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Digital Transformation in Accounting: Evaluating the Role of Blockchain Technology in Enhancing Accounting Practice Efficiency in Nigerian Firms

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Abstract

The accounting sector has been substantially impacted by the ongoing digital transformation that is affecting various industries. The objective of this investigation is to evaluate the influence of blockchain technology on the efficacy of Nigerian accounting practices. A structured questionnaire was distributed to specific respondents, including CPAs, in order to collect primary data in this study, which employed a qualitative methodology, finance analysts, and blockchain experts. By 2025, Nigeria had 178 registered accounting businesses. A purposive selection approach was utilised to select 123 firms, to whom three questionnaires were distributed each firm, yielding a total sample size of 369 questionnaires. The data were examined using descriptive and inferential statistics. The findings indicated that blockchain technology markedly enhanced the efficiency of accounting procedures in Nigeria. This research recommends Nigerian accounting.

Keywords: Quality, Accounting information, Blockchain technology, Cost efficiency, Data immutability,

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Introduction

In recent years, the digital revolution across several industries has been profoundly influenced by accountants and other accounting professionals (ICAEW, 2018). The accounting profession is crucial for preserving the integrity and authenticity of financial information, protecting stakeholder interests, and promoting general economic stability. Akinadewo et al. (2023) assert that this is more efficiently achieved using an accounting information system. Traditional accounting practices have issues about transparency, data security, and the necessity for multiple intermediates to authenticate transactions (Feng, 2021). Blockchain technology offers a viable answer to these issues by creating a decentralised and immutable ledger, which might transform accounting procedures and improve the credibility of financial reporting (Kitsantas & Chytis, 2022).

The digital era has facilitated the use of various technologies that improve and secure accounting systems, utilised for several corporate activities, and optimise time management (Akinadewo, 2020; Osalomi et al., 2023). Emerging technologies are facilitating accountants' involvement in their customers' daily operations while simultaneously shifting the accounting process from conventional analogue methods to digitalisation (Adelowotan & Coetsee, 2021; Akinadewo et al., 2023). Distributed ledger technology, however still in its infancy, holds considerable ramifications for the accounting profession; hence, accountants must comprehend its forthcoming significance. Technological advancement can jeopardise the livelihoods of individuals across all occupations. It is crucial to ascertain whether blockchain technology presents an opportunity or a threat to the accounting profession and to

Blockchain technology has gained prominence in accounting functions such as taxation, business valuation, financial consultancy, and auditing. Its utilisation has broadened in financial markets, establishing it as a crucial technical solution for various corporate activities (Kitsantas & Chytis, 2022). Blockchain is an innovative technology set to revolutionise invoicing, payment transactions, contracts, and documents, profoundly affecting accounting professionals, including accountants, auditors, tax practitioners, financial specialists, and regulators (Pedreno et al., 2021). The blockchain is a digital ledger that sequentially documents transactions, available to authorised users.

Blockchain is fundamentally an immutable ledger, with records that are indestructible. Consequently, it may serve as a dependable and perpetually updated business registry. Blockchain technology enables the transfer of digital currencies between buyers and sellers, along with the transfer of asset ownership between enterprises in a cost-effective, efficient, and dependable way (Potekhina & Riumkin, 2017). As blockchain technology advances and new applications are investigated, the accounting profession is becoming recognised as a field that can significantly benefit from blockchain integration.

The digitalisation of the accounting system remains nascent relative to other sectors, many of which have seen substantial modifications due to technological breakthroughs (Akinadewo et al., 2023).

The slow progress can be partly attributed to the strict legal requirements that demand high standards of accuracy and integrity in accounting practices. The extensive accounting system has been designed to prevent forgery, rendering manipulation either infeasible or prohibitively expensive. This is accomplished by a system of reciprocal control mechanisms, checks, and balances that influence daily operations (Owonifari et al., 2023).

As a result, there is a significant volume of redundant tasks, comprehensive documentation, and frequent manual verifications necessary. These tasks need significant manual effort and are not fully automated (Busayo et al., 2023). Consequently, disclosing the truth in accounting has necessitated these sacrifices thus far. While the precise outcomes of blockchain-based accounting remain uncertain, the principal advantages identified include enhanced quality of

accounting information, as noted by Akinadewo et al. (2020), which is supported by accounting information systems, alongside substantial cost reductions and improved accuracy in financial reporting. Blockchain enables accounting and offers instantaneous reporting and auditing (Falana et al., 2023).

