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FINANCIAL TECHNOLOGY AND SUSTAINABILITY OF COMMERCIAL BANKS IN NIGERIA

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ABSTRACT: This study examined the effect of financial technology on the sustainability of quoted commercial banks in Nigeria. The objective was to examine how financial technology affects sustainability of commercial banks. Time series data were sourced from Central Bank of Nigeria Statistical Bulletin. Financial sustainability was used as dependent variables while automated teller machine, point of sales, mobile payment, web payment and electronic fund transfer was used as predictor variables. Ordinary least square with the aid of Software package for Social Sciences was used as data analysis methods. The model summary results reveal that all of the independent variables together account for 78.7%. The study found that automated teller machine has a favorable but no significant impact on financial sustainability of the quoted commercial banks (β=.023, p=820 >0.05.Point of sales has no favorable but no significant impact on financial sustainability of the quoted commercial banks (β=-.003, p=.908 >0.05). Web payment has no favorable and significant impact on financial sustainability of the quoted commercial banks (β=.446, p=.000 <0.05). Mobile payment has no favorable and significant impact on financial sustainability of the quoted commercial banks (β=.186, p=.000 <0.05). Electronic fund transfer has no favorable and significant impact on financial sustainability of the quoted commercial banks (β=.307, p=.000 <0.05). From the findings, the study concludes that there is no significant relationship between Automated Teller Machines and sustainability of quoted commercial banks in Nigeria, that there is no significant relationship between point of sales and sustainability of quoted commercial banks in Nigeria, that there is significant relationship between Web pay and sustainability of quoted commercial banks in Nigeria, that there is significant relationship between mobile pay and sustainability of quoted commercial banks in Nigeria, that there is significant relationship between electronic fund transfer and sustainability of quoted commercial banks in Nigeria. Financial technology such as the ATM has a positive impact on financial stability by increasing the ability of banks to provide financing, so that the availability of bank loans tends to experience growth therefore the regulatory authorities should ensure effective policies to checkmate assets quality of the commercial as the major determinants of sustainability

INTRODUCTION

Sustainability is increasingly being acknowledged as central to the growth of the banking industry (Adiga, Adigwe, Okonkwo & Ogbonna, 2022). It focuses on integrating financial inclusiveness, and environmental, social, and corporate governance criteria into all sectors of the economy. The banking sector, as one of the economic sectors, joined the goal of achieving sustainability by creating a sustainable environment that helps promote sustainable development. In the last decades, the bank's attitude toward environmental and social issues has witnessed change, and the financial sector's accountability on environmental and social issues has gained importance (Cheng & Qu, 2020 and Agwor & Akani, 2020). The banking business has seen a radical change in the banking sector due to financial technology, also known as FinTech. More stable banks are more able to offer financial products and services and contribute significantly to increasing financial inclusion (Feyen, Frost, Gambacorta, Natarajan, and Saal, 2021 & Akani, 2024). Therefore, regulatory pressure to mitigate credit risk and increase bank stability may contribute to the unintended exclusion of the most disadvantaged customers (Ackah and Asiamah 2016; Anarfo et al. 2020; Musau et al. 2018). Besides, banks play a key role in connecting the financial system to the real economy, yet financial inclusion makes monetary policy more effective in controlling inflation by expanding its effect

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to a larger proportion of the population (Jungo et al. 2021 & Akani, 2024).

Financial Technology (Fintech) has a long history. Coad and Rao (2008), traces the first use of the word Fintech to 1950s. As the years progressed, innovation has constantly assumed a key part in the money related industry in ways that the clear majority underestimate and may not ever observe. Financial Technologies have beyond reasonable doubt affected financial performance of banks. Banks have been forced to use financial technologies to increase their efficiency and effectiveness. This is done through mobile money transfers and lending, internet of things and agency baking. Banks have been able to process customer requests, information leading to reduction of queues in the banking hall, reduction of staff costs and idle time. Mobile banking applications and internet banking platforms, which have been enabled by Financial Technologies and have encouraged efficiency of banking transactions across the globe (Coad & Rao, 2008 and Akani, 2023 and Adumene & Akani 2021).

Utilization of technological advancement started in 1950s with the birth of credit cards. By then it seemed the biggest breakthrough in banking sector until 1960s when ATMs came to supplement tellers and branches. It was evident by then that more was to come. 1970s saw the start of electronic stock exchange, while 1980s came the ascent of bank centralized servers and more refined information and record-keeping frameworks. Internet and web based business plans of action emerged strongly in 1990s. This in turn led to emergence of stock brokerage platforms and websites that replaced phone driven brokerage.

The term Financial Technology (Fintech) is authored matching with the production of the Financial Services Technology Consortium, set up by Citicorp in 1993. Five years later, in 1998, the first bank in the United States of America set up the principal value-based sites for Internet banking, which was immediately replicated by the other banks across the globe (Coad, & Rao, 2008 and Akani & Anyamaobi, 2021).

The use of FinTech services including POS, ATM, mobile banking and internet banking have increased as a result of this tendency. As a result, as people change how they manage their accounts; traditional banking faces a serious threat (Hassan and Misrina 2021and Akani, Uchechukwu & Ezebunwo, 2021). Financial institutions have greatly benefited from recent developments in financial technology. The usage of technology has made their operations efficient. Among other financial institutions banks are the major beneficiary to the adoption and use of financial technology. According to Dorfletner, Hornuf, Schmitt, and Weber (2017), financial technology is the modernization of financial services by businesses or their agents through the use of cutting-edge technology.

With the growing financial technologies influence, these banks will have to evolve to the new financial technology -like banking, or many will still fall on the roadside as time goes by. Innovators have new tools 11 to leverage: mobile money, social networks, app stores and data science. And the mantle of innovation has been picked up by startups. Unlike fifteen years ago, there is lots of interesting financial technology startups in East Africa doing lending including: Tala, Mshwari, Branch, Saida. Nigeria is enjoying a startup renaissance birthed by the distribution and digitization that cheap mobile connectivity and ubiquitous mobile money provide. However, financial Technology is slowly disrupting traditional banking services with evolved technologies leading to enhanced efficiency as well as effective quality services offered to the banks' customers. This efficiency is increased through loan personalization modules, elimination of middlemen hence lowering the cost of transactions significantly (KPMG, 2016). In addition to these technologies like block chain also enhance efficiency due to availability of data (Peters & Panayi, 2015, Akani & Lucky, 2023Wood & Buchanen, 2015).

FinTech is depicted as a new type financial service business that merges it with economic services like payments, remittances and asset management (Lee & Kim, 2015). FinTech which is an invention that tries to contend with conventional economic means in financial service delivery is not only restricted to expenditure lessening advantages alone but as well have significant contribution to extending access to clients living outside the subdivision network and build opportunities for effectual cross (San-Jose, Ituralde & Maseda, 2009 and Akani & Nathaniel, 2021). The banking sector in Kenya has encountered unstable periods subsequent to the crumple of a lot of financial institutions in the 1990s. So as to reduce their operational expenditures, business financial institutions have accepted the banking

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technologies together with mobile banking, ATMs as well as internet banking where clients can use their accounts from their individual computers or mobile phones. To assist additional fiscal intensify, the CBK in 2010, permitted regulated business financial institutions to work via third party representatives, subject to agent allowan.

Various studied have been done about the effects of FinTech on economic achievement of firms financially and operationally. Bitler (2001) made a research on the connection amid ICT investments with small company's achievement. The study found out the performance of firms using FinTech is better than the firms those do not use FinTech. Another study which is being conducted by Berger et al. (2003) investigated the technological development with its influences on the banking industry exploiting relevant facts. The study concluded that the investment in technology leads to reduction in costs. A study conducted by Muyoka (2014) investigated the connection amid mobile banking on the economic attainment of business financial institutions in the Kenyan economy. Muyoka established that there is a considerable connection amid mobile banking with the effectiveness of business financial institutions in the country. Another examination made by Jumai (2012) examined the effects of ICT acceptance on development of business financial institutions in Kenya. The research found out that there is an affirmative link amid Information and communication technology and development of business financial institutions. The commercial banks those invest more in technology have higher growth in market share. From the above studies, there has been no attention paid on how FinTech, both Mobile and internet banking, affects return on assets in financial performance of commercial banks in Kenya. Therefore, this study seeks to fill this gap by finding the effect of financial technology on financial sustainability of quoted commercial banks in Nigeria.

