OPEN ACCESS

Saudi Journal of Economics and Finance
Abbreviated Key Title: Saudi J Econ Fin
ISSN 2523-9414 (Print) |ISSN 2523-6563 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: http://saudijournals.com

Original Research Article

Information Technology Dynamics and Financial Reporting Quality of Listed Family-Owned Companies in Nigeria

Olubunmi Modupe odugbemi[1]*

[1]Department of Accounting, Faculty of Administration and Management Sciences, Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria

DOI: https://doi.org/10.36348/sjef.2026.v10i03.005 | **Received:** 11.01.2026 | **Accepted:** 06.03.2026 | **Published:** 30.03.2026

***Corresponding author:** Olubunmi Modupe odugbemi
Department of Accounting, Faculty of Administration and Management Sciences, Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria

Abstract

Despite the significant contribution of family-owned business to global economy, these firms often struggle with the quality of financial reporting due to unique governance structures, poor management, and a lack of access to modern technology, which poses challenges to transparency and investor confidence. In view of this, the study investigates the effect of information technology dynamics on financial reporting quality of listed family-owned companies in Nigeria. Longitudinal research design was used on data collected from secondary sources of 37 family-owned companies from 2015 to 2024. The robust pooled ordinary least squares regression was conducted tests to verify interaction between financial reporting quality (FRQ) as dependent variable and the proxy of information technology dynamics; cloud computing cost, extensible business reporting language cost, and artificial intelligence cost. Results revealed that cloud computing cost has a significant affirmative effect while artificial intelligence cost has an insignificant positive effect on FRQ of listed family-owned companies in Nigeria. Contrarily, extensible business reporting language cost has an insignificant adverse effect on FRQ of listed family-owned firms in Nigeria. The study concludes that information technology investments significantly improve financial reporting quality of listed family-owned companies in Nigeria. It is therefore recommended that managers should consider prioritizing investments in cloud-based accounting systems as they enhance real-time data capture, facilitate accurate reporting and reduce possibility of human errors thereby boosting transparency and accountability. Furthermore, Regulators and policy makers should create enabling environments that reduce implementation costs and foster technological capacity development.

Keywords: Information technology dynamics, financial reporting quality, artificial intelligence cost, cloud computing cost, extensible business reporting language cost, family-owned companies.
JEL Classification Codes: G38, M48, O33, L26.

Copyright © 2026 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution **4.0 International License (CC BY-NC 4.0)** which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

The comprehensive procedures of systematic recording, analysing, summarising, and communicating of business financial transactions to numerous users to enhance knowledgeable judgments and decisions is known as financial reporting. These reports are periodically disclosed (weekly, monthly, quarterly, semi-annually, or yearly) in accordance with the company's policy, law and standards. Firms need the periodic financial report to evaluate the performance of its operation and efficiency of its strategies. Section 331, Companies and Allied Matters Act (CAMA) 2004 mandates firms in Nigeria to have financial records that will communicate and interpret its monetary transactions with accuracy the timely financial position, performance and other relevant matters. Also, Financial Reporting Council of Nigeria mandate all firms in Nigeria to adopt the International Financial reporting Standard (IFRS) in the year 2013. The fundamental qualitative attributes of financial information are relevance and faithful representation, while comparability, verifiability, understandability, and timeliness enhance these attributes in accordance with IFRS conceptual framework. These attributes make information in the financial report beneficial to users for decision making. Globally, the need to restore confidence to investors and other stakeholders of the firms, makes financial reporting a subject of paramount importance in the society.

Information technology (IT) encompasses the use of computers, its accessories, various technological advancements and tools. These are used to transform

from manual form into computerised system which enhance accuracy, efficiency, quality and service delivery. Extant empirical evidence affirmed that information technology performs a crucial role in enhancing financial reporting by reducing errors, strengthening data security, and enabling real-time access to financial information (Abdulwahab *et al.,* 2023; Ademola *et al.,* 2024; Adeyemi & Fagbemi, 2019; Egbuka, 2020; Enoma, 2024; Olowolaju & Olayinka, 2020; Ibrahim & Dauda, 2023; Ineke *et al.,* 2024; Rotenstein *et al.,* 2021). Information technology includes various components that enhance business operations, such as cloud computing, artificial intelligence, extensible business reporting language, disruptive technology, machine learning language, etc. Cloud computing allows business to store and access data remotely, reducing infrastructure costs, risk of loss of data and improving data accessibility (Oladeinde *et al.,* 2023). AI and machine learning help automate processes, detect anomalies in financial data, and improve decision-making, reducing human mistakes, preventing fraud and improving reporting accuracy (Chinyere & Yamma, 2021). XBRL facilitates better financial reporting by allowing companies to submit financial statements in a structured format that improves readability and comparability across industries, to enable scrutiny by stakeholders (Fakunle & Ajani, 2021).

However, many businesses struggle to adopt these technologies due to high implementation costs and deficiency of IT expertise. Despite these challenges, companies that successfully integrate information technology in financial reporting benefit from faster data processing, better risk management, and improved compliance with financial regulations (Oguejiofor *et al.,* 2023). This is particularly important for Nigerian family-owned businesses, which often lack formal governance structures and rely on traditional accounting methods. With regulatory bodies emphasizing greater transparency, IT adoption has become essential for companies seeking to comply with reporting standards and reduce financial misstatements. Organizations that successfully integrate IT into their financial reporting systems are better positioned to provide accurate, timely, and reliable financial statements, ultimately strengthening investor confidence and corporate accountability (Ifeanyi & Ukah, 2021).

Despite the growing adoption of information technology across industries, its impact on financial reporting quality of family-owned companies in Nigeria remains underexplored. Existing studies, such as those by Oladeinde et al. (2023), Fakunle and Ajani (2021), and Sadiq et al. (2022), have primarily focused on large corporations, overlooking the distinct challenges faced by family businesses. These challenges include limited financial resources, inadequate expertise in information technology, and resistance to modern digital tools. Unlike larger firms with extensive IT budgets and expertise, family-owned businesses often struggle to integrate emerging technologies effectively into their financial reporting processes. In order to bridge this lacuna, the study examine how different technology costs, including cloud computing, artificial intelligence, and extensible business reporting language affect the financial reporting quality of listed family-owned companies in Nigeria.

This study provides contribution to knowledge from contextual perspective, by illustrating how different technological tools can have varying degrees of association with reporting quality on the unique setting of listed family-owned firms, a sector that is often overlooked in mainstream accounting literature by focusing specifically on the Nigerian context. From the theoretical perspective, the findings provide empirical support for resource-based view and the technology acceptance model. The significant positive effect of cloud computing cost (CC) on financial reporting quality and validates the RBV assertion that strategic resources such as advanced IT systems can generate organizational advantages when effectively utilized. Policymakers and regulators can draw from the study's evidence to design frameworks that reduce the cost burden of adopting advanced technologies while also ensuring proper training and compliance standards, thereby enhancing the reliability of financial reporting in familyowned businesses. The other sections of this study include the review of extant, related literature, data and methods used for the study, analysis and discussion of findings and conclusion.

2. CONCEPTUAL REVIEW

This section provides the explanation of concepts of dependent and independent variables, theoretical and empirical review, and the development of hypotheses.

2.1.1 Financial Reporting Quality

This is the procedure of producing excellent reports by the management of firms through the provision of economic and non-economic information in order to meet the requirements of various stakeholders (Odugbemi & Alade, 2025). Abdullah et al. (2024) define financial reporting quality as the degree to which annual reports represent the firm's financial performance and position. High-quality reports are complete, reliable, and prepared according to accounting standards, enabling users to make sound economic decisions. The quality of financial reporting depends on several internal and external factors (Hasbullah *et al.,* 2023). Internally, the competence of accounting personnel, strength of internal controls, availability of information technology techniques and management integrity play crucial roles. Externally, regulatory frameworks and enforcement mechanisms influence reporting quality. In Nigeria, adoption of International Financial Reporting Standards since 2012 was meant to improve reporting quality, but implementation challenges persist (Abubakar *et al.,* 2023).

Financial reporting quality can be measured using various methods, with discretionary accruals being a widely accepted proxy in academic research (Greenwood & Tao, 2020). Discretionary accruals represent the portion of revenue which can be influence by management via accounting choices, reflecting potential earnings manipulation or aggressive reporting (Yolanda & Kholmi, 2024). Higher discretionary accruals often indicate lower financial reporting quality, as they may deviate from economic reality of a company's performance. In the Nigerian family businesses, discretionary accruals are particularly relevant due to weak governance structures and limited oversight, which may create opportunities for earnings management (Ogullah & Waribugo, 2022). According to Abubakar et al. (2023), high discretionary accruals has been linked to reduced transparency and increased risk of misreporting. The Modified Jones Model is commonly employed to isolate discretionary accruals from total accruals, controlling for non-discretionary factors like changes in revenue and property, plant, and equipment. However, critics note that discretionary accruals may also reflect legitimate managerial judgment in uncertain environments.

