

Auditors' preparedness to meet FinTech with computer assisted audit techniques

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Abstract

The study examined the capability of Computer Assisted Audit Techniques (CAATs) to effectively assist auditors in their audit of the financial statements of Financial Technology companies (FinTech) in Nigeria. The data for the study were obtained from the external auditors of FinTech, through an online survey. The data collated were analysed using descriptive and correlation analyses. It was observed that FinTech pose new risks; the perceived risks in FinTech affect audit opinions; and FinTech do not render existing CAATs ineffective. Finally, the weight of evidence gives the verdict that auditors were not prepared to meet FinTech with CAATs. The study therefore recommended that CAATs should be used to strengthen audits in FinTech environments.

Keywords: FinTech, CAATs, auditors, PAOs, regulators

1 Introduction

The 2008 financial crisis had eroded the trust customers had in the providers of financial services, particularly banks. There were also the unbanked population which constituted the informal sector, especially in EMDEs (emerging markets and developing economies), waiting to be connected to the mainframe financial system. The orthodox traditional brick and mortar banks were constrained by the need for physical presence and its attendance costs, and the need for humans that would stand at attention to render services at specified times of the day. The existing and potential financial services customers were therefore only ready to jump at better services when such came up. Digital financial services (DFS) providers took advantage of this gap to render innovative and renewed services at lesser costs through customers' smartphones' friendly interfaces (Christi & Barberis, 2016). They offer the unbanked individuals an access to payments, savings, remittances, insurance, and credits on their mobile phones even in remote locations. The DFS providers need no branch offices nor do they have to visit their customers: communications and business transactions were conducted through digital channels. The transactions became personalised, local, easier, and more accessible, especially that customers transact through well dispersed agents (Denyes, 2019; Akinola & Evans, 2023). But these improved services offered at real time speed are not without their problems.

Bhattacharya (2017) describes FinTech as the use of ICT in the playfield of financial services while Gupta and Tham (2018) see FinTech as the innovative genetic material of financial services. The ease and speed of rendering FinTech services is unparalleled by banks, and this has made FinTech companies (FinTech) more acceptable to the public. Incumbent operators in the financial services sector have seen the challenge and they are responding in various ways: adapting FinTech into the traditional system; adopting FinTech practices sometimes by establishing an arm or a subsidiary; or resisting by building brick walls or by instigating regulators (Denyes, 2019). The regulators are responding by creating FinTech laws and guidelines that would shield the integrity of the financial system (SEC, 2019). For example, the Central Bank of Nigeria (CBN) and the Interbank Settlement System introduced a regulatory sandbox in March 2018 and the CBN continued to develop FinTech regulations for Nigeria (Findexable, 2019). FinTech, then, seem to have come to stay, and the benefits are becoming obvious.

The paradigm has shifted in the favour of using technology (internet, software applications, cloud services, mobile devices, etc.) to process and deliver financial services and products to consumers (Evans et al., 2023). The consumers too are majorly millennials who are tech savvy and would rather conduct all their financial transactions on their smartphones than visit any physical structure or meet any person. The ecosystem has changed tremendously and industry operators, including erstwhile brick and mortar banks, are investing heavily in ICT to leverage on the benefits of the cross-border nature of DFS delivery. According to Wale-Awe (2020), the Covid-19 pandemic and the concomitant restriction of movement hastened the necessity for the use of digital technologies to deliver financial services. Consumers now became accustomed to transacting business in the comfort of their homes and offices, and ecommerce operators too are making it easier by developing online shopping into a seamless venture. This has become the new normal. Yet, the attendant risks confront both the operators and the regulators alike.

Amongst the professionals that add value in the chain of accountability are the auditors that must examine the books of these clicks and buttons operators in the ecommerce and the DFS sectors. The accounting profession had developed computer-assisted audit techniques (CAATs) for the use of those that audit the financial statements of organisations that use computers to capture, store, process and communicate financial information to users. If auditors are to assuredly ascertain the truth and fairness of the financial statements of FinTech, they must be well equipped with the requisite

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professional skills and tools to competently review the financial statements. Are the current auditing skills and tools, including CAATs, a match for the Fintech challenge? How do auditors assure themselves that they have gathered sufficient evidence to express an opinion in a Fintech environment? Would standard-setting bodies have to update existing standards or replace them with new ones? What additional controls would auditors recommend for Fintech clients? These questions were calling for answers that this study is set to answer.