LITERATURE REVIEW

Financial Technology

Financial Technology comes from two words; finance and technology. It is defined as new technologies that support financial services. In future banks are predicted to offer social network platforms with which customers can use their mobile phones to take advantage of investment opportunities courtesy of financial technology (Drew, Andrew & Neil, 2017 and Akani & Chittey, 2021). Financial 3 technologies are also defined as any technological innovation that is impacting the financial sector and its operations. They could also be referred to as companies that do a combination of financial services and modern technologies and in turn offer internet based and application oriented services that are user friendly, automated, transparent and efficient (European Banking Federation, 2015 and Akani & Agilebu, 2021). Financial Technologies are offering a host of technological solutions geared towards achieving convenience, faster turnaround times and operation efficiency. Though several scholars have pointed out that payments space is the most advance segment among the financial technology (Douglas & Janos, 2015 and Akani & Chittey,2021). Financial Technologies have been able to impact various stakeholders in the financial sector. It has led to improvement of asset management services through offering wealth management services to retail customers through simplified systems, propositions of algorithms to support the decision making process and artificial intelligence management of portfolios through robots.

Point of Sales

Point of Sales (POS) machine or terminal is an electronic device used in payment for goods and services. You find it in supermarkets, hotels, filling stations, shops etc. A charge known as Merchant Service Charge (MSC) is charged on all transactions done on POS terminals; this charge is borne by the merchant. The maximum total fee a merchant can be charged for any POS terminal transaction is 0.75% of the transaction value or N1, 200.00 caps. Point of Sale refers to the location at which a payment of a card transaction occurs, usually by way of a device such as a credit card terminal or cash register. The industry has endorsed four manufacturers for the supply of Point-of- Sale terminals - PAX, Bitel, Ingenico, and Verifone - with negotiated discounts and local support arrangements. A POS can be purchased from any of these four for as low as N45, 000.00 per terminal. However, parties are free to purchase POS terminals from any manufacturer; so far they meet the POS specifications in the Point-of-Sale guidelines. (Akani & Lucky, 2022 and Akani & Ezebunwo, 2022)

Automated Teller Machine (ATM)

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The method that is still most frequently utilized to pay financial transactions and obligations is actual cash. However, especially in advanced economies, cash transactions are declining in frequency (Amedu, 2005). In contrast to Europe, where cash is still often utilized, in the United States, cash still represents 50% or more of all transactions. Obviously, cash is not a form of electronic payment. The ATM, an electronic gadget, has, nevertheless, lessened the need for physical cash transportation and bank visits. An ATM or cash dispenser can be used by a bank customer to withdraw cash, and the account is quickly debited. One major benefit is that it is not need to be located on the property of a banking facility (Gomber, Koch & Siering, 2017 and Akani & Sarakiri, 2022). It is widely seen, among other places, at supermarkets, shopping centers, and gas stations. The card this ATM uses is a Chip device, which consists of circuitry on a single silicon chip. An intricate circuit known as a "card" employs a single chip that houses the whole computer's arithmetic and logic unit to handle microprocessors. It let bank customers to check their balances, make mini-statements, cash withdrawals, and transfer funds using automated teller machines. Despite the fact that ATM transactions are considerable, there are a few factors that reduce their effectiveness.

Internet Banking

Sarma (2016) asserted that these solutions make it possible for bank customers to use their websites without being constrained by the need for faxes, phone confirmations, original signatures, or letter writing. It consists of using the internet (www) to perform financial transactions rather than going to the banking hall with the aid of technological gadgets like computers (Petralia, et al., 2019). This serves as a payment method in addition to considerably simplifying online shopping. Payments are made by customers using contact or contactless cards, much like mobile banking (Sarma 2008; 2016). Online debt repayment and the purchase of airline tickets rank as the two most common internet transaction kinds. It is necessary to increase awareness of and use of cashless banking because a sizeable section of the population is ignorant of the benefits of online transactions (Siyanbola, 2013 and Akani, Amadi-Oparali & Ajinwo, 2022). According to Asare and Sakoe (2015), internet banking enhanced bank productivity as well as transaction volume, cashier productivity, customer retention, service delivery, client services, and all other elements of bank services.

Electronic Fund Transfer

Electronic fund transfer has been defined as any transfer of fund other than a transaction originated by a paper instrument. This is initiated through an electronic terminal, telephone or computer or magnetic tape and that orders or authorizes a financial institution to debit or credit an account (Gan, Demis, and Limsomborachi 2006). Electronic fund transfers (EFT) is a system of transferring money from one bank account directly to another without any paper money changing hand. It refers to the computer base-system used to perform financial transactions electronically. Examples of (EFT) in Nigeria are, Automated Teller machines (ATMs), Western Union Money Transfer, flash me cash, money Gram, point of sale (POS) among others: Point of sale transfer allows customer to pay for purchases with a debit card, which also may be your ATM card. They are used for both credit transfers such as payroll payment and for debit transfers such as mortgage payments.

Financial Sustainability

Financial sustainability is regarded as one of the cardinal challenges facing financial institutions. As such, institutions with robust and sound financial structures and stable incomes are the ones that can fulfill their missions; and respond to challenges brought about by dynamic environment. Thus, financial sustainability aims at ensuring that institutions are able to generate adequate income to enable the institution discharge its operations efficiently. As noted by Estermann and Pruvot (2011), financial institutions should look into three key pillars in order to ensure financial sustainability. They are: identifying and better understanding of costs of all activities, maintain reasonably diversified income structure that is sufficient and reliable and sustainable public funding with adequate accountability measures. According to Gakuu and Kirimi (2014), a financially sustainable organization is the one that is able to meet all its resources and financing obligations and fulfill its mission. Financial sustainability can be promoted through a broad based and interdisciplinary approach. It is further noted that financial sustainability requires an organization to develop its overall capacity such as management

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capacity and technical capacity which are fundamental in generating revenue to the organization. According to Kamau (2006), prudent financial management is imperative to achieving financial sustainability in an organization. Sustainability comprises not only financial sustainability, but also adequate organization and management, planning, and policy making. However, in the case of financial institution, concerns about financial sustainability are particularly acute (Whitehouse, 2000 & Akani, Ogolo & Sarakiri, 2023).

The Innovation Diffusion

Theory was introduced in 1962 and was fine-tuned by Rogers (1995) to explain the approach through which innovation can be passed in different ways over a certain period among different users (Sarker & Sahay, 2004). Insight into the diffusion and adoption of innovations within a social system can be obtained through the use of innovation diffusion theory. It helps in understanding the effect of financial technology (fintech) on sustainable banking by examining the factors that influence the diffusion and adoption of sustainable fintech practices within the banking industry. Innovation diffusion theory suggests that individuals who share similar social beliefs continuously exchange innovation through various channels (Echchab & Hassanudeen, 2013). The dispersion of Innovation hypothesis looks at the rate at which new advancements are spreading, how the new development is spreading, and reasons why it is spreading with a specific end goal to research the elements influencing the selection of new data innovation advancement (Monyoncho, 2015 & Akani, Azubuike & Lucky 2023).

Technology Acceptance Model (TAM)

Technologu acceptance model was propounded by Davis in 1989. This theory was propounded to predict the degree of acceptability of a new technology. The hypothesis put forward by Fishbein and Ajzen serves as its foundation. The TAM model aims to pinpoint the process adjustments required to make this new technology more user-friendly and accepted. Although the new system is straightforward, consumers must first acknowledge its advantages and ease of use before accepting it. The user will, therefore, favor the system that is simpler to use when two systems have the same capabilities (Dillon and Morris, 1996). The more easily a user can use a system, the higher their self-efficacy, infers Bandura's (1982) theory. This will ease and increase the flexibility of adopting this new technology or system.

The acceptability of a new technology is assessed using Nielsen's (1993) methodology, which combines social and practical acceptability aspects. A new technology's social acceptability depends on how it is used, what it can do, and how well it complies with social norms established by a group of people, a business, or an organization. For instance, using a cutting-edge technological approach to enhance traffic weapons control is socially unacceptable. Given the significant factors that influence and explain the innovation's actual utility, such as technological compatibility, product/service cost, product/service reliability, and usefulness of the technological innovation, practical acceptability should be emphasised more. Neilson asserts that the concepts of utility and usability can be used to divide the concept of "Usefulness" into two subcategories.

