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FINANCIAL TECHNOLOGY AND FINANCIAL PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT

The study determined the effect of financial technology on financial performance of deposit money banks in Nigeria. The study developed three proxies for measuring financial technology which are automated teller machine transactions, mobile banking transaction and point of sale transaction, the study also proxy financial performance using return on investment. The made used of 14 quoted deposit money banks in Nigeria as the population and the study used 10 banks out of the total population as sample size using judgmental sampling techniques to select the sample size. The study adopted ex-post facto research design and used least square regression model. The data used for this study were collected from the Statistical Bulletins of the Central Bank of Nigeria covering the period 2012 - 2023. The result of the analysis of this study shows that automated teller machine transaction has a negative but statistically significant effect on the financial performance of deposit money banks in Nigeria. While Mobile banking transaction and point of sale transactions exerted positive but non-significant effect on return on assets within the period under review. Therefore, the study concludes that, bank management and strategy formulation of banks in Nigeria should take note of negative and significant relationship between value of automated teller machine transactions and return on asset this may suggests that banks may face problems in managing the costs of ATM services. These costs could include maintenance and cash handling, which, if not carefully managed, can pulled down profitability. The study therefore recommend that; Bank management should conduct a comprehensive review of the costs associated with ATM services and implement strategies to optimize the use of ATMs, such as by reducing the number of underutilized machines or enhancing operational efficiencies to reduce costs and improve profitability. The digital banking teams should focus on developing and promoting mobile transaction platforms by increasing user engagement and transaction volumes, as these channels currently have untapped potential.

Key words: *Financial Technology, Automated Teller Machine, Mobile Banking, Point of Sale, Return on Asset.*

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INTRODUCTION

The financial industry is experiencing rapid evolution and innovation, with financial technology (FinTech) emerging as a significant player. This growth is driven by factors such as the sharing economy (for instance, peer-to-peer platforms and online marketplaces), favorable regulations (e.g., consumer protection measures), and advancements in information technology (e.g., cloud computing and artificial intelligence) (Lee & Shin, 2018). Nigeria, a West African country, is actively transforming into a dynamic ecosystem that provides a platform for fintech start-ups to thrive and potentially become multimillion-dollar businesses. As one of Africa's major fintech investment destinations, Nigeria has witnessed a surge in deal activities in recent years. In 2010, only two deals were reported, but by September 2016, the number had increased to 14 deals. Based on activities in the first three quarters of 2022, Nigeria's fintech deal activity is projected to reach 86 deals in 2022, representing a 1 per cent increase from the previous year (Popoola et al., 2023). The rapid technological changes, sophisticated customers and the need for high value service have influenced the new orientation in banking from on counter banking to branchless banking. Banks are applying new business models and new technologies to reshape the financial services industry (Dahlberg & Mallet, 2008).

The concept of financial technology (fin tech) services were established to ensure financial services are made available to the unbanked population. By enabling digital payments, mobile money reduces dependency on cash whilst providing a platform for customers to access a much broader range of financial services (Castri 2013). Financial technology involves the introduction of technology to the way money changes hands. It enables its users to do all financial transaction electronically. The service offers customers the opportunity to make payments services including online shopping, Insurance premium, restaurants services (with delivery), ticket purchases and payment for general goods and services, Internet banking, Debit and credit Card banking etc. However, anytime the internet network is poor no transaction is made till it resurfaces. Aside, non- fin tech subscribers pay high service charge, undergo more stress or are sometimes regular banking hall services are not available at all.

The increasing popularity of transaction and payment services through technology has revealed the tremendous potential to expand financial inclusion through financial technology. These financial revolutions have already improved the lives of millions by reducing the need to carry cash or spend time traveling over long distances to reach the nearest point of service. Nonetheless, the importance of onboarding the unbanked into the financial ecosystem and

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increased financial access cannot be overemphasized as there is a relationship between finance and technology (Bruhn & Inessa, 2009). However, despite Nigeria as a country projecting itself as the largest in Africa with 24 commercial banks, 6 merchant banks, 887 microfinance banks and 47 mobile money operators, which is an indication that the level of competition in the sector is high, available statistics shows that about 36% of adult Nigerians are financially excluded from formal financial products and services (EFInA Report, 2022). This figure mirrors those adult populations for financial exclusion and financial exclusion is closely tied to poverty and economic vulnerability. Thus, connecting every individual to financial products and services has underpinned financial inclusion effort across the globe over the last 10 years. Financial inclusion has to do with guaranteeing access to those who can use financial services in a very broad, efficient and cost effective way. According to National Financial Inclusion Strategy (2020), financial inclusion is achieved when adult Nigerians have access to affordable financial products and services that meet their needs. Financial inclusion calls for democratizing financial services, catering for equal unrestricted distribution, and financial services provided in a responsible manner, by legitimate institutions and at a reasonable price and on a cost effective manner (Salampasis & Mention, 2018). However, the financial system has witnessed a lot of changes in recent years. The integration of financial technology (Fintech) has led to improved usability and delivery. Financial technology is driving disruption in the banking world, which is finance today (Ohiani, 2021). Fintech has gone through so many changes and a lot of evolution in the past couple of years; the recent hype or boom of Fintech can be attributed to the fact that technology has advanced significantly across the globe. Iwedi, et'al (2022) posit that financial technology is a major catalyst in changing the paradigm of the banking services in Nigeria.

The emergence of fintech in Nigeria was facilitated by the introduction of universal banking in 2001, which allowed banks to offer a wide range of financial services beyond traditional deposit-taking and lending activities. Furthermore, the cashless policy implemented in 2011 by the Central Bank of Nigeria (CBN) in collaboration with the Bankers Committee aimed to provide mobile payment services to break down traditional barriers hindering financial inclusion, such as cost, distance, or documentation requirements. This policy also ensured secure and convenient financial services in urban, semi-urban, and rural areas across the country (Itah & Emmanuel, 2014). This policy shift towards retail banking and the use of e-banking channels have significantly improved financial inclusion. For example, the percentage of Nigerian adults with access to payment services increased from 21.6 per cent in 2010 to 70 per cent in 2020, access to savings increased from 24.0 per cent to 60 per cent,

and access to credit increased from 2 per cent to 40 per cent (CBN, n.d.). Electronic banking, as a form of fintech solution, both as a delivery medium for banking services and as a strategic tool for business development, has gained widespread acceptance internationally and is rapidly gaining traction in Nigeria. According to Ovia (2001), more banks enter the market and leverage e-banking facilities to offer enhanced services and excel in a competitive banking industry. The adoption of e-banking has benefited not only ordinary customers but also the corporate world. The rapid development and global acceptance of e-banking and its products have strongly encouraged its penetration into Nigeria (Ovia, 2001). Fintech enables users to make instant payments, transfer funds, and pay bills using their mobile phones. This has greatly enhanced financial inclusion, particularly among the unbanked population who can now conduct transactions seamlessly without a traditional bank account. In addition, fintech lending platforms such as Carbon, Fairmoney, and Renmoney leverage technology to provide quick and accessible loans to individuals and small businesses. Moreover, insurtech startups such as AXA Mansard and Tangerine Life have introduced digital insurance solutions that offer convenience and customized coverage.