Technological advancements however, may proffer opportunities to enhance financial reporting quality of family businesses in Nigeria, (Jimoh *et al.,* 2023). Automated accounting systems reduce human errors in calculations and data processing, while providing real-time financial information. Cloud-based solutions enable better record-keeping and facilitate audit trails, enhancing reliability. The use of technology helps to improve transparency in financial reporting through immutable record-keeping (Ogunwale *et al.,* 2024). However, many Nigerian family businesses lag in technology adoption due to high costs and lack of technical expertise (Ayo-Lawal, 2024). According to Adebayo et al. (2024), the digital divide between large corporations and small family businesses continues to widen, with only about 31% of Nigerian SMEs using accounting software. This technological gap represents a significant barrier to improving reporting quality across Nigeria's business landscape.

2.1.2 Information Technology (IT) Dynamics

Information Technology Dynamics refers to the continuous evolution and advancement of digital tools and systems that influence how businesses operate and communicate (Yildiz *et al.,* 2021). Globally technology evolve rapidly, forcing companies to adapt or risk falling behind. These dynamics create both opportunities and challenges for organizations, especially in how they manage and report their financial information. In Nigeria, family-owned businesses understanding these technological changes is crucial because it affects their competitiveness and ability to meet financial reporting standards. The speed at which new technologies emerge means companies must constantly learn and upgrade their systems (Bello & Musa, 2023). For financial reporting, this means shifting from paper-based methods to digital systems that provide real-time data and analysis. Many Nigerian family businesses are still moving from manual processes to digital tools, struggling with issues like resistance to change and a lack of technical skills (Olayinka & Agboola, 2023).

Also, IT dynamics involves making different technologies work together smoothly. Cloud-based accounting and artificial intelligence software may need to connect with mobile apps for remote access, which requires regular updates and adjustments. Technology changes so quickly that today's solutions may become outdated tomorrow, forcing businesses to constantly review their IT strategies (Nweke & Okoro, 2022). This is especially important for financial reporting because outdated systems can lead to mistakes, delays, and failure to meet regulatory requirements. Adequacy of IT management ensures accurate, timely reports instead of errors and delays. Nigerian family businesses, often with limited resources and centralized decisions, must plan carefully for IT dynamics. This is evident during the COVID-19 pandemic firms with flexible IT systems operated remotely while others faced disruptions (Johnson & Oluwole, 2021). Additionally, financial regulations now require digital reporting formats like XBRL, pushing businesses to adopt technology (Financial Reporting Council of Nigeria, 2024). Nigerian regulators increasingly demand tech-driven reporting, making IT dynamics essential for compliance. For Nigerian family businesses, mastering this can improve reporting quality and overall performance in a digital economy (Abubakar & Sani, 2022). The key takeaway is that technology do not represent one-time investment but continuing process of adaptation.

2.1.2.1 Cloud Computing

Cloud computing involves storing and accessing financial data online instead of on physical servers or manually (Patel *et al.,* 2023). This technology allows companies to store, process, and access their financial information through internet-based services rather than maintaining expensive on-premise servers. The cost structure of cloud computing typically involves subscription fees or pay-as-you-go models offered by IT service providers (Ramesh *et al.,* 2021). Nigerian businesses, this transition means they can access enterprise-level computing resources without the substantial capital investment required for traditional IT infrastructure (Oyoyo & Baguma, 2019). This is evident in a medium-sized family business in Lagos switching from manual record-keeping to using cloud-based accounting software such as QuickBooks Online or Sage Accounting. These platforms offer real-time financial data access from any location with internet connectivity, significantly improving operational flexibility (Efuntade & Olubunmi, 2023). The importance of cloud computing extends beyond mere convenience; it fundamentally transforms financial reporting by enabling instantaneous updates, multi-user collaboration, greater accuracy in

their financial reporting through automated processes that minimize human errors associated with manual data entry automated backups (Ayinla *et al.,* 2024; Ashraf, 2024). Cloud computing is poised to play an increasingly central role in Nigeria's financial reporting ecosystem. Financial Reporting Council of Nigeria as regulators are actively encouraging digital transformation, recognizing that cloud-based systems can enhance transparency and compliance monitoring (Abrahams *et al.,* 2024).

Furthermore, cloud services often include automatic updates that ensure businesses always have access to the latest features and security patches without additional IT expenses (Ullah, 2019). Cloud computing is applicable when multiple branches of a family business input data into a shared cloud system, the software can automatically reconcile accounts and flag discrepancies in real-time. This capability is vital for Nigerian firms that need to abide by increasingly stringent reporting standards while operating with limited accounting staff. The collaborative nature of cloud computing also breaks down geographical barriers, allowing accountants in different locations to work simultaneously on the same financial records. The strategic adoption of cloud computing by family businesses in Nigeria, could allow the firms to compete more effectively with larger corporations through improved financial management capabilities. The technology's scalability means businesses can start small with basic accounting functions and gradually expand their usage as needs grow and confidence builds (Otokiti *et al.,* 2023). This development could make cloud-based financial management accessible to even small, informal businesses (Akadi & Olaoye, 2024). Cloud computing also enables easier integration with other emerging technologies like artificial intelligence and block chain for secure transaction recording, driving efficiency and security.

2.1.2.2 Artificial Intelligence (AI)

Artificial Intelligence is define as computer systems which carry out tasks requiring brainpower of human, such as predictive analytics, analyzing financial data and process automation. (Morandín-Ahuerma, 2022). AI adoption involves significant costs related to acquiring specialized software, hardware, technical expertise to analyze years of financial data to forecast future performance, helping business owners make more informed decisions (Cohen, 2022; Nnadozie, 2024). These brainy systems can develop large amounts of financial information rapidly, recognising anomalies which might escape human notice. AI powered tools can automatically detect discrepancies in financial statements, flag potential fraud cases, and even predict cash flow trends based on historical data. The implementation of such systems requires substantial initial investment, including costs for software licenses, system integration, and employee training programs (Beatrice *et al.,* 2024). Many Nigerian businesses face challenges in adopting AI due to limited technical infrastructure and skilled personnel. However, the long-term benefits often outweigh these initial hurdles, as AI can dramatically reduce manual errors by improving financial reporting quality. According to Antwi et al. (2024), companies using AI for financial analysis report up to 40% improvement in reporting accuracy.

The cost-benefit analysis of AI implementation in Nigerian family businesses reveals both immediate expenses and long-term savings. Initial costs include not just software acquisition but also hardware upgrades, system customization, and ongoing maintenance fees (Ebuka *et al.,* 2023). Many businesses underestimate the hidden costs of data preparation, as AI systems require clean, well-organized data to function effectively. There are also expenses of cybersecurity measures to protect sensitive financial information processed by AI tools. However, these investments typically yield substantial returns through improved operational efficiency and reduced error-related costs (Kaushik, 2023). AI-driven automation can complete in minutes what might take human accountants' hours or days, significantly cutting labor costs over time. The technology's predictive capabilities also help businesses avoid costly financial missteps by identifying risks early (Peng *et al.,* 2023). In the Nigerian, where access to financing often depends on the quality of financial reporting, AI-enhanced statements can improve a company's creditworthiness and investor appeal (Antwi *et al.,* 2024). The technology also facilitates compliance with increasingly complex reporting requirements, potentially avoiding regulatory penalties. Another significant benefit is the standardization of financial processes across business units, which is particularly valuable for family businesses expanding across different regions (Lannon *et al.,* 2023). AI systems can automatically adjust for varying accounting standards or regulatory requirements, ensuring consistency in financial reporting

The role of AI in financial reporting for Nigerian family businesses is poised for significant growth as technology becomes more affordable and user-friendly. Current trends suggest that AI capabilities will expand beyond basic number-crunching to include natural language processing for report generation and sophisticated anomaly detection for audit purposes. For Nigerian businesses, this evolution means that early adopters may gain a competitive edge in financial transparency and operational efficiency (Obiki-Osafiele *et al.,* 2024). The integration of AI with other emerging technologies like blockchain could further enhance the reliability and security of financial data (Hasan, 2024). However, successful implementation requires careful planning and consideration of the unique challenges faced by Nigerian enterprises. As AI becomes more prevalent in financial reporting globally, Nigerian businesses that embrace these technologies may be better positioned to attract foreign investment and participate in international markets. With proper implementation, AI helps to transform financial reporting from a compliance

obligation into a strategic asset that drives business growth and sustainability in Nigeria's evolving digital economy.

2.1.2.3 Extensible Business Reporting Language (XBRL)

XBRL is the standardized digital format designed specifically for business and financial reporting (Abhishek *et al.,* 2022). It uses tags to identify and categorize financial data, making it easier to store, share, and analyze information across different platforms. Unlike traditional reporting methods like PDFs or spreadsheets, XBRL provides a structured way to present financial statements, ensuring consistency and accuracy. This technology was developed to address the challenges of manual data entry and interpretation, which often lead to errors and inefficiencies (Borgi, 2022). In Nigeria, regulators have adopted XBRL to streamline financial reporting processes (FCRN, 2023). By using XBRL, companies can submit reports that are immediately readable by both humans and machines, reducing the time and effort required for data processing. The adoption of XBRL is part of a global shift towards digital financial reporting, with many countries recognizing its potential to enhance transparency and comparability. For Nigerian businesses, particularly family-owned enterprises, understanding and implementing XBRL is becoming increasingly important to meet regulatory requirements and stay competitive (Alkayed *et al.,* 2023). However, despite its advantages, the transition to XBRL is not without challenges, including the need for specialized software and training.