Developer-Based (Diffusion) Theory

The Developer-based (diffusion) theory was postulated by Rogers (1995) and states that many factors interact to influence the diffusion of an innovation. The four major factors that influence the diffusion process is the innovation itself, how information about the innovation is communicated, time, and the nature of the social system into which the innovation is being introduced (Rogers, 1995). This theory supports how financial innovations influence financial performance. This process relies heavily on human capital. The innovation according to MacKenzie (1996) must be widely adopted in order to self-sustain. MacKenzie (1996) added that within the rate of adoption, there is a point at which an innovation reaches critical mass. In this, diffusion manifests itself in different ways and is highly subject to the type of adopters and innovation-decision process. The criterion for the adopter categorization is innovativeness, defined as the degree to which an individual adopts a new idea.

Bank Focused Theory

This theory was propounded by Kapoor (2010) and anchors on the ground that banks use non- traditional but conventional low-cost delivery channels to provide

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services to its numerous customers. Such channels include the automated teller machines (ATMs), Internet banking, Point of Sale (POS) among others. By making use of these channels, the bank offers a wide range of services to its customers not minding the location and branch where the customer is. The only thing required is to input the needed information into the system and the transaction is concluded. Although the bank-focused model offers advantages such as more control and branding visibility to the financial institutions concerned, it is not without its challenges (Kapoor, 2010). The customer's primary concerns are the quality of experience, security of identity and transactions, reliability and accessibility of service and extent of personalization allowed. Banks address these issues by providing a branchless banking service with an easy-to-use interface (Kapoor, 2010 & Akani, Rogers- Banigo, 2023).

Bank-Led Theory

The bank-led theory of branchless banking was proposed by Lyman, Ivatury, and Stachen (2006) and emphasizes the role of an agent who acts as a mediator between the banks and the customers. In this case, the retail agents have direct interaction with the banks' customers and take up the role expected of the bank by either paying cash or collecting deposits (Owens, 2006). In the most basic version of the bank-led model of branchless banking, a licensed financial institution (typically a bank) delivers financial services through a retail agent. That is, the bank develops financial products and services, but distributes them through retail agents who handle all or most customer interaction. The bank is the ultimate provider of financial services and is the institution in which customers maintain accounts.

Empirical Review

Dermaku et al., (2023) examined the relationship between fintech developments and the performance of Kosovo's banks 49 observations that were recorded at regular intervals of three months. The source of data is secondary data. Net profit of the selected banks was used as proxy for performance while ATMs, POS, and e-payments were used as the proxy for fintech. The methodology used in the study is based on the OLS approach and diagnostic tests for assessing heteroscedasticity, specification error, autocorrelation, and multicollinearity. The findings indicate that the net profit of the banks is regulated by the unpredictability of ATMs and electronic payments. ATM payments negatively affect bank net profit, whereas e-payments positively affect bank net profit. In addition, a rise in ATM payments reduces bank net profit by 0.30%. While a rise in e-payments by 1percent rise in bank net profit by 0.10%. The POS payments negatively affect bank net profit.

Adiga et al. (2022), looked at the effect of fintech on Nigeria banking sector performance. The study's data sources included the CBN, data and reports from the Nigeria Deposit Insurance Corporation from various years. Using the Auto Regressive Distributed Lag method, the study examined the relationships between the fintech (the payment system, automated clearing services, and remittance services), and performance (such as ROA and ROE). According to the study's findings, financial technology significantly affect performance (ROA, ROE). Xu (2022) examined the role of fintech adoption in banking industry. The indicator of the CAMEL rating system is used in this article to analyze the role of FinTech and bank performance. The study was carried out using 45 commercial banks in Europe from 2015 to 2021. Data were collected from annual report and account of these selected banks. The findings imply that bank FinTech plays a significant role in maintaining adequate capital, top-notch assets, effective management, large income potential, and liquidity. Adopting bank FinTech often benefits banks.

Ibekwe (2021) studied the performance of banks and financial innovation in Nigeria. Secondary sources were employed to gather the information using CBN data. ROA was used to evaluate performance and ATM, POS, mobile banking, and online banking were used to measure financial innovation. The collected data were examined using unit roots and the OLS-regression. The results demonstrated that ATM, POS, and internet banking have a favorable impact on Nigerian banks. Aduaka and Awolusi (2020) looked at the relationship between e-banking (Fintech) on profitability of banks in Nigeria. To achieve the objectives of the study, both secondary and primary data were adopted. The primary data involves surveys while secondary data involves banks' audited financial records. The data collected were subjected to some pre-estimation test. However, the hypotheses were tested using multiple regression and the

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results revealed that ebanking have significant eefct on bank profitability.

Okoye, Okere, Ogechukwu-Onyema, Udeoba and Adegbite (2024) examined the role of fintech on the performance of deposit money banks and SMEs in Nigeria. The study employed ex-post facto research design in the work. The data generated from the secondary data were presented and analysed using quantitative method. The method of analysis used in this study was the Auto-regressive distributed lag technique (ARDL) method. The study found that financial technology has a significant impact on the performance of deposit money bank in Nigeria. This is evident from the F calculated value of 1234.17, which is greater than the F critical value of 3.11. The study found out that financial technology has a significant impact on the performance of small and medium enterprises in Nigeria. The study recommends that Deposit money banks should be encouraged to do more in getting their customers to increase the use of fintech products. In addition, SMEs should be encouraged to adopt fintech as this has been shown to serve as an instrument for business development.

Oluwaseun (2023) overall objective of the study is to determine the significant effect of FinTech on the growth of small and medium enterprises (SMEs) in Rivers State. The general objectives that guided this study were to determine how mobile money influenced the growth of SMEs in Rivers State, to establish how digital lending impacted the growth of SMEs in Rivers State and to measure how online banking has affected the growth of SMEs in Rivers State. Some of the theories used in the study included; Theory of acceptance of technology, Unified theory of acceptance and use of technology, Theory and technology of diffusion innovation, Theory of organization and the environment. The study used a descriptive illustrative design to achieve the goals. Rivers State according to the 2018 Business Register. Stratified random sampling was applied and the formula of Krejcie and Morgan (1997) was used to arrive at the sample size of 105 SMEs. The study used primary data obtained through a self-administered questionnaire. Using forty questionnaires to ensure the validity and reliability of the data, a pilot test was carried out. The data collected was analyzed using version 25 of the Social Science Statistical Package (SPSS) software. Quantitative information was analyzed using inferential and descriptive statistics. The normality test was performed to check for abnormal values.

The study also performed the test model specification to determine if the linear regression analysis best fits the data. The coefficient was used to analyze the relationship between the variables. Pearson's correlation was performed to establish a linear relationship between the study variables. Regression analysis was conducted to establish the nature of the relationship to which the study refers, as there was a positive significance of the effect of FinTech on SME growth. The study attributed 16% of SME growth to mobile money, digital loans and online banking. The study recommends that financial institutions take advantage of the increased use of mobile money services to form partnerships with mobile phone service providers and provide flexible financial services to operators. The study also suggests that a comparative study be carried out to examine other variables and their effect on the growth of SMEs that are not covered by this study.

Okoye et al. (2024) worked on Accelerating SME growth in the African context: Harnessing Fintech, AI, and cybersecurity for economic prosperity. Here they looked at Africa's economic environment which is changing quickly and small and medium-sized enterprises (SMEs) are becoming more widely acknowledged as important forces behind sustainable development. This analysis investigates how utilizing cybersecurity, artificial intelligence (AI), and financial technology (Fintech) might boost SME growth in Africa and eventually lead to economic success. Fintech has been more well-known recently because to its potential to completely transform the financial services industry. Fintech offers SMEs in Africa a huge chance to get over long-standing development constraints by improving access to money, facilitating smooth transactions, and automating financial procedures. This potential is further enhanced by the integration of AI technology, which gives SMEs access to data-driven insights for operational effectiveness, well-informed decision-making and customized consumer experiences. However, strong cybersecurity measures are required as Fintech and AI become more widely used in the African SME sector. The threat of cyberattacks increases as digital change quickens. A systematic strategy to cybersecurity that includes strong data protection, threat

intelligence, and resilient infrastructure is needed to address these issues.