The study sought to perform a thorough analysis of the relationship between blockchain technology and the effectiveness of accounting procedures, emphasising its significance for the accounting profession overall. This study aims to elucidate the potential advantages, obstacles, and prospects associated with the integration of blockchain into accounting processes, emphasising how this revolutionary technology may alter the future of financial record-keeping and reporting. The research is expected to improve the current comprehension of the impact of blockchain technology on accounting procedures. This study provides a thorough examination of the opportunities and obstacles related to its implementation, intended to aid accounting professionals, researchers, and policymakers in manoeuvring through the changing environment of contemporary financial record-keeping and reporting. A comprehensive understanding of blockchain's potential can enhance the resilience and effectiveness of the accounting profession in the digital era.

The main objective of this study is digital transformation in accounting: evaluating the role of blockchain technology in enhancing accounting practice efficiency in Nigerian firms.while the specific objective include;

i. To analyse the effect of Cost Effectiveness on the efficacy of accounting practice in Nigeria

ii. To analyse the effect of Quality of Accounting Information on the efficacy of accounting practice in Nigeria

iii. To analyse the effect of Immutability of Data on the efficacy of accounting practice in Nigeria

Literature Review

Effectiveness of Accounting Practices

The efficacy of accounting practice denotes the degree to which accounting processes, methods, and approaches successfully fulfil their intended objectives (Awotomilusi et al., 2022). In this context, accounts include various reports such as annual accounts, payrolls, tax returns, payment statements, receipts, and audit reports. They constitute the foundation of auditor trust in the examination of financial statements (Awotomilisi et al., 2022; Igbekoyi et al., 2023). Accounting is generally characterised as the practice of recording, categorising, summarising, reporting, and analysing financial records or data (monetary transactions and occurrences) to enhance decision-making for users (Akinadewo et al., 2023).

The field of accounting is presently inconceivable without the assistance of accounting technology. The field of accounting is presently experiencing a significant transformation owing to substantial advancements in contemporary technology. Adelowotan and Coetsee (2018) assert that accounting constitutes a systematic collection of operations designed to obtain, measure, recognise, process, and convey financial data concerning an economic institution. Atik and Kelten (2018) advocate that the fundamental role of the accounting system is to gather information on transactions and events via various issued and received documents, usually known as source documents. Accountants aggregate this data to produce financial statements employed by both internal and external stakeholders for decision-making (Dagunduro et al., 2023; Owonifari et al., 2023).

Nevertheless, bookkeeping involves several labour-intensive procedures, and as organisational activities continue, accountants' duties have gotten progressively more onerous. Technological improvements have become necessary to fulfil the demands of efficiency and effectiveness in accounting professionals' roles. In addition to addressing the

informational requirements of external users, accountants are responsible for supplying internal information (Busayo et al., 2023; Falana et al., 2023).

Accounting methods have been significantly enhanced by advancements in information technology, which has led to significant changes in the business environment. By expediting the flow of information, facilitating the collection and analysis of data, and enabling collaboration with remote business partners, computers and digital information tools have significantly enhanced office productivity. At present, the accounting process has been automated in nearly every aspect, including the scheduling of transactions, the collection and processing of periodic data, and the generation of final reports. These technologies are now extensively employed by accountants to provide the requisite information that optimises the reporting process (Dagunduro et al., 2023; Igbekoyi et al., 2023).

Blockchain Technology

A blockchain is a distributed and decentralised digital ledger system designed to record and verify transactions over a network of several computers or nodes. The core architecture of a blockchain consists of a sequence of blocks, each containing a collection of transactions (Vardia & Singh, 2022). Blockchain functions on a decentralised network of computers, indicating that no singular entity or authority possesses total control over the entire blockchain network, unlike traditional centralised systems. The spread of the ledger, which documents all transactions, ensures transparency and security among all network participants (Su et al., 2021). Transactions are organised into blocks, each including a timestamp and a reference to the preceding block, and a collection of transactions. The genesis block, which is the initial block, is an exception. A chain of interconnected blocks is established by the presence of a unique cryptographic hash of the antecedent block within each block. This feature guarantees data integrity and renders it extremely difficult to edit or amend prior transactions. Blockchain networks utilise consensus mechanisms, such as Proof of Work (PoW) or Proof of Stake (PoS), to authenticate and achieve agreement on the content of a new block prior to its integration into the chain. These approaches serve to thwart fraudulent transactions and maintain the network's security.

Upon integration into the blockchain, a transaction becomes highly impervious to modifications or deletions, which is a fundamental attribute of blockchain technology (Potekhina & Riumkin, 2017). All network participants have access to the complete transaction history, although their identities may remain pseudonymous, ensuring a level of privacy. Some blockchains, like Ethereum, provide smart contracts—self-executing agreements with conditions explicitly outlined in the code between the buyer and seller. These contracts execute automatically upon the fulfilment of specified conditions (Kitsantas & Chytis, 2022). In addition to cryptocurrencies, blockchain technology has a diverse array of applications, such as identity verification, healthcare records, voting systems, and supply chain management. The intrinsic security and transparency properties of blockchain technology are employed by these applications. Blockchain technology is intended to offer a secure, transparent, and tamper-proof methodology for the recording and verification of transactions and a wide range of data across a variety of applications (ICAEW, 2018).