This research work was motivated by the use of electronic payment technologies that has generated conflicting opinions regarding bank performance in terms of profitability, expected returns, and risk exposure. For instance, many deposit money banks in emerging economies have seen an increase in profit without sustainable growth. However, the implementation of electronic payment technologies has reduced the returns of bank stakeholders and heightened their risk exposure. The adoption of electronic payment technologies requires Nigerian banks to modify their business models, leading to higher operational costs during the transition phase. To compete with fintech companies in the country, several deposit money banks have made significant investments to support the advancement of electronic payment technologies (Mustapha, 2018). This highlights the growing disruptive influence of financial technology in banks compare to traditional banking practices and emphasizes the need to examine the contributions and risks of fintech in banking services, considering the limited research available on this subject matter. Studies on fintech in Nigeria have largely focused on its adoption, challenges, and benefits for financial inclusion. However, this study filled the gaps in the understanding of the impact of fintech on the performance of banks in emerging economies.

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Objectives

This study examines financial technology and financial performance of deposit money bank in Nigeria. The specific of objectives of this study are to:

1. determine the effect of automated teller machine transactions on financial performance of deposit money banks in Nigeria.
2. evaluate the effect of mobile banking transaction on the financial performance of deposit money banks in Nigeria.
3. investigate the effect of point of sale transaction on the financial performance of deposit money banks in Nigeria.

LITERATURE REVIEW

Financial Technology (FinTech)

Financial technology involves the introduction of technology to the way money changes hands. It enables its users to do all financial transaction electronically. The service offers customers the opportunity to make payments services including online shopping, Insurance premium, restaurants services (with delivery), ticket purchases and payment for general goods and services, Internet banking, Debit and credit Card banking etc. However, anytime the internet network is poor no transaction is made till it resurfaces. Aside, non- fin tech subscribers pay high service charge, undergo more stress or are sometimes regular banking hall services are not available at all (Iriobe and Akinyede, 2017). Financial technology, also known as Fin Tech, is the use of new technology and innovation with other available businesses in order to compete in the marketplace of traditional financial institutions and intermediaries in the delivery of financial services (Chishti & Barberis, 2016). Financial technology companies consist of both startups and established financial and technology companies trying to replace or enhance the usage of financial services of incumbent companies. Financial services are the economic services provided by the finance industry, which encompasses a broad range of businesses that transfer, save, manage and spend monies as a medium of exchange (Iriobe and Akinyede, 2017).

According to Anyfantaki (2016), the term “financial technology” (or FinTech) refers to the application of technology for the provision of financial services. As a sector, FinTech refers to technology startups that are emerging to compete with traditional banking and financial market players, offering a number of services, from mobile payment solutions and crowdfunding platforms to online portfolio management and international money transfers.

FinTech companies are attracting the interest of both financial services users and investment firms, which see them as the future of the financial sector. FinTech firms aim to attract customers with products and services that are more user friendly, efficient, transparent, and automated than those currently available (Dorfleitner et 'al, 2017). Different Examples of innovations that are central to FinTech today include crypto currencies and the BlockChain, new digital advisory and trading systems, artificial intelligence and machine learning, peer-to-peer lending, equity crowd funding and mobile payment systems.

Automated Teller Machine Transactions

Automated Teller Machine (ATM) is an electronic telecommunication device which allows customers to complete basic transactions without the aid of branch representative or teller. Basic ATM will withdraw cash and will provide report of the account information. Complex ATM machines will accept deposits, Pay bills, Funds transfer and provide mini statement of the account. ATM has created a win-win situation by extending greater convenience and multiple options for customers while providing terrific cost advantage to the bank. Competition among the banks will lead towards a better service for their customers from the latest technology they use. Rigid competition in the banking sector in forcing the banks to become customer friendly and customer oriented. Customer satisfaction has become more important with the increasing competition. Banking sector has undertaken various initiatives to entice retain of their customers. Automated Teller Machine transactions (ATM) represent the value of ATM transactions, which could increase with the implementation of fintech due to improved services and convenience, affecting banks' earnings and profitability.

Mobile Banking Transaction

According to Tam and Tiago, (2015), the term mobile banking means execution of banking and financial transactions using a mobile phone. Mobile banking is the act of doing financial transactions on a mobile device (cell phone, tablet, etc).and using software usually called an app provided by the financial institution for the purpose. Mobile banking is usually available on a 24 hours' basis. This activity can be as simple as bank sending fraud or usage activity to a client paying bills of sending money abroad. Advantages to mobile banking include security concerns and a limited range of capabilities when compared to banking in person or on a computer. Some financial institutions have restricted on which accounts may be accessed through mobile banking as well as a limit on the Amount that's can be transacted. The facilities available via mobile banking are as follows: Checking account balance, Fund

transfer, Mobile recharge, E-fixed deposit, SMS alerts, Blocking of ATM cards, Merchant banking, Bill payments, Balance enquiry, Cheque book request and E-commerce (shopping) on mobile. Mobile banking (m-banking) is one of the most important strategic changes to occur in retail banking in more than a decade. Changes in technological interfaces have made it possible for the financial industry to delight its customers with instant solutions to their problems through the use of self-service technologies.

Point of Sale (POS) Transactions

The financial institutions and telecommunication companies' worldwide are facing new loop on the Information and Communication Technology convergence curve. Point of sale [POS] terminal has emerged as a promising new application of the next generation e-payment system. The role and importance of efficient payment system has been closely monitored and promoted by monetary authorities in all countries. The Nigerian payment system that is cash-driven cannot and has not guaranteed the much needed efficient and effective payment platform required for a sustainable economic development, [Adeoti, 2013] The Nigerian economy being largely cash-based is associated with high cost of cash management. Reliance on cash based payment platform has been found to be risky and cumbersome. Carrying cash in the economy is responsible for large pool of money being found in the hand of the unbanked citizens. In an effort to reduce the volume of cash in circulation and reduce the risk of going about with huge cash, the CBN introduced electronic payment system such as point of sale (POS) terminal, automated teller machine (ATM), payment cards [Smart card] etc into the Nigerian economy. This has given rise to the introduction of switch companies that facilitate interconnectivity (Adeoti 2013)

A point of sale/ service [POS] terminal is used to conduct retail transactions. It can provide many services including credit card processing check reading and transactions depending on the model. These devices can be found virtually anywhere, from grocery stores to gas stations. The technology used in POS machine results in a speedy and secured transaction. Based on CBN policy on cash lodgments and withdraws all businesses that accept cash up to N0.5m for individuals and up to N3m for corporate customers for their daily business transactions require a PoS terminal to avoid being charged from 2% in excess of the approved free lodgment limit. These include supermarkets, hotels and restaurants, electronic shops, pharmacies, boutiques, Hospitals, Distributorships, Airlines, etc