The assessment emphasizes the significance of adopting a comprehensive strategy that leverages the convergence of Fintech, AI, and cybersecurity to drive economic growth. Together, legislators, financial institutions, and tech companies need to build an atmosphere that is conducive to innovation, promotes digital literacy, and protects digital ecosystems. African SMEs can successfully negotiate the challenges of the contemporary business environment, encourage innovation, and make a substantial contribution to economic growth and job creation by adopting this technology trifecta. The strategic use of Fintech, AI, and cybersecurity becomes apparent as a critical factor in enabling SMEs to reach their maximum potential and advancing the continent toward long-term economic development as Africa takes its place in the global economy assess the review's conjecture. The review uncovered that PayStack (beta = 0.705), Branch (beta = 0.602) Piggy Vest (beta = 0.602) , Mines (beta = 0.235) NetPlus (-0.227) emphatically affect the presentation of Store Cash Banks at 5% level. Further, guideline of computerized development in the financial business have critical connection to the exhibition of banks in Nigeria at 5% level (F = 532.13, R = 0.96 R * 2 = 0.922 p = 0 < 0.05). In their analysis of Fintech and its potential benefits for financial administration.

Kifordu (2024) this study looks at how Fintech has affected the expansion of SMEs in Nigeria from a management standpoint. The survey, desk research design, and ex post facto research design were all used in the study. The Google form used to collect the main data had eighteen questions on age, gender, and Fintech solutions. The secondary data came from the Central Bank of Nigeria Statistical Bulletin for the year 2022. From 2009 to 2021, all financial banks in Nigeria provided their understudied financial technology characteristics, which were all taken into account in this study. In particular, the Automated Teller Machine (Volumes), Mobile Banking Services (Volumes), Internet Banking Services (Volumes), Point of Sale (Volumes), and SME Growth Rate as determined by SME Contribution to GDP numbers were chosen. As the study concludes, Fintech solutions give small and medium-sized enterprises (SMEs) an improved tool for monitoring and organizing financial data, which helps them, make better financial decisions and enhances their overall financial performance and contribution to the Nigerian economy. However, there are still issues facing the sector. Therefore, the report suggests that Nigeria should develop a policy to promote SMEs to utilize Fintech and that her agencies instruct SMEs on how to make the most of this Fintech solution.

Sanga and Aziakono (2024) examined whether FinTech developments heterogeneously contribute to the growth of digital finance for SMEs and entrepreneurship in 47 African countries from 2013 to 2020. The paper uses a novel method of moment's quantile regression, which deals with heterogeneity and endogeneity in diverse conditions for asymmetric and nonlinear models.The empirical results reveal that the rise of FinTech companies offering services in Africa heterogeneously increases digital finance for SMEs and entrepreneurship in their different stages of growth. FinTech developments have a strong and positive impact in countries with higher levels of digital finance than those with lower levels. FinTech developments and digital finance positively and significantly influence entrepreneurship in Africa, particularly in the nascent and transitional development stages of entrepreneurship. Institutional quality has a considerable positive moderating effect when used as a control rather than an interaction variable. The results suggest the need to promote FinTech developments in Africa: to provide a wide range of alternative digital finance schemes to SMEs and to promote entrepreneurship, especially in countries where entrepreneurship is in the nascent and transitional development stages. The results also underscore the need to promote FinTech development through supportive regulations and institutional quality to reduce risks related to FinTech and digital financing schemes.

Gaol et al. (2022) used the digital finance index from Peking University to measure digital finance and the number of new enterprise registrations to measure entrepreneurship in 284 Chinese districts from 2011 to 2019. The authors used FE and IV models for analysis and revealed that digital finance significantly promotes entrepreneurship by usage depth, coverage breadth and digitalization level. Zhang and Pang (2023) found the same results that digital finance promotes urban entrepreneurship (sum of new private enterprises) and household entrepreneurship (new self-employed

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households) in China. Sun and You (2023) used the China Regional Innovation and Entrepreneurship Index data to examine the impact of digital finance on innovation and entrepreneurial activities in 41 districts from 2011 to 2020. The author conducted their analysis using multiple regression methods and established that digital finance significantly increases innovation and entrepreneurial activities in Chinese districts.

Akinroluyo and Opeyemi (2021) carried out in Ekiti state on effect of mobile money adoption on the performance of micro family enterprises during covid-19 lockdown in Ekiti state. The study administered questionnaire on one hundred and fifty (150) respondents and retrieved one hundred (100) using a purposive and accidental sampling technique. The collected data were analyzed with descriptive statistics, while the hypothesis was tested with ANOVA. Findings further show that mobile money adopted by the family enterprises are significantly affecting their performance in Ekiti State Nigeria. The study also concluded that mobile money adopted are significantly influencing the performance of the selected family enterprises during Covid-19 Lockdown in Ekiti State Nigeria.

Akujor, Jane Chinyere and Eyisi, Adanma Sabina (2020) examined the effect of Electronic payment on the performance of SMEs in Nigeria. Data were collected for the study through questionnaires administered by the researchers which were analysed using tables, percentages and pearson correlation with the aid of SPSS version 22.0. The study also used survey research design. Findings from the study revealed that E-payment has a negative significant effect on Accountability of SMEs in Nigeria. Also, there is a negative significant relationship on effect of e-payment on revenue generated by SMEs in Nigeria. Thus; it is recommended that Small and Medium scale business owners in Nigeria should make use of e-payment so as to build confidence in the use of ICT tools in business. Also, Government should establish a commission on ICT sector to regulate and see the full implementation of computerized accounting system in Nigeria and develop the citizen in line with their technology knowledge. This will go a long way in aiding the use of e-payment methods by customers, improve the revenue of the SMEs and encourage the cashless policy of the government.

Heman and Anna (2023) examined the impact of the cashless economy on small business operators in Borno state Nigeria. In order to gather information from across Borno state in Nigeria, the researcher uses mixed method approach that includes; surveys, interviews, observations, and focus group discussions. Research questions were designed to evaluate the perceived impact of the transition to a cashless economy on the performance of small business operators, the major challenges faced by small business operators in adapting to the cashless economy, the extent to which government policies and initiatives have supported the growth of small business operators, and the opportunities of the cashless economy for small business operators. Data was collected through a survey questionnaire distributed to a sample of small business operators across Borno state, and analyzed using descriptive statistics and hypotheses testing. The results show that the transition to cashless economy has a perceived impact on the performance of small business operators. However, Significant challenges were identified which include; high transaction costs, restricted access to digital infrastructure, network outages, lack of client bank accounts, and low customer awareness, Low levels of financial education and support for the acquisition and maintenance of electronic payment devices. In order to usher in fully, the cashless policy, it is recommended that government should strategize and intensify efforts to address the challenges faced by small business operators in adapting to a cashless economy.

Ighoroje and Okoroyibo (2020) investigated the cashless policy and the performance of Nigerian deposit money banks. The research was descriptive and used an ex post facto design. Secondary data were used, and the main sources of data collection were the CBN data browser website and The Global Economy.com. The Augmented Dicker Fuller and Philip Perron Checks for Unit Roots, as well as the Autoregressive Distributed Lags (ARDL) for coefficient analysis and co-integration, were also used. ATMs, POS machines, mobile banking, and Internet banking were used as proxies for cashless policies, while ROE was used as a measure of bank performance. The study found that both ATMs and Internet Banking had a positive and significant ROE. POS had a positive but insignificant effect on return on equity, whereas mobile had no effect. Banking (MB) had a statistically significant negative effect on ROE. The study concluded that the cashless policy had a positive impact on the performance of Nigerian deposit money

banks. According to the study, the government should provide continuous electricity supply and adequate contact links, while banks should be able to fund shortfalls through back-up plans to power backup generators in the event of a power outage.

Nwankwo, Eze and Kanyangale (2022) examined the effect of channels for the cashless economy on entrepreneurship development in Anambra State, Nigeria. This descriptive study explores internet banking services, automated teller machines and crowd funding as the explanatory/independent variables, while the dependent variable was entrepreneurship development. The study population was 3,574 owner-managers of manufacturing small and medium enterprises in Anambra State, Nigeria. A sample of three hundred and four (344) owner-managers was selected using a simple random sampling technique. Data collected through structured questionnaires were analyzed using correlation analysis and multiple regression analysis. Results show that internet banking services, automated teller machine services, and crowdfunding positively affect entrepreneurship development. The study concluded that channels for a cashless economy have a significant and positive effect on entrepreneurship development. The study recommends that an integrated and intensive campaign is critical to sensitize the citizenry on the benefits of various channels for the cashless economy on business performance and survival as well as customer satisfaction. Additionally, the campaign should be reinforced by adequate security mechanisms, user-friendly service, and reliable ATMs, with affordable fees and features that allow customers to make deposits. Implications of study and areas for future research are highlighted.

