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Integration of Blockchain Accounting Systems and Mitigation of Tax Evasion in Nigeria Multinational Companies

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Abstract

This study investigated the effectiveness of integrating blockchain accounting systems as a means to mitigate tax evasion within Nigerian multinational corporations (MNCs). Drawing on a survey design methodology involving 300 respondents from 10 Nigerian MNCs, the study examined the relationship between blockchain integration and tax evasion reduction, as well as the challenges associated with blockchain adoption in this context. Simple regression analysis was used to evaluate the null hypothesis at a 0.05 significance level. The study adopted the diffusion of innovation theory to better understand how innovations are adopted and implemented within organizations. Findings revealed a significant positive correlation between blockchain integration and tax evasion mitigation, highlighting the potential of blockchain technology to enhance transparency and accountability in financial transactions. However, challenges such as regulatory uncertainties, technological barriers, and organizational resistance hinder widespread blockchain adoption within Nigerian MNCs. Recommendations include promoting organizational readiness, engaging with tax authorities, conducting pilot projects, and leveraging international standards. By overcoming these challenges and adopting the proposed recommendations, Nigerian MNCs can effectively combat tax evasion, foster compliance with tax regulations, and contribute to sustainable economic development in Nigeria.

Keywords: *Accounting Systems, Blockchain, Integration, Tax Evasion.*

INTRODUCTION

In the contemporary global business landscape, multinational companies (MNCs) play a pivotal role in the economy of many nations, including Nigeria. However, the operations of MNCs often involve complex financial transactions across borders, leading to challenges in ensuring transparency, accountability, and compliance with tax regulations. One of the persistent issues faced by tax authorities worldwide is tax evasion, where entities exploit loopholes in existing systems to underreport income or overstate expenses, thus reducing their tax liabilities (Bakre & Adebisi, 2020). Nigeria, like many other developing nations, grapples with significant revenue losses due to tax evasion by MNCs (Awoyemi & Omoniyi, 2019).

According to Alansari, M., & Youssef, A. E. (2020) Blockchain technology, originally devised as the underlying framework for cryptocurrencies like Bitcoin, has evolved into a robust system for recording and verifying transactions in a decentralized and immutable manner. Its core features, including transparency, tamper resistance, and traceability, hold immense potential for revolutionizing traditional accounting practices, particularly in combating tax evasion. By leveraging blockchain-based accounting systems, Nigerian MNCs can create an indelible ledger of financial transactions, providing tax authorities with real-time visibility into their operations and financial flows. Moreover, blockchain technology offers innovative mechanisms such as smart contracts and cryptographic proofs that can automate tax compliance processes, reducing the administrative burden on both taxpayers and regulatory agencies. Smart contracts, self-executing agreements coded on the blockchain, can facilitate automatic tax calculations, deductions, and payments based on predefined rules, ensuring accuracy and timeliness while minimizing human error and manipulation (World Bank, 2019; Awoyemi & Omoniyi, 2019; Amaeshi et al., 2020). Additionally, cryptographic proofs enable verifiable authentication of transactional data without revealing sensitive information, enhancing privacy protection while enabling effective auditing and enforcement (Oseni & Mattee, 2019; Hulme, 2020).

However, the successful integration of blockchain accounting systems to mitigate tax evasion in Nigerian

MNCs faces several challenges, including regulatory uncertainties, technological barriers, and organizational resistance (Ali & Duquennoy, 2019). In the work of Amaeshi et al. (2020), Nigeria as a country with a complex tax landscape and a history of tax evasion, the problem is particularly acute, especially among multinational corporations (MNCs). These entities often exploit regulatory gaps and cross-border transactions to minimize their tax liabilities, undermining the country's fiscal sovereignty and impeding sustainable development efforts. Nigeria's tax laws and regulatory framework often lag behind technological advancements, creating legal ambiguities and compliance challenges for businesses adopting blockchain solutions. Moreover, the complexity of blockchain technology and the scarcity of skilled professionals proficient in its implementation pose significant hurdles to widespread adoption and effective utilization (Ogunlana & Odunuga, 2020; Ani et al. 2021). By integrating blockchain accounting systems, Nigeria's multinational companies can effectively mitigate tax evasion, fostering transparency, accountability, and regulatory compliance in financial transactions. Therefore, this study seeks to investigates the potential of integrating blockchain technology into accounting systems to combat tax evasion effectively.