2 Literature review

2.1 Conceptual review

FinTech, though not entirely novel, is a current industry focus. Its origin dates to 1866, when initial communication began; the Trans-Atlantic cable finished in 1958, shortening message transmission between Europe and North America from ten days to seventeen hours. This led to global telex development and enhanced financial services. Evolving technologies have transformed financial service delivery. Three prior industrial revolutions: 1765 mechanization with steam engines, 1870 electricity enabling mass production, and 1969 ICT automating production. The ongoing fourth revolution encompasses AI, ML, cyber systems, cloud computing, blockchain, and IoT (Adewole, 2019). Each revolution has reshaped the landscape. Computer power growth, especially in AI and ML, is projected at 1,000 percent annually (Brynjolfsson & McAfee, 2017). The present revolution presents challenges: job displacement, fraud, cybersecurity risks in digital transactions, rapid startup growth. Auditors must address these threats and opportunities. New entrants driven by technology alter the financial services dynamic. Banks, once dominant, faced disruption. ATMs and POS terminals introduced digital payment channels. Later, online banking apps emerged. COVID-19 accelerated FinTech adoption, transforming the landscape. The FinTech revolution divides into three eras (Arner et al, 2015): infrastructure (1886–1967), with transatlantic cables, Fedwire (1918), electronic funds transfers; digitization era with ATMs, digital stock exchanges, SWIFT, online banking (1990s); startup era post-2008 financial crisis, driven by distrust of traditional banking. Bitcoin v0.1 (2009), mobile-centric transactions, and diverse payment apps emerged, changing consumer behaviour and intensifying competition.

FinTech combines ICT and financial services (FS), transforming their delivery. FinTech marries technology and innovative financial service delivery (Gupta & Tham, 2018, Adeola & Evans, 2023). FSB (2017) defines it as tech-enabled financial service innovation with material effects. Start-ups, as nimble, lean entities, challenge incumbents. They quickly leverage technology for better results. Incumbents also launch FinTech subsidiaries or ventures. FinTech offer innovative DFS to underserved customers, utilizing existing bank data. ICT automates business transactions, vital in FinTech's digital environment.

Table 1 shows that Nigerian FinTech offer diverse services: payments, savings, investments, crowdfunding, insurance, lending, and more (Ernst & Young, 2021). Payment services are offered by various operators using digital wallets and mobile apps. FinTech lenders use open data for automated lending (e.g., Aella Credit, Carbon). Some focus on savings, investments, crowdfunding (e.g., Chaka, Rise Vest, FarmCrowdy).

Table 1. FinTech Categories

S/N	FinTech Segment	% of FinTech	Sub-categories
1	Payments, Mobile Money & Digital Banking	38	Digital banks & accounts. Digital payments. Global transfers & remittances. Mobile money & wallets. Payments processing & switching. Terminal & infrastructure providers.
2	Lending	23	Credit data analytics & loan assessments. Retail lending. SME lending.
3	Savings, Investment & Crowdfunding	15	Alternative investments. Automatic savings platforms. Crowdfunding. Digital wealth & asset management. International investment platforms.
4	Enterprise Services & Infrastructure - APIs	13	APIs and Connectors. Credit Infrastructure. Financial services solutions.
5	Cryptocurrency	8	Cryptocurrency exchanges & wallets
6	InsurTech	3	Digital agents and distribution platforms. Digital insurers. Insurance comparison services. Insurance services providers.
7	Robo-Advisory	0	Automated Investment Advice.
	Total	100	

Source: Extracted from Ernst & Young (2021)

Globally, 1.7 billion lacked bank accounts in 2017 (World Bank, 2018). EMDEs heavily rely on cash transactions, fuelling informal sectors (BIS, 2020). In Nigeria, limited access to credit, insurance, and high costs prevailed. M-Pesa's success in Kenya highlighted unmet demand driving FinTech adoption. BIS (2020) found FinTech flourish where few bank branches exist relative to population. Cross-border payments favoured FinTech due to lower costs. They address unmet needs, high costs, and millennial demand in EMDEs, especially Nigeria, enhancing financial inclusion targets (David-West, 2016). Nigeria's financial exclusion fell from 41.6% (2016) to 36.8% (2018) due to FinTech (Ernst & Young, 2021). FinTech drivers are demand-pull (economic development, competition gaps, youth population) and supply-push (data access, tech advancement, regulations, institutional factors, ecommerce growth).

Visiting a bank branch was the only way of lodging or withdrawing money from the bank before the ATM came. It relieved the customers and their banks from lots of stress. Then came the use of smartphones to make enquiries; to transfer and withdraw cash; and to perform other financial transactions with the licensed financial institutions. It started with the USSD codes but these transactions are now conducted on mobile apps. The traditional banks got to this level when FinTech start-ups took over and upturned the entire financial landscape. The wave started in 1998 when PayPal took off in the USA but it started in Nigeria in 2009 with the entrance of Paga, but Interswitch and E-transact had been on ground since 2002 and 2003 to connect banks, provide technology for ATM and give the backbone for digital payments and e-commerce. The table below shows the year of entry and the area of specialization of the top FinTech in Nigeria, but the distinction in specialisation gets blurred as these companies take on new products and services over time.