The implementation of XBRL involves several costs that businesses must consider. These include the expense of purchasing or subscribing to XBRL-compatible software, which is necessary for creating and validating XBRL-tagged reports (Klimczak, 2018). Additionally, companies may need to invest in training programs to ensure that their staff can effectively use the software and understand the XBRL tagging process (Klimczak, 2018). For many Nigerian family businesses, these upfront costs can be significant, particularly for smaller firms with limited budgets. There are also ongoing costs related to maintaining the software, updating it to comply with changing regulatory standards, and potentially hiring consultants to assist with complex reporting requirements. Another cost factor is the time and resources required to convert existing financial data into XBRL format, which can be particularly challenging for businesses that have historically relied on manual or paper-based systems (Ameeta & Fang, 2023). Despite these expenses, the long-term benefits of XBRL, such as reduced errors and improved efficiency, often justify the investment. Moreover, regulatory bodies in Nigeria are increasingly mandating the use of XBRL, making it a necessary expenditure for compliance (Tawiah & Borgi, 2022). Companies that fail to adopt XBRL may face penalties or lose credibility with investors and stakeholders. XBRL offers numerous benefits that significantly improve the excellence of reporting. One of the primary advantages is standardization of financial data, which eliminates inconsistencies and reduces the likelihood of errors. This standardization also enhances the comparability of financial statements, allowing investors, regulators, and other stakeholders to easily scrutinise and benchmark performance across firms (Tanjung, 2021). For Nigerian businesses, this can lead to increased transparency and trust, which are crucial for attracting investment and maintaining good relationships with regulators (Alkayed *et al.,* 2023).

2.2 Review of Theories and hypotheses Development

2.2.1 Cloud Computing cost and Financial Reporting Quality

Technology Acceptance Model (TAM) was propounded by Davis in 1989. The model provides a framework for understanding how users come to accept and use IT to improve financial reporting quality in business settings. There two major features of TAM; perceived usefulness and perceived ease of use, to determine how firms globally use cloud computing technology to enhance the reporting quality for their business. The rate at which persons use a particular system to improve job performance is refers to as perceived usefulness while perceived ease of use relates to the degree of effort required to use the system. Emphasizing the existences of relationship between financial reporting quality and cloud computing, TAM provides the perceptions of how accounting staff will transition from manual to cloud computing systems. Cloud-based technology tools may significantly enhance data accuracy, timeliness, improved proficiency, greater data integrity, and ultimately better reporting outcomes.

This link was further buttressed in the study of El-Mousawi and Jaber (2023) that investigated the effect of cloud accounting on improving financial reporting quality in Lebanon. Using a quantitative research design, the researchers distributed a five-point Likert questionnaire to 400 Certified Public Accountants (CPAs), with 366 valid responses. Multivariate analysis was adopted for hypotheses test. Findings revealed that cloud accounting significantly improves the credibility of financial reporting quality. So also, in the study of Akpan et al. (2023) investigate the impact of cloud accounting on financial reporting quality in sampled Nigerian firms. Cross sectional survey design was adopted on data obtained from 400 respondents, including professional accountants, auditors, and IT experts in Lagos State. Taro Yamane's formula was used for determination of sample and analyzed data using Ordinary Least Squares (OLS) regression. Findings revealed that cloud accounting significantly enhances data storage, data efficiency, and data mining. In a similar study of Daniel (2023) examined the impact of cloud computing on the performance of financial services firms in Nigeria. Analysis showed that cloud computing systems and accounting software have

affirmative and significant effect return on assets. The study concluded that cloud accounting enhances the financial performance of banks.

Contrarily, it asserted in the study of Abidde (2023) that assessed the impact of cloud computer accounting on financial performance of listed manufacturing companies in Nigeria. Ex-post facto research design was used on pre- and post-implementation effects of NetSuite on return on assets, return on equity, and return on capital employed. Findings revealed mixed results, with some firms experiencing significant improvements, while others saw negative implications. So also in the study of Akpan *et al.,* (2023) that investigated the impact of cloud computing on FRQ of sampled financial services firms in Nigeria. Survey research design was employed on data obtained from 120 staff members via five-point Likert-scale questionnaire. The study employed purposive sampling and analyzed data using robust least squares regression. Results indicated that Platform as a Service (PaaS) had an insignificant impact on improved FRQ. The research across countries affirm that actively encouraging digital transformation, through cloud-based systems can promote transparency, accuracy and excellence of financial reporting quality (Abrahams *et al.,* 2024). In view of this the first hypothesis is stated in null form as thus:

H_1: There is no significant effect of cloud computing cost on the financial reporting quality of listed family-owned companies in Nigeria.

2.2.2 Artificial Intelligence (AI) and Financial Reporting Quality (FRQ)

The Resource-Based View (RBV) was first formally introduced by Birger Wernerfelt in 1984. The theory was later expanded by scholars such as Jay Barney, who in 1991 refined and articulated it into a widely accepted framework for understanding firm-level competitive advantage. The RBV argues that firms possess resources, both tangible and intangible, that when valuable, non-substitutable, inimitable, and rare can deliver a continued competitive advantage. According to Barney (1991), resources that meet these criteria form the basis for strategic decisions and superior performance outcomes. The central proposition of the RBV is that internal firm resources are the primary determinants of long-term business success. Highlighting the existence of link between artificial intelligence and financial reporting, RBV is particularly relevant because it shifts the focus to internal strengths such as information technology capabilities that can be leveraged to enhance financial reporting quality. AI provides firms with technology that are essential for operational efficiency, strategically develop and manage their IT resources which outperform competitors and comply more effectively with FRQ standards.

This connection was buttressed in the study of Anantharaman *et al.,* (2023) that explored whether the adoption of Artificial Intelligence (AI) technologies enhances financial reporting quality among US public firms between 2014 and 2018. Using a proprietary dataset supplemented by public sources, the authors employed an instrumental variable approach based on local AI skill availability to support causal inference. Findings showed that AI adoption reduces discretionary accruals, strengthens the relationship between accruals and cash flows, and improves the predictive ability of accounting estimates regarding future cash flows and improve financial reporting quality. Oleimat et al. (2023) explored the importance of AI in enhancing the quality of financial reporting to stakeholders. A qualitative research design was employed, using secondary data sourced from books, articles, and other publications. The study adopted an interpretivism philosophy and inductive approach to gather and analyze data. A cross-sectional time horizon was used to ensure efficient and cost-effective research. Findings revealed that AI significantly improves financial reporting by freeing human resources, enhancing security, and improving organizational technological direction, and also supporting better stakeholder communication and customer retention.

Furthermore, in the study of Oyeniyi et. al. (2024) investigated the influence of Artificial Intelligence on financial reporting quality. Using a qualitative research methodology, the authors explored the integration of AI technologies into financial reporting systems, aiming to highlight the ways AI improves reporting practices. The findings revealed that AI significantly enhances the accuracy, analytical depth, and efficiency of financial reports. However, the finding diverges from Ulrich et al. (2023), who argued that the cost of AI adoption deters many firms, limiting its effect on financial reporting quality. The extant studies reviewed uphold that AI systems provide mechanisms that will analyze years of financial data to forecast future performance which improve the quality of financial reporting thereby helping business owners and others stakeholders make more informed decisions. In view of this the second hypothesis is stated in null form as thus:

H_2: There is no significant effect of artificial intelligence cost on the financial reporting quality of listed family-owned companies in Nigeria.

2.2.3 Extensible Business Reporting Language Cost (XBRL) and Financial Reporting Quality

The Diffusion of Innovation (DOI) Theory, propounded by Everett Rogers in 1962. The theory clarifies how innovations are adopted and spread across individuals, groups, or organisations. The theory outlines a process through which a new idea, product, or technology improves worldwide over time via a social system. The theory was categorised into five of adopters; innovators, early adopters, early majority, late majority, and laggards. These help to explain how quickly or slowly innovations are accepted, depending on the characteristics of the adopters and the context in which

diffusion takes place. In the context of information technology (IT) dynamics, DOI theory is particularly useful in elucidate in what way technologies of XBRL are embraced by companies. Since these businesses often have entrenched traditional systems and centralised decision-making structures, their pace of adoption may vary significantly compared to larger, more technologically advanced corporations.

The DOI theory is suitable in explaining the effect of XBRL on financial reporting quality in Nigerian family businesses as it provides a comprehensive framework to understand how quickly IT innovations are embraced by these unique entities, and the subsequent effect on the FRQ. This link was accentuated in the study of Tawiah and Borgi (2022) that examined the effect of extensible business reporting Language adoption on financial reporting quality at the country level across 98 developed and developing nations from 2005 to 2018. Data were collected from sources including the World Economic Forum and XBRL website. The findings revealed that XBRL adoption improves financial reporting quality, with a stronger effect observed in developing countries. Results remained consistent after accounting for variables like XBRL experience and globalisation of accounting practices. The study concluded that XBRL enhances information efficiency by improving search ability, display quality, and comparability of financial statements.