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Financial Performance

According to Appah &Inini (2019) stated that financial performance of corporations construct has two different perspectives, namely, growth and profitability, and each of these perspectives might be operationalized by using one or more indicators. Firm financial performance is commonly reflected in the calculation of financial ratios that show the link between numbers in the financial statement. The financial ratios may include the computation of the profitability, efficiency, liquidity, gearing, and investment of a particular firm. Moreover, firm financial performance generally may also be reflected in market-based (investor returns) and accounting-based (accounting returns) measures. Examples of market-based indicators to measure firm financial performance are price per share and Tobin's Q which indicate the market value or the share of the firm as well as the financial prospect of the firm in the future. Financial performance depends on various factors. Some of them are Capital Adequacy, Asset Quality, Management Efficiency, Liquidity, Gross Domestic Product etc. Therefore, in order to ensure sound financial performance banks should focus on the factors likely to affect profitability and the extent of their influence.The performance deposits money banks can be affected by internal and external factors (Al-Tamimi, 2010).

These factors can be classified into bank specific (internal) and macroeconomic variables. The internal factors are individual bank characteristics which affect the bank's performance. These factors are basically influenced by the internal decisions of management and board. The external factors are sector wide or country wide factors which are beyond the control of the company and affect the profitability of banks Teimet & Lishenga (2019).The empirical results of the researches (Raza, et'al 2011) explained that a company, which has better efficiency, it does not mean that always it will show the better effectiveness. Alam, et'al (2011) study concludes that ranking of banks differ as the financial ratio changes. The ability to support the present and future operations of a bank depends on the quality of its earnings and profitability profile (Shar et'al, 2011). The determinants of bank performance can be put into three groups: variables that are induced by management decision and policy objectives (bank-specific factors), variables that capture the industry structure and market growth (industry-specific factors) and elements that reflect the economic atmosphere under which the bank operates (macroeconomic factors).Appah and Inini (2019) stated that financial performance of corporations construct has two different perspectives, namely, growth and profitability, and each of these perspectives might be operationalized by using one or more indicators. Profitability, for example, can be measured by variables such as return on equity

(ROE), return on assets (ROA), or even the return on investments (ROI), while growth can be measured by increase in sales.

Theoretical Review

Bank-Focused Theory

This theory was popularized by Kapoor (2010) and anchors on the premise that banks use non-traditional but conventional low-cost delivery channels to offer services to its customers. Such channels include the automated teller machines (ATMs), mobile phone banking, Point of Sale (POS) among others. In using these channels, the bank offers a wide range of services to its customers regardless of location and branch attachments. All that is required is to enter the needed information into the system and the transaction is done.

Bank-Led Theory

The bank-led theory of branchless banking was postulated by Lyman, Ivatury and Stachen (2006) and emphasizes the role of an agent who acts as a link between the banks and the customers. In this case, the retail agents have direct interaction with the banks' customers and perform the role expected of the bank by either paying cash or collecting deposits. Finally, this agent is expected to transmit all his dealings with the bank's customers to the bank he is representing through electronic means (such as phones, internet, etc).

Empirical Review

Otonne and Ige, (2023) studied exploring the influence of financial technology on banking services in Nigeria. This study employed a quantitative research approach, analyzing data from the financial statements of selected Nigerian banks, and financial technology application statistics through econometric modelling and descriptive analysis. The study found that Fintech positively impacts Nigerian banks' traditional and market-based performance measures.

Iriobe and Akinyede (2017) investigated effect of financial technology services on banks customers' satisfaction in Nigeria. The study adopted explanatory and casual research design. The population of the study comprised universities students in Nigeria out of which 5 universities were randomly selected. The primary data was collected through the administration of 250 structured questionnaires to the universities. Out of the 250 questionnaires administered, two hundred and forty-three (243) was properly filled and returned. SPSS (Statistical package of social sciences) was used to analyze and present the

data collected. The result of the study revealed that accessibility of financial technology services, transaction cost, availability of technology service, operations of technology services and business effect bank's customer satisfaction and finally convenience and security effect bank's customer satisfaction It can however be concluded that the quality of financial technology have a positive significant effect on bank's customer satisfaction More so, the result from the questionnaires distributed showed that effective financial technology services helps to satisfy and retain customers and continual satisfaction leads to increase in the income generated by the banks.

Iwedi et' al (2023) studied effect of financial technology on financial inclusion in Nigeria. This study used quarterly secondary data and all the data were extracted from Central Bank of Nigeria (CBN) Statistical Bulletin (2021) from 2009-2019. In this study, financial technology was proxy using point of sale, automated teller machine, web banking technology and mobile banking technology, while financial inclusion in Nigeria was proxy using deposit ratio. Time series data were analyzed using the vector auto regression (VAR) estimation technique. The results show that web banking technology has a positive and significant effect on financial inclusion in Nigeria, whereas point of sale, automated teller machine and mobile banking technology have a positive but not significant effect on financial inclusion in Nigeria. This suggests that an increase in the usage of financial technology (ATM, POS, WEB and mobile technology) will cause more Nigerians to be financially included. Based on the findings, the study recommends that policymakers should encourage the development of affordable and accessible 3G and 4G mobile networks in order to provide rural and remote customers with better access to mobile banking and other financial technologies. Finally, banks should seek to improve the financial literacy of their customer base by offering regular educational programmes on topics such as money management and financial planning.

Gbanador et'al, (2022) examined financial innovation and performance of deposit money banks in Nigeria. A time series data covering the periods, 2009 – 2021 was used. The assets of the Deposit Money Banks was used as the dependent variables while the Point of sales, Automated Teller Machine, Internet Banking and Mobile Banking served as the independent variables. The researcher used the ARDL model in the analysis. Further, post-test analysis using serial autocorrelation, heteroskesdasticity, CUSUM were conducted. It was discovered that POS had the highest performance while internet banking had the least. More so, the variables are statistically significant. The authors recommended that internet accessibility should be made cheaper for easy access and usage. Banks should reduce the ownership cost

of POS machine and rural banks should conduct periodic seminars and knowledge dissemination programmes for their rural customers so as to increase their knowledge of mobile banking activities.

Domeher et'al (2022) evaluated financial innovations and economic growth: Does financial inclusion play a mediating role?. This study thus, sought to establish if financial inclusion mediates the relationship between innovation and growth. Secondary data from 26 selected SSA countries over the period 2004 to 2017 were used. The data were analysed using the GMM estimation technique. It was found amongst other things that investments in innovations in the banking sector promote financial inclusion. In addition, financial inclusion fully mediates the relationship between innovation and economic growth. It is thus recommended that governments in the sub-region invest in the appropriate technological infrastructure that the banking sector can leverage on in the provision of banking services as the key to promoting financial inclusion and economic growth.