Existing commercial banks established subsidiaries as a way of entering the FinTech market: First Bank has Firstmonie, Polaris Bank has SurePadi, Unity Bank has QikQik, Zenith Bank has EasyMoney, Wema Bank has ALAT, and UBA has U-Mo. The telecommunication companies (telcos) are taking the same steps: MTN has Momo but Glo and 9Mobile has payment service banks (PSBs). MMO platforms allow consumers to make or receive payments or buy airtime using USSD (Unstructured Supplementary Service Data) on their phones; to use the MMOs' Apps for mobile transactions; and to visit any of the MMOs' network of agents to conduct their financial transactions.

To give legal backing to FinTech in Nigeria, on 17 August 2020, the CBN issued guidelines for the operation of Payment Service Banks in Nigeria and on 31 October 2020 the first three PSBs were licensed and their required share capital was fixed at ₦5billion. By 09 December 2020, the CBN had introduced new licence categories for other operators in the Nigerian payments system and their capital requirement was fixed accordingly. Mobile Money Operators (MMOs) require ₦2billion, Switching and Processing Companies (SPC) require ₦2billion, Payment Solution Service Providers (PSSP) require ₦100million, Payment Terminal Service Providers (PTSP) require ₦100 million, the Super Agents require ₦50million, and Payment Solution Services (combining PSSP, PTSP and Super Agents) require ₦250million (PwC, 2020). This signalled the official opening of the gate for the operation of FinTech in Nigeria, and all operators were given up to 30 June 2021 to comply (CBN, 2021). Thus, the CBN classified FinTech into seven categories: MMO, PSSP, PTSP, Switches, card payment scheme, super agents, and third-party processors.

With these developments, according to Findexable (2019), Lagos (Nigeria) ranked 52 amongst the top 100 hubs in the world, with deals worth US\$94.9m in 2018. These deals were championed by Jumia, Paga and SnapCredit; driven by digital payments, mobile lending, and personal finance; and given the growth impetus by the teeming population of millennials with relevant ICT skills (Findexable, 2019).

Digital banks, known as neobanks or challenger banks, are small retail setups using digital channels to compete with established banks. They cater to underserved segments, advancing cashless and inclusion goals. Neobanks operate nimbly with low costs, offering ATM access, no forex fees, mobile apps, better rates, quick loans, spending tracking, etc. COVID-19 highlighted their advantages over traditional banks, appealing to millennials and older generations. They're internet-based without physical branches. Nigerian examples include SunTrust Bank, ALAT, Kuda, Brass, Rubbies, etc. Eversend, Umba, Monzo, N26, etc., operate in Africa and Europe. Payment service banks (PSBs) like Hope PSB, 9PSB, and Money Master PSB also contribute.

Application Programming Interface (API) enables software communication. FinTech leverage APIs, using data and analytics for mobile delivery. API directs user requests to host servers, returning responses. Connector APIs enable messaging, processing, and settlements for mobile payments. Nigerian examples include Okra, Mono, and OnePipe. Four API categories exist: non-sensitive info, sensitive info, non-real-time transactions (like loan apps), and real-time transactions (payments). FinTech embed or collaborate for API-based banking, fostering open banking, collaboration, and efficient service provision.