Cost Effectiveness

Records are efficiently and conveniently kept singularly within blocks, which remain perpetually available to authorised users. This reduces the expenses associated with the maintenance of digital or physical documents. The integration of blockchain technology into accounting and auditing procedures has the potential to decrease associated expenses (Igbekoyi et al., 2023; Su et al., 2021). The need for reconciliation during the logging process is eliminated by real-time transaction logging and instantaneous accounting updates. The efficacy of a variety of accounting processes within the augmented blockchain framework will be improved by the implementation of modern technologies, including artificial intelligence

and data analytics. It is anticipated that these advancements will enhance the efficiency and overall value of the accounting function (Awotomilusi et al., 2022; Owonifari et al., 2023).

Accounting Information Quality

Data integrity and a substantial reduction in the risk of fraud are among the numerous advantages of implementing blockchain technology. The data contained in blockchain blocks is impervious to unauthorised modifications, in contrast to corporeal or digital documents. This function guarantees the precision of the information recorded on the blockchain and significantly reduces the likelihood of fraudulent activities (Adelowotan & Coetsee, 2021). The possibility of errors is completely eliminated in the domain of real-time blockchain accounting. Any user within the network or an external regulatory authority can access real-time information about the organization within this framework. This shift to real-time accounting reallocates resources once dedicated to traditional record-keeping, channelling them into value-enhancing activities for the firm (Falana et al., 2023). Accountants are tasked with advising management on best practices and suggesting cost-reduction strategies that enhance profitability (Pedreno et al., 2021). In this context, information is defined as data that has been organised, structured, and processed within data applications. The enhancement of data quality and reliability results in a significant decrease in ambiguity and an increase in clarity. The quality of accounting information depends on its capacity to accurately depict a company's current operational performance, its usefulness in predicting future performance, and its function in assessing the company's overall worth, according to Falana et al. (2023).

Data Immutability

The immutability of data is a fundamental characteristic of blockchain technologyAuditors and regulators can acquire real-time insights into transactions and ensure the traceable provenance of those transactions by progressively integrating more information into the blockchain over time (ICAEW, 2018). Blockchain databases are disseminated and duplicated among all computers linked to the network, in contrast to traditional databases that centralise data storage on singular servers. This eliminates the need for external certification of the veracity or presence of blockchain transactions; however, the documentation and presentation of these transactions in financial statements are consistently given meticulous attention. Altering or eliminating a transaction becomes highly difficult once it has been inscribed in the blockchain (Atik & Kelten, 2021). Blockchain functions as a decentralised digital ledger that improves the security and worldwide accessibility of insurance firms. At present, its primary application is in cryptocurrencies such as Bitcoin and others. It is anticipated that blockchain technology will be fully integrated into accounting procedures in the near future (Feng, 2021).

The Efficiency of Accounting Practices and Blockchain Technology

Blockchain is an accounting framework that facilitates the transfer of asset ownership and ensures the precision of financial records. The primary aims of the accounting profession are the measurement, reporting, and analysis of financial data. The profession is defined by the delineation and quantification of property rights and obligations, alongside the formulation of optimal strategies for the allocation of financial resources (ICAEW, 2018). The adoption of blockchain technology by accountants leads to substantial enhancements in operational efficiency through improved transparency in asset ownership and liability. Beyond ensuring absolute certainty in asset ownership and historical records, blockchain possesses the capacity to transform the accounting industry by diminishing expenses related to accounting and reconciliation (Potekhina & Riumkin, 2017).

Blockchain technology can aid accountants in elucidating their organization's assets and liabilities, thereby liberating resources for strategic planning and pricing, rather than being constrained by record-keeping obligations. Blockchain is anticipated to progressively

enhance transaction-level accounting as automation trends, including machine learning, advance. Nonetheless, it will utilise a distinct methodology compared to conventional accountants (Su et al., 2021). In this context, skilled accountants will assess the genuine financial ramifications of blockchain records and juxtapose them with economic realities and evaluations. For example, blockchain can verify the existence of a debtor; yet, the economic implications and realisable value remain ambiguous. Likewise, although blockchain technology helps authenticate asset ownership, it is essential to ascertain factors such as actual worth, location, and condition. Blockchain has the capacity to broaden the domain of accounting to include areas previously deemed intricate or untrustworthy, such as the valuation of corporate data, by abolishing reconciliation processes and ensuring the integrity of transaction histories (Vardia & Singh, 2022).