Moreover, in the study of Frista *et al.,* (2023) assessed the impact of XBRL adoption on earnings management among companies registered on the Indonesian Stock Exchange, focusing on finance and real estate sectors between 2011 and 2019. Using panel data covering 2,560 firm-years, their study investigated whether the adoption of XBRL reduced accrual and real earnings management practices. The findings revealed that both accrual-based and real earnings management decreased significantly after firms implemented XBRL. This suggests that the technology strengthened reporting transparency and constrained managers' ability to manipulate earnings opportunistically. Moreover, the presence of Big-4 auditors was found to further mitigate earnings management, indicating that audit quality plays key role in improving the effectiveness of XBRL. The authors noted, however, that despite these improvements, some firms continued to exhibit mild earnings management, pointing to the persistence of managerial discretion. They also emphasized that the intended regulatory goals of adopting XBRL in Indonesia to promote accountability and investor confidence have not yet been fully achieved. Nevertheless, the study concludes that the long-term benefits of XBRL adoption outweigh its costs, particularly in enhancing financial reporting credibility and reducing misreporting risks.

Alternatively, Ndaks (2022) in his study titled contemporary FRQ tools: Evidence from XBRL. Survey research design adopted as an exploratory research methodology to investigate the contemporary digital FRQ tools: taking evidence from XBRL. It was revealed that respondents' perceptions of the two concerns varied. Empirical research on the effects of extensible business reporting language adoption in Nigeria reveals that despite the technology's potential benefits in fostering transparency and facilitating information exchange. Nigerian businesses and regulators have not yet developed the operational and technical expertise required to deploy it. The review of existing literature affirms that XBRL enables automated data extraction and analysis, saving time, supports real-time reporting, enabling businesses to provide up-to-date financial information to stakeholders and reducing costs which is valuable for family businesses that may have limited resources to devote to financial reporting (Tanjung, 2021; Mansour *et al.,* 2023). Consequently, the third hypothesis is stated in null form as thus:

H_3: There is no significant effect of extensible business reporting language cost on financial reporting quality of listed family-owned companies in Nigeria.

3. DATA AND METHODS

Data employed for this study were gotten from official publications of the Nigerian Exchange Group website, and audited annual reports of the listed family-owned companies in Nigeria obtained from their website. Longitudinal research design was used to investigate the impact of information technology dynamics on FRQ of listed family-owned companies in Nigeria. This research design was employed to assess the effects of cloud computing, artificial intelligence, and extensible business reporting language costs on financial reporting quality. All the population of 37 family-owned companies listed on the Nigerian Exchange Group (NGX) as at 31 December 2024 were used as sample. These firms met the criteria of; family-owned business listed on the NGX; disclosed IT-related costs (cloud computing, AI, or XBRL) in their financial statements; and have at least ten (10) years of consistent financial data from 2015 to 2024. In order to examine the association between dependent and independent variables, the study employed the pooled ordinary least squares regression technique. This method is suitable for examining the linear relationship between proxies of independent variables information technology dynamics; artificial intelligence cost, cloud computing cost, and extensible business reporting language cost, the single proxy of dependent variable; FRQ which is discretionary Accruals estimated using the Modified Jones Model (1995), and the control variable of cash flow from operations ratio (CFOA). Before regression, descriptive statistics which summarize the data, and diagnostic tests of multicollinearity, heteroskedasticity, and normality were conducted to ensure the assumptions of the regression model are met. The choice of variables support the extant literature on the significance of information technology on the quality of financial reporting (Tawiah & Borgi, 2022).

The following is the model specification for this study:

$FRQit = \beta_0 + \beta_1 CCit + \beta_2 XBRLit + \beta_3 AIit + \beta 4 CFOAit + \varepsilon$ .....equation 1

Where: FRQ stand for Financial Reporting Quality for firm i in year t, proxied by Discretionary Accruals (DAC); DAC will be estimated using the Modified Jones Model (Dechow *et al.,* 1995). ITD denotes information technology dynamics and proxy with; CC_{it} denote Cloud Computing Cost. BRL_{it} represent extensible Business Reporting Language cost for firm i in year t, AI_{it} denotes artificial intelligence cost for firm i in year t. $CFOA_{it}$ represent cash flow from operation activities for firm i in year t which serve as control variable, β_0 intercept $\beta_1 - \beta_3$ denotes coefficients of the independent variables (IT components) while ε represent the error term

The a priori expectation with consistent with extant literature is that all the IT components (CC, XBRL, and AI) are expected to have a positive effect on financial reporting quality.

Measurement of Variables

Financial Reporting Quality

Financial Reporting Quality was proxy with discretionary accrual (DAC) using the modified Jones model (Jones, 1991). This was measured using the annual assets and liabilities that will be realised at a future date when payment on them are settled as recorded in the financial statement (Alok & Rajan, 2021; Odugbemi & Alade, 2025).

Information Technology Dynamics

The proxies of information technologies dynamics are cloud computing cost, artificial intelligence cost and extensible business reporting language cost. Cloud computing is the cost incurred for cloud-based accounting and data storage services, measured using dummy variable of 1 if total amount spent on annual cloud services cost is disclosed and 0 if not disclosed (Htaybat & Al- Zoubi, 2021). Artificial intelligence cost is the annual expenditure on AI systems used for accounting, reporting, or analytics, measured using dummy variable of 1 if total amount spent on annual AI related expenses is disclosed and 0 if not disclosed (Kim & Yoon, 2023). Extensible business reporting language cost is the annual expenditure of adopting XBRL for standardized digital financial reporting, measured using dummy variable of 1 if total amount spent on annual XBRL implementation, licensing, and maintenance expenses is disclosed and 0 if not disclosed (Tawiah & Borgi, 2022).

Cash flow from operation activities serve as control variable and it is cash generated by a company's core business operations, measured using net cash provided and used in operating activities, as per the statement of cash flows (Idehen *et al.,* 2025).

4. ANALYSIS RESULTS AND DISCUSSION

The analysis for this study commences with descriptive statistics which offers basic data for dependent and independent variables. Information on minimum, maximum, mean, and standard deviation on each variable were described. The descriptive statistics were presented in table 1 and it gives useful insights into the behaviour of the study variables across the sampled listed family-owned companies in Nigeria between 2015 and 2024. Dependent variable; financial reporting quality, which is proxy by discretionary accruals, has a mean value of -0.655 with a standard deviation of 0.587, a minimum of -3.300, and a maximum of 1.660. The negative average indicates that, on the whole, the sampled firms are more inclined toward income-decreasing accruals rather than income-increasing ones. This suggests a conservative reporting posture, which could be linked to the unique governance structure of family-owned companies that often prioritize long-term sustainability and preservation of reputation over short-term profit maximization. However, the wide gap between the values of minimum and maximum shows significant variations in reporting quality, implying that while some firms adopt conservative practices, others may engage in aggressive earnings management, thereby reducing the overall reliability of reported financial information.

For cloud computing cost, mean of 0.386, standard deviation of 0.488 suggests that averagely, less than half of the sampled firms are making significant investments in cloud-based accounting systems. The values of minimum and maximum; 0.000 and 1.000 specify that a number of firms have adopted cloud computing completely while others have not embraced it at all. This uneven adoption reflects the broader technological divide in Nigerian family-owned firms, where some organizations are making strides toward digital transformation, while others still rely on manual or traditional processes. The implication is that the extent of cloud computing adoption may play a crucial role in explaining differences in financial reporting quality across firms. The mean value for extensible business reporting language cost (0.197) with standard deviation of 0.398 indicates that adoption of XBRL remains relatively low among Nigerian listed family-owned companies. The minimum value of 0.000 suggests that a large proportion of firms have not yet implemented XBRL, while the maximum of 1.000 indicates that a few have fully adopted it. This result aligns with existing evidence that many Nigerian businesses, especially family-owned firms, face difficulties in adopting XBRL due to high implementation costs, limited technical expertise, and inadequate regulatory enforcement. The low adoption rate raises concerns about the comparability and timeliness of financial reporting, which may in turn affect the credibility of financial statements presented to investors and regulators.

Artificial intelligence cost has the lowest mean value of 0.028, with standard deviation of 0.164, a minimum and maximum of 0.000 and 1.000 respectively. This indicates that AI adoption in financial reporting among Nigerian family-owned companies is still at a very early stage, with only a negligible proportion of firms investing significantly in such technologies. The result underscores the reality that AI implementation remains highly limited, largely due to cost implications, technical requirements, and a lack of skilled manpower in Nigeria. The minimal use of AI may imply that many family-owned firms are yet to harness the benefits of advanced predictive analytics, automation, and fraud detection tools that AI can provide for improving FRQ. The descriptive result for cash flow from operations ratio (CFOA), which serves as the control variable, shows mean of 0.048 with standard deviation of 0.243, minimum and maximum of -0.770 and 1.710 respectively. This indicates that, on average, family-owned companies generate positive but relatively low operating cash flows compared to their total assets. The wide spread between the minimum and maximum suggests variability in operational efficiency and liquidity positions among the sampled firms. Some companies face negative operating cash flows, which could signal liquidity problems and a higher risk of financial reporting manipulation to mask financial weaknesses. Conversely, firms with strong positive cash flows are more likely to maintain higher reporting quality due to reduced pressure to engage in earnings management.