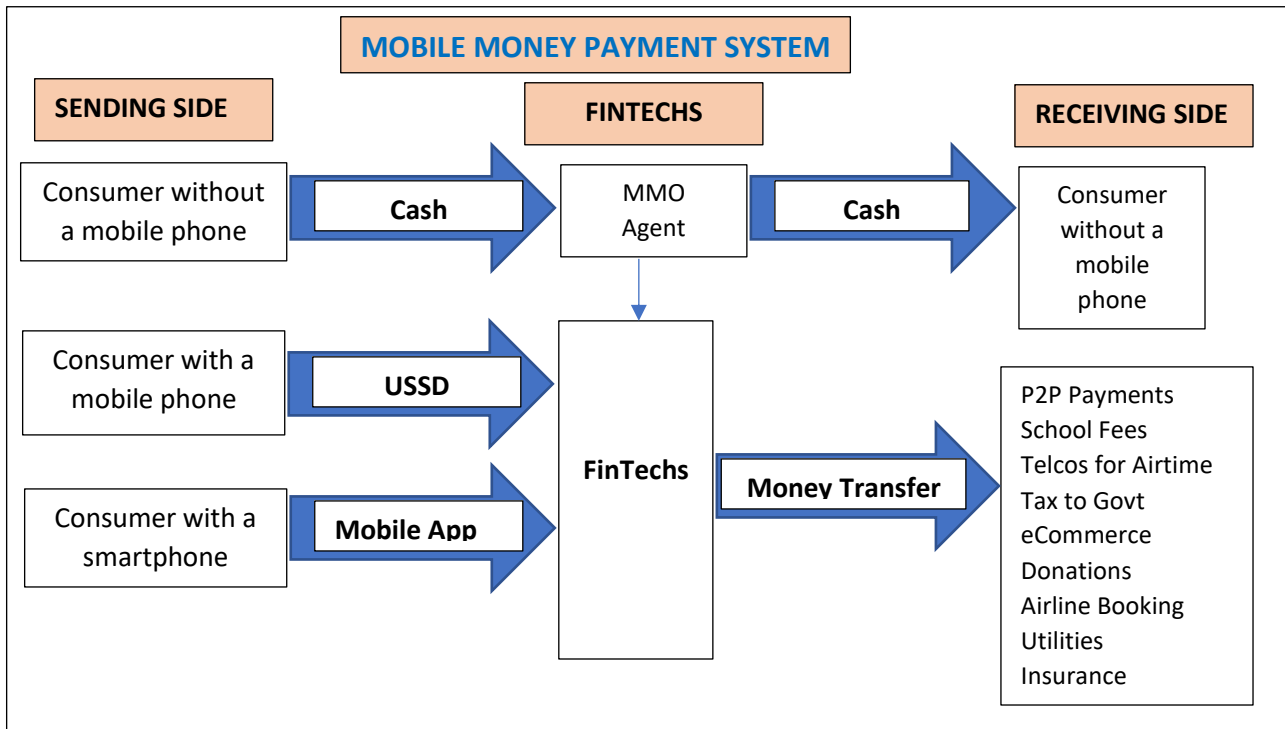
To expand financial services, open banking needs simplified standards, diverse products, flexible options, and commercialized core systems. The CBN in 2020 released licensing requirements for FinTech, following global trends. The CBN's 2021 data accessibility guideline aims at open data and open banking. Progression involves start-ups, payment platforms, lending FinTech, leading to open banking. Figure 1 illustrates the inclusive payment system, from agent-based cash transfers to mobile app payments for various services, highlighting the movement toward open banking.

The IMF and World Bank's Bali 12-point FinTech Agenda aims to promote government openness to fintech potential, encourage tech-driven financial service enhancement, boost market competition, ensure financial inclusion, monitor progress, refine regulations, and foster global collaboration. This global government support facilitates the growth of FinTech.

Regulatory environment crucially supports FinTech growth, ensuring consumer protection and system stability. Nigerian regulators, including the CBN, provide licenses, oversee sectors, protect deposits, manage technology transfer, ensure privacy, prevent money laundering, supervise KYC, enable public capital access, facilitate inter-bank transactions, and aid

agent expansion. The umbrella association FinTechNGR collaborates with regulators, government, and international counterparts to synchronize industry stakeholders.

Figure 1. Mobile Money Payment System



To audit FinTech, electronic data needs tools like Computer-Assisted Audit Techniques (CAATs). Auditors assess automated systems, compliance, and substantive tests. In computerized accounting, audit trails can be lost due to lacking source docs, data changes, minimal printouts, etc. The International Standards on Auditing (ISAs) advocate CAATs for tackling this. CAATs include automated working papers, audit software, and data processing tools. They're vital for complex data analysis, enhancing audit efficiency and effectiveness.

CAATs encompass technology use by auditors to achieve objectives, collecting and analysing audit evidence electronically. They help review client data systems, test procedures, select samples, and produce analyses. CAATs can swiftly handle voluminous data and test controls and transactions. They come in approaches like test data, integrated test facility, audit software, embedded audit modules, and parallel simulation. These approaches align with evolving technologies like blockchain, IoT, AI, smart contracts, and ML, which also power FinTech, enhancing audit capabilities.

Common CAATs like CaseWare IDEA, Pentana, ACL, and proprietary software assist auditors in testing, analysis, and reporting. Microsoft Excel-based tools and TeamMate Analytics are also employed. CAATs serve as critical aids in auditing technology-driven FinTech entities (Al-Hiyari et al, 2019; Suen, 2009; Dias & Marques, 2018).

Any failure on the part of auditors to articulate the internal control system of a FinTech and carry out compliance test on it may lead to serious risks. In addition, the auditor failing to carry out substantive tests of transactions, records and account balances may allow seriously huge frauds to escape detection. A case in point is the Wirecard scandal which accumulated a sequence of accounting scandals that resulted in its insolvency on 25 June 2020 (Jakubeit, 2021). Wirecard was established in 1999 as a German payment processor and DFS provider listed on the DAX index. It also issues and processes physical bank cards. It had subsidiaries in the UK and USA, and business operations in New Australia, Zealand, Turkey, Brazil, South Africa and later in China when SoftBank invested in it. Its claim of €1.9bn bank balances in the Philippine banks were discovered to be spurious. It later appeared that the auditors had failed to request crucial account information from the offshore banks to confirm it held cash on behalf of Wirecard and there had been many other major financial scandals in which auditors were alleged of negligence: Enron, Parmalat, Credit Suisse, and Satyam ((Jakubeit, 2021; Beerbaum, 2021 a & b; Scott, 2021).