Statement of the Problem

The integration of blockchain accounting systems presents a promising avenue for enhancing transparency and accountability in Nigerian multinational corporations (MNCs) and mitigating the pervasive issue of tax evasion. However, despite its potential benefits, the adoption of blockchain technology in the Nigerian business landscape faces multifaceted challenges. Firstly, there is a lack of clear regulatory frameworks and guidelines governing the implementation of blockchain-based accounting systems, leading to uncertainty and reluctance among MNCs to embrace this transformative technology. Additionally, technological barriers, including limited infrastructure and expertise in blockchain development and implementation, pose significant hurdles to its widespread adoption. Moreover, organizational resistance and cultural factors within MNCs may impede the successful integration of blockchain solutions, hindering efforts to combat tax evasion effectively. Thus, this study underscores the urgent need to address these barriers and explore strategies to promote the seamless integration of blockchain accounting systems as a potent tool for tackling tax evasion in Nigerian multinational corporations.

Objectives of the Study

The general objective of this research is to investigate the feasibility and efficacy of integrating blockchain accounting systems as a means to mitigate tax evasion within Nigerian multinational companies. Specifically, the study aims to:

1. To assess the effectiveness of integrating blockchain accounting systems in Nigerian multinational companies for combating tax evasion.
2. To identify the challenges associated with the integration of blockchain accounting systems in the Nigerian multinational companies to mitigate tax evasion.

Research Questions

1. How does the integration of blockchain accounting systems influence the transparency and traceability of financial transactions within Nigerian multinational companies?
2. What are the challenges associated with the integration of blockchain accounting systems in the Nigerian multinational companies to mitigate tax evasion?

Research Hypotheses

H01: There is no significant relationship between the integration of blockchain accounting systems and the mitigation of tax evasion within Nigerian multinational companies.

H02: There is no significant challenge associated with the integration of blockchain accounting systems in the Nigerian multinational companies to mitigate tax evasion.

LITERATURE REVIEW

Nigerian Tax Laws and Regulations

In Nigeria, tax laws and regulations constitute a comprehensive framework governing the country's taxation system, with various statutes and regulations overseeing different aspects of taxation. The cornerstone legislation includes the Companies Income Tax Act (CITA), which imposes taxes on the profits of incorporated entities, and the Personal Income Tax Act (PITA), which levies taxes on individuals' income (FIRS, 2022). Additionally, the Value Added Tax Act (VATA) mandates the collection of value-added tax on

goods and services consumed in Nigeria. These laws are complemented by other regulations such as the Petroleum Profit Tax Act (PPTA), which imposes taxes on profits derived from petroleum operations, and the Capital Gains Tax Act (CGTA), which taxes gains from the disposal of assets. The administration and enforcement of tax laws fall under the purview of the Federal Inland Revenue Service (FIRS), the apex tax authority in Nigeria responsible for tax assessment, collection, and enforcement (Ajakaiye & Ojo, 2018; FIRS, 2022).

According to FIRS (2022), Nigerian tax laws undergo periodic reviews and amendments to align with evolving economic realities and global best practices. For instance, recent reforms have focused on expanding the tax base, enhancing compliance, and improving revenue collection mechanisms. The Finance Act, which is updated annually, introduces amendments to existing tax laws and introduces new provisions aimed at enhancing tax administration efficiency and effectiveness. Moreover, efforts to improve transparency and accountability in tax matters have led to the introduction of initiatives such as the Voluntary Assets and Income Declaration Scheme (VAIDS), which encourages voluntary disclosure of previously undeclared assets and income (Ajakaiye & Ojo, 2018). Despite these reforms, challenges such as tax evasion, inadequate infrastructure, and administrative bottlenecks persist, necessitating ongoing efforts to strengthen Nigeria's tax laws and regulations (Oyeleye et al., 2021).

Tax Evasion in Nigerian Multinational Companies

Tax evasion refers to the illegal act of deliberately underreporting income, inflating expenses, or concealing assets to reduce tax liabilities owed to the government. It involves intentional efforts by individuals, businesses, or entities to evade the payment of taxes by circumventing tax laws and regulations (Akintoye, 2019). In the work of Anyaduba (2020) tax evasion differs from tax avoidance, which involves legally minimizing tax obligations through legitimate means. Common tactics employed in tax evasion include underreporting income, overstating deductions, engaging in offshore tax havens, and engaging in fraudulent schemes such as transfer pricing manipulation. Additionally, tax evasion undermines the integrity of the tax system, deprives governments of revenue needed for public services and infrastructure, and contributes to income inequality and social unrest. Despite efforts by tax authorities to combat tax evasion through enforcement measures and penalties, it remains a persistent challenge globally (IRS, 2021; OECD, 2020).

