



IMPACT OF ELECTRONIC BANKING ON FIRM VALUE: A STUDY OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

DAHIRU MOHAMMED YOLE¹, GBENGA FESTUS BABARINDE², IBRAHIM ABUBAKAR³ & ZAINAB
GIDADO BOBBO⁴

¹²³⁴ Department of Banking and Finance, Modibbo Adama University, Yola, Nigeria: dahiruyole@mau.edu.ng

Corresponding Author Email: dahiruyole@mau.edu.ng
<https://doi.org/10.70118/aijbfd.02012026013>

KEYWORDS

ATM, Bank's
Management, Deposit
Money Banks, E-
banking, Firm value

ABSTRACT

The study surveyed the influence of e-banking on firm value of listed deposit money banks in Nigeria. The population comprises all 14 listed deposit money banks in Nigeria, and all 14 listed banks were selected because of data availability. Secondary sources were used for data collection from annual financial report of the banks issued for year under review 2019-2023. Multiple regression techniques were employed and the finding indicates that both automated teller machines (ATM) and mobile banking (MB) positively impact value while POS negatively impacts value. Based on these findings, it is recommended that the management of the banks should increase the number of automated teller machine (ATM) installations to generate more income that will improve their value in the long run. Also, the management of banks should use secondary sources of data collection and not consider point of sale (POS) in improving their value as POS does not show a significant influence in maximizing the firm value. Management of banks should give maximum consideration to the use of MB by enhancing their network connectivity to improve firm value.

ARTICLE HISTORY

Received: 23/06/2025
Revised form: 20/07/2026
Accepted: 19/08/2026
Available online: 20/09/2026

1. Introduction

Globalization, technical advancements, and improved development have all played an importance role in transformation of global financial systems in twenty-first century, drastically altering financial transactions (Abdul & Raji, 2022; Akinwale et al., 2020; Kemunto & Kagiri, 2018). A major factor in closing the digital gap and converting the corporate world into the "e-world" has been the emergence of information and communication technologies, or ICTs (Olatomide & Adegbe, 2021). Banking sector, especially digital transformation, which has improved financial institutions' operational efficiency and service delivery models (Etemadi et al., 2019; Mishkin & Eakins, 2015) and transformed the global banking industry with innovations like fintech (Smith & Johnson, 2020).

Nigeria's banking industry has changed significantly, particularly due to efforts at recapitalization and consolidation. By reducing in-branch activity, electronic banking services have improved customer service, streamlined operations, and decreased transaction costs (Adeniji & Omoteso, 2019; Osly et al., 2020). Customers can apply for loans, pay bills, and conduct transactions without physically visiting bank branches thanks to mobile platforms and online banking (Adetugi, 2017 in Ugbede et al., 2019). Despite these developments, little is known about the connection between business value and electronic banking, especially in Nigeria's dynamic economic climate (Adeleke et al., 2022).

Electronic banking services have become a global trend, with financial institutions recognizing the potential benefits of cost reduction, enhanced customer experience, and expanded market reach (Etemadi et al., 2019; Mishkin & Eakins, 2015). Research in developed economies has shown a positive link between electronic banking adoption and firm value (Smith & Johnson, 2020), and

similar trends have been observed globally (Ghasemi et al., 2021; Yoong & Susela, 2020). However, challenges such as cybersecurity concerns, inefficient ICT infrastructure, and high investment costs in the Nigerian context have hindered the full potential of electronic banking, contributing to poor financial performance and reduced customer satisfaction (Adeleke et al., 2022; Agboola, 2016; Agwu & Murray, 2015).

Despite these challenges, there is a need for a focused investigation into the influence of electronic banking on firm value among Nigerian commercial banks. This investigate is essential to understand the specific dynamics of the Nigerian banking system, including the regulatory environment, customer behaviors, and the effectiveness of ICT infrastructure, which differ significantly from other global contexts. The findings will provide insights into strategic decision-making for Nigerian banks as they navigate the digital transformation in the evolving financial system.

2. Literature Review

2.1 Conceptual Review

2.1.1 Firm Value

As a more thorough substitute for market capitalization, firm value (FV) calculates the overall worth of an organization. Firm's market capitalization, short-term debt and long-term debt, and cash or cash equivalents on the balance sheet are all included in FV's computation (Fernando et al., 2023). An economic metric that represents a firm's market value, total enterprise value, and it equally known as firm value. In contrast to studies of Cahyo et al. (2021); Jihadi et al. (2021) opined that, Price Book Value (PBV) as a proxy, this study uses enterprise value to capture the overall market value as an economic measure useful for the firm valuation to help identify undervalued firms. The firm's value was calculated as: equity value + total debt – cash & cash equivalents

+ preferred stock + minority interest. Therefore, firm's value divided by earnings before interest, taxes, depreciation, and amortization (EV/EBITDA) used to calculate the firm's value.

Many believe that firm value (EV), is an accurate indicator of company's worth compare market capitalization, differs greatly from the latter in several ways. EV provides interested parties or investors with information about firm's worth and the amount that another company need to pay to acquire it. Another factor take into account is, if a firm's entire cash or cash equivalents are worth more than the sum of its market capitalization plus loans, its EV may be negative. This indicates that a business is not making the best use of its resources; it has too much money lying around that isn't being put to any use. Distributions, buybacks, expansion, R&D, maintenance, employee pay increases, bonuses, and debt repayment are just a few of the many uses for extra money.

2.1.2 Electronic Banking

"Electronic banking is something that is operated and based on electronics," according to the Oxford Advanced Learners Dictionary. "It is a science and technology of electronic phenomena, devices, and systems such as computers, radios, etc." Therefore, it may be concluded that electronic banking refers to banking operations that are conducted electronically to deliver a quick and precise financial service, or that are conducted using electronic devices and systems. However, electronic banking, as defined as conduct of banking operations via information and technological facilities to support banking operations for both short-term and long-term objectives (Abaenewe et al., 2013). A variety of financial services, including withdrawal funds, transfer of funds, cash deposits, utility and credit card bill payment, and other financial queries, are provided via electronic banking systems, which are regarded as an

innovative way of service delivery (Onyedimekwu & Oruan, 2013).

In a similar vein, Imiefoh (2012) views electronic banking as a catch-all phrase for the method by which a client can conduct financial transactions online without going to a physical location. That is the automated provision of both innovative and conventional banking services and products to clients via interactive, electronic channels of communication. In general, e-banking refers to a service that enables users access account-specific information and carry out transactions easily from far distance using a computer and any electronic facilities (Odulaja, 2012).

2.1.3 Delivery Channels of E-banking

Three fundamental categories used to group e-banking. These consist of mobile/phone, smart card, and internet banking (Abaenewe et al., 2013).

2.1.3.1 Internet Banking

This kind of e-banking service uses the Internet to receive and process user instructions. Customers can use internet banking to access banking services from the convenience of their homes or workplaces. Customers can purchase things here by ordering online, giving their banks instructions to pay the vendor the invoice amount, and having the goods delivered to the buyer's desired location. Another type of banking is internet banking, which enables users to access their bank statements, pay bills, and make transfers via the bank's website without physically visiting the banking hall. Requests from customers are received and processed online in this type of online banking service. Thanks to internet banking, clients can benefit from financial services from the comfort of their homes and workplaces. This implies that customers can place online orders, direct their banks to pay the merchant the invoice amount and have the

items delivered to the address of their choosing.

2.1.3.2 Smartcard Banking

This is the process of doing financial transactions using electronic cards, such as credit, debit, ATM, and value cards. An electronic card, which is a type of internet banking, is a tangible plastic card that is used to identify its owner. It is utilized for online financial transactions, such as automated teller machines (ATMs) and point-of-sale (POS) that approve payments to vendors (Chimaobi, 2018). Credit and debit cards are among the different kinds of cards that require restocking. An ATM is a device that combines a cash vault, record-keeping system, and computer terminal into one unit. It allows customers to access a financial company's bookkeeping system around-the-clock by punching a special code number into a computer terminal connected to the company's computerized records or by using a plastic card with a Personal Identification Number (PIN). This is the practice of using electronic cards (such as credit cards, debit cards, ATM cards, and value cards) to conduct financial transactions. Smart card technology makes it simple for bank customers to obtain cash, make transactions, and check their accounts without having to visit the banking hall. Smart card facilities are usually placed in strategic areas of cities, such as shopping malls, hotels, transportation hubs, and supermarkets.

2.1.3.3 E-Mobile Banking

This includes using mobile phones or fixed wireless phones to perform financial operations. The following actions are taken: The computer receives instructions via voice or short messages (SMS), decrypts the message and uses a highly coded device to carry out the instructions before returning the results to the consumer. Customers utilize telephone banking, a type of online banking, to carry out or execute retail transactions by

phoning phone communication units that are connected to a bank's automated system. Changing the PIN and transferring money are two possible actions (Chimaobi, 2018). Mobile banking is a type of online banking where certain transactions are completed using a cell phone. A phone recharge, a minor money transfer, and a PIN change are a few instances of these transactions. This means using fixed or mobile wireless phones to conduct banking activities. The following are the steps: Voice or short message (SMS) commands are sent to the computer, which decrypts the message and uses a highly coded device to carry out the commands. After that, the customer receives the response electronically.

2.1.3.4 Point of Sales (POS)

Customers are given online cards under this scheme, which they can insert into specialized electronic devices to make payments. The Point of Sales (POS) terminals are at the heart of these payment systems (Azeez, 2011). These are to be dispersed among the nation's business hubs. These point-of-sale terminals will function similarly to automated teller machines (ATMs). In this instance, the amount is input into a POS terminal into which the electronic card has been inserted after a transaction is completed and the value is determined. The amount's cash equivalent is automatically sent from the payer's account to the payee's account (Olaegbe, 2011).

2.2 Theoretical Framework

2.2.1 Technology Acceptance Model

Davis (1989) created the Technology Acceptance Model (TAM), which describes how people embrace and use new information systems like online banking. According to TAM, a person's intention to use a system is impacted by how they view it, particularly how easy and beneficial they believe it to be. While perceived ease of use indicates the perception that a system is simple to use with

little effort, perceived usefulness refers to the belief that using a system will improve one's performance. Davis (1989) goes on to say that perceived utility is directly influenced by simplicity of usage. Intention is defined by Ajzen (1991) as an individual's preparedness to carry out an activity, which is also influenced by these perceptions. According to the paradigm, judgments of utility and ease of use can be influenced by outside elements like the surroundings. Research on IT adoption is one of the many domains where TAM has been used. For instance, Liu and Arnett (2000) used TAM to study effective website design, and Luarn and Lin (2003) applied the model to comprehend technology-assisted customer behavior. While Horst et al. (2007) extended TAM to examine e-government acceptance, emphasizing the importance of trust and experience in technology adoption, Pavlou (2003) created an acceptance model for e-commerce.

Studies on e-banking, namely those about bank clients' adoption of new technology, are also informed by TAM. The model's emphasis on perceived utility and usability is essential for elucidating how customers behave while embracing online banking. Research indicates that adoption decisions are significantly influenced by how beneficial technology is seen to be, and that successful implementation is more likely when a system is simple to use (Scott & Davis, 2015). TAM is therefore crucial to comprehending how e-banking might improve Kenyan banks' performance by directing their customers' use of technology.

3. Empirical Review

Research on the factors influencing business value in the banking industry using the random effects model was done by Sugianto, Oemar, Hakim, and Endri in 2020. 42 banks that were listed between 2010 and 2015 on the Indonesia Stock Exchange made up the study

population, and 27 banks were selected as research samples. Purposive sampling was used as the sampling method, and the random effects regression panel model was used for analysis. Purposive sampling was used as the sample method, and the random effects regression panel model was used for analysis. Empirical evidence indicates that the NPL ratio has an impact on firm value, although other factors such as business growth (FG), CAR, loans (LDR), BOPO, DPK growth (DG), and profitability have a combined effect on the company's worth (Tobin's Q) but only partially affect it.

In a similar vein, Olalere, Kes, Islam, and Rahman (2021) compare Malaysian and Nigerian banks to examine how financial innovation and bank competition affect business value. The study employed the sys-GMM estimation technique using 286 observations of data taken from 26 commercial banks in Malaysia and Nigeria between 2009 and 2019. The study's findings indicate that bank rivalry and financial inclusion (FI) have a substantial detrimental impact on firm value in Nigeria. On the other hand, bank rivalry and financial inclusion (FI) both significantly increase business value in Malaysia. Firm value is strongly correlated with GDP growth, inflation rate, bank size, and return on asset (ROA). Firm value in Malaysia and Nigeria is significantly positively correlated with the interactive impact (FI * COMP). The idea that FI is a genuine force behind economic development, competitiveness, and advancement is supported by empirical investigation. The paper concludes that to manage the risks posed by the FI process, policymakers should address the flaws revealed by the financial crisis, which helped to bring about the development of several contemporary financial regulatory regimes.

With regards to electronic banking operation about bank financial performance or firm's

value, Oyedokun et al. (2021) study on E-banking services and the financial performance of deposit money banks in Nigeria. The study used eight selected deposit money banks categorized with international authorization in Nigeria. This study adopted an ex-post facto research design because data were collected from secondary sources through annual reports and the statistical bulletin of the Central Bank of Nigeria over the period 2011 to 2020. E-banking was measured using mobile banking, online banking, automated teller machines, and point of sale, while the performance of the bank was measured by Return on Assets (ROA). The study applied ordinary least squares (OLS) in its analysis to determine the effect of E-Banking on the performance of deposit money banks in Nigeria. The outcomes of the work showed that mobile banking (MB) and point of sales have a significant effect on the performance of deposit money banks in Nigeria while online banking (OB) and automated teller machines (ATM) did not have a significant influence on the performance of deposit money banks in Nigeria.

Ebimobowei (2022) also conducted a related study on the company value and corporate governance features of Nigerian deposit money institutions. Among the specific goals are examining the connection between Tobin q and board size, assessing the relationship between Tobin q and board independence, figuring out the connection between Tobin q and board ownership, examining the impact of gender diversity on Tobin q, and assessing the connection between board meetings and Tobin q. The study population consisted of all deposit money banks and the Taro Yamane method of sample size determination was applied. The secondary data for the study was from the published financial statements of sampled banks for the period after the validity and reliability test of data. The data obtained were tested using univariate,

bivariate, and multivariate analysis. The value of deposit money banks in Nigeria is positively and significantly impacted by board independence, board size, ownership structure, gender diversity, and board meetings, according to the multiple regression results. The study came to the conclusion that the value of deposit money banks in Nigeria is favorably and significantly impacted by corporate governance features. Another study on the impact of digital banking on Nigerian commercial banks' performance from 2010 to 2019 was conducted by Origin and Rapuluchukwu in 2022. The Autoregressive Distributive Lag (ARDL) framework was used in the study to investigate the link between Nigerian commercial banks' return on assets (ROA), web banking (WEBG), banking transactions performed using unstructured supplemental service data (USSDG), and point of sale machines (POSG). The Central Bank of Nigeria's (CBN) statistical bulletins and the Nigeria Deposit Insurance Corporation's (NDIC) yearly reports provided the data. The analysis's conclusion showed that digital banking significantly and favorably affects Nigerian commercial banks' performance. The study suggests the necessity of the reasonably stable network in light of these findings:

A study on Nigerian deposit money institutions' performance and electronic banking systems was carried out by Gbanador (2023). The study used secondary data gathered from the Central Bank of Nigeria's statistical bulletin using an ex-post facto research design. The study used monthly time series data from 2019 to 2021. According to the study, e-banking systems did not significantly affect Nigerian DMB performance in the short term. However, the long-term analysis's findings showed that mobile banking has a favorable and large impact on DMBs' performance, whereas

ATMs and point-of-sale systems have a positive but negligible effect. The fully adjusted least squares and Johansen Cointegration results provide proof of the long-term connection between DMB performance and e-banking. Therefore, the study comes to the conclusion that e-banking

affects DMB performance in Nigeria and suggests that DMBS educate customers about the advantages of using POS, ATMs, and other e-payment channels in addition to providing high-quality mobile banking services to maintain their performance.

2.4 Conceptual Framework

The following conceptual framework displays company value as the dependent variable and electronic banking services (POS, ATM, and MB) as independent variables. The approach is predicated on the idea that, among Nigerian commercial banks, electronic banking service factors (POS, ATM, and MB) do not significantly affect a firm's value.

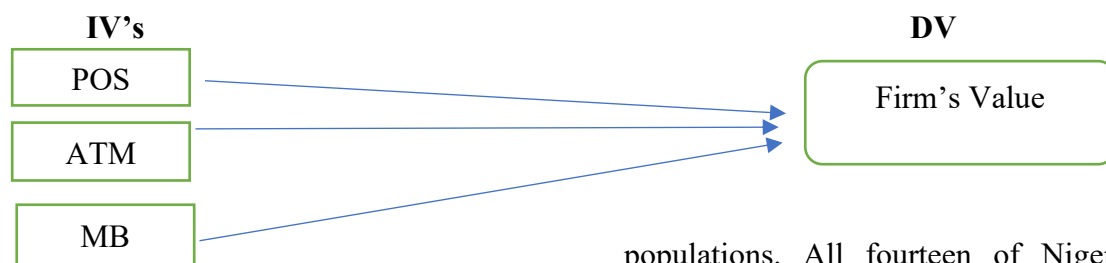


Figure 2.1: Conceptual Framework
Source: Researcher Compilation (2023).

3. Methodology

The ex-post facto research design was employed in this investigation. The fourteen (14) Nigerian Listed Deposit Money Banks make up the study's

populations. All fourteen of Nigeria's listed deposit money banks were used in this study since their data was easily accessible and they were all listed on the Nigeria Stock Group during the study period (2019–2023). The banks' annual reports and accounts served as the secondary source of the data. Multiple regression analysis was used to examine the gathered data.

3.1 Variables and their Measurements

The variables of the study and their measurements are summarized in Table 1.

Table 1: Variables and their Measurements

Variables	Variable Definition	Variable Measurement
ROE	Return on Equity	Net profit after tax ÷ Shareholders' Equity Abdi (2010).

ATM	Automated Teller Machine	Natural log of the number of ATM systems installed by the banks.
POS	Point of Sales	Natural log of the number of point of sales terminals.
MB	Mobile Banking	Natural log of the usage volumes of Mobile banking.

Source: Researchers' compilation (2023)

3.2 Model specification

The model of the study is specified in equation (1)

$$ROE_{it} = \beta_0 + \beta_1 ATM_{it} + \beta_1 POS_{it} + \beta_1 MB_{it} + \beta_1 e_{it} \quad (1)$$

Where:

ROE= Return on Equity

ATMS= Automated Teller Machine

POS= Point of Sales.

MB= Mobile banking

α_0 = Estimated value of Y when all the other variables are zero

β = Correlated volatility of the estimated value of Y

e_t = Error term

4. Results and Discussion

The regression results of the independent variables (ATM, POS, and MB) and the study's dependent variable (financial performance) are shown, interpreted, and discussed in this part. Analyzing the correlation between each independent variable and the dependent variable, as well as the overall outcome of the models, is how the results are presented in Table 2.

Table 2 Summary of Regression Result

Variable	Coefficient	t-statistics	t-significant	Tolerance/VIF
Constant	2.098	1.109	0.272	0.9124/1.071
Atm	0.349	2.818	0.006	0.924/1.083
Pos	-0.271	-1.957	0.055	0.938/1.067
Mb	0.137	0.962	0.340	0.975/1.025

R ²	0.491
F-statistics	3.848
F-significant	0.000

Source: STATA OUTPUT 2023.

According to Table 2, the cumulative value of R², or multiple coefficients of determination, which indicates the overall variation in the dependent variable explained by the independent variables taken together, is 0.491 in Table 2. Consequently, 49% represents the combined relationship between the independent and dependent variables. According to the R² of 0.491, variations in Nigerian deposit money banks' MB, POS, and ATMs account for 49% of the variance in financial performance. Fitting of the E-Banking and financial performance model is indicated by the Fisher change of 3.848, which is significant at 1%. All explanatory factors contribute significantly to raising the return on equity of deposit money banks in Nigeria, according to the computed F-significant of 0.000 at the 1% level of significance. As a result, MB, POS, and ATM significantly affect deposit money banks' financial performance. There is a high likelihood that the correlation between the variables is not the result of pure chance, as indicated by the F-significant, which is statistically significant at the 1% level.

Numerous researchers agree that the variance inflation factor (VIF) and the tolerance value are both useful metrics for assessing multicollinearity among a study's explanatory variables. Multicollinearity is absent if the VIF of each explanatory variable is less than ten (10). Based on the coefficients in Table 4 (1.083<10, 1.087<10, 1.025<10). The tolerance value (0.924<1, 0.938<1, and 0.975<1) is less than 1.000, another metric used to assess multicollinearity. Additionally, it demonstrates that there is no

multicollinearity among the study's independent variables. ATM has been found to be significant at all levels of significance, with a coefficient value of 0.349, t-statistic of 2.818, and t-sig of 0.006. The financial performance of listed deposit money banks in Nigeria is positively correlated with the number of ATMs installed, as indicated by the coefficient value of 0.349. This means that for every 1% increase in the number of ATMs installed by listed deposit money banks, the financial performance will increase by 35%. This indicates that the mentioned deposit money institutions' financial performance will improve with the number of ATMs they have. Given that one study claims that ATMs have no effect on the financial performance of Deposit Money Banks in Nigeria, this offers sufficient statistical support to reject the null hypothesis (Ogare, 2013; Osakwe & Ezeaku, 2022).

According to the table, POS is significant at the 1% level of significance with a coefficient value of -0.271, t-statistic of -1.957, and t-sig of 0.055. The coefficient value of -0.271 indicates that there is a negative correlation between the point of sale (POS) and financial performance of Nigerian listed deposit money banks. This means that the two variables are inversely related, meaning that for every 1% increase in the number of points of sale, the listed deposit money banks' financial performance will fall by 27%. This shows that the study's second null hypothesis—that point-of-sale (POS) has no discernible effect on the financial performance of Nigeria's listed deposit money banks cannot be rejected (Agbo, 2021; Jegede, 2014).

Finally, MB has a positively correlated coefficient value of 0.137, t-statistics of 0.962, and a t-sig of 0.340. This suggests that listed deposit money banks' financial performance will rise by 14% for every 1% increase in mobile banking usage. This indicates that performance will increase with the number of MB level transactions made by the mentioned deposit money banks. The study's third null hypothesis, according to which MB has no discernible effect on the financial performance of Nigeria's listed deposit money banks, is not sufficiently supported by statistics (Agbo, 2021; Peter & Emenike, 2016).

5. Conclusion and Recommendations

The impact of e-banking on the financial performance of Nigerian listed deposit money banks has been the subject of various studies. The 14 deposit money banks that were listed on the Nigerian stock exchange as of 2023 used as the study's sample size. The dependent variable for financial performance was return on equity, while the independent variables were ATM, POS, and MB.

The study concludes that ATMs significantly improve the financial performance of deposit money banks in Nigeria, hence rejecting the null hypothesis. This conclusion is based on the research findings, data collected and evaluated, and the hypothesis tested. Any deposit money bank that is profitable is likely to have strong financial performance as a result. Consequently, it is determined that banks ought to benefit from the installation of ATMs in order to improve their efficiency. According to the hypothesis that POS has no discernible impact on the financial performance of deposit money banks in Nigeria, POS is found to have a negligible and adverse influence on the financial performance of listed deposit money banks in that country. Additionally, the analysis shows that MB has no beneficial and significant

impact on the financial performance of Nigeria's listed deposit money banks.

Therefore, the study's conclusions and findings suggested that:

1. The study found a significant relationship between ATMs and financial performance, indicating that ATMs have a significant impact on financial performance. As a result, banks should install ATMs to improve their financial performance.
2. The study also suggests that since point-of-sale (POS) has little bearing on optimizing the financial performance of deposit money institutions in Nigeria, bank management should not consider it when trying to improve their performance.
3. Banks should use MB since it improves financial performance, albeit not much. The effect of MB has been found to have a positive but negligible relationship with the financial performance of listed deposit money banks in Nigeria.

References

- Adeleke, C. (2022). Digital transformation in banking: A comprehensive review of electronic banking Services. *International Journal of Finance and Technology*, 8(2), 45-67.
- Abdul, H., & Raji, B. (2022). Customer perception and satisfaction with electronic banking services in Nigeria. *International Journal of Bank Marketing*, 40(1), 90-109.
- Abaenewe, Z. C., Ogbulu, O. M. & Ndugbu, M. O. (2013). Electronic banking and bank performance in Nigeria. *West African Journal of Industrial & Academic Research*, 6(1), 171 – 187

- Agboola, A.A., (2006). Electronic payment systems and tele-banking services in Nigeria. *Journal of Internet Banking and Commerce*, 11(3), 1-10.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179–211.
- Akinwale, Y. A., et al. (2020). Electronic banking services and customer satisfaction in Nigerian commercial banks. *International Journal of Economics, Commerce, and Management*, 8 (1), 18-29.
- Agwu M. E., & Carter A. L. (2015). Mobile phone banking in Nigeria: benefits, problems and prospects. *International Journal of Business and Commerce*, 3, 50-70.
- Azeez, K. (2011). *Fresh hurdles for CBN cashless economy plan*.
- Black, N. 1., Lockett, A., Winklhofer, H., & Ennew, C. (2001). The adoption of Internet financial services: a qualitative study. *International Journal of Retail and Distribution Management*. 29(8), 390-398.
- Bhullar, P. S., & Bhatnagar, D. (2013). Theoretical framework EV vs. stock price: A better measurement of firm value. *International Journal of Commerce, Business and Management*, 2(6), 335–343.
- Cahyo, H., Kusuma, H., Harjito, D. A., & Arifin, Z. (2021). The relationship between firm diversification and firm performance: Empirical evidence from Indonesia. *The Journal of Asian Finance, Economics, and Business*, 8(3), 497–504.
- Chimaobi, C. M. (2018). *Impact of internet banking on the profitability of commercial banks in Nigeria: A Study of Zenith Bank Plc (2005-2017)*. Department of accounting and finance, faculty of management and social sciences Godfrey Okoye University Uguomunike, Enugu.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-34.
- Etemadi, H., Saleh, M., & Moghaddam, F. A. (2019). The impact of electronic banking services on the performance of Iranian banks. *International Journal of Bank Marketing*, 37(1), 206-226.
- Ebimobowei, A. (2022). Corporate governance characteristics and firm value of deposit money banks in Nigeria. *British Journal of Management and Marketing Studies* 5(2), 109- 129.
- Ghasemi, Z., Kermani, M. A., & Allahviranloo, T. (2021). Exploring the main effect of e-banking on the banking industry concentration degree on predicting the future of the banking industry: A case study. <https://doi.org/10.1155/2021/8856990>.
- Gbanador, M. A. (2023). Electronic banking systems and the performance of deposit money banks in Nigeria. *Nigerian Journal of Management Sciences*, 24(1), 360 -371.
- Imiefoh, P. (2012). Towards effective implementation of electronic e-banking in Nigeria. *An International Multi-Disciplinary Journal*, 6, 290-300.
- Johnnson, M., (2019). An overview of electronic payment system in Nigeria.

- Strategic and Technical Issues CBN*, 29(2), 68-71.
- Johnson, A., & Smith, B. (2021). The impact of electronic banking on financial performance: A global perspective. *Journal of Banking Research*, 15(3), 112-130.
- Jihadi, M., Vilantika, E., Hashemi, S. M., Arifin, Z., Bachtiar, Y., & Sholichah, F. (2021). The effect of liquidity, leverage, and profitability on firm value: Empirical evidence from Indonesia. *The Journal of Asian Finance, Economics, and Business*, 8(3), 423–431.
- Kemunto, E. R., & Kagiri, A. (2018). Effect of implementation of Fintech strategies on competitiveness in the banking sector in Kenya: A case of KCB Bank Kenya. *European Journal of Business and Strategic Management*, 3(3), 29-40.
- Lee, J. N., Miranda, S. M., & Kim, Y.M. (2004). IT outsourcing strategies: Universalistic, contingency, and configurational explanations of success. *Information Systems Research*, 15(2), 110-131.
- Lifland, S. (2011). The impact of working capital efficiencies on the enterprise value option: Empirical analysis from the energy sector. *Advances in Business Research*, 2(1), 57–75.
- Liu, C., & Arnett, K. (2000). Exploring the factors associated with website success in the context of electronic commerce. *Information and Management Journal*, 38(1), 23-33.
- Luarn, P., & Lin, H. H. (2003). A customer loyalty model for e-service context. *J. Electron. Commerce Res.*, 4(4), 156-167.
- Mishkin, F. S., & Eakins, S. G. (2015). *Financial markets and institutions*. Pearson Education.
- Ogutu, M., & Fatoki, O. (2019). Effect of e-banking on financial performance of listed commercial banks in Kenya. *Global Scientific Journals*, 7(9), 2320-9186.
- Orji, A., Ogbuabor, J. E., Okon, A. N., & Anthony-Orji, O. I. (2018). Electronic banking innovations and selected banks performance in Nigeria. *The Economics and Finance Letter*, 5(2), 46- 57.
- Olatomide, O. S., & Adegbe, F. F. (2021). Regulatory challenges in electronic banking in Nigeria. *Journal of Internet Banking and Commerce*, 26 (3), 1-16.
- Olalere, O., Islam, A., Yusoff, W. S., & Iqbal, M. M. (2020). Revisiting the impact of intrinsic financial risks on the firm value of banks in ASEAN-5 countries: A panel data approach. *Banks and Bank Systems*, 15(2), 200 - 2012.
- Olalere, O. E., Kes, M. S., Islam, M. A., & Rahman, S. (2021). Effect of financial innovation and bank competition on firm value: A comparative study of Malaysian and Nigerian banks. *Journal of Asian Finance, Economics and Business*, 8(6), 245–253.
- Ochego, E. M., Omagwa, J., & Muathe, S. (2019). Corporate governance, financial performance and firm value: A case of commercial banks in Kenya. *International Journal of Finance & Banking Studies*, 8(4), 41–48.
- Olwande, O. S., & Ngaba, D. (2019). E-banking services and financial performance of commercial banks in Kenya. *International Academic Journal*

of Economics and Finance, 3 (4), 132-153.

Adedokun, G. E., Orenuga B., & Modupeola, A. (2021). E-banking services and performance of deposit money banks in Nigeria. *Global Research Journal of Accounting and Finance*, 2(1), 80-92.

Origin, C. K., & Rapuluchukwu, M. S. (2022). Effects of digital banking on the performance of commercial banks in Nigeria (2010 -2019). *International Journal of Multidisciplinary Research and Analysis*. 5(1), 133-148.

Rogers, E. M. (1995). *Diffusion of innovation* (4th ed.). The Free Press.

Smith, J., Johnson, A., & Williams, B. (2020). The impact of electronic banking on financial performance: A review. *Journal of Banking Research*, 25(2), 123-145.

Singh, N. (2023). Impact of e-banking: Prior and after effects on banking activities. *Journal of Pharmaceutical Negative Results*, 14(2), 310–317.

Scott, W. R., & Davis, G. F. (2015). Organizations and organizing: Rational, natural and open systems perspectives. