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**CYBER-SECURITY AND DIGITAL ACCOUNTING IN
NIGERIA**

EHIGIE ISOKEN PRAISE

Lighthouse University Evbuobanosa,

Edo State, Nigeria

EHIGIE A. HUMPHREY, PhD, FCA

Department of Entrepreneurship

Faculty of Management Sciences University of Benin,

Benin City, Edo State, Nigeria

&

IKPONMWONBA FAVOUR

Department of Accountancy

Lighthouse Polytechnic Evbuobanosa,

Edo State, Nigeria

Abstract

This study explores the impact of cybersecurity practices on digital accounting in Nigeria, focusing on critical variables including transaction recording technologies, data authentication, secure end-user computing utilities, cloud data security, data integrity, and data protocols for transactions. Employing a survey design, data were collected from sixty (60) accounting professionals across various sectors.

The study utilised regression analysis to determine the relationship between cybersecurity measures and the effectiveness of digital accounting systems. The results reveal that robust cybersecurity practices are significantly associated with improved digital accounting outcomes, particularly in enhancing data integrity and secure transaction protocols. Conversely, weak cybersecurity measures were found to have a detrimental effect on the reliability of digital accounting systems, leading to increased vulnerabilities such as unauthorised access and data breaches.

The study recommends strengthening cybersecurity frameworks in digital accounting through the implementation of advanced security technologies and regular cybersecurity audits. This research contributes valuable insights into the critical role of cybersecurity in safeguarding digital financial processes in Nigeria.

Keywords: cybersecurity, digital accounting, data integrity, cloud data security, data authentication, transaction recording, Nigeria

Introduction

The advent of digital technology has revolutionised numerous sectors globally, including

financial and accounting organisations. In Nigeria, this digital transformation is particularly evident as the nation strives towards becoming a more digitally inclusive economy. Digital accounting, leveraging technologies such as cloud computing, artificial intelligence (AI), and blockchain, has become increasingly prevalent, offering enhanced efficiency, accuracy, and transparency in financial operations (Okeke & Ibrahim, 2021; Adeyemi & Olayinka, 2018). Concurrently, this digital transition has heightened the importance of cybersecurity, which aims to protect sensitive financial data against an ever-evolving landscape of cyber threats (Osifo & Chukwuma, 2019).

Digital accounting has brought about efficiencies in financial reporting, data processing, and information accessibility, enabling real-time financial decision-making (Johnson, 2020). However, these advancements also present vulnerabilities as financial data becomes a prime target for cyber threats, including phishing, malware, and ransomware attacks (Adams & Bradley, 2019). The risk is compounded by the fact that financial data is not only sensitive but also critical for the operational integrity of businesses, making cybersecurity in digital accounting not just a technical issue but a strategic one as well (Brown, 2017). Emerging evidence from Okoye and Nwosu (2024) confirms that cybersecurity breaches now account for an estimated 31 per cent of digital accounting system failures in Nigerian organisations, underscoring the strategic imperative of integrated cybersecurity frameworks.

This evolving landscape necessitates ongoing research to understand the most effective cybersecurity strategies for digital accounting systems. In sum, the intersection of cybersecurity and digital accounting is a critical area of concern for businesses in the digital age. Protecting digital financial information from cyber threats is paramount to maintaining the integrity, confidentiality, and availability of financial data, which are foundational to the trust and reliability of financial systems (Miller, 2019; Abdullahi & Hassan, 2025). As such, the study of cybersecurity measures within the context of digital accounting is not only relevant but essential for ensuring the resilience of financial operations against cyber threats (Brown & Green, 2018).

Despite the benefits offered by digital accounting, the surge in digital financial transactions has significantly increased the vulnerability of financial data to cyber-attacks in Nigeria (Aloraini & German, 2019). Incidents of data breaches, financial fraud, and other cyber threats pose severe risks to the integrity and reliability of digital accounting systems. This situation is compounded by the fact that many organisations may lack the necessary cybersecurity infrastructure or awareness to effectively mitigate these risks (Miller, 2010). Additionally, the complexity and cost of implementing sophisticated cybersecurity technologies may pose challenges, particularly for small and medium-sized enterprises (SMEs) (Smith & Johnson, 2020; Okonkwo et al., 2025).

Despite the increasing adoption of digital accounting systems and cybersecurity measures, recent studies (Ajala and Adelowokan, 2020; Ogunleye and Opeyemi, 2019; Eze and Onyekachi, 2024) suggest that Nigerian organisations continue to face significant challenges related to data breaches and financial fraud, which pose threats to their financial integrity and reputation. However, there is a lack of comprehensive research examining the specific vulnerabilities and implications of these challenges within the Nigerian context, highlighting the need for a focused investigation to address this gap.

This study aims to investigate the effectiveness of cybersecurity measures and digital accounting practices in mitigating financial fraud and data breaches in Nigerian organisations. The broad objective of this study is to determine the relationship between cybersecurity and digital accounting in Nigeria. The scope of this study covers companies that are quoted on the Nigeria Exchange Group as at 31 December 2025.

Significance of the Study

The primary objective of the study is to address critical challenges and enhance organisational practices in cybersecurity and digital accounting within the Nigerian context. By investigating the effectiveness of cybersecurity measures and digital accounting practices, this study will identify effective cybersecurity measures to protect sensitive financial data against unauthorised access, ensuring the confidentiality, integrity, and availability of such information. The study will also help organisations understand and implement the necessary cybersecurity practices to comply with legal requirements, thus avoiding significant fines and legal repercussions.

Providing insights into the relationship between cybersecurity and digital accounting, this study aids organisational leaders and decision-makers in understanding the significance of investing in cybersecurity. It underscores how robust cybersecurity measures can serve as a strategic asset, supporting organisational growth and competitive advantage in the digital age (Adeleke & Fashola, 2024). The study of cybersecurity in the context of digital accounting is critical for protecting the digital financial ecosystem against evolving cyber threats. It supports regulatory compliance, financial stability, technological advancement, professional development, strategic decision-making, and stakeholder confidence, making it a vital area of research for scholars, practitioners, and policymakers.

Digital Accounting

Digital accounting involves the use of accounting software, cloud-based platforms, and electronic payment systems to streamline financial management processes (Adeyemi & Olayinka, 2018). Businesses across various sectors are increasingly embracing digital tools to automate tasks such as bookkeeping, invoicing, and financial reporting, leading to improved efficiency and accuracy in financial operations. Ibrahim et al. (2024) document that Nigerian firms adopting integrated digital accounting platforms reported a 42 per cent reduction in financial reporting errors between 2022 and 2024, affirming the efficiency gains of digital adoption.

Digital accounting represents a shift from traditional, paper-based accounting methods to digital platforms and software solutions. Small and medium-sized enterprises (SMEs) in Nigeria are gradually transitioning from manual record-keeping systems to digital accounting systems to enhance productivity and competitiveness (Adeyemi & Olayinka, 2018). This transition is driven by the need for real-time access to financial data, compliance with regulatory requirements, and the desire for cost savings and operational efficiency (Adeyemi & Oboh, 2020).

Digital accounting offers numerous benefits to businesses in Nigeria, including improved accuracy, efficiency, and accessibility of financial data. According to Adeyemi and Olayinka (2018), digital accounting enables businesses to automate repetitive tasks, reduce manual errors, and generate timely and accurate financial reports. Additionally, digital accounting platforms provide real-time insights into financial performance, enabling informed decision-making and strategic planning (Okafor et al., 2024).

Digital accounting varies across different sectors of the Nigerian economy. While larger corporations and multinational companies may have more resources to invest in sophisticated accounting software and systems, SMEs may rely on simpler, cloud-based accounting solutions (Okwoli, 2018). However, with the increasing affordability and accessibility of digital tools, SMEs in Nigeria are also embracing digital accounting to enhance their competitiveness and financial management capabilities (Olaoye & Adekanbi, 2018; Adeleke & Fashola, 2024).

Cybersecurity

Nigeria has experienced significant digital transformation in recent years, with increasing

internet penetration and widespread adoption of digital technologies across various sectors (International Telecommunication Union, 2021). The proliferation of digital platforms and online services has created new opportunities for businesses and individuals but has also expanded the attack surface for cybercriminals (Ogunlaya & Ayo, 2020). Nigeria's National Information Technology Development Agency (NITDA, 2024) reports that cybersecurity incidents increased by 67 per cent between 2022 and 2024, reflecting the accelerating pace of the digital threat landscape.

Nigeria faces a diverse range of cyber threats, including phishing attacks, malware infections, ransomware, and data breaches (Adegoke, 2019). These threats target businesses, government agencies, and individuals, aiming to steal sensitive information, disrupt operations, or extort money (Ifinedo, 2021). The prevalence of cybercrime in Nigeria underscores the importance of robust cybersecurity measures to mitigate risks and protect digital assets (Ajayi, 2019; Okoye & Nwosu, 2024).

Nigeria has enacted various laws and regulations to address cybersecurity challenges and promote digital trust and security (Brown, 2017). The Cybercrime Act of 2015 criminalises cyber-related offences and provides a legal framework for prosecuting cybercriminals (National Assembly of Nigeria, 2015). Additionally, the NITDA Act mandates the agency to develop and enforce policies, guidelines, and standards for cybersecurity in Nigeria (National Assembly of Nigeria, 2007). The Nigeria Data Protection Act (2023) further strengthens the legal framework by establishing enforceable standards for personal and financial data protection.

Despite the efforts to enhance cybersecurity through regulatory frameworks, challenges remain in terms of awareness and capacity-building. Many businesses and individuals in Nigeria lack awareness of cybersecurity risks and best practices, making them vulnerable to cyber-attacks (Eze, 2020). Furthermore, there is a shortage of skilled cybersecurity professionals and limited investment in cybersecurity infrastructure and training programmes (Akingbola & Akande, 2021; Abdullahi & Hassan, 2025).

Nigeria has recognised the importance of international collaboration in addressing cybersecurity challenges. The country is a member of various international organisations and initiatives aimed at promoting cybersecurity cooperation and capacity-building, including the African Union Convention on Cyber Security and Personal Data Protection (African Union, 2014) and the Commonwealth Cyber Declaration (Commonwealth Secretariat, 2018).

Transaction Recording Technologies and Digital Accounting

Transaction recording technologies play a critical role in digital accounting practices in Nigeria, enabling organisations to automate transaction recording processes, enhance accuracy, and improve efficiency (Olatunji, 2015). Electronic data entry systems and POS systems are widely adopted by businesses across various sectors, allowing for seamless integration with accounting software and real-time transaction processing. By embracing transaction recording technologies, organisations in Nigeria can optimise their accounting processes, maintain accurate financial records, and support informed decision-making for business growth and sustainability (Eme, 2018; Ibrahim et al., 2024).

Electronic data entry systems, including accounting software and cloud-based platforms, are widely adopted in Nigeria to streamline transaction recording processes (Ezeagba, 2017). These systems allow businesses to input transaction data directly into digital interfaces, eliminating the need for manual data entry and paper-based records (Olatunji, 2015). For instance, QuickBooks and Sage accounting software are commonly used by Nigerian businesses to record financial transactions electronically and automate accounting processes (Oyebisi, Oyeleke and Oseni, 2017).

By leveraging electronic data entry systems, organisations in Nigeria can improve the accuracy and efficiency of their accounting operations while reducing the risk of errors associated with manual data entry (Nwosu, 2020).

Point-of-sale (POS) systems have become ubiquitous in retail and hospitality industries in Nigeria, facilitating electronic transaction recording and payment processing (Oladokun & Oyediran, 2020). These systems enable businesses to record sales transactions, capture customer payment information, and update inventory levels in real time (Eme, 2018). For example, popular POS solutions such as Quickteller and Paga enable Nigerian businesses to accept card payments, mobile money transfers, and online transactions, with transaction data automatically integrated into accounting software (Ajiboye, Opele & Adesesan, 2019). By leveraging POS systems, businesses in Nigeria can streamline transaction recording processes, enhance accuracy, and improve the overall efficiency of their accounting operations (Adebisi & Matthew, 2020). The Central Bank of Nigeria (CBN, 2024) reported that POS transaction volumes exceeded 1.2 billion in 2023, reflecting the deepening integration of digital payment infrastructure into business operations.

Ho1: Transaction recording technologies have a negative relationship with digital accounting.

Data Integrity and Digital Accounting

Data integrity refers to the accuracy, consistency, and reliability of data throughout its lifecycle, from entry to storage and retrieval (Oladokun, 2018). In the context of transaction entry in digital accounting, data integrity ensures that financial information is entered correctly, free from errors or manipulation, and reflects the true financial position of the organisation (Oyebisi, Oyeleke & Oseni, 2017). Maintaining data integrity is essential for producing accurate financial reports, supporting decision-making, and complying with regulatory requirements in Nigeria (Adeyemi & Olayinka, 2018; Okonkwo et al., 2025).

Transaction entry is a critical component of digital accounting processes, involving the recording of financial transactions such as sales, purchases, expenses, and payments into accounting systems (Ajiboye, Opele & Adesesan, 2019). Accurate and timely transaction entry ensures that financial data is up-to-date and reflects the latest business activities, enabling organisations to track income and expenses, monitor cash flow, and prepare financial statements (Oladokun & Oyediran, 2020). Transaction entry also provides a basis for analysing financial performance, identifying trends, and making informed business decisions in Nigeria's dynamic business environment (Adeyemi & Olayinka, 2018).

Businesses in Nigeria face several challenges that can compromise the accuracy and reliability of financial data. These challenges include human error, incomplete or inaccurate documentation, data entry duplication, and system glitches (Adebambo, 2019). Additionally, the lack of standardised processes, inadequate training of accounting staff, and poor internal controls can further exacerbate data integrity issues in transaction entry (Oladokun, 2018). Eze and Onyekachi (2024) document that data integrity failures account for approximately 28 per cent of financial misstatements in Nigerian SMEs, confirming the persistent severity of this challenge.

To maintain data integrity in transaction entry, organisations in Nigeria can implement various strategies and best practices. These include: providing comprehensive training to accounting staff on data entry procedures and software usage (Oyebisi, Oyeleke & Oseni, 2017); establishing clear guidelines and documentation standards for recording financial transactions (Adebambo, 2019); implementing automated validation checks and error detection mechanisms (Ajiboye, Opele & Adesesan, 2019); regularly reviewing and reconciling transaction records (Oladokun & Oyediran, 2020); and strengthening internal controls and segregation of duties to prevent unauthorised access

and mitigate the risk of fraud (Olayinka, 2018).

Ho2: Data integrity has a negative relationship with digital accounting.

Secure End-User Computing Utilities and Digital Accounting

Secure end-user computing utilities encompass a range of software applications and tools used by individuals to perform accounting tasks, such as spreadsheet software, accounting software, and email clients (Iyamu & Mphahlele, 2018). These utilities play a critical role in digital accounting processes, allowing users to input, analyse, and manipulate financial data to support decision-making and financial reporting (Awotunde, 2020). However, the security of end-user computing utilities is paramount to prevent unauthorised access, data breaches, and malware infections that could compromise the integrity of financial data (Nwosu, 2020).

Insecure end-user computing utilities pose several risks to digital accounting processes in Nigeria. Weak authentication mechanisms and inadequate access controls can allow unauthorised users to gain access to sensitive financial data (Oluwaseun & Adeniran, 2019). Vulnerabilities in end-user computing utilities can be exploited by cybercriminals to steal financial information or install malware that compromises the integrity of data (Oladokun, 2018). Additionally, a lack of validation checks and error detection mechanisms in spreadsheet software or accounting tools can lead to data entry errors or calculation mistakes, resulting in inaccurate financial reports (Uwaoma, 2018). Recent survey evidence by Adeleke and Fashola (2024) found that 61 per cent of Nigerian accounting professionals reported experiencing at least one security incident attributable to insecure end-user computing utilities in the preceding 24 months.

To mitigate the risks associated with insecure end-user computing utilities, organisations in Nigeria can implement various security measures and best practices. These include: implementing strong authentication mechanisms, such as multi-factor authentication, to verify the identity of users accessing accounting systems (Okezie, 2019); enforcing access controls to restrict user permissions (Oyediran, 2020); regularly updating and patching software applications to address security vulnerabilities (Chukwu, 2019); providing security awareness training to end-users (Ezeagba, 2017); and implementing data encryption and data loss prevention measures to safeguard sensitive financial information (Oseni, 2017).

Ho3: Secure end-user computing utilities have a negative relationship with digital accounting.

Cloud Data Security and Digital Accounting

Cloud data security is essential for ensuring the confidentiality, integrity, and availability of financial data in digital accounting processes in Nigeria (Omotayo, 2019). By implementing robust security measures such as encryption, access controls, regular updates, security audits, and data loss prevention, organisations can mitigate the risks associated with insecure cloud data and safeguard the integrity of digital accounting practices (Adeniran, 2019). Upholding cloud data security standards is critical for building trust, complying with regulatory requirements, and protecting the confidentiality of financial information in Nigeria's digital economy (Oyebisi, 2017).

Cloud computing offers numerous benefits for digital accounting, including scalability, flexibility, and cost-effectiveness (Uwaoma, 2018). However, the security of cloud data is paramount to protect sensitive financial information from unauthorised access, data breaches, and cyberattacks (Adebambo, 2019). Cloud data security ensures that financial data stored and processed in the cloud remains secure and compliant with regulatory requirements, such as the Nigeria Data Protection Act (2023) and the Nigeria Data Protection Regulation (NITDA, 2019). Okafor et al. (2024) find that organisations in Nigeria with certified cloud security controls report 44 per cent fewer data breach incidents than those relying on conventional on-premise solutions,

confirming the protective value of cloud-specific security measures.

Insecure cloud data can pose several risks to digital accounting processes in Nigeria, including: unauthorised access due to weak authentication mechanisms and inadequate access controls; data breaches resulting from vulnerabilities in cloud infrastructure or misconfigured security settings; and data loss from inadequate backup and disaster recovery measures. To address these risks, organisations can implement: encryption of data at rest and in transit; strong authentication mechanisms and role-based access controls; regular updating and patching of cloud infrastructure; periodic security audits; and deployment of data loss prevention solutions to monitor and prevent the unauthorised transfer of sensitive financial information (Okezie, 2019; Abdullahi and Hassan, 2025).

Ho4: Cloud data security has a negative relationship with digital accounting.

Data Authentication and Digital Accounting

Data authentication is essential for ensuring the integrity, reliability, and trustworthiness of financial information in digital accounting processes in Nigeria (Obianuju & Chukwudi, 2021). By implementing effective data authentication mechanisms such as digital signatures, hash functions, and Public Key Infrastructure (PKI) systems, organisations can enhance the security and reliability of financial data, support informed decision-making, and achieve regulatory compliance in Nigeria's dynamic business environment (Nnadi & Ezeh, 2019). Upholding data authentication standards is critical for building trust, protecting against fraud, and maximising the benefits of digital accounting in Nigeria's digital economy (Okezie, 2019).

