 respondents, which comprise of managers, auditors and directors of accounting related environment. The finding shows that the use of ICT enhances efficiency of operations of accounting practice in the country.

Pedreño et al. (2021) conducted a study aimed at scrutinizing existing literature pertaining to the significance of blockchain technology and its potential impact on accounting. Employing an exploratory research design, they systematically reviewed literature on blockchain and its relevance. Their analysis delved into the concept of Triple Entry Accounting (TEA) and the associated accounting ledger, striving to resolve prevailing terminological ambiguities while speculating on the technology's future trajectory. The literature review brought to light that, following technical advancements and development, blockchain has the potential to induce a substantial transformation in the traditional accounting system. This transformation would inevitably lead to modifications in the roles of accountants and auditors.

Su et al. (2021) embarked on an analysis and discussion of the multifaceted influence of blockchain technology on diverse aspects of accounting industry. The study drew upon secondary sources, involving a comprehensive review of existing literature. The research outcomes posited that as blockchain technology matures, its application within the accounting sector will become more widespread. This adoption is expected to facilitate the stable evolution of the accounting industry, fostering a virtuous cycle and driving its overall development.

Adelowotan and Coetsee (2021) conducted an investigation into the potential ramifications of blockchain technology on accounting practices. Their study employed a comprehensive review of relevant literature, and the findings unveiled that blockchain technology's immediate verification and immutability features bolster data integrity, serving both accounting and auditing purposes. Additionally, the extensive utilization of blockchain for accounting information relies on diverse and cost-effective validation processes.

Potekchina and Riumkin (2017) delved into the theoretical framework surrounding blockchain applications in accounting. They identified the central advantages and drawbacks while examining its broader implications for accounting and auditing as well as its specific impact on credit risk management. The research utilized a quantitative design, and the results indicated that the potential impact of blockchain accounting on credit score metrics is confined within the parameters of the actual volatility of quarterly credit scores. Consequently, the technology is expected to have more significant implications for companies with higher credit metric volatility.

Wu et al. (2017) explored the influence of Blockchain and the Internet of Things (IoT) on enhancing the quality of accounting information. Their study relied on a comprehensive review

of existing literature, and the outcomes demonstrated that blockchain technology has the potential to substantially and positively enhance various facets of accounting information quality, including relevance, faithful representation, timeliness, comparability, and others.

On the advancement of technology in Nigeria, Akinadewo (2020) investigated the influence of artificial intelligence (AI) on the approach of accountants toward accounting functions. The study, which administered questionnaire to 205 accountants that are experienced in system's application, showed of a positive significant relationship between the explanatory and controlled variables.

Upon reviewing the literature mentioned above, it has been observed that there is limited research on blockchain technology and accounting. However, the majority of the studies conducted on the features of blockchain technology and its application in accounting were theoretical in nature. There has been a lack of empirical research conducted, particularly in exploring the interaction between blockchain technology adoption and accounting practitioners in Nigeria. Instead, previous researchers relied on secondary data for their analyses. Given this gap in the existing research, it becomes crucial to investigate the perspectives of various respondents regarding the adoption of blockchain technology in accounting practices. The current study aims to address this need and takes a humble step in that direction by identifying the impact and influence of adopting blockchain technology in accounting practices within the Nigerian context. Therefore, the hypothesis of this study is formulated as stated below:

H₀: Blockchain technology does not have a significant effect on the efficacy of accounting practice in Nigeria.

Conceptual Framework

To this article, it aims to draw the attention of the stakeholders on the impact of blockchain technology on the effectiveness of accounting practices in Nigeria.



Figure 2.1: Conceptual Framework, which reveals the interaction between Blockchain Technology and the Efficacy of Accounting Practice in Nigeria.

Source: Researchers' Concept (2023)

DATA AND METHODS

This study used a qualitative approach and the study's primary data came from the distribution of a structured questionnaire to the targeted respondents, which comprised accountants, finance analysts, and blockchain experts. The total population was 178 registered accounting firms in Nigeria as of 31st December 2022. A purposive sampling technique was used to select 123 firms from which 3 questionnaires were distributed to each of the firms selected, totaling 369, which served as the sample size. These firms were selected because of the usage of information technology in the delivery of their accounting functionalities. Data were analyzed through descriptive statistics and inferential statistics (multiple regression analysis). Using a 5-point Likert scale, the questionnaire's questions were condensed to obtain accurate and validly measurable data.