Misati et' al (2022) studied digital financial innovation enhance financial deepening and growth in Kenya. The study utilized autoregressive distributed lag (ARDL) model, which is preferable over other time series methods as the model allows application of co-integration tests to time series with different integration orders and is flexible to the sample size including small and finite. The main findings of this paper are as follows: first, there is evidence of a positive relationship between digital financial innovation and financial depth with the strongest impact emanating from Internet usage and mobile financial services and the lowest impact from bank branches; second, the results reveal a significant positive impact of financial depth on economic growth consistent with the supply-leading finance theory. The results of the study imply a need for investment in technology-enabling infrastructure for digital financial services (DFS) and a redesign of strategies to avoid further financial exclusion of low-income earners due to the unaffordability of digital devices and financial and digital illiteracy.

Mbizi et' al (2022) studied the nexus between technological financial innovation and financial performance of commercial banks in Zimbabw. A positivist philosophical orientation approach guided this study wherein an eight year quarterly panel data for a time period ranging from 2015 to 2021 for thirteen commercial banks in Zimbabwe was adopted for data collection. STATA software was used to analyse the impact of each dimension of technological financial innovation on commercial financial performance. The results showed

that the use of automated teller machines and internet banking have strong positive relationship with financial performance, whilst a weak positive relationship was established between mobile banking and financial performance of commercial banks. Moreover, an insignificant association was established between electronic funds transfer and financial performance of commercial banks. The major implication was that banks should intensify the adoption of financial innovation as it enhances their operations.

Rachid and Nadir (2022) studied the relation between Financial Innovation and Economic Growth in Algeria: ARDL approach. The study used Autoregressive distributed lag model covering the period from 1964 to 2019. Financial innovation represented by Domestic Credit to the Private Sector (DCP) and economic growth represented by GDP, an intermediate variable was used represented by Broad-to-Narrow Money (BNM). The results indicated that Financial Innovation have significant positive impact on economic growth in both the long-run and the short-run period, also results show that variables are Co-integrated by using ARDL method.

Idriss et'al (2021). Using mobile money to bank the unbanked in Sub-Saharan Africa: an empirical study. The aim of this research is to thoroughly investigate the role of mobile money toward a cashless society in Sub-Saharan Africa. The research is best on information gathered from reliable sources but mainly focused in developing countries where the aim of mobile money is for banking the unbanked. The findings of the research provide a foundation for directing future policy debates on the journey to cashless society.

Alhassan et'al (2021) examined financial innovation: The impact of mobile money on innovative economic growth. The study covered 2011-2018 period using the partial least squares (PLS) regression. The causality within and between mobile money development, which include the continuous surge in registered mobile money agents, rapid growth of annual of transactions as well as the overall yearly capitalization of mobile money transactions on the sub-Saharan African financial sector development and economy. It was established that mobile money development has significant impact on economic growth, where GDP per capita was employed as the dependent variable, but the model results may largely depend on the variable used to proxy for economic growth. Also, a significant positive Pearson correlations was found between mobile money activities and financial development as well as GDP, and hence proving that the rise of mobile money activities like number of agents and volume of transactions has an effect on economic development in sub-Saharan African

economies per our study model. Mobile money is an alternative mode of banking for the unbanked population; thus, it is not surprising that its expansion and easy access positively affects financial sector growth in the region. Hence, the adoption and development of electronic banking and payment affect the economy through various ways like trade, household consumption and remittances. Although, any policy initiative implemented to encourage and boost this type payment and banking method may not immediately affect the economy, however, the mobile money system facilitates the pooling of capital and it onward effective allocation to productive sectors, thus promoting and enhancing innovative development in the region.

Al Ajlouni and Al-hakim (2018) evaluated financial technology in banking industry: challenges and opportunities. The paper focused at first place to shed light on this wave of development in financial industry that combined with high technology, it aims also to clarify the role of FinTech in the financial industry in general and banking sector in particular. The paper obtained its goals in two main phases, firstly; background and definition of the FiTech, in addition to outlining the current FinTech market segments and landscape and some alternative financing FinTech platforms will be discussed. In the second phase, we will identify the influence of FinTech on banking industry and the required response to face it. The paper suggested also some future research proposals about the effect of FinTech on the financial industry and banking sector in the Arab countries.

Ejinkonye and Okonkwo (2021) studied nexus between financial innovation and financial intermediation in Nigeria's banking sector. The specific objectives of this study were to examine the relationship between financial innovation (value of the automated teller machine, internet banking, mobile banking, point of sale transactions) and financial intermediation (commercial banks deposit mobilization) in Nigeria for the period 2009– 2018. This study was anchored on the financial innovation theory of Joseph Schumpeter, which states that technology creates opportunities for new profits and super profits as a result of increased investment by banks or financial institutions on products of innovation. The ordinary least square was used to estimate the parameters. The data used were extracted from the Central Bank of Nigeria statistical bulletin. The results showed that there is a positive and significant relationship between financial innovation (value of Automated Teller Machine) and financial intermediation (commercial banks deposit mobilization) in Nigeria; there is a positive but no significant relationship between financial innovation (internet banking) and financial intermediation (commercial banks deposit mobilization) in Nigeria; there is a positive but no

significant relationship between financial innovation (mobile banking) and financial intermediation (commercial banks deposit mobilization) in Nigeria; and there is no positive and significant relationship between financial innovation (point of sale transactions) and financial intermediation (commercial banks deposit mobilization) in Nigeria. The f-test result showed that financial innovations proxies jointly related significantly to commercial banks' deposits. The work concludes that financial innovations contributed to commercial banks' deposits in Nigeria.

Emeka et'al (2019) studied impact of electronic banking on financial inclusion in Nigeria. The study used the total number of automated teller machines and point-of-sale devices in Nigeria as proxies for electronic banking and the proportion of banked adult population to total bankable adult population in Nigeria as proxy for financial inclusion. The study adopted correlational and ex-post facto research designs with the aid of computer-based multiple regression analysis. It was observed that automated teller machines do not significantly impact financial inclusion while point-of-sale devices significantly impact financial inclusion in Nigeria.

Abiola et'al (2021) evaluated financial sector reform and economic development in Nigeria. The study employed several variables as a proxy for financial reforms and adopted the Granger causality test and vector error correction model to analyse the impact of the relationship for the period between 1980 and 2017. The findings revealed a negative long-run relationship between financial sector reform variables and HDI, except for owners' equity. The study also showed positive short-run dynamics between total savings to GDP and HDI. The study concluded that the recent improvements in HDI, which is the proxy for economic development, are not due to the financial sector's reforms; rather, some other influences in the economy could be responsible.