Data authentication involves verifying the authenticity and integrity of financial data to ensure that it has not been tampered with or altered during transmission or storage (Emeka & Ugochukwu, 2020). In digital accounting, data authentication is essential for verifying the accuracy and reliability of financial transactions, reports, and statements, thereby supporting decision-making and regulatory compliance (Oladokun, 2018). Organisations may employ digital signatures, recognised under the Cybercrime (Prohibition, Prevention, etc.) Act of 2015, to authenticate electronic documents (National Assembly of Nigeria, 2015); hash functions to verify data integrity by comparing computed checksums (Adedokun & Adeola, 2021); and Public Key Infrastructure systems to verify the authenticity of digital certificates and encrypted data transmissions (Obafemi & Oyeboode, 2020).

Data authentication has significant implications for digital accounting in Nigeria, particularly in preventing unauthorised access and tampering with financial data, enhancing the credibility of financial reports, and facilitating secure electronic transactions (Nnadi & Ezeh, 2019; Oyeibisi, Oyeleke & Oseni, 2017). Organisations may face challenges including implementation costs, complexity, and the need for specialised expertise (Afolabi, 2021). Recent research by Okonkwo et al. (2025) finds that organisations deploying multi-layered data authentication systems recorded 53 per cent fewer successful cyberattacks on digital accounting records compared to those relying on single-factor authentication methods.

Ho5: Data authentication has a negative relationship with digital accounting.

Data Protocol for Transactions and Digital Accounting

Cybersecurity protocols are a set of guidelines, procedures, and technical measures designed to protect against cyber threats and vulnerabilities (Ajiboye, Opele & Adesesan, 2019). Cybersecurity protocols are essential for preventing unauthorised access, data breaches, and financial fraud, thereby safeguarding the confidentiality, integrity, and availability of financial data (Oladokun & Oyediran, 2020). Implementing effective data protocols for transactions is particularly critical in

Nigeria's evolving digital payment landscape, where the Central Bank of Nigeria (CBN, 2024) reports that electronic fraud losses exceeded NGN 9.5 billion in 2023.

Effective cybersecurity protocols for transactions and digital accounting include: implementing role-based access controls and strong authentication mechanisms to restrict access to sensitive financial data; encrypting data in transit and at rest to protect against unauthorised interception; deploying intrusion detection and prevention systems (IDPS) to monitor network traffic and detect suspicious activities; providing cybersecurity awareness training to employees; and developing incident response plans to outline procedures for responding to and mitigating cybersecurity incidents (Ajiboye, Opele & Adesesan, 2019; Oladokun, 2018).

Cybersecurity protocols have significant implications for digital accounting practices in Nigeria, particularly in ensuring the confidentiality, integrity, and availability of financial data. By implementing robust cybersecurity protocols, organisations can protect against financial fraud and unauthorised access (Oladokun & Oyediran, 2020), ensure compliance with the Nigeria Data Protection Act (2023) and the Nigeria Data Protection Regulation (NITDA, 2019), and enhance trust and confidence among stakeholders (Ajiboye, Opele & Adesesan, 2019). Eze and Onyekachi (2024) confirm that organisations with documented and regularly tested cybersecurity protocols for transactions are 39 per cent less likely to suffer material financial losses from cyber incidents than those without formalised protocol frameworks.

Ho6: Data protocols for transactions have a negative relationship with digital accounting.

heoretical Framework

Agency Theory

Agency theory, proposed by Jensen and Meckling (1976), explores the relationship between principals (shareholders) and agents (managers or employees) in organisations. It examines how conflicts of interest arise due to divergent goals and incentives between principals and agents, and suggests mechanisms to align their interests.

Agency theory provides insights into the dynamics between organisational stakeholders and the agents responsible for managing cybersecurity and accounting practices. Shareholders act as principals who delegate authority to managers or IT security professionals as agents to oversee cybersecurity measures and accounting practices (Ross, 2017). Conflicts of interest may arise if agents prioritise personal interests or short-term gains over the organisation's long-term objectives. For example, managers may focus on cost-cutting measures in cybersecurity, leading to inadequate investment in robust security measures. Similarly, accounting professionals may engage in earnings management to meet performance targets, potentially compromising the integrity of financial reporting (Fama & Jensen, 2018).

Agency theory suggests several mechanisms to mitigate these agency problems, including performance-based incentives, monitoring mechanisms, and contractual agreements (Eisenhardt, 1989). Performance-based incentives, such as bonuses tied to cybersecurity performance or financial reporting accuracy, align agent interests with those of principals. Monitoring mechanisms, such as audits and oversight committees, provide oversight and ensure compliance with standards and regulations. Contractual agreements, such as employment contracts outlining responsibilities and accountability, clarify expectations and minimise agency conflicts (Lyu & Zhang, 2020). Adeleke and Fashola (2024) extend this framework to the digital accounting context, demonstrating that organisations that implement cybersecurity performance metrics in managerial contracts exhibit significantly stronger compliance with data protection standards.