APIs enable digital transformation by granting access to FinTech databases. Open data's network necessitates safeguards to prevent misuse and financial losses. For instance, Facebook faced a \$5 billion penalty for data misuse. Global cybersecurity measures dictate data acquisition, management, and protection. API providers must follow guidelines to secure open data for FinTech, facing penalties if not. FinTech using APIs also must uphold data integrity to evade penalties.

APIs enhance connectivity but expose vulnerabilities to hackers. Robust access controls and cybersecurity measures are essential to secure open data. Accounting information systems controls manage financial systems, while API controls address cybersecurity. Auditors use CAATs for compliance tests in financial statements, but reviewing API infrastructure control compliance isn't their domain.

2.2 Theoretical review

An area of concern that touches on auditors is conflict of interests. Fama and Jensen (1983) established that the owners of a firm and the agents employed by them to manage the firm often have divergent interests in the affairs of the firm. Thus, there tends to be an agency problem between the agents and their principals. This explains why the owners usually constitute a board of directors that monitor the actions and inactions of the agents. The board members are expected to be independent and ensure that the actions of the managers and contractors/consultants are tailored in line with the interest of the owners (Jensen & Meckling, 1976). This principle applies equally to auditors who are engaged to review the stewardship accounts of the managers and directors and report back to the owners (Carlinge & Holm, 2017). Thus, the agency theory is applicable to this study.

Moreover, corporate governance is an effective mechanism that can be developed to ensure that the activities of the agents are monitored and that the behaviours of the operators premised on selfish interests are curtailed (Habbash, 2010). This is achieved through the various corporate governance mechanisms such as the presence of audit committees, compensation committees and board of directors (Wale-Awe, 2019). The presence of institutional investors with large shareholding can also put the auditors on their toes, and ensure that their conducts tailor with the objectives of the owners (Lasisi, 2017). It is a betrayal of the trust of the owners for the auditors to allow their personal interests to clash with the interest of the owners. The auditor is guided by the ethics of the accounting profession to resign from such engagements where they are hampered from performing their fiduciary roles (ICAN, 2009).

The theory of asymmetric technology is equally applicable. Zeranski and Sancak (2020) posited that regulators in the financial industry are not catching up with the high speed of technological advancements of the FinTech, and that the technological gaps between regulators and FinTech result in a phenomenon called asymmetric technology. The lag in time and the concomitant unclear regulatory atmosphere becomes favourable for likely smart swindlers to plan and abuse the system to their personal advantages. The authors concluded that latent charlatans come up with boundless openings to exploit FinTech at capital markets because of unattractive yields at money markets, erratic supervisory methods, general tariff barriers in response to trade conflicts, and aggressive rivalries between national economies (beggar my neighbour policies).

This calls to mind scandals like the Enron and WireCard cases. However, the 12-point Bali FinTech Agenda (IMF & World Bank, 2018) is a global call for action in which governments were encouraged to take urgent action so that FinTech, by their transborder operations, would not cause serious financial havocs. Several features of the current financial sectors regulatory requirements are tackling potential FinTech abuses that could lead to scandals, country by country (developed or developing), on a global scale. Therefore, financial regulators and governments appear prepared to tackle potential FinTech scandals and crises through existing and ongoing structural reforms and digital transformation programmes (Zeranski & Sancak, 2020).

2.3 Empirical Review

The Unified Theory of Acceptance and Use of Technology (UTAUT) explains technology adoption, including CAATs. Using survey and interview methods, studies on auditors' CAATs usage show mixed results. Adebayo and Olugbenga (2012) found consequent increased efficiency, Ebimobowei et al (2013) identified positive resulting factors, Siew et al (2020) linked it to system complexity and PAOs' support to adoption, and Damer et al (2021) emphasized facilitating conditions, intentions, and performance expectancy. Despite ISA mandates, Janvrin et al (2008), Bierstaker et al (2014), and Al-Hiyari et al (2019) observed low CAATs usage. However, none of these studies was carried out in a FinTech environment.

3 Research Method

The number of FinTech had grown to 250 in Nigeria as at June 2021 (Santosdiaz, 2021). The FinTech are licenced and regulated by the CBN, making it obligatory for them to submit audited financial statements at specific times each year. But being private companies, they are not mandated to publish their financial statements on their websites. However, they refused to respond to questionnaires sent to them, making it difficult to identify their external auditors. The alternative means of reaching the auditors is to send survey questionnaires to all ICAN members through all the District Societies requesting that only auditors of FinTech should respond.