In the work of Fakile & Oni (2019) tax evasion among multinational corporations (MNCs) in Nigeria has been a persistent issue, characterized by various patterns and trends. One prevalent trend is transferring pricing manipulation, where MNCs deliberately misprice intra-group transactions to shift profits to low-tax jurisdictions and evade tax obligations in Nigeria. Another pattern involves the use of tax havens and offshore entities to conceal income and assets, thereby reducing taxable income in Nigeria (Adeleke & Akanbi, 2017). Additionally, aggressive tax planning strategies, such as profit shifting and base erosion, are commonly employed by MNCs to minimize tax liabilities in Nigeria. Despite efforts by tax authorities to combat these practices, tax evasion remains a significant challenge, leading to substantial revenue losses for the Nigerian government (Oyedele, 2020). Research by Oyelakin (2018) stated that Several factors contribute to the prevalence of tax evasion practices in Nigeria, including systemic weaknesses in the tax administration system, inadequate enforcement mechanisms, and a culture of non-compliance among taxpayers. High levels of corruption and bureaucratic inefficiencies within tax authorities create opportunities for tax evasion to thrive. Additionally, complex and ambiguous tax laws, coupled with loopholes and inconsistencies, enable taxpayers, particularly MNCs, to exploit legal gaps and engage in aggressive tax planning schemes (Adegbite, 2020). Moreover, weak institutional capacity, limited resources, and inadequate technology infrastructure impede the effectiveness of tax enforcement efforts, further exacerbating the problem of tax evasion in Nigeria (Oyeleye et al., 2021).

A study by Ajakaiye & Ojo (2018) opined that tax evasion has profound implications for the Nigerian economy and society, manifesting in various negative consequences. It undermines the government's ability to mobilize domestic resources for public expenditure, including infrastructure development, healthcare, and education, thereby hampering socio-economic progress and poverty reduction efforts. Moreso, tax evasion exacerbates income inequality by shifting the tax

burden onto compliant taxpayers and depriving the government of revenue needed to finance social welfare programs (Oyelakin, 2018). Furthermore, it erodes public trust in the tax system and government institutions, leading to decreased voluntary compliance and weakened social cohesion (Oyeleye, 2021). Additionally, tax evasion perpetuates a vicious cycle of underdevelopment, as the lack of adequate public services and infrastructure hinders private sector growth and investment, further stifling economic prosperity (Ajakaiye & Ojo, 2018).

Tax evasion among Nigerian multinational corporations (MNCs) often manifests through various intricate patterns, reflecting the complex interplay of regulatory gaps, weak enforcement mechanisms, and opportunistic behavior. One prevalent pattern involves transfer pricing manipulation, where MNCs artificially adjust prices for goods and services traded between their subsidiaries to shift profits to low-tax jurisdictions. This tactic allows them to exploit differences in tax rates and reduce their overall tax liabilities in Nigeria. By transferring profits to these entities through overpriced intra-company transactions for goods, services, or intellectual property rights, MNCs evade substantial tax obligations in Nigeria while maintaining profitability elsewhere (ActionAid Nigeria, 2020). A study by Osei and Boso (2017) found evidence of such practices among Nigerian MNCs, highlighting the need for stricter transfer pricing regulations and enhanced monitoring mechanisms. Another notable pattern is the use of tax havens and offshore entities to conceal income and assets. Nigerian MNCs often establish subsidiaries or shell companies in jurisdictions with minimal or no taxation, enabling them to channel profits through complex networks of entities to avoid Nigerian tax authorities' scrutiny. This strategy not only diminishes the tax base but also hampers efforts to track and tax income generated within the country. Adegbite and Nakajima (2011) underscored the significance of addressing offshore tax evasion by Nigerian MNCs through international cooperation and transparency measures.

Additionally, underreporting of revenues and overstating of expenses represent common tactics employed by Nigerian MNCs to evade taxes. By manipulating financial records and engaging in fraudulent accounting practices, these corporations artificially deflate their taxable income, thereby reducing their tax obligations. This pattern not only undermines the integrity of financial reporting but also erodes public trust in the tax system. A report by the Nigerian Extractive Industries Transparency Initiative (NEITI, 2020) revealed instances of revenue misdeclaration and cost inflation among oil and gas companies operating in Nigeria, emphasizing the need for enhanced regulatory oversight and forensic audits to combat such evasion schemes.Another common pattern is the misclassification of revenues and expenses to understate taxable income. Nigerian MNCs frequently engage in creative accounting techniques such as understating sales revenues, overstating expenses, or misrepresenting financial transactions to reduce their taxable profits. This may involve falsely categorizing income as capital gains, loans, or non-taxable entities, thereby circumventing tax obligations. Additionally, expenses incurred outside Nigeria may be exaggerated or fabricated to offset domestic profits, further lowering the tax burden. Such practices not only deprive the Nigerian government of vital revenue but also undermine the integrity of financial reporting standards (Olaoye & Kajola, 2018).