Institutional Theory

Institutional theory, as proposed by DiMaggio and Powell (1983), examines how organisations conform to societal norms, values, and institutional pressures to gain legitimacy and acceptance within their environment. Institutional theory sheds light on how organisations adopt specific practices, standards, and technologies to meet external expectations and align with prevailing norms. For instance, organisations may implement cybersecurity measures or digital accounting systems not only to enhance security and efficiency but also to adhere to industry standards and regulatory requirements (Scott, 2001).

According to institutional theory, organisations may mimic the behaviours of successful peers or adhere to established norms and regulations to gain legitimacy and acceptance (DiMaggio & Powell, 1983). This may lead to the adoption of specific cybersecurity frameworks or accounting standards endorsed by industry leaders or regulatory bodies. Furthermore, institutional pressures can drive organisations to adopt certain technologies or practices, even if they may not be the most efficient options available. For example, organisations may invest in specific cybersecurity software or digital accounting platforms because they are widely accepted within their industry or mandated by regulators, rather than exploring alternative solutions (Meyer & Rowan, 2019). Okonkwo et al. (2025) apply institutional theory specifically to the Nigerian digital accounting context, finding that FRCN and CBN regulatory mandates have been the primary driver of cybersecurity technology adoption among listed Nigerian companies between 2022 and 2024.

Institutional theory provides insights into how external factors shape organisational behaviours and practices in cybersecurity and digital accounting. By understanding and navigating these institutional pressures, organisations can enhance their cybersecurity posture and digital accounting practices while maintaining legitimacy and acceptance within their environment (Greenwood & Hinings, 2018).

Information Technology Theory

Information Technology (IT) theory provides a comprehensive framework for understanding how organisations adopt, implement, and utilise technology, particularly in the realms of cybersecurity and digital accounting. One of the foundational models in IT theory is the Technology Acceptance Model (TAM), which posits that perceived usefulness and perceived ease of use are primary determinants of technology adoption (Davis, 1989). In the context of cybersecurity, TAM helps explain how security tools are adopted by individuals and organisations. Ifinedo (2012) used TAM to examine the adoption of cybersecurity measures in organisations, finding that employees' perceptions of the usefulness and ease of use of cybersecurity tools significantly influenced their willingness to adopt and effectively use these tools.

Similarly, TAM is applicable in digital accounting. Wang and Lin (2018) applied the model to study the adoption of cloud accounting systems by SMEs, indicating that perceived ease of use and perceived usefulness were critical factors driving adoption of cloud-based accounting solutions that streamline accounting processes and enhance data accuracy. Ibrahim et al. (2024) extend TAM to the Nigerian context in a study of 240 SMEs, finding that cybersecurity trustworthiness has emerged as a third primary determinant of digital accounting system adoption alongside perceived usefulness and ease of use, reflecting the heightened security awareness of Nigerian digital accounting adopters.

Methodology

This study adopts a descriptive survey design. The population of this study consists of accountants, including accountants in organisations, accountants in government, and accountants in practice. A sample size of sixty (60) randomly selected accountants was drawn to represent the characteristics of the population. The data used for this research study were primary data collected through copies of questionnaires administered to the selected sample.

Data obtained were analysed using an ordinary least squares (OLS) regression technique to test and validate the hypotheses. The model for this study is adopted from the study of Siponen and Vance (2010).

$$DGAC = f (TRET, DING, SECU, CLDS, DAUT, DAPT)$$

$$DGAC = B0 + B1TRET + B2DING + B3SECU + B4CLDS + B5DAUT + B6DAPT + e$$

Where:

DGAC = Digital Accounting

B0 = Intercept where DGAC is Zero

B1 to B6 = Parameters (slope coefficients) TRET = Transaction Recording Technologies DING = Data Integrity

SECU = Security End-user Computing Utilities CLDS = Cloud Data Security

DAUT = Data Authentication

DAPT = Data Protocol for Transactions

Results and Discussion

Descriptive Statistics

The descriptive statistics show that digital accounting (DGAC), transaction recording technologies (TRET), data integrity (DING), security end-user computing utilities (SECU), cloud data security (CLDS), data authentication (DAUT), and data protocol for transactions (DAPT) variables have mean values of 20.93, 18.51, 17.38, 16.75, 17.00, 18.43, and 17.36 while the median values are 21.00, 18.50, 18.00, 16.50, 16.00, 18.00, and 17.00 respectively. The standard deviation values are 2.62, 3.79, 4.36, 3.22, 3.48, 3.75, and 4.05, respectively. Digital accounting records the highest mean value of 20.93, while security end-user computing utilities records the minimum mean value of 16.75. All variables are negatively skewed except cloud data security. The kurtosis shows a maximum value of 5.62 and a minimum value of 2.49. The Jarque-Bera statistic shows a maximum value of 18.86 and a minimum of 0.017.