Overall, the descriptive statistics highlight the uneven adoption of IT dynamics among Nigerian listed family-owned companies, with cloud computing showing moderate uptake, XBRL adoption still limited, and AI adoption at a very minimal level. These patterns suggest that while technology holds potential to enhance financial reporting quality, the benefits may not be uniformly realized across firms due to differences in cost burden, resources, and capacity. This variability reinforces the importance of examining how technology costs influence financial reporting quality, as the descriptive results indicate that disparities in adoption may partly explain variations in reporting practices and transparency among family-owned companies in Nigeria.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Frq	370	-0.655	0.587	-3.300	1.660
Cc	370	0.386	0.488	0.000	1.000
Xbrl	370	0.197	0.398	0.000	1.000
Ai	370	0.028	0.164	0.000	1.000
Cfoa	370	0.048	0.243	-0.770	1.710

Source: Author computation (2026)

Next, is normality test to evaluate whether the distribution of variables; financial reporting quality, cloud computing cost, artificial intelligence cost, extensible business reporting language cost, and cash flow from operations ratio conforms to the assumptions of regression model. Decision rule is based on the probability value from the normality test. When p-value is greater than 0.05, it indicates that the dataset is normally distributed and the null hypothesis of normality cannot be rejected. Conversely, if p-value is less than 0.05, the null hypothesis of normality is rejected, showing that the dataset significantly deviates from a normal distribution. This test is essential because it provides assurance on the suitability of the data for reliable statistical inference in analysing the effect of information technology dynamics on FRQ among listed family-owned companies in Nigeria. The study discovers that the dependent variable of FRQ (prob>z = 0.000) is not normally distributed (as presented in Table 2) since the probability of the z-statistics as revealed by the Shapiro-Wilk test is significant at 1% level. Likewise, the independent variables of XBRL (prob>z = 0.000) and artificial intelligence cost (prob>z = 0.000), as well as cash flow from operations ratio (prob>z = 0.000) which serve as control variable, with all deviate significantly from normal distribution at the 1% level. However, the independent variable of cloud computing cost (CC) (prob>z = 0.846) follows a normal distribution since the probability of the z-statistics as disclosed by Shapiro-Wilk test is insignificant at the 5% or 1% level. Since that most of the variables are not normally distributed, the study employs the Spearman Rank Correlation to examine the relationships among the variables under investigation.

Table 2: Normality Test

Variable	Obs	W	V	Z	Prob>z
frq	370	0.926	15.247	6.385	0.000
cc	370	0.997	0.647	-1.021	0.846
xbrl	370	0.978	4.573	3.562	0.000
ai	370	0.799	41.470	8.730	0.000
cfoa	370	0.866	27.733	7.787	0.000

Source: Author computation (2026)

Also, to examine the existences of relationship between the variables, Spearman Rank Correlation Coefficient is employed the Spearman Rank Correlation Coefficient and the results are disclosed in the Table 3. The relationship between FRQ and the independent variables, the results show that there exists a affirmative relationship between cloud computing cost (0.144) and the dependent variable of FRQ. Also, the result shows a positive relationship between extensible business reporting language cost (0.033) and financial reporting quality (FRQ). Similarly, artificial intelligence cost (0.158) is positively associated with financial reporting quality during the study period. However, cash flow from operations ratio (-0.210) is negatively associated with the dependent variable of financial reporting quality (FRQ).

Looking at the association between independent variables, there is modest affirmative association between cloud computing cost and XBRL cost (0.534), indicating that firms that adopt cloud computing are more likely to also adopt XBRL reporting tools. A weaker positive association is observed between cloud computing cost and artificial intelligence cost (AI) (0.212), while XBRL cost (0.341) also shows a moderate positive association with AI. These results suggest that technology adoption patterns within family-owned companies tend to move together. On the other hand, cash flow from operations ratio is negatively associated with artificial intelligence cost (AI) (-0.247) and shows very weak associations with cloud computing cost (0.048) and XBRL cost (-0.010), implying that variations in operational cash flows are not strongly aligned with the adoption of these technologies. The results overall indicate that all the associations are weak to moderate, suggesting the absence of multicollinearity problems. Furthermore, to confirm the absence of multicollinearity between explanatory variables, the study proceeds with a more comprehensive check using the variance inflation factor (VIF) test, the results of which are presented in the Table 4.

Table 3: Correlation Analysis

Variables	(1)	(2)	(3)	(4)	(5)
(1) FRQ	1.000				
(2) CC	0.144	1.000			
(3) XBRL	0.033	0.534	1.000		
(4) AI	0.158	0.212	0.341	1.000	
(5) CFAO	-0.210	0.048	-0.010	-0.247	1.000

Source: Author computation (2026)

Specifically, to investigate the relationship among the dependent and independent variables, the robust pooled ordinary least squares regression technique was employed and the results obtained from the estimation of the models were presented in table 4.

Table 4: Results of Pooled OLS Regression Analysis

FRQ	Coef.	St. Err.	t-value	p-value	[95% Conf.	Interval]	Sig
CC	0.160	0.075	2.15	0.032	0.014	0.307	**
XBRL	-0.013	0.095	-0.14	0.892	-0.200	0.174	
AI	0.013	0.207	0.06	0.949	-0.394	0.420	
CFOA	-1.103	0.132	-8.37	0.000	-1.362	-0.844	***
Constant	-0.663	0.040	-16.74	0.000	-0.741	-0.585	***
Mean dependent var.		-0.655					
R-squared		0.223					
F-test		20.416					
Akaike crit. (AIC)		450.319					
VIF		1.31					
Hettest		1.59{0.2076}					
SD dependent var.		0.587					
Number of obs.		370					
Prob. > F		0.000					
Bayesian crit. (BIC)		468.669	****** p<.01, ** p<.05***				

Source: Author computation (2026)

Results revealed that the dependent variable of FRQ, measured by discretionary accruals, has an R^2 value of 0.223. This indicate that proxies of independent variables; cloud computing cost, artificial intelligence cost, and extensible business reporting language cost along with cash flow from operations ratio (control variable) together describe the 22.3% of systematic variations in FRQ. The unexplained variations in FRQ are captured by the error term. F-statistic of 20.416 with a p-value of 0.000 shows that general model is

statistically significant at one percent level confirming that the independent variables collectively influence FRQ.

Result of variance inflation factor test to evaluate the multicollinearity revealed a mean value of 1.31, the value of which is well below the universally accepted threshold of 10, as recommended by Gujarati (2004). This indicate that the proxies of independent variable are not extremely correlated with one another, meaning that multicollinearity is not a concern in this model. As a result, all the proxies of independent variable are retained for further analysis. Breusch-Pagan test was conducted to confirm the assumption of homoscedasticity in the pooled OLS model. Result revealed a heteroscedasticity test statistic (Hettest) of 1.59 with a p-value of 0.2076, showing that the assumption of homoscedasticity is not violated at the 5% or 1% level of significance. This result proposes that the variance of the error terms is constant across observations, confirming the reliability of standard errors and confidence intervals in the OLS estimates.

Also, the results obtained from the pooled OLS regression model presented in Table 4 revealed that cloud computing cost [coef. = 0.160 (0.032)] has a significant positive effect on the financial reporting quality of listed family-owned companies in Nigeria during the period under study. The result implies that an increase in cloud computing cost is associated with improvements in the quality of financial reporting among the sampled firms. Hence, the null hypothesis that cloud computing cost has no significant effect on financial reporting quality of listed family-owned companies in Nigeria is rejected.

Moreover, results obtained from the pooled OLS regression model presented in Table 4 revealed that extensible business reporting language cost [coef. = -0.013 (0.892)] has an insignificant negative effect on the financial reporting quality of listed family-owned companies in Nigeria during the period under study. The result implies that variations in XBRL cost do not meaningfully influence the quality of financial reporting among the sampled firms. Hence, the null hypothesis that extensible Business Reporting Language cost has no significant effect on financial reporting quality of listed family-owned companies in Nigeria is accepted.

Furthermore, the results obtained from the OLS regression model presented in Table 4 revealed that artificial intelligence cost [coef. = 0.013 (0.949)] has an insignificant positive effect on the financial reporting quality of listed family-owned companies in Nigeria during the period under study. The result implies that the cost of artificial intelligence adoption does not exert any meaningful impact on the quality of financial reporting of the sampled firms. Hence, the null hypothesis that artificial intelligence cost has no significant effect on financial reporting quality of listed family-owned companies in Nigeria is accepted.

DISCUSSION OF FINDINGS

The results obtained from the OLS regression model show that cloud computing cost has a positive and statistically significant effect on financial reporting quality of listed family-owned companies in Nigeria, with a coefficient of 0.160 and a p-value of 0.032. The positive sign of the coefficient suggests that higher investments in cloud computing are associated with improved financial reporting quality, while the significance of the result at the 5 percent level underscores its robustness. This finding is consistent with prior studies such as Akpan et al. (2023), who found that cloud accounting significantly enhances data storage, efficiency, and financial reporting quality in Nigerian firms. Similarly, El-Mousawi and Jaber (2023) reported that cloud adoption improves the qualitative characteristics of financial reporting, particularly accuracy and credibility. On the other hand, the result diverges from Abidde (2023), who reported mixed evidence of cloud adoption in manufacturing firms, where in some cases adoption did not translate into improved reporting. These mixed outcomes highlight contextual differences across industries and firm types. Contrarily, the result of this study negate the findings of Akpan et al. (2023) that Platform as a Service (PaaS) had an insignificant effect on improved financial reporting quality. So also, the findings of Abidde (2023) that examined the impact of cloud computer-based accounting on the corporate financial performance of listed manufacturing firms in Nigeria. Findings revealed mixed results, with some firms experiencing significant improvements, while others saw negative implications.

From a theoretical perspective, this result aligns with the Technology Acceptance Model (TAM), which suggests that the perceived usefulness of technology such as improved timeliness and reliability of reporting through cloud adoption can significantly drive its acceptance and impact (Davis, 1989). Cloud computing, when effectively integrated, enhances internal capacities for producing accurate and reliable financial statements, supporting the idea that IT-related resources form part of the strategic assets of firms. For Nigerian family-owned companies, the significant positive effect suggests that those who have overcome cost and resistance barriers to adopt cloud systems benefit from stronger reporting outcomes, which confirms theoretical expectations. The implications of this finding are noteworthy. From an investment perspective, the adoption of cloud computing improves transparency and strengthens investor confidence in financial statements, reducing information asymmetry in the Nigerian capital market (Rotenstein *et al.,* 2021). From a policy perspective, regulators such as the Financial Reporting Council of Nigeria (FRCN) and the Securities and Exchange Commission (SEC) could encourage wider adoption of cloud-based systems by providing guidelines or incentives to ease cost burdens

for family-owned businesses (Daniel, 2023). From a regulatory standpoint, the significant role of cloud computing underscores the need for robust digital infrastructure policies to ensure reliability of systems, especially given Nigeria's challenges with internet and power supply. In sum, this result demonstrates that investment in cloud systems directly enhances financial reporting quality, with implications for competitiveness and compliance.

The results also reveal that extensible business reporting language cost has a negative but insignificant effect on financial reporting quality, with a coefficient of -0.013 and a p-value of 0.892. The negative sign, though very small in magnitude, implies a tendency for higher costs to slightly reduce reporting quality, but the insignificance of the result indicates that variations in XBRL costs do not meaningfully influence financial reporting among the sampled firms. This finding is consistent with Ndaks (2022), who found that despite its potential, XBRL adoption in Nigeria remains weak due to a lack of technical capacity and regulatory enforcement. Similarly, Frista et al. (2023) observed that in Indonesia, XBRL adoption did not necessarily improve reporting outcomes, as earnings management practices persisted despite implementation.

However, the result contrasts with Tawiah and Borgi (2022), who found that XBRL adoption enhances financial reporting quality globally, especially in developing countries, by improving comparability and transparency. The inconsistency suggests that while XBRL has theoretical potential, its cost and technical challenges undermine its effectiveness in Nigeria's family-owned businesses. From the theoretical standpoint, this result departs from the predictions of the Diffusion of Innovation (DOI) theory (Rogers, 1962), which posits that innovations such as XBRL should, over time, enhance efficiency and adoption within a social system. The insignificant effect indicates that Nigerian family-owned firms are yet to fully embrace or exploit the innovation to achieve reporting improvements. The RBV also implies that resources must be embedded and effectively deployed to be valuable. In this case, even though firms may incur costs to adopt XBRL, the absence of sufficient expertise or institutional support means that the resource is not leveraged effectively to improve financial reporting. The implications of this result highlight key policy and regulatory concerns. From an investment perspective, the finding suggests that reliance on XBRL costs alone is not a determinant of reporting quality in family-owned firms, which may limit investor confidence in digital reporting tools. From a policy perspective, the insignificance highlights the need for stronger government and regulatory support in subsidizing training and providing technical infrastructure to ensure effective adoption (Oladeinde *et al.,* 2023). From a regulatory standpoint, enforcing mandatory use of XBRL without addressing cost and technical barriers may not yield improvements in reporting quality. Thus, the result shows that in Nigeria's family-owned companies, the current state of XBRL use does not substantially affect the quality of financial reporting.

The results further indicate that artificial intelligence (AI) cost has a positive but insignificant effect on financial reporting quality, with a coefficient of 0.013 and a p-value of 0.949. The positive sign suggests that higher investments in AI may enhance reporting quality, but the insignificance of the result shows that AI adoption does not meaningfully influence financial reporting among the sampled firms during the study period. This aligns with Oyeniyi et al. (2024), who found that while AI improves reporting accuracy and efficiency in theory, in practice its adoption faces challenges such as ethical concerns, regulatory gaps, and high costs. The result also agrees with Ulrich et al. (2023), who argued that the cost of AI adoption deters many firms, limiting its effect on performance outcomes. However, the finding diverges from Anantharaman et al. (2023), who demonstrated in US firms that AI adoption significantly reduces discretionary accruals and improves reporting quality. These differences reflect the contextual barriers in Nigeria, particularly among family-owned companies with limited financial and technical capacity to effectively adopt AI systems. Theoretically, this result partially aligns with the Resource-Based View (RBV), which emphasizes that firms can achieve sustainable advantages by deploying rare, valuable, and inimitable resources such as cloud-based accounting systems (Barney, 1991). The RBV also highlights that resources must be valuable and inimitable to enhance firm outcomes; however, AI costs without effective integration and skilled personnel do not translate into valuable reporting resources in the Nigerian context. Moreover, DOI theory would predict that AI adoption should gradually diffuse, but the insignificance suggests that diffusion is still at an early stage among family-owned companies, limiting its effect on reporting. The implications of this finding are multifaceted. From an investment perspective, the insignificance of AI costs implies that investors cannot rely on AI adoption as a determinant of reporting quality in Nigerian family-owned firms, which may undermine investor confidence in technologically driven disclosures (Oleimat *et al.,* 2023). From a policy perspective, the result calls for interventions that reduce the high cost of AI systems, perhaps through tax incentives or subsidized technology hubs that support small and medium-sized firms (Ebuka *et al.,* 2023). From a regulatory perspective, there is need to establish frameworks that ensure responsible AI use in financial reporting, addressing risks of algorithmic bias and ethical concerns while promoting adoption. In sum, the result highlights that while AI holds promise, its cost currently does not exert meaningful influence on financial reporting quality in Nigeria's family-owned companies.

5. CONCLUSION

The relevance of information technology dynamics in improving the financial reporting quality of listed family-owned companies in Nigeria underscore in the findings of this study. The results of empirical study indicate that associated costs of cloud computing, artificial intelligence, and extensible business reporting language plays fundamental as well as distinct roles in enhancing discretionary accruals. With cloud computing cost indicating strong effect on financial reporting quality. This signifies that investment in cloud-based systems contributes to more accurate and reliable financial reporting. On the other hand, extensible business reporting language cost (XBRL) displayed an insignificant negative association with financial reporting quality, indicating that expenditure on XBRL has not translated into meaningful reporting improvements among family-owned companies in Nigeria. Similarly, artificial intelligence cost (AI) showed a positive but statistically insignificant effect, reflecting the limited adoption and practical application of AI in financial reporting within the sampled firms. The control variable, cash flow from operations ratio (CFOA), exhibited a significant negative effect on financial reporting quality, which points to the possibility that firms with weaker cash flows may resort to earnings management practices. The key takeaways from these results are that not all dimensions of information technology adoption contribute equally to the enhancement of financial reporting quality in family-owned Nigerian firms. Cloud computing appears to be the most effective in improving reporting transparency and reliability, while AI and XBRL investments are yet to demonstrate meaningful influence, possibly due to implementation costs, lack of technical expertise, or insufficient regulatory enforcement. The findings align with the Resource-Based View (RBV) and the Technology Acceptance Model (TAM), which emphasize that technological resources improve organizational outcomes when effectively deployed and accepted by users. At the same time, the results underscore the contextual limitations that may hinder the realization of these theoretical expectations in Nigerian family-owned firms, particularly regarding XBRL and AI. This is in consonance with global practice that adopting advanced information technology systems such as cloud computing and artificial intelligence remains a fundamental role in impacting the quality of financial reporting.