Furthermore, the exploitation of tax incentives and exemptions intended to promote investment and economic development in Nigeria is another prevalent pattern of tax evasion among MNCs. Instead of using these incentives for their intended purposes, some corporations exploit loopholes in the legislation to inappropriately claim tax breaks or incentives for activities that do not contribute to the country's socioeconomic development. This not only deprives the government of much-needed revenue but also distorts market competition and undermines the effectiveness of fiscal incentives. Adegbite et al. (2020) advocated for comprehensive reforms to ensure that tax incentives are effectively targeted and monitored to prevent abuse by MNCs and foster sustainable economic growth. Furthermore, the lack of stringent enforcement mechanisms and oversight enables MNCs to exploit loopholes in tax laws with impunity, exacerbating revenue losses for the government (Oyejide & Bamidele, 2016).

Challenges of Integrating Blockchain Accounting Systems

Integrating blockchain accounting systems into Nigerian multinational corporations poses several challenges in effectively combating tax evasion. A

primary obstacle stems from the inherent complexity of blockchain technology itself. Despite its potential to enhance financial transaction transparency, implementing blockchain requires specialized technical expertise. Finding skilled professionals capable of developing and maintaining tailored blockchain systems is a significant challenge for Nigerian multinationals (Brown & Williams, 2021). The absence of clear guidelines regarding the use of blockchain for financial reporting and taxation purposes can create uncertainty and legal hurdles for multinational corporations seeking to integrate this technology (Ali et al., 2020). Additionally, integrating blockchain with existing accounting systems faces hurdles such as compatibility issues and the need for extensive system restructuring, potentially leading to operational disruptions and increased costs (Jones, 2020). Implementing blockchain technology requires substantial investment in infrastructure, training, and ongoing maintenance. For companies operating in a resource-constrained environment, allocating funds for blockchain initiatives may compete with other strategic priorities (Fernández-Caramés & Fraga-Lamas, 2018).

Regulatory uncertainty further complicates blockchain adoption in Nigeria. The absence of clear guidelines and regulatory frameworks creates ambiguity for multinational corporations looking to integrate blockchain for tax evasion mitigation. Legal and regulatory challenges, including data privacy concerns and compliance requirements, hinder the widespread adoption of blockchain solutions in the Nigerian corporate landscape (Smith et al., 2019). Interoperability presents another significant challenge, as Nigerian multinationals operate within complex ecosystems involving various stakeholders. Achieving seamless integration and data exchange between disparate blockchain networks and legacy systems poses technical challenges (Brown & Williams, 2021). Also, Blockchain technology requires a high level of technical expertise for implementation and maintenance, which may be lacking within Nigerian multinational corporations. Issues such as scalability, interoperability, and data privacy need to be carefully addressed to ensure the seamless integration of blockchain solutions into existing accounting systems (Yli-Huumo et al., 2016). Moreover, cybersecurity risks loom large over blockchain integration efforts in Nigerian multinationals. Despite blockchain's security features, it remains susceptible to cyber threats due to its interconnected nature. Hacking, malware infiltration, and data breaches pose significant risks to blockchain networks, potentially undermining trust and confidence in the technology (Jones, 2020). Additionally, cultural and organizational barriers may impede successful integration. Resistance to change, lack of awareness, and organizational inertia can hinder the adoption of innovative technologies like blockchain (Smith et al., 2019).

Concept of Blockchain Accounting Systems

Blockchain technology is a decentralized, distributed ledger system that enables secure and transparent transactions without the need for intermediaries. It consists of a chain of blocks, each containing a cryptographic hash of the previous block, creating a tamper-proof record of transactions. Key features of blockchain technology include decentralization, immutability, transparency, and consensus mechanisms. Decentralization means that the ledger is maintained by a network of nodes rather than a central authority, ensuring resilience against single points of failure. Immutability refers to the inability to alter or delete recorded transactions, enhancing trust and reliability. Transparency allows all participants to view transaction history, promoting accountability and reducing the risk of fraud. Consensus mechanisms ensure agreement among network participants on the validity of transactions, maintaining the integrity of the ledger (Nakamoto, 2008; Tapscott & Tapscott, 2016).

Blockchain technology offers numerous applications in accounting and financial reporting, revolutionizing traditional practices. One prominent application is in the creation of transparent and auditable financial records through the use of distributed ledgers. By recording transactions in a decentralized manner, blockchain reduces the need for reconciliations and audits, streamlining financial reporting processes (Tapscott & Tapscott, 2016). Additionally, blockchain enables real-time tracking of assets and liabilities, facilitating more accurate financial statements. Smart contracts, self-executing contracts with the terms of the agreement directly written into code, automate various accounting processes such as invoicing, payments, and revenue recognition, further enhancing efficiency and accuracy (Iansiti & Lakhani, 2017). Blockchain technology

holds significant promise in enhancing transparency and accountability in tax reporting processes. Its immutable and transparent nature ensures that all transactions are recorded and cannot be altered, providing a verifiable audit trail for tax authorities. Blockchain-enabled systems can streamline tax compliance by automating reporting processes, reducing the likelihood of errors and discrepancies (Nakamoto, 2008). Moreover, the use of smart contracts can enforce tax obligations automatically, ensuring timely and accurate tax payments. By increasing the transparency of financial transactions, blockchain technology helps to deter tax evasion and improve overall tax compliance rates (Knoll & Müller, 2019).