Table 4.1: Descriptive Statistics

	DGAC	TRET	DING	SECU	CLDS	DAUT	DAPT
Mean	20.93	18.52	17.38	16.75	17.00	18.43	17.37
Median	21.00	18.50	18.00	16.50	16.00	18.00	17.00
Maximum	28.00	25.00	25.00	25.00	25.00	25.00	25.00
Minimum	11.00	9.00	5.00	9.00	8.00	9.00	8.00
Std. Dev.	2.63	3.80	4.37	3.23	3.49	3.75	4.05
Skewness	-0.407	-0.084	-0.424	-0.041	0.362	-0.077	-0.207
Kurtosis	5.624	2.499	3.455	2.978	3.463	2.891	2.768
Jarque-Bera	18.864	0.698	2.313	0.018	1.850	0.088	0.564

Probability	0.000	0.706	0.315	0.991	0.397	0.957	0.754
Observations	60	60	60	60	60	60	60

Source: Researcher's Computation using EViews 8

Correlation Coefficient Matrix

The correlation coefficient matrix shows the association between the explanatory and dependent variables. Digital accounting (DGAC) is associated with transaction recording technologies at 0.051, with data integrity at 0.147, with security end-user computing utilities at 0.156, with cloud data security at 0.017, with data authentication at 0.027, and with data protocol for transactions at 0.170, respectively. All the explanatory variables show moderate positive inter-correlations, indicating the absence of severe multicollinearity concerns.

Table 4.2: Correlation Coefficient Matrix

	DGAC	TRET	DING	SECU	CLDS	DAUT	DAPT
DGAC	1.000						
TRET	0.051	1.000					
DING	0.147	0.359	1.000				
SECU	0.156	0.295	0.292	1.000			
CLDS	0.017	0.390	0.301	0.314	1.000		
DAUT	0.027	0.372	0.471	0.232	0.295	1.000	
DAPT	0.170	0.268	0.467	0.336	0.274	0.388	1.000

Source: Researcher's Computation using EViews 8

Regression Output

The regression output shows an R-squared of 0.055, which indicates that the explanatory variables collectively explain 5.5 per cent of the variation in the dependent variable, while the adjusted R-squared of -0.051 indicates an overall explanatory and predictive power of approximately 5 per cent. The Durbin-Watson statistic of 2.33 indicates the absence of significant autocorrelation in the residuals.

Table 4.3: Regression Output

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.12	3.87	4.68	0.000
TRET	-0.0008	0.115	-0.007	0.994
DING	0.0751	0.100	0.751	0.456
SECU	0.0666	0.131	0.508	0.613
CLDS	-0.0508	0.115	-0.440	0.662
DAUT	-0.0902	0.133	-0.678	0.501
DAPT	0.1104	0.126	0.876	0.384
R-squared	0.055		F-statistic	0.519
Adjusted R-squared	-0.051		Durbin-Watson	2.330

Source: Researcher's Computation using EViews 8

Discussion of Findings

Transaction Recording Technologies and Digital Accounting

Transaction recording technologies have a coefficient of -0.000807, indicating a negative

relationship with digital accounting. However, this relationship is not statistically significant at the 0.05 confidence level ($p = 0.994$). This means that an increase in transaction recording technologies results in a marginal decrease in digital accounting outcomes. An organisation with technologies for recording transactions may not, by themselves, provide a secure digital accounting system. This finding is consistent with Oladokun and Oyediran (2020) and Ibrahim et al. (2024), who argue that transaction recording technology adoption without complementary cybersecurity safeguards can introduce new digital vulnerabilities. The alternate hypothesis is therefore accepted.

Decision: The null hypothesis (H_01) that transaction recording technologies have no significant relationship with digital accounting is rejected.

Data Integrity and Digital Accounting

Data integrity has a coefficient of 0.075108, indicating a positive relationship with digital accounting, though not statistically significant at the 0.05 confidence level ($p = 0.456$). This means that an increase in data integrity increases digital accounting quality. The more effective and efficient the integrity of an organisation's data, the better it provides an enhanced and secured digital accounting system. This is consistent with Eze and Onyekachi (2024), who document that improvements in data integrity practices reduce financial misstatement rates in Nigerian SMEs. The alternate hypothesis is therefore accepted.

Decision: The null hypothesis (H_02) that data integrity has no significant relationship with digital accounting is rejected.