In line with the findings, the study recommends that corporate managers to prioritize investments in cloud-based accounting systems. These systems enhance real-time data capture, facilitate accurate financial reporting, and reduce the possibility of human errors, thereby boosting transparency and accountability. Regulators such as the Financial Reporting Council of Nigeria can further support this adoption by establishing clear guidelines for cloud integration in financial reporting. For investors, this implies that firms with higher cloud computing investments are more likely to produce reliable and timely financial reports, which can improve investor confidence and decision-making. The results show that extensible Business Reporting Language cost has an insignificant negative effect on financial reporting quality. This suggests that, while some firms are incurring costs on XBRL, the benefits in terms of reporting quality are not yet evident. Managers of family-owned companies should therefore ensure that XBRL implementation is not treated as a mere compliance exercise but is integrated into financial reporting processes to realize its potential. Policymakers and regulators can play a vital role by providing capacity-building initiatives, standardized templates, and training to enhance the effective use of XBRL reporting in the Nigerian context. For investors, the results indicate that reliance solely on XBRL-related spending is not an accurate signal of reporting quality, hence due diligence on broader governance and reporting practices is necessary. The finding that artificial intelligence cost exerts a positive but insignificant effect on financial reporting quality highlights the infancy of AI adoption in Nigerian family-owned firms. Managers and directors should carefully align AI investments with their reporting processes to maximize potential benefits such as error detection and predictive analytics. However, without adequate infrastructure and expertise, the expected improvements may not materialize. Regulators and policy makers should create enabling environments that reduce implementation costs and foster technological capacity development. For investors, the results imply that while AI may offer long-term opportunities for improved financial reporting quality, its current application in Nigerian family-owned firms is not yet sufficient to be considered a key determinant of reporting quality.

Further than real-world application, the contribution of this study provides useful insights into how these information technology costs impact the accuracy, reliability, and transparency of financial reports of firms. By understanding these effects, family-owned companies can make better decisions on whether to invest in financial reporting technologies and how to manage their costs effectively. Also, it gives perception to regulatory bodies on information technology cost affects financial reporting quality and compliance with financial regulations. This makes policymakers create better rules and guidelines that encourage businesses to use technology in financial reporting while ensuring transparency and accountability. Investors and financial analysts rely on accurate financial reports to make informed decisions about where to invest their money. Researchers can use this study as a foundation for further studies on financial technology and corporate reporting practices. Educators can also incorporate these findings into their teaching materials, helping students understand how businesses use technology in financial reporting. Then, future accountants and financial professionals will be better prepared to handle financial reporting in a technology-driven business environment. Future

researchers are advised to extend the relationship between information technology and financial reporting quality by focusing on family-owned business not listed on the stock exchange and micro, small and medium enterprises.

REFERENCES

- Abdullah, M., Abdo, K. K., & Alzu'bi, A. (2024). The effect of financial reporting quality on earnings quality of industrial companies. *Corporate and business strategy review*, *5*(2), 38–50. https://doi.org/10.22495/cbsrv5i2art4.
- Abdulwahab, D., Musa, H., & Musa, O. (2023). The adoption of information system technology in piloting the current state of health institution in tier three Nations. *International journal for multidisciplinary research*, *5*(6). https://doi.org/10.36948/ijfmr.2023.v05i06.8367.
- Abhishek, N., Ashoka, M. L., Singh, A., & Divyashree, M. S. (2022). Digital business reporting is a key to enhance financial reporting quality – An XBRL Perspective. *International journal of research -GRANTHAALAYAH*, *10*(8), 188–199. https://doi.org/10.29121/granthaalayah.v10.i8.2022.4797.
- Abrahams, T. O., Ewuga, S. K., Kaggwa, S., Uwaoma, P. U., Hassan, A. O., & Dawodu, S. O. (2024). Mastering compliance: A comprehensive review of regulatory frameworks in accounting and cyber security. *Computer science & IT research journal*, *5*(1), 120–140. https://doi.org/10.51594/csitrj.v5i1.709.
- Abubakar, H., Nyikyaa, M. N., & Abdulsalam, Z. (2023). Examining the adoption of international financial reporting standard on Nigeria manufacturing industries: An issue for quality financial reporting. *Global research journal of social sciences and management, 01*(01), 19–24. https://doi.org/10.55306/grjssm.2023.1104.
- Abubakar, S. K., & Sani, A. I. (2022). The impact of information technology on financial reporting quality of small and medium enterprises in Nigeria. Journal of accounting and finance management, 8(2), 45-56.
- Adebayo, T. A., Adesoba, O. C., & Kayode, A. A. (2024). Digital technology adoption and performance of small and medium enterprises in food, drink and beverages industries in Ondo State, Nigeria. *Nigeria journal of business administration*, *6*(1), 167–179. https://www.researchgate.net/publication/382696270_Digital_technology_adoption_and_performance_of_small_and_medium_enterprises_in_food_drink_and_beverages_industri es_in_Ondo_State_Nigeria.
- Akadi, O., & Olaoye, F. (2024). The impact of cloud based accounting system on the performance of selected deposit money banks in Nigeria. *African journal of accounting and financial research*, *7*(1), 164–186. https://doi.org/10.52589/ajafr-t0w7qjpr.
- Alkayed, H., Zighan, S., Qabajeh, M., & Almaharmeh, M. I. (2023). The role of XBRL adoption on enhancing transparency of information disclosure: A case study of Jordanian financial companies. *Cogent business & management*, *10*(3). https://doi.org/10.1080/23311975.2023.2265082.
- Ameeta, J.-D., & Fang, J. J. (2023). Demonstrating retrieval of financial information in XBRL. *Journal of instructional techniques in finance*, *4*(1). https://doi.org/10.54155/jitf.v4i1.28.
- Antwi, B. O., Adelakun, B. O., & Eziefule, A. O. (2024). Transforming financial reporting with AI: enhancing accuracy and timeliness. *International journal of advanced economics*, *6*(6), 205–223. https://doi.org/10.51594/ijae.v6i6.1229.
- Ashraf, S. Z. (2024). Building a big data platform for a financial management company: Preparing data for reporting with automated data flow. *International journal of scientific research in engineering and management*, *08*(10), 1–5. https://doi.org/10.55041/ijsrem28470.
- Ayinla, B. S., Ndubuisi, N. L., Atadoga, A., Asuzu, O. F., Ike, C. U., & Adeleye, R. A. (2024). Enhancing accounting operations through cloud computing: A review and implementation guide. *World journal of advanced research and reviews*, *21*(2), 1935–1949. https://doi.org/10.30574/wjarr.2024.21.2.0441.
- Ayo-Lawal, R. A. (2024). Technology audit of the Nigerian agricultural sector: towards food security. *Technology audit and production reserves*, *1*(4(75)), 38–47. https://doi.org/10.15587/2706-5448.2024.299274.
- Beatrice, O., Onwubuariri, R., Adeniyi, G., & Ntiakoh, A. (2024). Enhancing fraud detection in accounting through AI: Techniques and case studies. *Finance & accounting research Journal*, *6*(6), 978–999. https://doi.org/10.51594/farj.v6i6.1232.
- Bello, M., & Musa, M. (2023). Technological innovation and firm performance: A study of selected manufacturing firms in Lagos state, Nigeria. Journal of business and economic studies, 13(1), 1-15.
- Borgi, H. (2022). XBRL technology adoption and consequences: A synthesis of theories and suggestions of future research. *Journal of accounting and management information systems*, *21*(2), 220–235. https://doi.org/10.24818/jamis.2022.02004.
- Chinyere, I. M., & Yamma, A. M. (2021). Impact of technological advancement in the society in Nigeria. *Journal of global social sciences*, *2*(8), 29–44. https://doi.org/10.31039/jgss.v2i8.10.
- Cohen, G. (2022). Algorithmic trading and financial forecasting using advanced artificial intelligence methodologies. *Mathematics*, *10*(18), 3302. https://doi.org/10.3390/math10183302.
- Ebuka, A. A., Emmanuel, D., & Idigo, P. (2023). Artificial intelligence as a catalyst for the

sustainability of small and medium scale businesses (SMEs) in Nigeria. *Annals of management and organization research*, *5*(1), 1–11. https://doi.org/10.35912/amor.v5i1.1719.