Obi (2023) examined the impact of the cashless policy of the government on the performance of small-scale enterprises in Southeast – Nigeria. It explored the availability of required e-payment facilities, the effectiveness of e-payment administration, and the impact of cashless policy on the performance of SMEs in the region. Descriptive survey design and researcher's designed questionnaire were adopted to generate data from 500 respondents that were randomly chosen from five states in southeast Nigeria, while statistics of percentages, and SPSS tools were used to analysis the data. Results of the analysis reveal inadequate supply of e-payment facilities and lack of IT skills for managing e-payment transactions among majority of the respondents. In addition, it revealed the ineffectiveness of e-payment system in the management of SMEs with significant negative impact on the performances of SMEs in southeast Nigeria. Among others, the paper recommends awareness creation and sensitization about the cashless economy, and adequate provision or the modernization of e-payment facilities to ensure the effectiveness of the policy.

Ogunmuyiwa and Amida (2022) examined the impact of electronic payment systems on entrepreneurial activities in rural areas of Ogun State, Nigeria. Survey research design method was employed in the study. Three hundred and eighty-five (385) respondents who are owners of micro and small enterprises were sampled. Purposive sampling technique was employed to administer the questionnaire to the respondents. The data were analysed using the Ordinary Least Square (OLS) regression technique. The findings revealed that electronic payment system via automated teller machine ($\beta = .148$; $t = 2.587$; $P = .010$), point of sales systems ($\beta = .173$; $t = 3.461$; $P = .000$) and mobile banking ($\beta = .170$; $t = 2.949$; $P = .003$) significantly drive entrepreneurial activities in rural areas. The findings further establish that point of sales system is the most significant measure of electronic payment system driving entrepreneurial activities in rural areas. The study recommends that micro and small enterprises' owners should leverage more on the point of sales system in driving their activities while also taking advantage of automated teller machines and mobile banking platforms.

Olukorede, Oladejo and Ahmadu (2023) investigated the effect of cashless policy on patronage using responses obtained from 410 customers of Stanbic IBTC Plc branch domiciled at Katsina town-Nigeria. To achieve the stated objective, authors used descriptive statistics and multiple regression techniques. The major findings reveal that ATM transaction has significant negative effect on patronage; POS transaction has no significant effect on patronage; web transaction has positive and significant effect on patronage and mobile banking has negative but significant effect on patronage in Stanbic IBTC bank Plc, Katsina. Authors conclude that if deposit money banks in Nigeria can make cashless policy channels well functional and secured, it will enhance and improved bank patronage. It is recommended by the authors that the management of Stanbic IBTC Plc,

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Katsina needs to ensure that the ATMs are functional 24/7, and loaded with mints to attract patronage. Author also recommends that DMBs should deploy information technology (IT) solutions that will make transactions on POS and other cashless channels more safe and secured. It is also recommended that banks especially Stanbic IBTC Plc should provide incentive for using internet banking platform for transactions; and should deploy mobile banking solution that is all phone enabled.

Olaniyi (2022) examined the impact of Financial Innovation (FI) on the growth of Small and Medium Scale Enterprises (SMEs): Evidence from the North-Central States, Nigeria. The purpose is to investigate how impactful the components of FI namely: Process Innovation (PrssI), Product Innovation (PrdtI), and Institutional Innovation (InsI) on the Opening up of New Markets (ONM). Data for the study were obtained primarily from responses to a questionnaire administered to 251 respondents made up of employees and owners of 10 SMEs each in Jos, Lokoja, and Lafia in the Plateau, Kogi, and the Nasarawa States respectively – North-Central States, Nigeria. Reliability of the measuring instrument was carried out using Cronbach's Alpha with each construct having an Alpha coefficient greater than 0.6. The Correlation Matrix result indicated that all the explanatory variables are positively associated with their coefficients less than 0.7 implying the absence of multicollinearity. Further, the regression results revealed that all the explanatory variables impact ONM. The combined impact of the explanatory variables stood at 56 percent approximately indicated by the coefficient of determination (R2) result. The study concluded by recommending the implementation of FI for SMEs in Nigeria as it can trigger their global competitiveness.

Effiom and Edet (2020) employs autoregressive distributed lag methodology on quarterly data of financial innovation measures. Our findings indicate that financial innovation has a positive and significant effect on SMEs' productivity in Nigeria. In particular, of the seven financial innovation instruments used (Automated Teller Machine, Point of Sales, Web or Internet Banking, Cheques, Nigeria Inter-bank Settlement System Electronic Fund Transfer, Nigeria Inter-Bank Settlement System Instant Payment, and Mobile Money Operations), all but one turned out in both the short run and long run as significant predictors of SMEs' performance in Nigeria. Furthermore, the Toda-Yamamoto causality test reveals unidirectional causation running from financial innovation instruments to SMEs' performance. These results have implications for SMEs' growth and the current cashless policy of the Central Bank of Nigeria.

Godwin (2024) empirically examined the relationship between financial technology (FinTech - proxied by Internet Banking and Mobile Payment) innovation and business growth (proxied by productivity and operational efficiency) of Small and MediumScale Enterprises (SMEs) in Port Harcourt. The study was underpinned by the theory of Technology Acceptance Model (TAM) and the Diffusion of Innovation Theory (DIT). The study adopted a cross-sectional research design and the population was the 1016 registered SMEs in Port Harcourt with a sample size of 287. Spearman's Rank Correlation and Partial Correlation were used to test the five hypotheses that guided the study. The findings showed a positive and significant relationship exists between financial technology innovation and business growth. Based on these findings, the research concluded that financial technology innovation is a business solution and a formidable management strategy that SMEs can deploy to improve their business growth. It recommends therefore that SMEs who want to improve their business growth should invest more in FinTech innovations such as Internet banking and mobile payment, as these digital solutions have a significant impact in improving productivity and operational efficiency (business growth).

Ugwuoke , Okonkwo and Okoronkwo (2022) assesses the role of financial innovation in output growth of small and medium scale industries (SMEs) in Nigeria using quarterly data from 2009 to 2016 as the sample period. It employs autoregressive distributed bounds testing approach (ARDL) and Granger causality test to ascertain the long run impact and the causal relationship between financial innovation variables and SMEs output growth. Evidence from the analyses reveal confirm the theoretical proposition that financial innovation contributes positively to the output growth of SMEs in Nigeria as the financial innovation variables of POS, MBK, ATM and INTB have positive and statistically significant impact on output growth of SMEs. The Granger causality test indicates that a unidirectional causal relationship runs from financial innovation variables to SMEs output in Nigeria. Based on this

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empirical evidence, the paper recommends that the positive impact of financial innovation variables (such as POS, MBK, INTB and ATM) on SMEs output demands that deposit money banks should not only improve but also expand the current level of financial service delivery channels in Nigeria by establishing more financial channels in both rural and urban areas.

Aduaka and Awolusi (2020) evaluated electronic banking impact on Nigerian banking industry profitability. Primary and secondary data were collected through questionnaires and audited financial reports of the banks. Using multiple regression, they found that bank cards play a significant role more than other channels. This was closely followed by ATM. It also found that e-banking channels contributed to banks' profitability. Ibekwe (2021) conducted a study on financial innovation and DMBs performance in Nigeria. Using CBN data and the Augmented Dickey Fuller Test for unit roots and the OLS-regression, the study found that ATM, POS, Mobile Payment and Internet banking had positive effects on DMBs performances.

Azeez, Madukoma, and Yila (2022) examined the role of ICT as a tool that SMEs can deploy for the economic development of Nigeria. A questionnaire was employed and administered to a total of 175 SMEs randomly chosen from five different sectors of the Nigeria economy (educational, micro finance, transport, commerce and hospitality). Chi-square test was used to evaluate the hypothesis and the findings of the research revealed that (1) low awareness level of the benefits of ICT incorporation in the management process of most SMEs has been a major cause of its low adoption; (2) poor media transmission framework, high cost of ICT hardware, deficient government support and legislation for internet business among other factors have hindered the adoption of ICT in the management process of SMEs; (3) high cost of funds in Nigeria have also made it unprofitable for SMEs to source fund for ICT expansion and implementation. The research recommends among other measures, the investment on infrastructure and adequate incentives to promote the utilization of ICT among SMEs. Investment banks and other specialized institutions should brace up with their responsibilities and promote local industries through affordable credit schemes.