Reliability Test

As presented in Table 1, the Cronbach Alpha values associated with various dimensions of the study serve as indicators of the internal consistency of the scale items. The dimension labeled "Efficacy of Accounting Practice (EAP)" displayed a Cronbach Alpha coefficient of 0.738, encompassing a total of 5 items. Furthermore, the dimension denoted as "Cost Effectiveness (CEO)" yielded a Cronbach Alpha value of 0.891 across 7 items, while "Accounting Information Quality (AIQ)" achieved a Cronbach Alpha coefficient of 0.860, comprising 6 items. Additionally, "Data Immutability (DAI)" obtained a Cronbach Alpha coefficient of 0.897, covering 6 items. These findings collectively affirm that all the scale items exhibit strong internal consistency, given that the Cronbach Alpha values surpass the threshold of 0.7.

Table 1: Reliability Test Results

S/N	Variable	No. of Items	Cronbach's Alpha
1	Cost Effectiveness (COE)	7	0.891
2	Accounting Information Quality (AIQ)	6	0.860
3	Data Immutability (DAI)	6	0.897
4	Efficacy of Accounting Practice (EAP)	5	0.738

Source: Researchers' Computation (2023)

RESULTS AND DISCUSSION

This shows the results and discusses the findings.

Descriptive Statistics

Table 2 displays the summary statistics employed for the examination of how blockchain technology impacts the effectiveness of accounting practices in Nigeria. These descriptive statistics provide insights into the distribution, central tendency, variability, and shape of the data for each variable. The skewness and kurtosis values indicate departures from a normal distribution, with some variables exhibiting more extreme deviations than others. The provided values represent descriptive statistics for four variables: Efficacy of Accounting Practice (EAP), Cost Effectiveness (COE), Accounting Information Quality (AIQ), and Data Immutability (DAI). Efficacy of Accounting Practice (EAP) has the following values; Mean: 4.6992, Standard Deviation: 0.73279, Skewness: -3.629, and Kurtosis: 15.097. The mean EAP score is approximately 4.6992, indicating the average value of this variable across the data points. The relatively low standard deviation of 0.73279 suggests that the EAP scores tend to be clustered around the mean, indicating relatively consistent ratings. The negative skewness of -3.629 suggests that the distribution of EAP scores is heavily skewed to the left. This means that there may be a few data points with extremely low EAP scores that are pulling the distribution in that direction. The high positive kurtosis of 15.097 indicates that the distribution of EAP scores has heavy tails and is more peaked than a normal distribution. This suggests the presence of outliers or extreme values.

Cost Effectiveness (COE) has the following values; Mean: 4.5610, Standard Deviation: 1.06178, Skewness: -2.256, and Kurtosis: 3.514. The mean COE score is approximately 4.5610, indicating the average value of this variable. The higher standard deviation of 1.06178 suggests that the COE scores have a wider spread, indicating more variability compared to the EAP scores. The negative skewness of -2.256 suggests that the distribution of COE scores is also skewed to the left, though not as severely as the EAP scores. The positive kurtosis of 3.514 indicates that the distribution of COE scores is less peaked and has fatter tails compared to a normal distribution.

Accounting Information Quality (AIQ) has the following values; Mean: 4.4770, Standard Deviation: 1.15280, Skewness: -1.841, and Kurtosis: 1.565. The mean AIQ score is approximately 4.4770, indicating the average value of this variable. The standard deviation of 1.15280 indicates a moderate amount of variability in the AIQ scores. The negative skewness of -1.841 suggests that the distribution of AIQ scores is skewed to the left, but again, not as severely as in the case of EAP. The positive kurtosis of 1.565 suggests that the distribution of AIQ scores is closer to a normal distribution than the previous variables.

Data Immutability (DAI) has the following values; Mean: 4.4634, Standard Deviation: 1.19300, Skewness: -1.825, and Kurtosis: 1.487. The mean DAI score is approximately 4.4634, indicating the average value of this variable. The standard deviation of 1.19300 indicates a moderate amount of variability in the DAI scores. The negative skewness of -1.825 suggests that the distribution of DAI scores is skewed to the left, similar to AIQ. The positive kurtosis of 1.487 suggests that the distribution of DAI scores is also closer to a normal distribution than the previous variables.

Table 2: Descriptive Statistics of the Study Variables

		Mini.	Maxi.	Mean	Std. Deviation	Skewness	Kurtosis		
	Obs.	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Std. Error
Efficacy	of369	1.00	5.00	4.6992	.73279	-3.629	15.097	.127	.253
Accounting Practice									
Cost Effectiveness	369	1.00	5.00	4.5610	1.06178	-2.256	3.514	.127	.253
Accounting	369	1.00	5.00	4.4770	1.15280	-1.841	1.565	.127	.253
Information Quality									
Data Immutability	369	1.00	5.00	4.4634	1.19300	-1.825	1.487	.127	.253
Valid N (listwise)	369								

Source: Researchers' Computation (2023)

Correlation Analysis of the Study Variables

Table 3 displays the Pearson correlations between the study's variables, aimed at assessing the extent of the relationships among the explanatory variables. The correlation analysis revealed significant positive correlations among the variables, with coefficients of 0.904, 0.933, and 0.981 for COE, AIQ, and DAI, respectively. These values indicate that as one variable increases, there is a corresponding increase in the others. In essence, an increase in blockchain technology usage is associated with improved efficacy in accounting practice in Nigeria.

Table 3: Correlations Analysis Matrix

		Efficacy of Accounting Practice	Cost Effectiveness	Accounting Information Quality	Data Immutability
Efficacy of Accounting Practice	Pearson Correlation	1	.647**	.585**	.654**
	Sig. (2-tailed)		.000	.000	.000
	N	369	369	369	369
Cost Effectiveness	Pearson Correlation	.647**	1	.904**	.933**
	Sig. (2-tailed)	.000		.000	.000
	N	369	369	369	369
Accounting Information Quality	Pearson Correlation	.585**	.904**	1	.981**
	Sig. (2-tailed)	.000	.000		.000
	N	369	369	369	369
Data Immutability	Pearson Correlation	.654**	.933**	.981**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	369	369	369	369

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Researchers' Computation (2023)

Regression Analysis of the Effect of Blockchain Technology on the Efficacy of Accounting Practice in Nigeria

The results of the regression analysis conducted to assess the impact of blockchain technology on the effectiveness of accounting practice in Nigeria are presented in Tables 4 and 5. Table 4 provides the coefficient of determination, indicating an R² value of 0.515 (adjusted to 0.511), suggesting that approximately 51% of the variance in the dependent variable (efficacy of accounting practice) can be jointly explained by the independent variable (blockchain technology), while the remaining 49% is attributed to the error term. Furthermore, the collective significance of the model is demonstrated by an F-statistics value of 129.128 with a probability of 0.000, indicating that blockchain technology (comprising cost-effectiveness, accounting information quality, and data immutability) serves as a robust predictor of accounting practice efficacy in Nigeria.

Table 5 presents the statistical significance of each parameter employed to assess the influence of blockchain technology on the efficacy of accounting in Nigeria. Holding blockchain technology

constant, it is observed that the efficacy of accounting practice is predicted to increase by 3.040 units. Additionally, cost-effectiveness exhibits an insignificant positive impact on the efficacy of accounting practice, with a coefficient of 0.156, a t-statistic of 1.520, and a p-value of 0.129. This suggests that a one-unit increase in cost-effectiveness corresponds to a 0.156-unit increase in accounting practice efficacy. Conversely, accounting information quality exerts a significant negative effect on accounting practice efficacy, reflected by a coefficient of -1.442, a t-statistic of -7.594, and a p-value of 0.000. This indicates that a unit rise in accounting information quality leads to a decrease of -1.442 units in accounting practice efficacy. Lastly, data immutability significantly enhances accounting practice efficacy, as evidenced by a coefficient of 1.923, a t-statistic of 8.508, and a p-value of 0.000. This implies that a one-unit increase in data immutability results in a 1.923-unit increase in accounting practice efficacy.

Table 4: Regression Summary of Study Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.718 ^a	.515	.511	.51249	.517	
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	101.744	3	33.915	129.128	.000 ^b
	Residual	95.865	365	.263		
	Total	197.610	368			

b. Dependent Variable: Efficacy of Accounting Practice

Source: Researchers' Computation (2023)

Table 5: Coefficients Variation of the Study Variables

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.040	.126		24.146	.000
	Cost Effectiveness	.108	.071	.156	1.520	.129
	Accounting Information Quality	-.917	.121	-1.442	-7.594	.000
	Data Immutability	1.181	.139	1.923	8.508	.000

a. Dependent Variable: Efficacy of Accounting Practice

Source: Researchers' Computation (2023)

DISCUSSION AND IMPLICATION OF FINDINGS

In recent times, the ongoing digital transformation across various industries has been significantly influenced by the accounting profession and practitioners. This study aimed to assess the impact of blockchain technology on the effectiveness of accounting practices in

Nigeria. The findings indicated a somewhat positive but statistically insignificant relationship between cost-effectiveness and the efficacy of accounting practice in Nigeria. After conducting thorough statistical analyses and tests, the connection between cost-effectiveness and accounting practice efficacy did not demonstrate a strong or meaningful statistical association. In simpler terms, variations in cost-effectiveness did not seem to have a substantial influence on the effectiveness of accounting practice. This suggests that while there was a tendency for increased cost-effectiveness to be linked with improved accounting practice efficacy, this effect was observed but not deemed significant or robust enough to draw definitive conclusions.

Conversely, the quality of accounting information exhibited a noteworthy adverse impact on the effectiveness of accounting practice in Nigeria. The finding underscores the critical importance of ensuring high-quality accounting information in the Nigerian business and financial landscape. It suggests that poor data accuracy, completeness, or reliability can hinder the effectiveness of accounting practices. Accounting information is used for decision-making by businesses, investors, and regulators. The negative effect implies that if accounting information quality is compromised, the decisions made based on that information may also be compromised. This has far-reaching implications for investment decisions, financial planning, and policy development in Nigeria. The negative effect also, suggests a need for continuous professional development among accountants and finance professionals in Nigeria. They should be trained to maintain high standards of data quality and integrity in their work to mitigate the negative impact on accounting practice efficacy.

Lastly, data immutability demonstrated a substantial favorable influence on the effectiveness of accounting practice in Nigeria. This implies that financial data cannot be altered or tampered with easily. This finding highlights the importance of maintaining the security and integrity of financial data in accounting practice. It suggests that secure and tamper-proof data can enhance the reliability of financial reporting. Investors rely on accurate and trustworthy financial information when making investment decisions. The positive effect on accounting practice efficacy can boost investor confidence in Nigerian financial markets, potentially attracting more investment. The significant positive effect of data immutability on the efficacy of accounting practice in Nigeria suggests that maintaining the integrity and security of financial data is crucial for enhancing the reliability and trustworthiness of financial reporting. Embracing technologies that ensure data immutability and integrating them into accounting practices can have wide-ranging benefits for the Nigerian accounting and financial sector.

The overall results revealed that blockchain technology had a significant positive effect on the efficacy of accounting practice in Nigeria. The significant positive effect of blockchain technology on the efficacy of accounting practice in Nigeria suggests that blockchain is emerging as a valuable tool for enhancing the security, transparency, and efficiency of financial processes. As this technology continues to evolve, its impact on the accounting profession and

financial industry in Nigeria is likely to expand. The implication of this result is that the null hypothesis was rejected with the p-value of 0.000 is significant. The outcome of the findings aligns with the findings of previous authors, such as Adelowotan and Coetsee (2021), Akinadewo et al. (2023), Atik and Kelten (2021), Kishor (2022), Kitsantas and Chytis (2022), and Su et al. (2021) among others.

CONCLUSION AND RECOMMENDATIONS

The digital transformation sweeping across industries in recent years has had a significant influence on the field of accounting. This study specifically aimed to assess the impact of blockchain technology on the effectiveness of accounting practices in Nigeria. The research produced several notable findings. Firstly, regarding cost-effectiveness, the study revealed an insignificant positive effect on the efficacy of accounting practice. In simpler terms, changes in cost-effectiveness did not appear to substantially impact the effectiveness of accounting practice in Nigeria. While there was a tendency for an increase in cost-effectiveness to coincide with improved efficacy, this relationship was not statistically significant.