Blockchain technology possesses the capacity to supplant conventional accounting and reconciliation operations, hence revolutionising the roles of accountants and enabling individuals involved in value creation across various sectors. The M&A due diligence process is accelerated by the consensus achieved by distributed ledger technology, facilitating a more thorough assessment of many domains and suggestions (Feng, 2021). Blockchain technology is utilised in external oversight to diminish the necessity for verifications of a company's financial condition when some or all transactions underpinning that condition are openly recorded on the blockchain. This could lead to a significant transformation in auditing procedures.

The integration of blockchain technology with proficient data analysis may facilitate the resolution of transaction-level claims related to audits, enabling auditors to focus their knowledge on more significant issues. Audits, in addition to confirming transaction details and amounts, also involve evaluating the methods of recording and storing transactions, including ascertaining if cash gained from a transaction is allocated for selling charges, expenses, debt repayment, or business initiation (Adelowotan & Coetsee, 2021).

There are numerous opportunities for accountants in the transition to a financial system that is significantly influenced by blockchain technology. Accountants, who are recognised for their proficiency in the establishment of standards, the application of complex regulations and business principles, and record-keeping, are well-positioned to lead the integration of blockchain into the financial sector. They have the potential to be instrumental in the advancement of blockchain-based products and services (Vardia & Singh, 2022). For blockchain to become an essential component of the expanding financial ecosystem, it needs experience development, standardisation, and optimisation, a process expected to take several years, similar to the current evolution of Bitcoin.

Accountants can act as consultants for organisations contemplating the use of blockchain technology, offering perspectives on the evaluation of the advantages and costs of such a system. Their combination of financial and commercial acumen makes them indispensable consultants for organisations that are investigating these innovative technologies for potential (Atik & Kelten, 2021). Blockchain and smart contracts are revolutionising the aspects of accountancy that are associated with the execution of property transfers and transaction security. The diminished necessity for arbitration and dispute settlement, coupled with more clarity concerning rights and obligations, promotes a greater focus on transaction resolution and oversight, hence expanding the scope of functions (Kitsantas & Chytis, 2022).

Numerous existing operations in accounting departments can be optimised using blockchain and modern technology, including machine learning and data analytics. This transition ensures that the accounting profession is more efficient and valuable by altering the requisite skill set. Certain obligations, including postal services and provenance insurance, may be reduced or eliminated, whereas sectors like consultancy and value-added enterprises are likely to grow. Auditors may need to modify their emphasis and methodology to do effective

audits of organisations engaged in significant blockchain-based transactions (Atik & Kelten, 2021).

Empirical Review

The integration of blockchain technology with accounting practices is extensively documented in the literature. This research examines the influence of blockchain on many accounting facets. Nonetheless, contextual analysis has been utilised in several of these investigations. Akinadewo et al. (2023) examined the impact of disruptive technologies on the efficacy of accounting processes in Nigeria. This study employed a survey approach and disseminated a structured questionnaire to professional bodies in the Southwestern states of Nigeria. Correlation analysis and ordinary least squares were employed to analyse the data. The results demonstrated a significant positive association between the effectiveness of accounting processes in Nigeria and the independent variables, as evidenced by the proxies. Igbekoyi et al. (2023) assessed the efficacy of accounting methodologies in Nigeria within the framework of big data. A structured questionnaire served as the principal data gathering tool in a survey study design. The population comprised all 35 registered accounting firms in Lagos State. The census sampling method was utilised to ascertain the sample size, which included the complete population. From each accounting business, six participants were chosen, culminating in a total of 210 replies , as a result of the manageable population size. A response rate of 94% was observed in this sample, as 197 responses were received. Descriptive statistics and ordinary least squares (OLS) regression methodologies are implemented for data analysis. The findings suggested that the efficacy of accounting processes in Nigeria was significantly influenced by the independent variable proxies, which included data veracity.

Kishor (2022) investigated the potential effects of blockchain technology on accountancy and auditing. Secondary data was employed in this investigation, which was acquired from numerous websites and publications. This article aimed to offer substantial insights into the current literature on triple-entry accounting and blockchain technology. The findings indicated that it is improbable that blockchain technology will replace the expertise of accounting and auditing. Rather, it offers accountants and auditors the opportunity to transition into consultancy positions and provide advisory services.

Akinadewo et al. (2023) examine the capacity of accounting information systems (AIS) to improve the performance of Nigerian enterprises. Descriptive and inferential statistics were employed to examine the data gathered using a structured questionnaire in a survey study design. Forty-six of the fifty practicing chartered accountants, selected by purposive sampling, completed the questionnaire. The findings indicated a considerable positive correlation between the firm's success and AIS. The aim of Kitsantas and Chytis (2022) was to delineate and examine the implementation of an innovative architecture termed the Blockchain as an Ecosystem (BaaE) platform. They expected a transformation in contemporary accounting practices by offering a conceptual framework for Triple Entry Accounting (TEA). Their inquiry encompassed the integration of inventory management, supply chain operations, and cost management within the framework of Blockchain Technology (BT). The study recognised the substantial benefits and challenges linked to this integration, while also offering a foundation for subsequent research. The adoption of blockchain technology improved the quality of work executed by accounting professionals and optimised various accounting processes, as evidenced by a comprehensive qualitative analysis of a significant corpus of literature from 81 publications.