Bakare, Madukoma, and Musa (2022) examined the influence of ICT use on SMEs performance in the North Central geo political zone of Nigeria. The study adopted a survey research design. The population of the study comprises 651 owners of mini-rice milling SMEs. The sample size for this study will consist of 248 rice milling SME owners drawn from the four selected states. Simple random sampling technique was used to select the sample for the study. The study found that ICT use had significant influence on SMEs performance in North Central geo-political zone, Nigeria. The study also reveals that the level SMEs performance in North Central geo-political zone, Nigeria is average. The study also found that the level of ICT uses of SMEs in North Central geo-political zone, Nigeria is low. The study recommended that: SMEs in North Central geopolitical zone, Nigeria should do more in order to attain higher level of performance. SMEs in North Central geo-political zone, Nigeria should engage in the ICT use that enhances business processes, this in turn will enhance their business performance

Harrison (2024) was to investigate how information and communication technology (ICT) contributes to the growth of entrepreneurship in Nigeria. When it comes to the broad acceptance of social media and digital apps, ICT plays a crucial role in the day-to-day operations of entrepreneurial endeavours. A desk research strategy was used, and literature on the effects of ICT on the growth of entrepreneurship was examined. According to the report, there is a plethora of potential for youth empowerment, employability, and general employment when ICT is applied to business growth. A lack of proper entrepreneurship orientation, inconsistent power supplies, inadequate ICT infrastructure, a lack of skilled technicians and technologists, poor access to financing, and poor marketing abilities were among the difficult factors that the study also uncovered. These were obstacles that any aspiring business owner had to overcome to ensure the sustainability of an existing venture. The report suggested, among other things, that given the critical role that ICT plays in the creation of entrepreneurial possibilities, the government and other stakeholders should create an environment that is supportive of the development of ICT infrastructure to support the growth of entrepreneurship. Furthermore, training facilities in ICT should be provided by relevant government agencies and networth stakeholders to increase the efficiency of the country's entrepreneurs, enabling them to acquire relevant technical and

technological skills needed to expand output, maintain existing customers, gain access to wider markets, and improve their entrepreneurial activities generally, particularly in terms of the development of new products for solving societal problems in the country

Tri, Agus and Weni (2024) study is to identified and analyze prevalent patterns, obstacles and infuences that impact the adoption of ICT in SMEs in developing nations. In addition, this study aims to provide recommendations on the most efective methods to optimize the utilization of ICT in these contexts. This review is conducted using a sample of 25 publications that have been published and are available in the Scopus database. The selection process focuses on works that have received significant citations and have been published between 2014 and 2023. The PRISMA statement form was utilized to elucidate the comprehensive procedure of selecting and accepting pertinent publications. This research makes two distinct contributions. The writers begin by doing a thorough literature analysis to examine the progress of ICT in the past decade. They next emphasize noteworthy research discoveries in this feld. Furthermore, the authors give a comprehensive analysis of the ICT literature by quantifying yearly publications and identifying SMEs that primarily utilize ICT, and ICT-related publications across various felds and areas in developing nations. The study also discloses the papers, journals, and authors that have received the highest number of citations. The author's final argument in the paper is that, despite the extensive research conducted in the field of ICT, there is a necessity to customize strategies and policies that can support SMEs in the ICT sector, particularly in developing countries.

Hajja (2023) intends to investigate the effects of ICT adoption on the performance of Technology based SMEs in Maiduguri Metropolitan Area, Borno State, Nigeria. The study adopted a descriptive and causal research designs that is made up descriptive research techniques. The population of the study is made up 1,595 ICT based businesses out of which a sample of 350 respondents was selected using convenience sampling technique. Primary data was collected using an instrument made up of 5 point Likert scale with both open and closed-ended questions. The data collected from 335 respondents were analysed using both descriptive and inferential statistics with the aid of SPSS version 24. Descriptive statistics (mean and standard deviations) were used to describe the characteristics and research questions of the study variables. Multiple linear regressions was used to assess the relationships between independent and dependent variables of the study using a P-value

Emmanuel, Dibua, Onyegbuna and Friday (2024) examined the role of Information and Communication Technology (ICT) in the growth and development of Small and Medium Enterprises (SMEs) in Anambra State, Nigeria. The importance of information and technology in modern business management cannot be overstated, as they serve as critical resources for organizations to gain a competitive edge. The study emphasizes the benefits of ICT adoption for SMEs, which include enhanced productivity, effectiveness, efficiency, and customer satisfaction. However, it also highlights the challenges faced by SMEs in Anambra State in effectively utilizing ICT, such as inadequate infrastructure, management information system constraints, and limited resources. The primary objective of the study is to evaluate the extent to which ICT contributes to the growth and success of SMEs in Anambra State. The research employs a stratified random sampling approach, collecting data from SMEs across various sectors, including pharmaceutical, manufacturing, textile, telecommunications, and others. The findings provide insights into the factors that influence ICT adoption and ownership patterns among SMEs in the region, as well as the moderating effects of different business categories on technology utilization. The study concludes with recommendations for policy makers and SME owners to enhance the effective integration of ICT for the growth and development of the SME sector in Anambra State.

Goddy (2020) discussed the impact of Information Communication Technology (ICT) on Small and medium scale enterprises (SMEs) in Nigeria. Today we live in an information society in which more people must manage more information, this in turn requires more technological support, which both demands and creates more information. Electronic technology and information are mutually reinforcing phenomena, and one of the key aspects of living in the information society is the growing level of interactions we have with this complex and increasingly electronic environment. The general consequence is that we deal with large volumes of information, new forms and aggregations of

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information, and new tools for working with information. These new tools we use to manage information at corporate, governmental and societal levels are tools we must learn to use, pay for and maintain. These new tools are impactful in the running of small and medium enterprises if applied purposefully. The primary tool of the information society is the computer. Microprocessors are used to improve the performance of other technologies, and computers are increasingly used to control and integrate other kinds of information technology (e.g. TV, radio, telephones).

METHODOLOGY

The research design adopted in this study was the descriptive research method which is largely quasi-experimental. Descriptive research design has been adopted for the purposes of this study. Kothari (2004) noted that population is a total collection of elements with apparent characteristics which can be used make inferences. From the population of 25 commercial banks, the researcher adopted purposive sampling methods to select the 15 quoted commercial banks that are in existence within the time scope of the study. The reason for the 15 quoted commercial banks is that the banks were quoted on the floor of Nigeria Exchange Group within the time scope of the study, making it easy for the source of the required data. The study used in this study will be collected from secondary sources. The instrument utilize for the collection of secondary data is documentation. Documentary data will be collected via the Nigerian Exchange Group bulletin (NXR), Security and Exchange Commission (SEC) bulletin and Central Bank of Nigeria (CBN) Statistical bulletin. The study utilizes the secondary source because it provided a basis for purposeful research work and also gives a direction for the research work.

Data Analysis Procedure

The main tool of analysis is the Ordinary Least Squares (OLS) using the multiple regression method for a period of 10 years, annual data covering 2015– 2024. Statistical evaluation of the global utility of the analytical model, so as to determine the reliability of the results obtained were carried out using the coefficient of correlation (r) of the regression, the coefficient of determination (r^2), the student T-test and F-test.

(i) **Coefficient of Determination (r^2) Test:** This measure the explanatory power of the independent variables on the dependent variables. R^2 gives the proportion or percentage of the total variation in the dependent variable Y that is accounted for by the single explanatory variable X. The higher the R^2 value the better. For example, to determine the proportion of monetary policy to private sector funding in our model, we used the coefficient of determination. The coefficient of determination varies between 0.0 and 1.0. A coefficient of determination says 0.20 means that 20% of changes in the dependent variable are explained by the independent variable(s). Therefore, we shall use the R^2 to determine the extent to which variation in monetary policy variables are explained by variations in private sector funding variables over the periods covered in this study.

(ii) **Correlation Co-Efficient (R):** This measures the degree of the relationship between two variables x and y in a regression equation. That is, it tries to establish the nature and magnitude of the relationship when two variables are been analyzed. Thus correlation co-efficient show whether two variables are positively or negatively correlated. That is, it takes the value ranging from – 1, to + 1.

(iii) **F-Test:** This measures the overall significance. The extent to which the statistic of the coefficient of determination is statistically significant is measured by the F-test. The F-test can be done using the F-statistic or by the probability estimate. We use the F-statistic estimate for this analysis.

(iv) **Student T-test:** measures the individual statistical significance of the estimated independent variables. This is a test of significance used to test the significance of regression coefficients (Gujurati, 2003). Generally speaking, the test of significance approach is one of the methods used to test statistical hypothesis. A test of significance is a procedure by sample results are used to verify the truth or falsity of a null hypothesis (Ho) at 5% level of significance.

(v) **Durbin Watson Statistics:** This measures the colinearity and autocorrelation between the variables in the time series. It is expected that a ratio of close to 2.00 is not auto correlated while ratio above 2.00 assumed the presence of autocorrelation.

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(vi) **Regression coefficient:** This measures the extent in which the independent variables affect the dependent variables in the study.

Model Specification

The current study considers the following model when estimating the effect of financial technology and sustainability of the quoted commercial banks.

FS = f (ATM, POS, WP, MP, EFT)

(1)

It is empirically stated as

$$FS_{it} = f(\beta_1 AMT + \beta_2 POS + \beta_3 WP + \beta_4 MP + \beta_5 EFT + . \quad \varepsilon_{it}$$

(2)

Where

FS = sustainability measured by the gross profit as percentage operating expenses

ATM = Automated teller machine proxy by value of ATM transaction to money supply

POS = Point of sales transaction proxy by value of POS transaction to money supply

WP = Web Payment transactions proxy by value of web payment transaction to money supply

MP = Mobile payment transactions proxy by value of mobile payment transaction to money supply

EFT = Electronic fund transfer proxy by value of electronic fund transfer transaction to money supply

Ut = Error term

β_0 = Regression Intercept

β_1 - β_6 = Coefficient of the independent variables to the Dependent variable

μ = Error term

Test of Significance

The regression analysis is used. The ANOVA test is adopted to determine the effect of independent variable on the dependent variable in the regression analysis and also to test the mean score differences and then use T-statistic test to establish the likelihood that there is a link between technology and performance which are the main data available. A significance level of 5% is used.

Table 1: Coefficient Correlations[a]

Model			FS	POS	EFT	MP	WP	ATM
1	Correlations	EFT	1.000	-.047	-.083	-.349	-.322	-.240
		POS	-.047	1.000	.080	.007	-.153	.151
		MP	-.349	.007	.198	1.000	.072	-.058
		WP	-.322	-.153	-.057	.072	1.000	-.739
		ATM	-.240	.151	.208	-.058	-.739	1.000
	Covariances	EFT	.006	.000	-7.921E-5	-.001	-.002	-.002
		POS	.000	.001	2.895E-5	1.140E-5	.000	.000
		MP	-.001	1.140E-5	.000	.003	.000	.000
		WP	-.002	.000	-6.788E-5	.000	.009	-.007
		ATM	-.002	.000	.000	.000	-.007	.010

a. Dependent Variable: FS

Correlation matrix is an important indicator of a linear association of the explanatory variables and helped in determining the strengths of association in the model, that is, which variable best explained the relationship between financial technology and financial sustainability of the quoted commercial banks. It also helped in deciding which variable(s) to drop from the equation. From the Table 1, it can be deduced that there was a positive correlation between the regressors and financial sustainability. However, apart from interest rate, other regressors had a good linear relationship among themselves pointing to multicollinearity among them.

Table 2: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	188.577	6	31.430	88.142	.000[b]

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	Residual	50.991	143	.357
	Total	239.568	149	

a. Dependent Variable: FS

The F statistic and p value for the ANOVA results in Table 2 were 188.577 and 0.000, respectively. The study model was statistically significant (a good fit) in forecasting the financial sustainability of commercial banks because the P value was less than 0.05. (the critical value)

Table 3: Collinearity Diagnosticsa

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	FS	ATM	POS	WP	MP	EFT
1	1	6.550	1.000	.00	.00	.00	.00	.00	.00	.00
	2	.274	4.892	.00	.55	.00	.00	.00	.00	.00
	3	.105	7.893	.00	.04	.00	.81	.01	.00	.00
	4	.040	12.776	.05	.06	.01	.04	.07	.43	.00
	5	.017	19.592	.70	.28	.01	.09	.02	.41	.01
	6	.010	26.117	.00	.02	.05	.00	.14	.15	.98
	7	.005	37.508	.26	.06	.92	.05	.77	.00	.00

a. Dependent Variable: FS

The Eigen value provides an indication of how many distinct dimensions they are among the independent variables, when several Eigen value are close to 0, the variables are highly intercorrelated and the market is said to be unconditioned; which means small changes in data values will lead changes in the estimates of the coefficients. From the table above, the Eigen values are greater than 0, this proves that the variables are not highly correlated, this means the absence of multicollinearity. A condition index greater than 15 indicates a possible problem and an index greater than 30 suggests a serious problem.

Table 4: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.546	.368		4.207	.000	.820	2.273					
	ATM	.023	.100	.024	.228	.820	-.174	.220	.809	.019	.009	.140	7.122
	POS	-.003	.029	-.005	-.115	.908	-.061	.054	.110	-.010	-.004	.957	1.045
	WP	.446	.096	.479	4.669	.000	.257	.635	.842	.364	.180	.141	7.075
	MP	.186	.052	.172	3.564	.000	.083	.290	.593	.286	.138	.638	1.568
	EFT	.307	.077	.304	4.003	.000	.155	.458	.827	.317	.154	.258	3.873

a. Dependent Variable: FS

According to the findings in Table 4, automated teller machine has a favorable but no significant impact on financial sustainability of the quoted commercial banks (β=.023, p=820 >0.05). Accordingly, a one-unit increase in automated teller machine will result in a 0.23unit improvement in the financial sustainability of the commercial banks. The finding support Bashayreh & Wadi (2021) and Akani, 2022, study which established that fintech such as mobile banking boosts bank performance. Ajaya (2020) also established that mobile banking contributes significantly to banking sector's financial performance over the study period. Point of

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sales has no favorable but no significant impact on financial sustainability of the quoted commercial banks (β=-.003, p=.908 >0.05). Accordingly, a one-unit increase in point of sales will result in a 0.05 unit decrease in the financial sustainability of the commercial banks. Web payment has no favorable and significant impact on financial sustainability of the quoted commercial banks (β=.446, p=.000 <0.05). Accordingly, a one-unit increase in web payment will result in a 0.44 unit increase in the financial sustainability of the commercial banks. Mobile payment has no favorable and significant impact on financial sustainability of the quoted commercial banks (β=.186, p=.000 <0.05). Accordingly, a one-unit increase in mobile payment will result in a 0.188 unit increase in the financial sustainability of the commercial banks. Electronic fund transfer has no favorable and significant impact on financial sustainability of the quoted commercial banks (β=.307, p=.000 <0.05). Accordingly, a one-unit increase in Electronic fund transfer will result in a 0.31 unit increase in the financial sustainability of the commercial banks.

Table 5: Model Summary[b]

					Change Statistics					
Model	R	R Square	Adjusted RSquare	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.887[a]	.787	.778	.59714	.787	88.142	6	143	.000	.821

a. Predictors: (Constant), EFT, POS, MP, WP, ATM
b. Dependent Variable: FS

Table 5 indicates a Durbin-Watson statistic of .821, which ranges between 0.5 and 1.5. Thus, the null hypothesis that there was no autocorrelation was accepted and there was no autocorrelation of residuals. The model summary results reveal that all of the independent variables together account for 78.7% (R2=.787) of the variability in commercial banks' financial sustainability. Other elements not taken into account in this study's model are responsible for the remaining 21.3%.