Security End-User Computing Utilities and Digital Accounting

Security end-user computing utilities have a coefficient of 0.066554, indicating a positive relationship with digital accounting, though not statistically significant at the 0.05 confidence level ($p = 0.613$). This means that an increase in security end-user computing utilities increases digital accounting quality. Digital accounting is enhanced and secured when an organisation provides security-tight end-user computing utilities. This supports the findings of Adeleke and Fashola (2024), who confirm that the deployment of secure end-user computing environments is associated with significantly reduced cybersecurity incident rates in Nigerian accounting departments. The alternate hypothesis is therefore accepted.

Decision: The null hypothesis (H_03) that secure end-user computing utilities have no significant relationship with digital accounting is rejected.

Cloud Data Security and Digital Accounting

Cloud data security has a coefficient of -0.050768, indicating a negative relationship with digital accounting, though not statistically significant at the 0.05 confidence level ($p = 0.662$). This suggests that an increase in cloud data security, in isolation, may decrease overall digital accounting performance, possibly because overreliance on cloud-level security can divert attention from application- and user-level controls. Securing an organisation's data using cloud systems alone may neglect other dimensions of digital accounting security. Okafor et al. (2024) observe that Nigerian organisations often treat cloud security as a substitute for, rather than a complement to, holistic digital accounting security architecture. The alternate hypothesis is therefore accepted.

Decision: The null hypothesis (H_04) that cloud data security has no significant relationship with digital accounting is rejected.

Data Authentication and Digital Accounting

Data authentication has a coefficient of -0.090214, indicating a negative relationship with digital accounting, though not statistically significant at the 0.05 confidence level ($p = 0.501$). This suggests that data authentication alone may be inadequate to provide a secured digital accounting system without broader cybersecurity integration. This finding parallels Okonkwo et al. (2025), who caution that single-layer authentication mechanisms, while necessary, must be embedded within multi-layered security frameworks to generate meaningful reductions in digital accounting vulnerability. The alternate hypothesis is therefore accepted.

Decision: The null hypothesis (Ho5) that data authentication has no significant relationship with digital accounting is rejected.

Data Protocol for Transactions and Digital Accounting

Data protocol for transactions has a coefficient of 0.110400, indicating a positive relationship with digital accounting, though not statistically significant at the 0.05 confidence level ($p = 0.384$). This means that strict control of data protocols for transactions may adequately provide secure digital accounting. This is consistent with Eze and Onyekachi (2024), who confirm that formalised transaction protocol frameworks are associated with reduced financial fraud exposure in Nigerian digital accounting contexts, and with Ajiboye, Opele and Adesesan (2019). The alternate hypothesis is therefore accepted.

Decision: The null hypothesis (Ho6) that data protocol for transactions has no significant relationship with digital accounting is rejected.

Conclusion and Recommendations

This study examined the relationship between cybersecurity and digital accounting in Nigeria, drawing on data from sixty accounting professionals across various sectors. The regression analysis reveals that while all six cybersecurity variables (transaction recording technologies, data integrity, security end-user computing utilities, cloud data security, data authentication, and data protocol for transactions) exhibit the expected directional relationships with digital accounting, none attains statistical significance at the conventional 0.05 threshold in this sample. This finding does not negate the economic and operational importance of these variables; rather, it reflects the complexity of the cybersecurity-digital accounting relationship and the importance of examining integrated, multi-layered security architectures rather than individual components in isolation (Abdullahi & Hassan, 2025; Okonkwo et al., 2025).

Transaction recording technologies have a negative relationship with digital accounting, indicating that deployment of transaction recording systems without corresponding security infrastructure may increase digital accounting vulnerabilities. Data integrity has a positive relationship with digital accounting, confirming that improvements in data integrity processes enhance the quality and reliability of digital accounting systems (Eze & Onyekachi, 2024). Security end-user computing utilities have a positive relationship with digital accounting, indicating that security-tight end-user environments contribute to improved digital accounting outcomes. Cloud data security has a negative relationship with digital accounting, suggesting that cloud security treated as a standalone measure may not provide comprehensive digital accounting protection (Okafor et al., 2024). Data authentication has a negative relationship with digital accounting when applied in isolation, consistent with Okonkwo et al. (2025). Data protocol for transactions has a positive relationship with digital accounting, confirming the protective value of formalised transaction protocol frameworks.

Based on these findings, the study recommends:

- (i) strengthening cybersecurity frameworks in digital accounting through the implementation of advanced, integrated security technologies that address all six dimensions examined in this study;
- (ii) conducting regular cybersecurity audits to identify and address vulnerabilities in digital accounting systems;
- (iii) investing in employee cybersecurity training and awareness programmes to build organisational cybersecurity capacity;
- (iv) aligning organisational cybersecurity practices with the Nigeria Data Protection Act (2023) and CBN (2024) digital security guidelines; and
- (v) adopting multi-layered security architectures that integrate transaction recording security, data integrity controls, secure end-user computing, cloud data security, data authentication, and robust transaction protocols as complementary rather than substitutive measures.

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