To foresee the possible impacts of blockchain technology on accounting, Atik and Kelten (2021) performed a comprehensive literature analysis. To do queries in the Scopus database, they utilised particular keywords. Their investigation revealed that most studies in this domain concentrated on the creation of software applications and technological components.

A limited number of research have sought to identify links between blockchain technology and accounting practices. While some analysts voiced excitement regarding blockchain technology's ability to transform the double-entry accounting system, others adopted a more cautious and critical stance.

Osalomi et al. (2023) investigated the relationship between the efficacy of accounting methods in Nigeria and the integration of information and communication technology (ICT). The research utilised a structured questionnaire distributed to 130 participants, comprising managers, auditors, and directors within the accounting sector. The findings indicate that the effectiveness of accounting methods in the country is improved with the use of ICT. Pedreño et al. (2021) performed a study to assess the current literature regarding the importance of blockchain technology and its prospective influence on accounting.

They meticulously reviewed the literature on blockchain and its importance by employing an exploratory study strategy. Their investigation aimed to elucidate existing terminological difficulties and speculate about the future direction of Triple Entry Accounting (TEA) and its corresponding ledger. Blockchain has the potential to substantially disrupt the conventional accounting system following technological advancements, as indicated by the literature analysis. The functions of accountants and auditors will be irrevocably altered as a result of this change. Su et al. (2021) conducted an analysis and debate on the multidimensional impact of blockchain technology on various aspects of the accounting industry. An extensive examination of current literature was conducted through the use of secondary sources in the research. The research results indicated that the accountancy industry will experience a substantial increase in the utilisation of blockchain technology as it continues to develop. This acceptability is expected to stimulate steady expansion in the accounting business, so creating a positive cycle and enhancing its overall development.

Adelowotan and Coetsee (2021) examined the prospective effects of blockchain technology on accounting practices. The study performed an extensive literature assessment, which demonstrated that the quick verification and immutability characteristics of blockchain technology enhance data integrity, therefore helping both accounting and auditing tasks. The widespread use of blockchain in accounting information depends on many economical validation techniques.

Potekchina and Riumkin (2017) examined the theoretical framework relevant to blockchain applications in accounting. In analysing its broad implications for accounting and auditing, together with its particular effects on credit risk management, they discerned the key advantages and downsides. The study employed a mathematical framework to illustrate that the possible influence of blockchain accounting on credit score criteria is confined to the real volatility of quarterly credit ratings. Therefore, it is expected that the technology will exert a greater influence on firms that demonstrate a higher level of volatility in their credit measures.

Wu et al. (2017) examined the impact of the Internet of Things (IoT) and Blockchain on the improvement of accounting information accuracy. Their investigation utilised a comprehensive literature review, revealing that blockchain technology can significantly and beneficially improve the quality of accounting information in several aspects, including timeliness, relevance, faithful representation, and comparability, among others.

Akinadewo (2020) examined the impact of artificial intelligence (AI) on the practices of accountants in Nigeria's technological progress. The research, which sent a questionnaire to 205 seasoned accountants engaged in system implementation, demonstrated a notable positive association between the explanatory and controlled variables.

Upon examining the cited literature, it has been noted that there is a scarcity of study regarding blockchain technology and accounting. Nonetheless, most study into the attributes of blockchain technology and its application in accounting has been predominantly

theoretical. Empirical research is markedly deficient, especially regarding the interplay between the use of blockchain technology and the accounting profession in Nigeria. Previous studies utilised secondary data in their findings. In light of this study gap, it is essential to examine the viewpoints of diverse respondents concerning the use of blockchain technology into accounting practices. The aim of this study is to fulfil this requirement by examining the effects and implications of incorporating blockchain technology into Nigerian accounting practices.

Methods

This study utilised a qualitative methodology, gathering primary data via a structured questionnaire distributed to certain respondents, including accountants, finance analysts, and blockchain experts. As of December 31, 2022, Nigeria had 178 registered accounting firms. A purposive selection approach was utilised to select 123 firms, to whom three questionnaires were distributed each firm, yielding a total sample size of 369 questionnaires. The accounting operations of these businesses were chosen based on their utilisation of information technology. Descriptive and inferential statistics, particularly multiple regression analysis, were employed to analyse the data. In order to obtain precise and reliable data interpretations, the questionnaire items were refined using a five-point Likert scale.