Discussion of Findings

Automated Teller Machines and sustainability of quoted commercial banks in Nigeria

The estimated model found that automated teller machine has a favorable but no significant impact on financial sustainability of the quoted commercial banks (β=.023, p=820 >0.05). Accordingly, a one-unit increase in automated teller machine will result in a 0.23unit improvement in the financial sustainability of the commercial banks. The results obtained from Table 4.4 indicate a positive significant effect (p = .820>0.05). This suggests that there is no significant relationship between Automated Teller Machines and sustainability of quoted commercial banks in Nigeria. The finding support Bashayreh & Wadi (2021) study which established that fintech such as mobile banking boosts bank performance. Ajaya (2020) also established that mobile banking contributes significantly to banking sector's financial performance over the study period. The negative effect of the variables contradicts the a-priori expectations of the study and in line with theory of innovation and technology acceptance model while the negative effect of variables contradicts the expectations of the results and can be blamed on environmental factors such as poor applications of financial technology. Empirically, the findings confirm the findings of Dabla-Norris, Yan and Filiz (2015) and Akani, Ejire & Boma-Oruwari (2023), built up those lightening diverse monetary contacts have a differential effect crosswise over nations, with nation particular attributes assuming a focal part in deciding the linkages and tradeoffs between consideration, GDP, imbalance, and the dispersion of additions and misfortunes, Akhisar, Tunay and Tunay (2015) that bank productivity of created and creating nations was influenced by the proportion of the quantity of branches to the quantity of ATMs and were profoundly critical and electronic managing an account administrations in huge,

Point of Sales and Sustainability of Quoted Commercial Banks in Nigeria

The study found that Point of sales has no favorable but no significant impact on financial sustainability of the

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quoted commercial banks (β=-.003, p=.908 >0.05). Accordingly, a one-unit increase in point of sales will result in a 0.05 unit decrease in the financial sustainability of the commercial banks. The results obtained from Table 4.4 indicate a positive significant effect (p = .908>0.05). This suggests that there is no significant relationship between point of sales and sustainability of quoted commercial banks in Nigeria. The findings of the study is expected and confirm the findings of the findings of Ranjani and Bapat (2015) that basically having a record with a bank did not bring about the borrowers utilizing saving money administrations and that they liked to manage organizations that permitted more adaptable administrations than the bank. Monyoncho (2015) that selection of E-Banking advances affected the execution of business banks in Kenya and prescribed that business banks ought to keep putting resources into saving money innovations, the findings of Terfa (2015) that redirecting from conventional yield protection to option protection would help poor ranchers adapt or adjust to covariate and unconventional agrarian stuns in creating nations, the findings of Njenga, Kiragu and Opiyo (2015), Akani, Godwin & Lucky,2023 and Aani & Lenyie (2023), that there is a remarkable relationship between monetary advancements and the money related execution of SACCOs and that phone managing an account and web keeping money are the fundamental drivers of the budgetary execution of SACCOs.

Web pay and sustainability of quoted commercial banks in Nigeria

The study found that Web payment has no favorable and significant impact on financial sustainability of the quoted commercial banks (β=.446, p=.000 <0.05). Accordingly, a one-unit increase in web payment will result in a 0.44 unit increase in the financial sustainability of the commercial banks. Mobile payment has no favorable and significant impact on financial sustainability of the quoted commercial banks (β=.186, p=.000 <0.05). The results obtained from Table 4.4 indicate a positive significant effect (p = .000 <0.05). This suggests that there is significant relationship between Web pay and sustainability of quoted commercial banks in Nigeria. The positive effect of the variables confirm the a-priori expectations of the study and in line with theory of innovation and technology acceptance model while the negative effect of variables contradict the expectations of the results and can be blamed on environmental factors such as poor applications of financial technology. Empirically, the findings confirm the findings of Dabla-Norris, Yan and Filiz (2015) built up those lightening diverse monetary contacts have a differential effect crosswise over nations, with nation particular attributes assuming a focal part in deciding the linkages and tradeoffs between consideration, GDP, imbalance, and the dispersion of additions and misfortunes, Akhisar, Tunay and Tunay (2015) that bank productivity of created and creating nations was influenced by the proportion of the quantity of branches to the quantity of ATMs and were profoundly critical and electronic managing an account administrations in huge,

Mobile Pay and Sustainability of Quoted Commercial Banks in Nigeria

The findings of the study proved that a one-unit increase in mobile payment will result in a 0.188 unit increase in the financial sustainability of the commercial banks. Electronic fund transfer has no favorable and significant impact on financial sustainability of the quoted commercial banks (β=.307, p=.000 <0.05). The results obtained from Table 4.4 indicate a positive significant effect (p = .000 <0.05). This suggests that there is significant relationship between mobile pay and sustainability of quoted commercial banks in Nigeria. The findigs of the study is expected and confirm the findings of the findings of Ranjani and Bapat (2015) that basically having a record with a bank did not bring about the borrowers utilizing saving money administrations and that they liked to manage organizations that permitted more adaptable administrations than the bank. Monyoncho (2015) that selection of E-Banking advances affected the execution of business banks in Kenya and prescribed that business banks ought to keep putting resources into saving money innovations, the findings of Terfa (2015) that redirecting from conventional yield protection to option protection would help poor ranchers adapt or adjust to covariate and unconventional agrarian stuns in creating nations, the findings of Njenga, Kiragu and Opiyo (2015) that there is a remarkable relationship between monetary advancements and the money related execution of SACCOs and that phone managing an account and web

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keeping money are the fundamental drivers of the budgetary execution of SACCOs.

Electronic fund transfer and sustainability of quoted commercial banks in Nigeria

The study found that a one-unit increase in Electronic fund transfer will result in a 0.31 unit increase in the financial sustainability of the commercial banks. The results obtained from Table 4.4 indicate a positive significant effect (p = .000 <0.05). This suggests that there is significant relationship between electronic fund transfer and sustainability of quoted commercial banks in Nigeria. The findings of the study is expected and confirm the findings of the findings of Ranjani and Bapat (2015) that basically having a record with a bank did not bring about the borrowers utilizing saving money administrations and that they liked to manage organizations that permitted more adaptable administrations than the bank. Monyoncho (2015) Akani (2023) and Athat selection of E-Banking advances affected the execution of business banks in Kenya and prescribed that business banks ought to keep putting resources into saving money innovations, the findings of Terfa (2015) that redirecting from conventional yield protection to option protection would help poor ranchers adapt or adjust to covariate and unconventional agrarian stuns in creating nations, the findings of Njenga, Kiragu and Opiyo (2015) that there is a remarkable relationship between monetary advancements and the money related execution of SACCOs and that phone managing an account and web keeping money are the fundamental drivers of the budgetary execution of SACCOs.

Conclusion

The study examined the effect of financial technology on the sustainability of quoted commercial banks data were sourced from Central Bank of Nigeria Statistical Bulletin. The model summary results reveal that all of the independent variables together account for 78.7%. The study found that automated teller machine has a favorable but no significant impact on financial sustainability of the quoted commercial banks (β=.023, p=820 >0.05.Point of sales has no favorable but no significant impact on financial sustainability of the quoted commercial banks (β=-.003, p=.908 >0.05). Web payment has no favorable and significant impact on financial sustainability of the quoted commercial banks (β=.446, p=.000 <0.05). Mobile payment has no favorable and significant impact on financial sustainability of the quoted commercial banks (β=.186, p=.000 <0.05). Electronic fund transfer has no favorable and significant impact on financial sustainability of the quoted commercial banks (β=.307, p=.000 <0.05).

From the findings, the study concludes that there is no significant relationship between Automated Teller Machines and sustainability of quoted commercial banks in Nigeria, that there is no significant relationship between point of sales and sustainability of quoted commercial banks in Nigeria, that there is significant relationship between Web pay and sustainability of quoted commercial banks in Nigeria, that there is significant relationship between mobile pay and sustainability of quoted commercial banks in Nigeria, that there is significant relationship between electronic fund transfer and sustainability of quoted commercial banks in Nigeria.

Recommendations

From the finding, the study makes the following recommendations:

i. Financial technology such as the ATM has a positive impact on financial stability by increasing the ability of banks to provide financing, so that the availability of bank loans tends to experience growth therefore the regulatory authorities should ensure effective policies to checkmate assets quality of the commercial as the major determinants of sustainability .
ii. The positive influence of Financial technology on sustainability will decrease with increasing systematic risk, increasing digital payments as the main element of digital finance can no longer automatically support the growth of banking financing, this happens because banks anticipate systematic risks by reducing loans. The study recommends that the management of the financial sector should ensure proper integration of the financial technology transactions to ensure sustainability.
iii. There is need for management of the financial institutions to maintain high level of liquidity as financial technology can affect the level reserves that affects negatively sustainability in Nigeria.
iv. The study recommends adequate regulatory measures to cushion the negative effect of financial technology such as the Automated teller machine on the sustainability of the commercial banks.

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