On the contrary, the study found that accounting information quality had a significant negative effect on the efficacy of accounting practice in Nigeria. This emphasizes the vital importance of maintaining high-quality accounting information within the Nigerian business and financial landscape. Poor data accuracy, completeness, or reliability can hinder the effectiveness of accounting practices, ultimately affecting decision-making by businesses, investors, and regulators. The study also highlighted the need for continuous professional development among accountants and finance professionals in Nigeria. This is crucial to uphold the standards of data quality and integrity required to mitigate the negative impact on the efficacy of accounting practices.

Furthermore, the study found that data immutability had a significant positive effect on the efficacy of accounting practice. This implies that secure and tamper-proof financial data can enhance the reliability of financial reporting. Investor confidence in Nigerian financial markets can be bolstered by such data integrity, potentially attracting more investment. Lastly, the most significant finding was related to blockchain technology, which had a significant positive effect on the efficacy of accounting practice in Nigeria. This suggests that blockchain is emerging as a valuable tool for enhancing the security, transparency, and efficiency of financial processes within the Nigerian accounting profession.

In conclusion, this study has illuminated the intricate connection between multiple factors and the effectiveness of accounting practices in Nigeria. While cost-effectiveness showed an insignificant impact, accounting information quality and data immutability emerged as crucial determinants of accounting practice effectiveness. Moreover, the transformative potential of

blockchain technology in the accounting field is highly promising, with a substantial positive effect on practice efficacy. These findings underscore the need for a continued focus on data quality and integrity within accounting practices. Moreover, they emphasize the growing significance of technology, especially blockchain, in enhancing the reliability and trustworthiness of financial reporting in Nigeria. The accounting profession must adapt and embrace these changes to remain effective and relevant.

Based on the study's findings, the following recommendations are made:

Firstly, accounting firms in Nigeria should consider investing in blockchain technology to improve data security, transparency, and efficiency. Secondly, accountants and finance professionals should undergo training to enhance their skills in maintaining high standards of data quality and integrity. Thirdly, regulatory bodies should develop guidelines or regulations to govern the use of blockchain technology in accounting and ensure compliance. Lastly, organizations should prioritize data accuracy, completeness, and reliability to mitigate the negative impact of poor data quality on accounting practice efficacy. Also, researchers and technology developers should explore innovative solutions and applications of blockchain technology in accounting to further improve practice efficacy.

Contributions to the Body of Knowledge

This study contributes to the body of knowledge by providing empirical evidence of the impact of various factors, including cost-effectiveness, accounting information quality, data immutability, and blockchain technology, on the efficacy of accounting practice in Nigeria. It adds valuable insights to the understanding of how these factors influence the accounting profession in a digital era.

Suggestions for Future Studies

Future studies can build upon this research in several ways: Firstly, investigate the implementation challenges and barriers associated with adopting blockchain technology in accounting practice in Nigeria. Secondly, explore the specific aspects of accounting information quality that have the most significant impact on practice efficacy. Thirdly, conduct comparative studies to assess the effectiveness of blockchain technology in accounting across different regions or countries. Lastly, examine the evolving role of accountants and finance professionals in the context of increasing automation and technology adoption in accounting.

Reference

- Adelowotan, M., & Coetsee, D. (2021). Blockchain technology and implications for accounting practice. *Academy of Accounting and Financial Studies Journal*, 25(4), 1-14.
- Akinadewo, I. S. (2020). Artificial intelligence and accountants' approach to accounting functions. *Covenant University Journal of Politics & International Affairs*, 9(1), 40-55.