Using an online survey, data was gathered from 205 FinTech auditors out of a potential 250, resulting in an 82% response rate. To achieve full coverage, the online survey was sent by email to all ICAN district societies, their chairmen, and their secretaries for onward distribution to all members. The questionnaire, designed on Google Forms, contained 30 structured questions eliciting information on the use of CAATs in the audit of FinTech, factors influencing audit opinions, system controls assessment, CAATs usage compliance, the need for online real-time file interrogation, automated audit tests, and continuous auditing. The data was analysed descriptively using tables, central tendency measures (mean, median), sum of squares, skewness, and kurtosis to understand data distribution and relationships.

4 Data analysis

A total of 205 responses were received: 105 were practising as external auditors while the remaining 100 were in the private sector as company accountants (61), in the public service as civil servants (32) and in education as instructors (7). Table 2 show this distribution.

Out of the 105 respondents that were external auditors, 83 were auditors to FinTech and 22 were not. It is these 83 respondents that form the focus of the analysis that provided answers to the questions raised by this study. Out of the 83 auditors, 37 (45 percent) were able to ascertain that the environment in which the financial statements were prepared were free of errors. Eight of the auditors that did not use CAATs, were nevertheless able to satisfy themselves that the financial

reporting environment were free of errors. Likewise, the Auditors were asked if they complied with the ISA mandate to use CAATs in the FinTech environment, 37 (45%) complied and the remaining 45 (55%) did not comply.

Out of the 83 auditors, 52 were able to do an assessment of the internal control system, 23 were unable to do the assessment while 8 did not do the assessment as shown in Table 3. By implication, 29 out of the 52 auditors used CAATs while the remaining 23 used the 'Auditing Around the Computer' approach to assess the system.

Table 2. Respondents to the Survey

Category	Respondents
Audit practice	105
Private sector	61
Public service	32
Education	7
Total	205

Table 3. Assessment of the Internal Control System

Category	Number	percentage
With CAATs	29	35%
Alternative Approach	23	28%
Could Not	23	28%
Did Not	8	9%
Total	83	100%

Auditors of FinTech that use CAATs were 29 (35 percent) and they all agreed that CAATs help in obtaining information on the knowledge of the client's business (KOB). Out of the 29 auditors that used CAATs, only 13 used CAATs to interrogate the system and the remaining 16 used CAATs to a limited extent.

4.1 Perception of Auditors on Blockchain Technology

With their exposure to the audit of FinTech, auditors were of the opinion that blockchain will affect auditing positively in the future. It will specifically assist auditors in the confirmation of accounts balances (e.g. money in escrow accounts). Their response in Table 4 shows that 16 strongly agreed and 29 agreed, totalling 45 (60%) that agreed. The remaining 38 were neutral but none disagreed.

Table 4. Blockchain will assist auditors

Category	Blockchain
Strongly Agree	16
Agree	29
Neutral	38
Disagree	0
Strongly Disagree	0
Total	83

4.2 Perception of Auditors on Internet of Things (IoT)

Asked if Internet of Things (IoT) will assist auditors in the confirmation of clients' transactions with third parties, auditors' responses in Table 5 were heavily in the affirmative, as only 8 (9%) disagreed.

Table 5. Internet of Things (IoT) will assist auditors

Category	Internet of Things
Strongly Agree	16
Agree	44
Neutral	15
Disagree	8
Strongly Disagree	0
Total	83

4.3 Perception of Auditors on Continuous Auditing

Asked if Machine Learning (ML) tools and Internet of Things (IoT) can work with blockchain to help auditors in performing continuous audit, auditors' responses shown in Table 6 was majorly in agreement, as 16 strongly agreed and 52 agreed, with only 15 (18%) being neutral. The inference is that continuous auditing is the way to go.

Table 6. Continuous Auditing is the Way to Go

Category	Continuous Audit
Strongly Agree	16
Agree	52
Neutral	15
Disagree	0
Strongly Disagree	0
Total	83

4.4 Perception of Auditors on International Standards

Furthermore, the auditors were asked if Blockchain, IoT, Machine Learning and other technologies will result in: (i). Bookkeeping, reconciliation, substantive tests becoming redundant (ii). The purpose and role of auditor being transformed (iii). Accounting and auditing standards needing update and revision. Their responses are as shown in Table 7 with 45 strongly agreeing and 38 agreeing.

Table 7. Accounting & Auditing Standards Need Updating

Category	Standards Need Updates
Strongly Agree	45
Agree	38
Neutral	0
Disagree	0
Strongly Disagree	0
Total	83

Auditors expect that developments in technology will impact on the profession with computers handling bookkeeping (data, capture, storage, and processing) and reconciliation (with automated algorithms), rendering substantive tests redundant. There is an expectation of a digital transformation of the auditors' role leading to a recast of accounting and auditing standards.