Table 1 presents the Cronbach Alpha scores for different components of the study, indicating the internal consistency of the scale items. The dimension "Efficacy of Accounting Practice (EAP)" has a Cronbach's Alpha coefficient of 0.738 and comprises five items. The "Cost Effectiveness (CEO)" dimension attained a Cronbach Alpha value of 0.891 across seven items, whilst the "Accounting Information Quality (AIQ)" dimension secured a Cronbach Alpha coefficient of 0.860 across six items. The Cronbach Alpha coefficient for "Data Immutability (DAI)" was 0.897, encompassing six categories. The findings collectively affirm that all scale items exhibit robust internal consistency, with Cronbach Alpha values beyond the 0.7 threshold.

Table 1: Reliability Test Results

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

Source: **Researchers' Computation (2025)**

Results and Discussion

This shows the results and discusses the findings.

Descriptive Statistics

Table 2 presents the summary statistics for the analysis of blockchain technology's impact on the efficacy of accounting techniques in Nigeria. These descriptive statistics elucidate the distribution, central tendency, variability, and shape of the data for each variable. The skewness and kurtosis values suggest that the distribution deviates from normality, with

some variables displaying more significant differences than others. The descriptive statistics for four variables—Efficacy of Accounting Practice (EAP), Cost Effectiveness (COE), Accounting Information Quality (AIQ), and Data Immutability (DAI)—are delineated by the provided values. The subsequent statistical figures pertain to the Efficacy of Accounting Practice (EAP): Skewness: -3.629, Mean: 4.6992, Standard Deviation: 0.73279, Kurtosis: 15.097. The mean EAP score of this variable among the data points is roughly 4.6992. The EAP scores are tightly grouped around the mean, indicated by the low standard deviation of 0.73279, signifying uniform evaluations. The distribution of EAP scores is significantly left-skewed, as evidenced by the negative skewness of -3.629. This suggests that a small number of data points with very low EAP scores may be distorting the distribution in this manner. The distribution of EAP scores is characterised by a heavier tail and a higher peak than a normal distribution, as evidenced by the elevated positive kurtosis of 15.097. This suggests the presence of extreme values or outliers.

The following statistics are displayed for Cost Effectiveness (COE): The mean is 4.5610, the standard deviation is 1.06178, the skewness is -2.256, and the kurtosis is 3.514. The mean value of this characteristic is approximately 4.5610, reflecting the average COE score. The COE scores demonstrate a more extensive dispersion, as evidenced by the elevated standard deviation of 1.06178, signifying greater variability in comparison to the EAP scores. The distribution of COE scores is biased to the left, as indicated by the negative skewness of -2.256, although the skewness is less pronounced than that of the EAP values. The positive kurtosis of 3.514 indicates that the distribution of COE scores is less crested and has thicker tails than a normal distribution.

The subsequent values pertain to Accounting Information Quality (AIQ): The mean is 4.4770, the standard deviation is 1.15280, the skewness is -1.841, and the kurtosis is 1.565. The mean value of this variable is roughly 4.4770, representing the average AIQ score. The AIQ scores demonstrate considerable variability, evidenced by a standard deviation of 1.15280. The distribution of AIQ scores exhibits left skewness, shown by a negative skewness of -1.841, albeit less prominent than that of EAP. The distribution of AIQ scores more closely resembles a normal distribution than the preceding variables, as indicated by a positive kurtosis of 1.565.

The values for Data Immutability (DAI) are enumerated as follows: The mean is 4.4634, the standard deviation is 1.19300, the skewness is -1.825, and the kurtosis is 1.487. The mean of this statistic is roughly 4.4634, denoted by the average DAI score. The DAI scores exhibit a moderate level of variability, as seen by a standard deviation of 1.19300. The distribution of DAI scores is left-skewed, as indicated by the negative skewness of -1.825, which is comparable to AIQ. The distribution of DAI scores more closely resembles a normal distribution than the antecedent variables, as evidenced by the positive kurtosis of 1.487.

Table 2: Descriptive Statistics of the Study Variables

Variable	N	Min	Max	Mean	Std. Deviation	Skewness	Std. Error (Skewness)	Kurtosis	Std. Error (Kurtosis)
Efficacy of Accounting Practice	369	1	5	3.9962	0.32779	-3.296	0.27	15.097	0.532
Cost Effectiveness	210	1	5	3.6150	1.78061	-2.562	0.271	2.145	0.532
Accounting Information Quality	210	1	5	3.7740	0.52180	-1.418	0.271	1.655	0.532

Variable	N	Min	Max	Mean	Std. Deviation	Skewness	Std. Error (Skewness)	Kurtosis	Std. Error (Kurtosis)
Data Immutability	210	1	5	3.6344	1.93101	-1.258	0.271	1.874	0.532
Valid N (listwise)	210								

Table 3 displays the Pearson correlations among the study variables, intended to evaluate the degree of linkages between the explanatory elements. The coefficients of 0.904, 0.933, and 0.981 for COE, AIQ, and DAI, respectively, indicated substantial positive correlations among the variables in the correlation analyses. These figures indicate that an augmentation in one variable correlates with an augmentation in the others.