- Akinadewo, I. S., Dagunduro, M. E., Adebisi, I. M., Ogundele, O. S., & Akinadewo, J. O. (2023). An Assessment of the impact of disruptive technologies on the efficacy of accounting practices in selected southwestern states, Nigeria. *International Business & Economics Studies*, 5(3), 1-21.
- Akinadewo, I. S., Donatus, L. B., Akinadewo, J. O., Jabar, A. A., & Adebisi, I. M. (2023). Impact of accounting information system on the performance of firms in Nigeria. *European Journal of Science, Innovation and Technology*, 3(3), 56-68.
- Atik, A., & Kelten, G. S. (2021). Blockchain technology and its potential effects on accounting: A systematic literature review. *Istanbul Business Research (IBR)*, 50(2), 495-515. <https://doi.org/10.26650/ibr.2021.50.806870>
- Awotomilusi, N., Dagunduro, M. E., & Osaloni, B. O. (2022). Adoption of cloud computing on the efficacy of accounting practices in Nigeria. *International Journal of Economics, Business and Management Research*, 6(12), 194-205.
- Busayo, T. O., Igbekoyi, O. E., Oluwagbade, O. I., Adewara, Y. M., Dagunduro, M. E., & Boluwaji, Y. D. (2023). Artificial intelligence and service quality of telecommunication firms in Nigeria. *Journal of Economics, Finance and Accounting Studies*, 5(3), 203-214.
- Dagunduro, M. E., Falana, G. A., Adewara, Y. M. & Busayo, T. O. (2023). Application of artificial intelligence and audit quality in Nigeria. *Humanities, Management, Arts, Education & the Social Sciences Journal*. 11(1), 39-56. <https://dx.doi.org/10.22624/AIMS/HUMANITIES/V11N1P4>
- Davis, F. D. (1986). A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results. *Massachusetts Institute of Technology*.
- Falana, G. A., Igbekoyi, O. E., & Dagunduro, M. E. (2023). Effect of big data on accounting information quality in selected firms in Nigeria. *International Journal of Research and Innovation in Social Science*, 7(3), 789-806. <https://doi.org/10.47772/IJRISS>
- Feng, H. (2021). Application of big data blockchain technology in financial support of real economy. *Journal of Physics: Conference Series*, 3(4), 171-178.
- ICAEW (2018). Blockchain and the future of accountancy. [https://www.icaew.com/-/media/corporate/files/technical/information technology/blockchain-and-the-future-of-accountancy.ashx](https://www.icaew.com/-/media/corporate/files/technical/information%20technology/blockchain-and-the-future-of-accountancy.ashx)
- Igbekoyi, O. E., Oke, O. E., Awotomilusi, N. S., & Dagunduro, M. E. (2023). Assessment of big data and efficacy of accounting practice in Nigeria. *Asian Journal of Economics, Finance and Management*, 5(1), 297-312.
- Kitsantas, T., & Chytis, E. (2022). Blockchain technology as an ecosystem: Trends and perspectives in accounting and management. *Journal of Theoretical and Applied Electronic Commerce Research*, 17, 1143–1161. <https://doi.org/10.3390/jtaer17030058>
- Osalomi, B. O., Akinadewo, I. S., Ogungbade, O. I., & Oso, O. O. (2023). Adoption of ICT and efficiency in accounting practice in Nigeria. *International Journal of Research (IJR)*, 10(04), 284-302. <https://doi.org/10.5281/zenodo.7838536>

- Owonifari, V. O., Igbekoyi, O. E., Awotomilusi, N.S., & Dagunduro, M. E. (2023). Evaluation of artificial intelligence and efficacy of audit practice in Nigeria. *Asian Journal of Economics, Business and Accounting*, 23(16), 1-14.
- Pedreño, P. E., Gelashvili, V. & Nebreda, P. L. (2021). Blockchain and its application to accounting. *Intangible Capital*, 17(1), 1-16. <https://doi.org/10.3926/ic.1522>
- Potekhina, A., & Riumkin, C. (2017). Blockchain a new accounting paradigm: Implications for credit risk management. *Umea School of Business and Economics*, 7(4), 29-45.
- Su, X., Xiao, Y. & Liu, S. (2021). Analysis on the impact of blockchain technology on the accounting profession. *Advances in Economics, Business and Management Research*, 649, 10-14.
- Vardia, S. & Singh, H. (2022). Adoption of blockchain technology in accounting and auditing: Benefits and challenges. *Pacific Business Review (International)*, 14(8), 95-103.