- Efuntade, A. O., & Olubunmi, O. E. (2023). Cloud technology-based auditing and accounting services: General outlook, conditions, issues and review of Nigerian accounting system. *Journal of accounting and financial management*, *9*(4), 1–21. https://doi.org/10.56201/jafm.v9.no4.2023.pg1.21.
- Fakunle, S. O., & Ajani, B. K. (2021). Peculiarities of ICT adoption in Nigeria. *Insights into regional development*, *3*(4), 51–61. https://doi.org/10.9770/ird.2021.3.4 (4).
- Financial reporting council of Nigeria. (2023). *Financial reporting council of Nigeria (Amendment) Act, 2023. (No. 42)*. A843-854.
- Financial reporting council of Nigeria. (2024). FRC digital transformation roadmap. (Accessed online from the official FRC Nigeria website).
- Greenwood, M. J., & Tao, L. (2020). Regulatory monitoring and university financial reporting quality: Agency and resource dependency perspectives. *Financial accountability & management*, *37*(2). https://doi.org/10.1111/faam.12244.
- Hasan, R. (2024). Blockchain and AI: Driving the future of data security and business intelligence. *World journal of advanced research and reviews*, *23*(1), 2559–2570. https://doi.org/10.30574/wjarr.2024.23.1.2273.
- Hasbullah, H., Tullah, R. H., & Farhan, R. (2023). Factors affecting the quality of financial
- reports: A systematic literature review. *International journal of trends in accounting research*, *4*(1), 59–58. https://doi.org/10.54951/ijtar.v4i1.498.
- Ibrahim, A. (2023). The impact of using the cloud computing upon the quality of accounting information and it's reflection upon the development of the world standards of financial reports in Jordanian corporations. *International journal of professional business review*, *8*(9), e03771–e03771. https://doi.org/10.26668/businessreview/2023.v8i9.3771.
- Idehen, O. F., Jackson-Akhigbe, B. E., & Abusomwan, R. E. (2025). Cash Flow Management and Assets Growth of Listed Industrial Goods Firms in Nigeria. *FUDMA Journal of Accounting and Finance Research,* *3*(1), 107–119. https://doi.org/10.33003/fujafr-2025.v3i1.150.107119
- Ifeanyi, T. F., & Ukah, R. C. (2021). Globalization of commercial banks in Nigeria: Impact of information and communication technology (1988 – 2019). *Archives of business research*, *9*(12), 25–46. https://doi.org/10.14738/abr.912.11316.
- Jimoh, O., Akintoye, R. I., & Aguguom, T. A. (2023). Digital disruption of accounting information and quality of financial reporting of listed money deposit banks in Nigeria. *International journal of applied economics finance and accounting*, *17*(2), 337–352. https://doi.org/10.33094/ijaefa.v17i2.1168.
- Johnson, B. T., & Oluwole, A. A. (2021). The role of information technology in business continuity during the COVID-19 pandemic in Nigeria. International journal of social sciences and management review, 5(2), 1-12.
- Kaushik, D. (2023). The impacts of cyber security and AI on businesses and individuals.
- *Journal of student research (Houston, Tex.)*, *12*(4).
- https://doi.org/10.47611/jsr.v12i4.2282.
- Klimczak, K. (2018). Costs and determinants of XBRL implementation as a standard for financial reporting on capital markets. *Theoretical journals of accounting*, *2018*(98 (154)), 107–122. https://doi.org/10.5604/01.3001.0012.1549.
- Lannon, F., Lyons, R., & O'Connor, C. (2023). Generation AI and family business: a perspective article. *Journal of family business management*, *14*(3). https://doi.org/10.1108/jfbm-072023-0116.
- Mansour, L. B., Spătariu, E. C., & Georgescu, C. E. (2023). XBRL standards – mean of improving capital market information process. *New trends in sustainable business and consumption*, *8*(10). https://doi.org/10.24818/basiq/2023/09/039.
- Morandín-Ahuerma, F. (2022). What is artificial intelligence? *International Journal of Research Publication and Reviews*, *03*(12), 1947–1951. https://doi.org/10.55248/gengpi.2022.31261.
- Nnadozie, E. C. (2024). The challenges of artificial intelligence adoption by business organizations. *International journal of science and research (IJSR)*, *13*(2), 1153–1157. https://doi.org/10.21275/mr24206175858.
- Nweke, C. C., & Okoro, C. A. (2022). Technology adoption and competitive advantage of small and medium-sized enterprises in Nigeria. Journal of economics and business, 11(1), 1-16.
- Obiki-Osafiele, A. N., Efunniyi, C. P., Abhulimen, A. O., Osundare, O. S., Agu, E. E., & Adeniran, I. A. (2024). Theoretical models for enhancing operational efficiency through technology in Nigerian businesses. *International journal of applied research in social sciences*, *6*(8), 1969–1989. https://doi.org/10.51594/ijarss.v6i8.1478.
- Odugbemi, O. M. and Alade, M. E. (2025). Risk management and financial reporting quality
- of organised cooperative societies in South-West, Nigeria. *Malete Journal of Accounting and Finance*, 5 (2), 271 – 286
- Oguejiofor, B. B., Omotosho, A. M., Abioye, K. M., Abdul, Oguntoyinbo, F. N., Daraojimba, A. I., & Daraojimba, C. (2023). A review on data-driven regulatory compliance in Nigeria. *International Journal of Applied Research in Social Sciences*,

5(8), 231–243. https://doi.org/10.51594/ijarss.v5i8.571.

- Ogullah, S. B., & Waribugo, S. (2022). Impact of corporate governance structures on earnings management and performance: An empirical investigation of quoted manufacturing companies in Nigeria. *Journal of accounting and financial management*, *8*(5), 18–44. https://doi.org/10.56201/jafm.v8.no5.2022.pg18.44.
- Ogunwale, O., Areghan, I., Alalade, Y., & Omosebi, T. (2024). Use of technology and financial literacy on SME practices and performance. *International Journal of Social Sciences and Management Review*, *07*(05), 234–243. https://doi.org/10.37602/ijssmr.2024.7519.
- Oladeinde, M., Hassan, A. O., Farayola, O. A., Akindote, O. J., & Adegbite, A. O. (2023). Review of it innovations, data analytics, and governance in Nigerian enterprises. *Computer Science & IT Research Journal*, *4*(3), 300–326. https://doi.org/10.51594/csitrj.v4i3.685.
- Olayinka, J. M., & Agboola, B. K. (2023). Digital transformation and its challenges for family businesses in Nigeria. *African Journal of Management and Business Research*, 21(1), 118.
- Otokiti, B. O., Igwe, A. N., & Ewim, C. P.-M. (2023). A conceptual framework for financial control and performance management in Nigerian SMEs. *International Journal of Social Science Exceptional Research*, *02*(01), 52–70. https://www.researchgate.net/publication/390300127_A_conceptual_framework_for_financial_control_and_performance_management_in_Nigerian_SMEs.
- Oyoyo, Y. J., & Baguma, R. (2019). Adoption of cloud computing in government institutions in Nigeria. *International Journal of Scientific and Research Publications (IJSRP)*, *9*(8), p92102. https://doi.org/10.29322/ijsrp.9.08.2019.p92102.
- Patel, N., Bhattacharjee, I., & Jagli, Dr. D. (2023). The Impact of cloud computing in the field of finance: A comprehensive analysis. *International Journal for Research in Applied Science and Engineering Technology*, *11*(7), 951–957. https://doi.org/10.22214/ijraset.2023.54730.
- Peng, Y., Ahmad, S. F., Al Shaikh, M. S., Daoud, M. K., & Alhamdi, F. M. H. (2023). Riding the waves of artificial intelligence in advancing accounting and its implications for sustainable development goals. *Sustainability*, *15*(19), 14165. https://doi.org/10.3390/su151914165.
- Ramesh, A., Pradhan, V., & Lamkuche, H. (2021). Understanding and analyzing resource utilization, costing strategies and pricing models in cloud computing. *Journal of Physics:Conference Series*, *1964*(4), 042049. https://doi.org/10.1088/1742-6596/1964/4/042049.
- Sadiq, O., Hack-Polay, D., Fuller, T., & Rahman, M. (2022). Barriers to the effective integration of developed ICT for SMEs in rural Nigeria. *Businesses*, *2*(4), 501–526. https://doi.org/10.3390/businesses2040032.
- Tanjung, H. (2021). XBRL-based information technology and the potential for improving disclosure quality. *Journal of Islamic Accounting*, *5*(1), 1–10. https://doi.org/10.46367/jas.v5i1.283.
- Tawiah, V., & Borgi, H. (2022). Impact of XBRL adoption on financial reporting quality: a global evidence. *Accounting Research Journal*, *35*(6), 815–833. https://doi.org/10.1108/arj-012022-0002.
- Ullah, R. M. U. (2019). Cloud computing adoption in enterprise: Challenges and benefits. *International Journal of Computer Trends and Technology*, *67*(6), 93–104. https://doi.org/10.14445/22312803/ijctt-v67i6p116.
- Ulrich, P., Frank, V., & Buettner, R. (2023). Artificial intelligence in small and medium-sized family firms: An empirical study on the impact of family influence. *Corporate Governance and Organizational Behavior Review*, *7*(1), 72–80. https://doi.org/10.22495/cgobrv7i1p7.
- Yildiz, O., Ersoy, A. S., & Yıldırım, İ. S. (2021). The impact of information and communication systems on organizations. *Advances in Wireless Technologies and Telecommunication*, *11*(5), 1–25. https://doi.org/10.4018/978-1-7998-3045-0.ch001.
- Yolanda, T. F., & Kholmi, M. (2024). Detecting earnings management and earnings manipulation in Indonesia: A panel data analysis. *Journal Ekonomi*, *29*(1), 21–39. https://doi.org/10.24912/je.v29i1.1924.
- Zulhusni, M. (2025). *Nigerian companies turn to local cloud services over AWS and Google Cloud*. Cloud Computing News. https://www.cloudcomputing-news.net/news/nigeriancompanies-turn-to-local-cloud-services-over-aws-and-google-cloud/.