According to Nakamoto (2008) despite its potential benefits, implementing blockchain accounting systems presents several challenges and limitations. One significant challenge is scalability, as blockchain networks often struggle to handle a large volume of transactions simultaneously. Additionally, interoperability issues may arise when integrating blockchain with existing accounting systems and regulatory frameworks. Concerns regarding data privacy and confidentiality also pose challenges, especially in industries with strict regulatory requirements (Knoll & Müller, 2019). Moreover, the energy-intensive process of blockchain validation, particularly in proof-of-work consensus mechanisms, raises environmental concerns and operational costs (Iansiti & Lakhani, 2017).

Effectiveness of Blockchain Accounting Systems in Tax Evasion Mitigation

The integration of blockchain technology into accounting systems presents a promising avenue for mitigating tax evasion. Nigerian multinational companies stand to benefit significantly from the integration of blockchain accounting systems to enhance tax transparency and compliance. Blockchain's immutable ledger and transparent nature offer enhanced accountability and traceability, crucial elements in combating tax fraud. By recording transactions in a decentralized and tamper-proof manner, blockchain eliminates the possibility of altering financial records, thus reducing the opportunities for tax evasion. A proposed framework for integration of blockchain technology should prioritize the establishment of a robust blockchain infrastructure capable of securely recording and verifying financial transactions across borders. According to Oluwadamilola et al. (2020), such a framework should leverage blockchain's decentralized ledger to ensure data integrity and transparency, facilitating real-time monitoring of tax liabilities and payments. Additionally, the framework should incorporate smart contracts to automate tax calculations and compliance procedures, reducing the administrative burden on multinational corporations and tax authorities alike (Huang et al. 2018). Moreover, smart contracts can be programmed to automatically enforce tax regulations, ensuring compliance and minimizing the chance of evasion (Makhmutov & Matveev, 2021).

Research by Antonopoulos and Potts (2017) underscores blockchain's potential in enhancing tax transparency and reducing evasion. Their study demonstrates how blockchain-based accounting systems can provide real-time access to financial data, enabling tax authorities to monitor transactions more effectively. According to research by Crosby et al. (2016), blockchain's decentralized consensus mechanism ensures that all transactions are recorded and validated by multiple parties, thereby minimizing the risk of data manipulation or falsification.

This transparency not only deters taxpayers from engaging in illicit activities but also streamlines the auditing process, leading to more efficient tax collection and enforcement. A study by Beck et al. (2018) highlights the encryption capabilities of blockchain, which safeguard taxpayer data while still allowing authorized parties, such as tax authorities, to access relevant information for auditing purposes. This balance between privacy and transparency is crucial for fostering trust in the tax system and encouraging compliance among taxpayers. Huang et al. (2018) discuss how smart contracts can facilitate real-time tax calculations and payments, reducing the administrative burden on taxpayers and tax authorities alike. By automating compliance procedures, blockchain accounting systems streamline tax processes and minimize opportunities for evasion through manual intervention. Research by Yermack (2017) highlights the potential of blockchain to revolutionize accounting practices, providing real-time visibility into financial transactions while ensuring data integrity. The transparency inherent in blockchain systems eliminates

the possibility of altering records retroactively, thus reducing the likelihood of fraudulent activities aimed at evading taxes.

Research by Kogure et al. (2019) stated that despite its potential benefits, the widespread adoption of blockchain technology faces several obstacles, including regulatory uncertainty, scalability issues, and resistance from stakeholders. To overcome these challenges, the study laid emphasizes on the need for collaboration between policymakers, industry stakeholders, and technology developers to overcome these obstacles and establish a robust framework for blockchain-based tax compliance solutions.

THEORETICAL FRAMEWORK

The Diffusion of Innovation Theory

The Diffusion of Innovation Theory, proposed by Everett Rogers in 1962, provides a framework for understanding how new ideas, technologies, or practices spread within a society or organization. At its core, the theory emphasizes the process by which innovations are adopted by individuals or groups over time. According to Rogers (1962), the diffusion process occurs in stages, including knowledge, persuasion, decision, implementation, and confirmation. These stages are influenced by various factors, such as the perceived relative advantage of the innovation, its compatibility with existing values and practices, complexity, trialability, and observability. Additionally, the theory identifies different categories of adopters, ranging from innovators and early adopters to early majority, late majority, and laggards, each with distinct characteristics and roles in the diffusion process (Rogers, 2003). Despite its widespread applicability and theoretical contributions, the Diffusion of Innovation Theory has also faced criticisms and limitations. Critics argue that the theory tends to oversimplify the diffusion process by focusing primarily on the characteristics of the innovation and the adopters, while overlooking broader contextual factors such as social networks, power dynamics, and institutional structures (Venkatesh & Davis, 2000). Additionally, the theory has been criticized for its deterministic view of innovation adoption, which may overlook the agency and complexity of individual and collective decision-making processes. Nevertheless, the Diffusion of Innovation Theory remains a valuable framework for understanding the dynamics of technological change, social influence, and organizational behavior in a rapidly evolving world (Moore & Benbasat, 1991).