Table 8. Behavioural Patterns of Variables

	CATVL	GRC	APP	CPL	TRG
Mean	0.0964	0.4578	0.6386	0.4458	0.1687
Standard Error	0.0326	0.0550	0.0531	0.0549	0.0414
Standard Deviation	0.2969	0.5012	0.4833	0.5001	0.3767
Sample Variance	0.0882	0.2512	0.2336	0.2501	0.1419
Kurtosis	5.9027	-2.0195	-1.6963	-1.9994	1.2786
Skewness	2.7859	0.1724	-0.5875	0.2222	1.8023
Sum	8	38	53	37	14
Count	83	83	83	83	83

Table 8, capturing the behavioural patterns of the variables, revealed that the controls outpaced the value of CAATs as indicated by their mean values which implies that on the average, application controls ranks highest while the value of CAATs ranks lowest (because it is the dependent variable). Also, the standard deviation which shows the extent of discrepancy away from the mean revealed that general controls had the highest deviation. Meanwhile, skewness revealed that all variables were positively skewed except for application controls which proved otherwise. In otherwords, it can be deduced that the values of distribution for application controls was concentrated on the right tail side of the distribution graph because the left tail was longer implying that the mean value for APP was lower than its median distribution. Conversely, the positively skewed variables implied that the values of distribution for the other variables CATVL, GRC, CPL and TRG were concentrated on the left tail side of the distribution graph because the right tail was longer implying that mean values for these variables were higher than their median values.

As regards kurtosis which measures the flatness or peakedness of data distribution, it can be revealed that all variables except CATVL were found to be normal and platykurtic as their values were found to be between -3 and +3. However, for CATVL with a kurtosis value of 5.9027, it can be deduced that the variable is leptokurtic and can be said to be abnormally distributed. In precis, the values of skewness for the variables fell between the range of -1 and +1 while that of Kurtosis fell between -3 and +3 except for CATVL and TRG (in both cases for the former and in the case of skewness for the latter). Thus, it can be deduced that the variables are normally distributed except for CATVL and TRG. The reason for the sharp fluctuations in CATVL and TRG can be attributed to the divergent circumstances that affected the auditors in the course of the implementation of CAATs as regards CATVL, hence, the abnormal distribution of data. Also, for TRG, the non-compliance of auditors with CAATs usage may be responsible for the abnormal distribution in TRG.

5 Discussion of Results

5.1 *The FinTech pose new risks for auditors*

From the analysis of collected data it was observed that only 29 out of 83 (35 percent) of auditors of FinTech use CAATs, and bearing in mind that FinTech electronically capture, store, process and report information, there is much concern on how the remaining 65 percent (a huge majority) obtain audit evidence to satisfy themselves that the information at their disposal was sufficient to express appropriate opinions on the financial statements of their clients. It amounts to flying blind, and the concomitant consequent risks are enormous. The plethora of financial scandals like Enron and WireCard are a warning signal to auditors (Beerbaum 2021 a & b).

A larger percentage of FinTech auditors still employ the “Auditing Around the Computer Approach” in an environment that is paperless and devoid of audit trail. It only shows that auditors assume that they could use manual procedures to audit fully computerised FinTech. It compares with chasing a car snatcher with a bicycle. If the tools don't match, the resultant gap exposes the auditor to higher risks.

Two observations are related: 23 auditors (i.e. 28 percent) could not assess the internal control systems of the FinTech and eight auditors (i.e. 9 percent) did not attempt to assess the internal control systems, probably because they knew there was no way they could assess it without the right tools.

5.2 *The perceived risks in FinTech affect audit opinions*

Only 13 (16 percent) of FinTech auditors actually interrogate their clients' systems with CAATs. This is the core value of CAATs and it is the area in which it has tremendous advantage over auditing without CAATs. To use CAATs without using the file interrogation modules is to render CAATs useless or turn it to a cosmetic apparel.

FinTech auditors felt that the overall role of the auditor operating in the FinTech environment would be transformed. The developments in the DFS has not settled and neither is it anywhere a scratch in the potentials inherent in what ICT can do to finance. They expect a genetic modification of the auditor: in form, character, and appearance.

With the current technologies at their disposal, auditors expect that only continuous auditing would match the pace of technological development in FinTech. Continuous audit involves the installation of embedded audit modules in the clients

accounting applications with the objectives of gathering information for the auditor and also generating exception reports to assist the auditor in probing into spurious and suspicious transactions.

5.3 FinTech do not render existing CAATs ineffective

Another observation is the confession of 46 (i.e. 55 percent) of the FinTech auditors that they do not comply with the ISA's mandate that they should use CAATs. Though there has never been any sanctions for non-application of CAATs, it only makes it obvious that there is no enforcement of compliance. The PAOs may have worked on encouraging the auditors to comply but this now appears to be insufficient.

From their responses, the auditors perceived that they seriously expect developments in infotech to help audit practice. With artificial intelligence and especially machine learning, blockchain technology and Internet of Things gathering momentum and the computing power growing exponentially annually, auditor would not expect things to remain the same. They believe IT would support and simplify the work of the auditors over time.

Furthermore, the FinTech auditors suggest that accounting and auditing standards would require to be updated in the light of current developments in ICT. Specifically speaking, the ISAs 300, 315 and 330 dealt with CAATs, but auditors felt that more is required now that the face of business organisations and their information gathering, storage, processing and output are changing at digital speeds. They expect standard-setters to review and upgrade existing standards in order for auditors to keep up pace with developments in FinTech: They implied that FinTech render existing CAATs ineffective.

6 Summary and Recommendations

Drawings from the findings of this study, the following recommendations are germane. The PAOs should mandate all auditors of FinTech to use CAATs. Compliance can be enforced by insistence on the inclusion of a statement on compliance in the audit reports. Training to this effect should be included in the continuous professional development programmes of the other PAOs. One of the big four accounting firms did a practical workshop for small and medium practitioners a few years ago. This may have accounted for the 35 percent usage recorded in the survey results.

PAOs should strengthen their Practice Monitoring Units by building a strong in-house team of experts that had had exposure to audits especially in any of the big four firms. The Financial Reporting Council's backing is needed in this area as it can underwrite some of the costs. Asking audit firms to contribute financially towards the monitoring exercise would be self-defeating.

As ICT is wading into every sector, businesses have stopped resisting but are now adopting technologies. CAATs too may soon take over a huge part of the audit work. It becomes imperative that PAOs create a certification in CAATs.

Small audit firms may tarry for long before adopting CAATs because of the costs of acquiring computer hardware and CAATs software, and of training staff. The merger of small firms and the joining of international network of firms would give small firms access to CAATs earlier than when they remained small and detached.

A model may be designed such that a pool of funds is created from contributions made by public interest entities (PIEs), as a form of tax on profits and individual PIEs would stop paying audit fees. Auditors would then be paid from this pool of funds just as tertiary education is funded from TETFUND (Tertiary Education Trust Fund) in Nigeria. This will make auditors to receive fees commensurate with the service rendered and this will put them in the right stead to purchase and use CAATs. Furthermore, this model would have positive impacts on auditors' independence and the quality of their audits.

Auditors of FinTech would have to change their audit approach from auditing at year-end (or on quarterly basis) to continuous auditing. This will require having an embedded audit module installed into the client's accounting information system for continuous monitoring, and extraction of exception reports for the subsequent review of the auditor. The scope of audit work could be extended from working on samples to performing analytical reviews and substantive tests on all transactions, as the speed and carrying capacity of CAATs would make these possible, at no material marginal costs.

Chartered accountants that are CAATs vendors could organise training workshop programmes for buyers and users of CAATs in Nigeria. This would be their corporate social responsibility contribution to the profession and the Nigerian economy. Nevertheless, it will help in marketing their products, yielding increased sales revenue afterwards. Resource persons could be invited from developers as facilitators in the workshops and feedbacks from auditors would further assist the developers in making improvements on later versions of the CAATs.

This study assessed CAATs' effectiveness in aiding auditors of FinTech in Nigeria. An online survey collected primary data, analysed via descriptive statistics. Out of 205 respondents, 83 were FinTech auditors. literature review covered concepts, theories, and prior empirical work. Cross-sectional data estimation techniques were employed.

Most FinTech auditors did not use CAATs effectively, revealing inadequacies in their usage. Auditors lacked compliance with CAATs usage in computerized environments, and some did not sufficiently interrogate clients' systems to assess controls. Despite these gaps, auditors believed CAATs could enhance their FinTech audits. Emphasizing continuous auditing and updating IFRS and ISAs were recognized as essential. The need for auditors to adapt and transform in the FinTech environment was underscored.

The study highlights the necessity for FinTech auditors to adopt CAATs to ensure effectiveness and efficiency. Non-use of CAATs renders auditors unable to evaluate assertions and mitigate risks. New risks emerged in the FinTech environment, impacting audit opinions. Existing CAATs retained their efficacy for auditing FinTech.

The study adds to academic discourse by providing empirical evidence on FinTech and its associated risks. It highlights the significance of auditors' preparedness in a rapidly evolving technological landscape, benefiting governments, industry players, and academia.

7 Limitations and Directions for Further Research

The FinTech were not mandated to publish their annual financial statements on their websites though they submit to the CBN, because they are not public companies. This did not allow the researcher to get the auditors names directly, thus, the entire population of ICAN members in audit were included in the survey resulting in 83 out of 205 responses relating to the target respondents.

Opportunities for future research include investigating reasons for auditors' underutilization of CAATs for FinTech audits, exploring specific CAATs types fitting for FinTech' audits, and replicating the study in different countries. Comparative analysis of fees on FinTech audits is also suggested.

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