Emilio et 'al (2020) studied financial technology: review of trends, approaches and management. The aim of the study is to analyse this research subject worldwide during the period 1975– 2019. To this end, bibliometric techniques were applied to 2012 articles, obtaining findings of the productivity of scientific research, of the main thematic axes and their evolution. Scientific activity increased, mainly in the past decade, with 45% of publications. The main thematic areas were Business, Management and Accounting, Engineering, Social Sciences and Computer Science. Seven research lines were identified, aimed at analysing the aspects financial, economic, technology transfer, investment,

innovation, partnerships and institutions and commercial. Future research lines should develop analyses on banking, financial services trade, territorial development, legal, management, research methodologies and the sustainability of financial technologies. It was verified that there is a growing and dynamic interest in scientific activity on financial technologies at an international level. The findings obtained are a complement to the knowledge of financial technologies and allow the relationship between science and technology to be established, and to inform the decision-making process.

Ranasinghe and Kosala (2017) evaluated impact of automated teller machines (ATMS) service on customer satisfaction: a study based on state banks in Sri Lanka. This research bridges the gap that exists in the current body of knowledge by investigating the ATM service qualities and their impact on customer satisfaction. It also examines the impact of demographic factors for the relationship between ATM service quality and customer satisfaction. Given these gaps in the literature, the research problem in this research is: The factors which influence on customer satisfaction with relation to the ATM service. To investigate the research problem, a pilot study involving 30 state bank customers was used to check the initial reliability and validity of the constructs in the questionnaire. The factor analysis was employed to refine the measurement items and test for reliability and validity. The study has used the primary data of customer satisfaction survey (N=385). The data was collected using a structured questionnaire designed to ascertain the satisfaction levels. Regression, ANOVA and T-test were used to identify significant factors and frequency analysis was used to analyze customer satisfaction. The ATM service qualities have a positive impact on the customer satisfaction and the demographic factors like age and educational qualification moderate the relationship between ATM service quality and customer satisfaction. This paper identified the significant factors which the banks may take care to enhance the customer satisfaction.

Nasution et'al (2022) studied investigation of financial inclusion, financial technology, economic fundamentals, and poverty alleviation in asean-5: using sur model. The study used Seemingly Unrelated Regression (SUR) model during the period 2009 to 2019. The results obtained are: (1) Financial inclusion through the credit variable and the number of ATMs, and fintech through the e-money variable, contributed to the most significant increase in GDP in the ASEAN-5 countries. Meanwhile, the most critical contributor to reduction in the unemployment rate from financial inclusion is through the credit and savings variables, while from fintech it is through mobile phone subscriptions. (2) Thailand is the country that has

most effectively influenced the economic fundamental of unemployment rate, while Indonesia is the country that has most effectively influenced the economic fundamental of GDP. The results obtained from the panel regression model and cross-sectional weighting indicate that financial inclusion through savings, credit, and number of ATMs, and fintech through cellular phone subscription, are effective in reducing poverty rates in the ASEAN-5 countries. Nevertheless, financial inclusion and fintech do not significantly affect the inflation rate.

Adiga et'al (2022) studied financial technology and the banking sector performance in Nigeria (2005-2020). The specific objectives are to examine the effect of financial technology on return on assets (ROA), return on equity (ROE), interest income (II) and noninterest income (NII) of Deposit Money Banks (DMBs) in Nigeria. The study was anchored on Technology Acceptance Model (TAM) and Central Bank of Nigeria (CBN) statistical bulletin and Nigeria Deposit Insurance Corporation (NDIC) report of various years form the data source which were subjected to Auto Regressive Distributed Lag (ARDL) technique to test the interaction between independent variables namely payment system, automated clearing services and remittance services with the dependent components in return on asset, return on equity, interest income and non-interest income at 5% level of significance. Financial technology significantly explained the variation in ROA, ROE and noninterest income DMBs in Nigeria except the variation in interest income. The study concludes that financial technology significantly explained the variation in banking sector performance components in ROA, ROE, and non-interest income.

Mugdha and Neeraj (2018) studied Internet banking: a review (2002–2016). The study provides an overview of the changes as well as the ongoing research on internet banking. To identify relevant works, research databases were searched using 11 keywords. Only research papers on internet banking published in the last 15 years (2002–2016) were selected. The selected articles were further refined on the basis of country of origin, journal type, and research methods used for data analysis. Finally, 51 papers were selected on the basis of specific inclusion criteria for further analysis. These papers were grouped by research themes, and customer satisfaction with internet banking was identified as the most common theme.

Carlos and Tiago (2017) studied literature review of mobile banking and individual performance. This study focus on analysing and synthesising existing studies and make recommendations to researchers and practitioners. This research examines 64 journal articles published between 2002 and 2016 in top journals. Following a comprehensive review of the

literature, the authors propose a research agenda. The importance of use and individual performance has long been recognised by academics and practitioners in a variety of functional disciplines. The present review indicates that the topics of m-banking adoption and behavioural intention dominate the majority of research, but finds very few studies on post-adoption. The two most significant drivers of intentions to adopt m-banking are perceived ease of use and perceived usefulness. Considering several m-banking definitions, the authors propose a new, broader definition that takes into account the technological changes that have occurred over time. m-banking is a service or product offered by financial institutions that makes use of portable technologies. This study assembles this diverse body of knowledge into a coherent whole. The authors expect that this review will be of benefit to anyone interested in m-banking research and that it will help to stimulate further interest. In order to advance research in m-banking, future research should consider other theories uncovered in our findings.

Agu et'al (2019) studied point of sale (POS) - adoption and challenges in Nigeria. This study examines some relevant standards and protocols for Point of Sale (POS) terminals and discusses POS services and their adoption within a conceptual framework. Data for the study were collected from general merchants (traders) business centers, restaurants/ eatery, supermarkets and others. The finding of this study showed that in spite of having POS terminals, most merchants still accept cash above POS. This is because according to the finding, POS deployment was involuntary as they were deployed by banks unsolicited. There should be increased awareness of consumers which will accelerate adoption of the POS terminals and card payment system.

Mardiana et'al (2020) evaluated analysis of point of sales (POS) information systems in SMEs with The black box testing and PIECES Method. The research objective was to test the functional level of the Point of Sales (POS) information system and to analyze the effectiveness of the POS information system. The research method tested the functional level of the system using the black box testing method and testing using the equivalent partitioning. The analysis of the effectiveness of the POS information system use the PIECES method. The analysis process was carried out by distributing questionnaires to 183 respondents about the effectiveness of the POS information system using six variables and testing the validity. The results of functional test research using the black box testing method are very satisfying because the test cases that have been tested show that there is no interface that is functionally invalid or error. The results of measuring the effectiveness of the POS information system

using the PIECES method on the aspects of performance, information, economy, control, efficiency, and service are effective. The study concluded that POS information system is in line with SMEs needs because it provides faster services in obtaining transaction receipts and sales report.

Simon and Elias (2021) studied effect of electronic banking on commercial bank performance in Nigeria. The study adopted the ex post facto research design and covered the period from 2013 to 2017. E-views statistical tool was used for the analysis of the data obtained. The results of the study reveal that automated teller machine transactions have positive and significant effect on the performance of commercial banks in Nigeria while both point of sale terminal transaction and mobile banking transactions have negative and weak effects on the performance of the commercial banks in Nigeria.

Oyewole et' al (2013) studied E-banking and Bank Performance: Evidence from Nigeria. the study examined the impact of electronic banking on banks' performance in Nigeria. Panel data comprised annual audited financial statements of eight banks that have adopted e-) and retained their brand name banking between 2000 and 2010 as well as macroeconomic control variables were employed to investigate the impact of e-banking on return on asset (ROA), return on equity (ROE) and net interest margin (NIM). Result from pooled OLS estimations indicate that e-banking begins to contribute positively to bank performance in terms of ROA and NIM with a time lag of two years while a negative impact was observed in the first year of adoption.

MATERIALS AND METHOD

This study made use of *ex-post facto* research design. According to Ofor (2022) an *ex-post facto* research design is a quasi-experimental research design that occurs where the variable under study cannot be manipulated or controlled by the researcher but rather the data about on the variables under study already exist in records. We employ *ex-post facto* research design due to its special characteristics which are the event that has already occurred hence there is no need for manipulation or alteration and it is also less costly and less time consuming. The study made used of 14 quoted deposit money banks in Nigeria as the population and the study used 10 banks out of the total population as sample size using purposive sampling techniques to select the sample size. The study used panel least square regression model to test the hypotheses. The data for this study were collected from the Statistical Bulletins of the Central Bank of Nigeria. the study's time frame is from 2012 to 2023. The reason for this period is to

cover the period in which public limited firms were mandated to adopt international reporting standard (IFRS)

This study adapted the model of Tahir et al., (2018) which used the function:

EFRt= f(VATM, VWEB, VMOB, VPOS) ……. Eqn 1.

Where:

EFR = efficiency ratio

VATM = value of ATM transactions

VWEB = value of WEB transactions

VPOS = value of POS transactions.

μ = error term

The model was modified to suit the variables used. Hence the model for the study is anchored on the specific objectives.

ROA = f(VATM, VMBT,VPOST,) ……Eqn 2

This can be econometrically expressed as

$ROA_t = \beta_0 + \beta_1 VATM_t + \beta_2 VMBT_t + \beta_3 VPOSAT_t + \mu$ …… Eqn 3.

Equation 1 and 2 are the linear regression model used in testing the null hypotheses.

Where:

ROA = Return on Assets

VATM = Value of Automated Teller Machine Transactions

VMBT = Value of Mobile Banking Transactions

VPOST = Value of Point of Sale Transactions

β_0 = Constant

β_1 - β_4, = are the coefficient of the regression equation

μ = Error term

t = is the year (time series)

Decision Rule: Accept Null if P-Value is greater than 5% and reject Alternate**. Otherwise,** accept Alternate if P- Value is less than 5% and reject Null

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RESULT AND DISCUSSIONS

Descriptive Analysis

The study examine the effect of value of ATM, mobile transactions and point of sale on return on asset of banks in Nigeria.

Table 1 Descriptive Analysis

	ROA	VATM	VMBT	VPOS
Mean	0.014999	9.866435	9.231345	9.243000
Median	0.012697	9.810152	9.152399	9.263153
Maximum	0.062872	10.51386	10.51320	10.61316
Minimum	-0.112735	9.297758	7.498439	7.685400
Std. Dev.	0.021979	0.376754	0.907840	0.892824
Skewness	-2.544030	0.396676	-0.228691	0.070945
Kurtosis	16.94023	1.985553	2.041080	2.048616
Jarque-Bera	1101.092	8.292550	5.643623	4.626326
Probability	0.000000	0.015823	0.059498	0.098948
Sum	1.799861	1183.972	1107.761	1109.160
Sum Sq. Dev.	0.057484	16.89128	98.07670	94.85892
Observations	120	120	120	120

Source: Eviews 10 Output (2024)

as shown in Table 1 above, the Return on Assets (ROA) for banks in Nigeria, which measures how effectively a company uses its assets to generate profit, shows a mean value of 0.014999, indicating that on average, Nigerian banks earn approximately 1.5% of profit on their assets. The maximum ROA recorded is 0.062872, reflecting a strong performance where some banks were able to achieve a 6.3% return on their assets. However, the minimum ROA is -0.112735, which indicates that at least one bank experienced a loss, with its assets generating a negative return of 11.3%. The standard deviation of 0.021979 suggests that there is some variation in ROA across the banks, but it is relatively moderate, indicating that most banks tend to cluster around the average ROA.

The value of Automated Teller Machine (ATM) transactions (VATM) shows a mean value of 9.866435, suggesting that the transaction volumes for ATM usage across banks are fairly high. The maximum value of 10.51386 indicates that certain banks see substantial ATM transaction volumes, while the minimum value of 9.297758 shows that even at the lower end, ATM transactions are significant. The standard deviation of 0.376754 implies that there is a moderate level of variability in ATM transaction volumes across different banks, indicating that while most banks have similar ATM usage levels, there are some differences.

The value of mobile transactions (VMBT) has a mean of 9.231345, showing that mobile banking is widely utilized, though slightly less so than ATM transactions. The maximum

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VMBT of 10.51320 reflects the highest usage levels, indicating that some banks experience very high mobile transaction volumes. The minimum VMBT value of 7.498439 reveals that mobile transaction volumes can be significantly lower for certain banks. The standard deviation of 0.907840 is relatively high, pointing to considerable variability in mobile transaction volumes across banks, which may be influenced by factors such as customer preferences and the availability of mobile banking services.

The value of Point of Sale (POS) transactions (VPOS) reveals a mean of 9.243000, which suggests that POS transactions are also substantial, with usage levels comparable to mobile transactions. The maximum VPOS of 10.61316 indicates that some banks see very high POS transaction volumes, while the minimum value of 7.685400 points to a lower range of POS usage among some banks. The standard deviation of 0.892824 indicates a significant degree of variation in POS transaction volumes across different banks, suggesting that while POS is an important transaction channel, its adoption and usage vary widely among banks.

Test of Hypotheses

Table 2 Regression Analysis

Dependent Variable: ROA
Method: Panel EGLS (Cross-section SUR)
Date: 08/13/24 Time: 06:33
Sample: 2012 2023
Periods included: 12
Cross-sections included: 10
Total panel (balanced) observations: 120
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VATM	-0.008584	0.002584	-3.322013	0.0012
VMBT	0.001442	0.001022	1.410565	0.1610
VPOS	0.000978	0.001383	0.707106	0.4809
C	0.077336	0.015752	4.909459	0.0000

Weighted Statistics

R-squared	0.246952	Mean dependent var	4.228816
Adjusted R-squared	0.227477	S.D. dependent var	5.727246
S.E. of regression	1.008678	Sum squared resid	118.0219
F-statistic	12.68025	Durbin-Watson stat	1.766501
Prob(F-statistic)	0.000000		

Source: Eviews 10 Output (2024)

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Based on the result in Table 2 above, the adjusted R-squared value of 0.227477 indicates that approximately 22.75% of the variation in the Return on Assets (ROA) can be explained by the independent variables in the model, which are the values of ATM transactions (VATM), mobile transactions (VMBT), and point of sale transactions (VPOS). This relatively low value suggests that while these variables contribute to explaining some of the variability in ROA, there are other factors influencing ROA that are not accounted for by this model. The adjusted R-squared takes into account the number of predictors in the model and adjusts the R-squared value to avoid overestimating the explanatory power of the model when additional predictors are included.

The probability associated with the F-statistic is 0.000000, which indicates that the overall regression model is statistically significant. This means that there is a very strong likelihood that at least one of the independent variables (VATM, VMBT, VPOS) significantly contributes to explaining the variation in ROA. In other words, the model is useful for predicting ROA, and the relationship between the dependent variable and at least one of the predictors is unlikely to have occurred by chance.

Hypothesis One

H_0: Automated teller machine transactions have no significant effect on financial performance of deposit money banks in Nigeria.

H_i: Automated teller machine transactions have significant effect on financial performance of deposit money banks in Nigeria

The coefficient for VATM is -0.008584, which suggests a negative relationship between the value of ATM transactions and ROA. Specifically, for every unit increase in VATM, ROA is expected to decrease by approximately 0.008584 units, holding other factors constant. The probability value of 0.0012 is less than the common significance level of 0.05, indicating that this negative relationship is statistically significant. This implies that higher values of ATM transactions are associated with lower returns on assets, which might suggest inefficiencies or higher costs associated with ATM transactions that impact profitability negatively. Since the p-value is less than 0.05, we accepted the alternate hypothesis that Automated teller machine transactions have a significant negative effect on financial performance of deposit money banks in Nigeria.

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Hypothesis Two

H_0: Mobile banking transactions have no significant effect on the financial performance of deposit money banks in Nigeria.

H_i: Mobile banking transactions have significant effect on the financial performance of deposit money banks in Nigeria.

The coefficient for VMBT is 0.001442, indicating a positive relationship between the value of mobile transactions and ROA. Specifically, a one-unit increase in VMBT is associated with an increase of 0.001442 units in ROA, holding other factors constant. However, the probability value of 0.1610 is greater than the common significance level of 0.05, suggesting that this relationship is not statistically significant. This implies that while there may be a positive trend, the effect of mobile transactions on ROA is not strong enough to be confidently distinguished from zero. The null hypothesis was therefore accepted that Mobile banking transactions have a positive but non-significant effect on the financial performance of deposit money banks in Nigeria.

Hypothesis Three

H_0: Point of sales transactions have no significant effect on the financial performance of deposit money banks in Nigeria.

H_i: Point of sales transactions have no significant effect on the financial performance of deposit money banks in Nigeria.

The coefficient for VPOS is 0.000978, indicating a positive but very small relationship between the value of point of sale transactions and ROA. For every unit increase in VPOS, ROA is expected to increase by 0.000978 units, holding other factors constant. The probability value of 0.4809 is well above the common significance level of 0.05, suggesting that this relationship is not statistically significant. This implies that point of sale transactions do not have a meaningful impact on ROA, and any observed effect could be due to random variation rather than a true underlying relationship. Point of sale transaction on the financial performance of deposit money banks in Nigeria. The null hypothesis was therefore accepted that Point of sale transactions have a positive but non-significant effect on the financial performance of deposit money banks in Nigeria.

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CONCLUSION AND RECOMMENDATIONS

The findings of this study have implications for bank management and strategy formulation in Nigeria. The negative and significant relationship between ATM transactions (VATM) and Return on Assets (ROA) suggests that banks may face challenges in managing the costs associated with ATM services. These costs could include maintenance, cash handling, and security, which, if not carefully controlled, can erode profitability. This implies that banks need to reassess their ATM strategies, perhaps by optimizing the number of ATMs, improving operational efficiencies, or shifting focus towards digital channels that may offer lower operational costs and higher margins.

On the other hand, the weak and statistically insignificant relationships between both mobile transactions (VMBT) and point of sale transactions (VPOS) with ROA indicate that these transaction types, in their current state, are not major drivers of profitability for Nigerian banks. This could suggest that the mobile and point of sale transaction markets are still in a developmental phase or that their current scale is insufficient to generate substantial profits. For banks, this highlights the need to invest in and develop these digital channels further, focusing on expanding their customer base, increasing transaction volumes, and enhancing the user experience to make these platforms more profitable in the long run. The findings imply that while digital transactions have potential, realizing their benefits may require more strategic investment and innovation. We therefore recommend that:

1. Bank management should conduct a comprehensive review of the costs associated with ATM services and implement strategies to optimize the use of ATMs, such as by reducing the number of underutilized machines or enhancing operational efficiencies to reduce costs and improve profitability.
2. The digital banking teams should focus on developing and promoting mobile transaction platforms by increasing user engagement and transaction volumes, as these channels currently have untapped potential that, if properly harnessed, could significantly contribute to the bank's profitability.
3. The POS strategy teams should consider ways to expand the usage and adoption of point of sale services, perhaps through partnerships with more merchants, to enhance the volume of transactions and leverage the potential of this digital channel to contribute more meaningfully to the bank's overall profitability.

REFERENCES

Abaenewe, Z. C., Ogbulu, O. M and Ndugbu, M. O. (2013). Electronic Banking and Bank Performance in Nigeria. West African Journal of Industrial and Academic Research, 6(1)

Alhassan T.F., Blokhina T., Kouadio J.A. (2021) Financial Innovation: The Impact of Mobile Money on Innovative Economic Growth. Proceeding of the International Science and Technology Conference "FarEastCon 2020". Smart Innovation, Systems and Technologies, 22(7), 27-38. Springer, Singapore. https://doi.org/10.1007/978-981 16-0953-4_3

Al Ajlouni, M.T. & Al-hakim, M. (2018). Financial Technology in Banking Industry: Challenges and Opportunities. International Conference on Economics and Administrative Sciences ICEAS2018 Applied Sciences University, Jordan. 11-12.

Alabar, T. T. (2012). Electronic banking services and customer satisfaction in the Nigerian banking industry. International journal of business and management tomorrow, 2(3), 1-8.

Abiola, A.B., Lawal, A.I., Adetiloye, K.A. & Bede, U.A. (2021). Financial sector reform and economic development in Nigeria. Asian Economic and Financial Review, 2021, 11(2): 160-172.

Adiga, D.L., Adigwe, P.K., Okonkwo, V.K. & Ogbonna, S.K. (2022). Financial technology and the banking sector performance in Nigeria. Discovery Scientific Society. 58(316), 349-360.

Adeoti, O.O. (2013), ‘’Challenges to the efficient use of Point of Sale (POS) terminals in Nigeria’’ African Journal of Business Management, 7(3), 67-88.

Agu, B.O., Simon, N. P.N. & Onwuka, I.O. (2021). Point of sale (POS) - Adoption and Challenges in Nigeria.2(2)

Agbada, O. A., & Osuji, C. C. (2013). An Empirical analysis of trends in financial intermediation and output in Nigeria. Global Journals Inc. (USA), 13(9), 210-216. Arnaboldi, K. & Rossignoli, H. (2018). Financial innovation in banking. Journal of Bank Risk, Governance and Regulation, 127-162.

Broby, D. (2021). Financial technology and the future of banking. Journal of Financial Innovation. 7-47 https://doi.org/10.1186/s40854-021-00264.

Bray, S. (2014). Power in Transit: Examining the Social Construction of Power in Relation to the Perceptions, Interactions, and Spatial Behavior of Passengers on Public Buses.

Carlos, T. & Tiago, O.(2016). Literature review of mobile banking and individual performance International Journal of Bank Marketing (35)7, 1042-1065.

Castri, S. (2013). Mobile money: enabling regulatory solutions. Available at SSRN: https://ssrn.com/abstract=2302726 or htt p://dx.doi.org/10.2139/ssrn.2302726

Chishti, S. and J. Barberis (2016), the fintech BOOK: the financial Technology Handbook for Investors, Entrepreneurs and Visionaries, Wiley.

Chhabra, T.N., Suri, R.K. & Verma, S. (2009). An Introduction to e-commerce Dhanpat Rai & Co. New Delhi: 9(8)

Dumani, M., Ekokemi, T. T., Johnny, N., & Krokeme, O. (2017). Impact of financial intermediation on economic growth in Nigeria: A disaggregate approach. Journal of Economics and Sustainable Development, 8(22).

Domeher, D., Yiadom, E.K. & Aawaar, G (2022). Financial innovations and economic growth: Does financial inclusion play a mediating role? Cogent Business & Management. 2(9) 204-9670 https://doi.org/10.1080/23311975.2022.2049670

Dorfleitner, G., Hornuf, L., Schmitt, M., & Weber, M. (2017). Definition of FinTech and Description of the FinTech Industry FinTech in Germany (pp. 5-10): Springer.

Ejinkonye, R.C. & Okonkwo, I.V. (2021). Nexus between financial innovation and financial intermediation in Nigeria's banking sector. African Journal of Accounting and Financial Research. 4(3), 162-179. DOI: 10.52589/AJAFR.

Emilio, A.S., Mariana, D.G., Eloy, L.M. & Esteban, V.C. (2020). Financial technology: review of trends, approaches and management. Mathematics, 8- 951; doi:10.3390/math8060951.

Ene, E.E., Abba, G.O. and Fatokun, G.F. (2019) The impact of electronic banking on financial inclusion in Nigeria. American Journal of Industrial and Business Management, 9, 1409-1422. https://doi.org/10.4236/ajibm.2019.96092.

Iriobe G. O. & Akinyede O. M (2017). The effect of financial technology services on banks customers satisfaction in Nigeria. SSRN Electronic Journal.

Ibenta, S. N., & Anyanwu, F. A. (2017). Financial innovation and efficiency on the banking sub- sector: The case of deposit money banks and selected instruments of electronic banking (2006-2014). Asian Journal of Economics, Business and Accounting, 2(1), 1-12

Iwedi, M. (2017). Bank failure in Nigeria: Evidence of prudential regulator laxity. Frontiers in Management Research 1(4); 141-150.

Lee, I., & Shin, Y. J. (2018). Fintech: Ecosystem, business models, investment decisions, and challenges. Business horizons, 61(1), 35-46.

Mawutor, J. K. M. (2014). Impact of E-Banking on the Profitability of Banks in Ghana. Research Journal of Finance and Accounting, 5(22)/

Martins, C., Oliveira, T. and Popovič, A. (2014), "Understanding the internet banking adoption: a unified theory of acceptance and use of technology and perceived risk application", International Journal of Information Management, Vol. 34 No. 1, pp. 1-13.

Misati, R., Osoro, J., Odongo, M. & Abdul, F. (2022). Does digital financial innovation enhance financial deepening and growth in Kenya. International Journal of Emerging Markets. 1746-8809 DOI 10.1108/IJOEM-09-2021-1389.

Mbizi, R., Sifile, O., Mbaeni, N., chikazhe, L. & Murebwa, S. (2022). The nexus between technological financial innovation and financial performance of commercial banks in Zimbabwe. Skyline Business Journal. 18(1), 1998-3425.

Marshal, I., Owakah, N.F., & Oroma, K.W. (2023). Effect of financial technology on financial inclusion in Nigeria. African Journal of Accounting and Financial Research 6(1) 21-36.

Mugdha, Y. K & Neeraj, P. (2018). Internet banking: a review (2002–2016). Journal of Internet Commerce, DOI: 10.1080/15332861.2018.1451969.

Mardiana, A., Fikri, A. Elfirahmi, T. & Ahmad, R.M. (2020). An analysis of point of sales (POS) information systems in smeswith the black box testing and PIECES method. R Journal of Business and Management (IOSR-JBM) 22(9) 20-25.

Nasution, L.N., Ramli, Sadalia, I. & Ruslan, D. (2022). Investigation of financial inclusion, financial technology, economic fundamentals, and poverty alleviation in asean-5: using sur model. ABAC Journal 42 (3) 132-147.

Otonne, A. & Ige, O.T. (2023). Exploring the influence of financial technology on banking services in Nigeria. International Journal of Financial, Accounting, and Management (IJFAM) 5(3) 2656-3355.

Orji, A. (2012). Bank savings and bank credits in Nigeria: Determinants and impact on economic growth. International Journal of Economics and Financial Issues, 2(3), 357-372. ISSN 2146-4138.

Rachid, H. & Nadir, O.S (2022). The relation between Financial Innovation and Economic Growth in Algeria: ARDL approach Journal of Finance & Markets Review. 9(1) 1-9.

Ranasinghe, A.S.W., Kosala, C.K. (2017). The impact of automated teller machines (ATMS) service ON customer satisfaction: A study based on state banks in SRI Lanka. South Asian Academic Research Journals 6(2) 2319-1422 http://www.saarj.com.

Tahir, S. H., Shah, S., Arif, F., Ahmed, G., Aziz, Q., & Ullah, M. R. (2018). Does financial innovation improve performance? An analysis of process innovation used in Pakistan. Journal of Innovation Economics and Management, 3(27), 195-214.