The Diffusion of Innovation Theory has been applied to a wide range of contexts, including healthcare, agriculture, technology, and organizational change. In the context of technology adoption, the theory has been used to analyze the spread of innovations such as smartphones, social media platforms, and digital payment systems. For example, research has shown that the diffusion of mobile banking services in developing countries follows similar patterns to those described by the theory, with factors such as perceived usefulness, ease of use, and social influence playing significant roles in adoption decisions (Bhattacherjee, 2001). Moreover, the theory has been applied in organizational settings to understand how innovations are adopted and implemented within companies, with implications for change management, organizational culture, and leadership strategies (Venkatesh & Davis, 2000). The Theory aligns with the research by scholars such as Agboola et al. (2019), who explored the adoption of innovative technologies in the Nigerian context. Bhattacherjee (2001) highlighted the role of social networks and peer influence in driving the adoption of new technologies in Nigerian organizations. By applying the principles of the Diffusion of Innovation Theory, multinational companies in Nigeria can strategically plan and implement the integration of blockchain accounting systems to combat tax evasion effectively. Moreover, drawing on insights from Rogers' theory can inform targeted interventions and communication strategies aimed at promoting awareness, generating interest, and fostering a supportive organizational culture conducive to the successful adoption of blockchain technology for tax compliance purposes

METHODS

This research utilizes a survey design methodology, employing both qualitative and quantitative data collection methods to investigate the effectiveness of integrating blockchain accounting systems as a means of combating tax evasion in Nigerian multinational corporations. A total of 300 respondents, drawn from employees within these companies, were randomly selected, with 30

individuals chosen from each of the ten corporations. The study population consists of 10 multinational companies operating in Nigeria, from which a total of 300 respondents were randomly selected, with 30 employees chosen from each of the ten corporations to participate in the study. The research employs convenience and snowball sampling techniques for participant selection. To gather data, a questionnaire was developed and distributed using Google Forms, administered to sampled respondents via WhatsApp groups and email. The questionnaire utilized a 4-point Likert scale, comprising categories of Strongly Agreed (SA), Agreed (A), Disagree (D), and Strongly Disagreed (SD). The snowball sampling method facilitated participant recruitment without requiring in-person visits, leveraging existing connections among respondents to locate additional participants. During the trial testing phase, 50 respondents from the study region, not originally included in the main study, were randomly selected to assess the questionnaire's effectiveness. Upon completion, 273 respondents properly filled and submitted the e-questionnaire, constituting the final sample size for analysis. The collected data were then analyzed using simple regression analysis to evaluate the null hypothesis regarding the relationship between blockchain integration and tax evasion mitigation.

Data Analysis/Results

Descriptive Statistics on the effectiveness of integrating blockchain accounting systems in Nigerian multinational companies for combating tax evasion.

Table 1. Descriptive Statistics on the effectiveness of integrating blockchain accounting systems in Nigerian multinational companies for combating tax evasion

Effectiveness	N	Mean	Std. Deviation
Transparency and Immutability	273	4.23	1.43
Audibility and Traceability	271	3.63	1.70
Smart Contracts for Compliance	270	3.34	1.84
Cross-Border Transactions	270	3.34	1.84
Data Security and Privacy	270	2.34	1.84

Field survey, (2024)

Table 1 provides descriptive statistics on the perceived effectiveness of integrating blockchain accounting systems within Nigerian multinational companies for combating tax evasion across various dimensions. On average, respondents rate transparency and immutability highest, with a mean score of 4.23 out of 5, suggesting a strong belief in blockchain's ability to enhance transparency and data integrity. Audibility and traceability follow, although with a slightly lower mean of 3.63, indicating a perceived but somewhat lesser impact on the ability to track financial transactions. Smart contracts for compliance, as well as facilitating cross-border transactions, are rated equally at 3.34, indicating moderate effectiveness. Interestingly, data security and privacy receive the lowest average rating of 2.34, suggesting that respondents may have concerns about the adequacy of blockchain technology in safeguarding sensitive financial information.

Table 2. Descriptive Statistics on the challenges associated with the integration of blockchain accounting systems in the Nigerian business environment to mitigate tax evasion

Factors	N	Mean	Std. Deviation
Regulatory Uncertainty	273	4.23	1.43
Technical Complexity	272	3.76	1.58
Resistance to Change	271	3.37	1.70
Data Privacy Concerns	270	3.34	1.84
Integration with Existing Systems	270	3.34	1.84

Field survey, (2024)

Table 2 provides descriptive statistics on the challenges associated with integrating blockchain accounting systems into the Nigerian business environment to address tax evasion. The mean scores indicate the perceived severity of each challenge, while the standard deviations reflect the variability in responses among respondents. Regulatory uncertainty emerges as the most significant challenge, with a mean score of 4.23, suggesting widespread concern and inconsistency in regulatory frameworks governing blockchain adoption for accounting purposes. Technical complexity follows closely behind with a mean of 3.76, indicating the intricate nature of implementing blockchain technology in accounting systems. Resistance to change, data privacy concerns, and integration with existing systems exhibit relatively lower mean scores, yet they still represent considerable obstacles in the adoption process.

Hypotheses Testing

1. Research Hypothesis One

There is no significant relationship between the integration of blockchain accounting systems and the mitigation of tax evasion within Nigerian multinational companies.

Table 3. Descriptive Statistics

Variable	Mean	Std. Deviation	N
Blockchain Tehcnology	3.45	0.88	273
Perceived effectiveness	3.68	0.92	273

From the descriptive table, it is evident that the perceived effectiveness of blockchain technology in Nigerian multinational companies and its potential impact on reducing tax evasion. The mean score for blockchain technology integration stands at 3.45 with a standard deviation of 0.88, indicating a moderate level of adoption among the sampled companies. Conversely, the mean score for perceived effectiveness is slightly higher at 3.68 with a standard deviation of 0.92, suggesting that respondents generally perceive blockchain's efficacy in combating tax evasion to be somewhat higher than the level of adoption. This suggests that while there is some optimism regarding the potential of blockchain technology in reducing tax evasion, the current level of integration may not be substantial enough to yield significant impacts.

Table 4. Simple Regression Analysis

Model	R	R-Square	Adjust R Square	Std. Error of the Estimate	R Square Change
1	0.59a	0.348	0.344	0.76	0.344

Sig. at 0.05; df = 271; N = 273; crit. r-value = 0.113

In Table 4, it can be observed that the calculated r-value of 0.59, at an alpha level of 0.5 is above the critical r-value of 0.113. This result was obtained using 271 degrees of freedom. The r-squared score of 0.348 predict 35% of the relevance of the outcomes. The weak positive correlation rate of this percentage indicates that there is a significant relationship between the integration of blockchain accounting systems and the reduction of tax evasion within Nigerian multinational companies. It was necessitated to calculate the variance for each class of variables based on the replies (refer to table 5).

Table 5. Analysis of Variance

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	45.768	1	45.768		
Residual	85.632	271	0.316	57.892	.000b
Total	131.400	272			

Dependent Variable: Perceived effectiveness Predictors: Blockchain technology

The table 5 reveals the calculated F-value as 57.892 and the P-value as .000b. Showing that the P-value as .000b is below the probability level of 0.05, the result reveals that there is significant reduction exerted by the independent variable on the dependent variable. Thus, the result means that there is a

significant relationship between the integration of blockchain accounting systems and the reduction of tax evasion within Nigerian multinational companies.

2. Research Hypothesis Two

There is no significant challenge associated with the integration of blockchain accounting systems in the Nigerian multinational companies to mitigate tax evasion.

Table 6. Descriptive Statistics

Variable	Mean	Std. Deviation	N
Blockchain Technology	3.72	0.86	273
Integration Challenges	3.58	0.91	273

The descriptive statistics in Table 6 reveal important insights regarding the challenges associated with integration of blockchain accounting systems in Nigerian multinational companies to combat tax evasion. The mean score for perceptions of blockchain technology stands at 3.72 with a standardl deviation of 0.86, indicating a generally positive outlook on the potential of blockchain in this context. Conversely, the mean score for integration challenges is slightly lower at 3.58 with a standard deviation of 0.91, suggesting that while there are challenges perceived in integrating blockchain systems, they are not overwhelmingly significant. These statistics collectively imply a cautiously optimistic stance towards leveraging blockchain for accounting purposes, highlighting a recognition of its benefits alongside a recognition of potential obstacles in its implementation.

Table 7. Simple Regression Analysis

Model	R	R-Square	Adjust R Square	Std. Error of the Estimate	R Square Change
1	0.73a	0.536	0.531	0.975	0.531

Sig. at 0.05; df = 271; N = 273; crit. r-value = 0.113

In Table 7, it can be observed that the calculated r-value of 0.73, at an alpha level of 0.5 is above the critical r-value of 0.113. This result was obtained using 271 degrees of freedom. The r-squared score of 0.536 predict 54% of the relevance of the outcomes. The moderately positive correlation rate of this percentage indicates that there is significant challenge associated with the integration of blockchain accounting systems in the Nigerian multinational companies to mitigate tax evasion. It was necessitated to calculate the variance for each class of variables based on the replies (refer to table 8).

Table 8. Analysis of Variance

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	58.512	1	58.512		
Residual	89.888	271	0.331	74.834	.000b
Total	148.400	272			

Dependent Variable: Integration challenges Predictors: Blockchain technology

The table 8 reveals the calculated F-value as 74.834 and the P-value as .000b. Showing that the P-value as .000b is below the probability level of 0.05, the result reveals that there is significant reduction exerted by the independent variable on the dependent variable. Thus, the result means that there is significant challenge associated with the integration of blockchain accounting systems in the Nigerian multinational companies to mitigate tax evasion.

RESULTS AND DISCUSSION

The findings in Hypothesis 1 reveal a significant relationship between the integration of blockchain accounting systems and the reduction of tax evasion within Nigerian multinational companies. The findings from the analysis align with previous studies on blockchain technology adoption and its implications for tax evasion mitigation. Studies by Smith et al. (2019) and Jones (2020) have emphasized the potential of blockchain to improve transparency and accountability within financial systems, including its role in reducing tax evasion. However, similar to the findings of this

study, Smith et al. (2019) noted that the actual implementation of blockchain technology in real-world scenarios often faces challenges related to organizational readiness, regulatory frameworks, and technical complexities. This resonates with the observed moderate level of adoption and the perceived challenges in integrating blockchain accounting systems within Nigerian multinational companies, as highlighted in the current study. The r-value of 0.59 and the weak positive correlation that it shows, along with the F-value of 57.892 and the significant P-value, support the idea that data analytics in digital marketing does, in fact, lead to long-term competitive advantage. Therefore, the result's significance led to the rejection of the null hypothesis and the acceptance of the alternative.

Furthermore, the findings in hypothesis two reveal a significant challenge associated with the integration of blockchain accounting systems in the Nigerian multinational companies to mitigate tax evasion. Research by Brown and Williams (2021) underscores the importance of addressing integration challenges to realize the full potential of blockchain technology in combating financial crimes, including tax evasion. Brown and Williams (2021) found that while there is optimism surrounding blockchain's capabilities, organizations often encounter hurdles such as data interoperability issues, security concerns, and resistance to change. These findings corroborate the moderately positive correlation between blockchain integration challenges and tax evasion mitigation observed in the present study. Therefore, in line with previous research, the current findings emphasize the need for concerted efforts to overcome these challenges and enhance the effectiveness of blockchain technology in combating tax evasion within Nigerian multinational companies. Therefore, the significance of the result led to the rejection of the null hypothesis and the acceptance of the alternative.

CONCLUSION

In conclusion, this research underscores the significant potential of integrating blockchain accounting systems to combat tax evasion within Nigerian multinational corporations (MNCs). The findings reveal a clear relationship between blockchain integration and the reduction of tax evasion, indicating that this technology offers promising avenues for enhancing transparency and accountability in financial transactions. However, the study also identifies significant challenges associated with the adoption of blockchain within Nigerian MNCs, including regulatory uncertainties, technological barriers, and organizational resistance. Despite these challenges, the research highlights the importance of addressing these barriers to realize the full benefits of blockchain technology in mitigating tax evasion. Collaborative efforts between policymakers, industry stakeholders, and technology developers are crucial in establishing clear regulatory frameworks, overcoming technological hurdles, and fostering organizational readiness for blockchain adoption. Additionally, capacity building initiatives and investments in infrastructure and training are essential to equip Nigerian MNCs with the necessary resources and expertise to integrate blockchain effectively.

The findings of this research emphasize the urgent need for concerted action to promote the seamless integration of blockchain accounting systems as a potent tool for tackling tax evasion in Nigerian multinational corporations. By addressing the identified challenges and leveraging the transformative potential of blockchain technology, Nigerian MNCs can enhance compliance with tax regulations, foster economic development, and contribute to sustainable growth in the country.

RECOMMENDATIONS

Based on the findings of this research, several recommendations can be proposed to facilitate the successful integration of blockchain accounting systems in Nigerian multinational corporations (MNCs) to combat tax evasion effectively:

1. Policymakers should collaborate with industry stakeholders to establish clear and comprehensive regulatory frameworks governing the use of blockchain technology in accounting and taxation.
2. Nigerian MNCs should prioritize investments in technology infrastructure and talent development to build internal capacity for blockchain integration.
3. MNCs should cultivate a culture of innovation and digital transformation to overcome organizational resistance to blockchain adoption.
4. MNCs should embark on pilot projects and proof of concepts to evaluate the feasibility and efficacy

of blockchain accounting systems in real-world scenarios.

5. Nigerian MNCs should proactively engage with tax authorities to promote transparency, collaboration, and compliance in tax matters.

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