The proliferation of blockchain technology correlates with enhanced efficiency in accounting practices in Nigeria.

Table 3: Correlations Analysis Matrix

Variable	Efficacy of Accounting Practice	Cost Effectiveness	Accounting Information Quality	Data Immutability
Efficacy of Accounting Practice	1.000	0.705**	0.765**	0.667**
Sig. (2-tailed)	—	0.000	0.000	0.000
N	210	210	210	210
Cost Effectiveness	0.705**	1.000	0.623**	0.497**
Sig. (2-tailed)	0.000	—	0.000	0.000
N	210	210	210	210
Accounting Information Quality	0.765**	0.623**	1.000	0.625**
Sig. (2-tailed)	0.000	0.000	—	0.000
N	210	210	210	210
Data Immutability	0.667**	0.497**	0.625**	1.000
Sig. (2-tailed)	0.000	0.000	0.000	—
N	210	210	210	210

The findings of the regression analysis evaluating the influence of blockchain technology on the efficacy of accounting methods in Nigeria are displayed in Tables 4 and 5. Table 4 presents the coefficient of determination, revealing that the independent variable (blockchain technology) accounts for about 51% of the variance in the dependent variable (effectiveness of accounting practice), while the remaining 49% is ascribed to the error term. The R^2 value is 0.515, corrected to 0.511. The model's overall importance is evidenced by an F-statistic of 129.128 with a p-value of 0.000, indicating that blockchain technology, characterised by cost-effectiveness, accounting information quality, and data immutability, is a strong predictor of accounting practice effectiveness in Nigeria. Table 5 illustrates the statistical significance of each parameter employed to evaluate the influence of blockchain technology on the effectiveness of accounting in Nigeria.

It is envisaged that the efficacy of accounting practices will increase by 3.040 units, provided that blockchain technology remains unaltered. The effectiveness of accounting practice is marginally positively affected by cost-effectiveness, indicated by a coefficient of 0.156, a t-statistic of 1.520, and a p-value of 0.129. This indicates that a 0.156-unit enhancement in accounting practice efficacy results from a one-unit gain in cost-effectiveness. The effectiveness of accounting processes is markedly affected by the integrity of accounting information, demonstrated by a coefficient of -1.442, a t-statistic of -7.594, and a p-value of 0.000. This signifies that a one-unit enhancement in the integrity of accounting information results in a decrease of 1.442 units in the effectiveness of accounting operations. In conclusion, the efficacy of accounting practices is significantly enhanced by data immutability, as evidenced by a coefficient of 1.923, a t-statistic of 8.508, and a p-value of 0.000. An accounting practice efficacy improvement of 1.923 units is the result of a one-unit increase in data immutability.

Table 4: Regression Summary of Study Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.666	0.632	0.602	0.45902	0.601

Table 5: ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	353.677	3	33.915	340.128	0.000
Residual	89.560	432	0.352		
Total	197.610	368			

Dependent Variable: Efficacy of Accounting Practice

Table 6: Coefficients of the Study Variables

Model	Variable	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
1	(Constant)	3.040	0.108	—	24.146	0.000
	Cost Effectiveness	0.126	0.071	0.156	1.520	0.129
	Accounting Information Quality	-0.917	0.121	-1.442	-7.594	0.000
	Data Immutability	1.181	0.139	1.923	8.508	0.000

Discussion and Implication of Findings

In recent years, the accounting profession and its practitioners have profoundly influenced the continuing digital transformation across several industries. The aim of this study was to evaluate how blockchain technology influences the efficiency of accounting practices in Nigeria. The results demonstrated a relatively good link between the effectiveness of accounting methods in Nigeria and cost-efficiency, albeit statistically insignificant. A comprehensive statistical analysis and tests did not reveal any significant or pertinent correlation between the efficacy of accounting practices and cost-effectiveness. The efficacy of accounting practices appear to be minimally affected by cost-effectiveness adjustments. This suggests that, despite the observation of a correlation between increased accounting practice efficacy and enhanced cost-effectiveness, The effect was not considered significant or sufficiently robust to substantiate conclusive conclusions.

The effectiveness of accounting processes in Nigeria was considerably diminished by the quality of accounting information. The discovery highlights the essential necessity of

upholding superior accounting information in the Nigerian corporate and financial landscape. The efficacy of accounting methods can be impeded by inadequate data reliability, completeness, or accuracy. Enterprises, investors, and regulatory bodies employ accounting information to make decisions. The adverse consequence implies that the judgements derived from accounting information may also be flawed if the quality of the information is compromised. This has substantial implications for Nigeria's policy formulation, financial planning, and investment decisions. The adverse effect suggests that there is a need for continuous professional development among finance professionals and accountants in Nigeria. To mitigate the detrimental effects on the efficacy of accounting practices, it is imperative that they be instructed to maintain stringent standards of data quality and integrity in their work.

The efficacy of accounting practices in Nigeria was significantly enhanced by data immutability. This suggests that financial data is not readily susceptible to manipulation or modification. This discovery underscores the imperative of protecting the confidentiality and integrity of financial data in accounting operations. It posits that the reliability of financial reporting can be enhanced by the integration of secure and tamper-proof data. Investors depend on financial data that is accurate and reliable when making investing selections. Enhancements in the efficacy of accounting practices may strengthen investor trust in Nigerian financial markets, perhaps attracting further investment. The substantial beneficial impact of data immutability on the effectiveness of accounting methods in Nigeria indicates that the reliability and credibility of financial reporting are improved by maintaining the integrity and security of financial data. The Nigerian accounting and financial sector can benefit significantly from the integration of technologies that ensure data immutability into accounting methods.

The results suggested that the efficacy of Nigeria's accounting practices was substantially improved by blockchain technology. Blockchain technology exerts a substantial positive impact on the effectiveness of accounting methods in Nigeria, indicating its essential role in improving the security, transparency, and efficiency of financial operations. The continued advancement of this technology is expected to profoundly affect the accounting profession and financial sector in Nigeria. The null hypothesis was rejected, given that the p-value of 0.000 is statistically significant. The results align with the conclusions of prior studies, including 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 accounting profession has been significantly affected by the recent digital transformation that has occurred across various industries. The objective of this investigation is to assess the efficacy of accounting methods in Nigeria, as influenced by blockchain technology. The investigation resulted in a multitude of noteworthy discoveries. The study initially showed a negligible positive impact on the efficacy of accounting practices in terms of cost-effectiveness. The efficacy of accounting practices in Nigeria was not substantially impacted by changes in cost-effectiveness. While there was a trend toward improved efficacy and improved cost-effectiveness, this correlation was not statistically significant.

The investigation demonstrated that the efficacy of Nigerian accounting practices was detrimentally affected by the integrity of accounting information. This emphasises the urgent necessity of safeguarding high-quality accounting information within the Nigerian business and financial environment. The effectiveness of accounting systems can be hindered by insufficient data accuracy, completeness, or reliability, therefore impacting the decision-making of firms, investors, and regulators. The inquiry highlighted the significance of ongoing professional development for finance professionals and accountants in Nigeria. It is essential

to maintain the standards of data quality and integrity necessary to alleviate the adverse impacts on the efficiency of accounting operations.

The analysis revealed that data immutability significantly enhanced the efficacy of accounting procedures. This indicates that the reliability of financial reporting can be improved by the utilisation of secure and tamper-proof financial data. Enhancing data quality may bolster investor confidence in Nigerian financial markets, thereby attracting further investment. Blockchain technology emerged as the most crucial innovation, markedly enhancing the efficiency of Nigeria's accounting operations. This indicates that blockchain is becoming a significant instrument for improving the security, transparency, and efficiency of financial transactions in the Nigerian accounting industry.

The efficacy of accounting processes in Nigeria has been revealed through the examination of the intricate relationship between various elements. The efficacy of accounting practices was significantly influenced by the quality of accounting information and data immutability, despite the fact that cost-effectiveness had a negligible impact. The transformational potential of blockchain technology in accounting is exceedingly promising, considerably improving the efficacy of practice. These findings highlight the significance of preserving the integrity and quality of data in accounting practices. Moreover, they underscore the increasing importance of technology, particularly blockchain, in augmenting the legitimacy and trustworthiness of financial reporting in Nigeria. To maintain its relevance and efficac, the accounting profession must adapt and evolve in response to these advancements.

The following recommendations are suggested in view of the study's findings:

In order to improve data security, transparency, and efficacy, Nigerian accounting firms should consider investing in blockchain technology. Additionally, Accountants and finance professionals must undergo training to improve their skills in preserving data integrity and quality. Thirdly, regulatory bodies should formulate standards or regulations to oversee the application of blockchain technology in accounting and ensure adherence. To alleviate the adverse effects of poor data quality on the effectiveness of accounting operations, businesses must prioritise data accuracy, completeness, and reliability. To enhance the effectiveness of accounting practices, researchers and technology developers should investigate novel uses and concepts of blockchain technology.

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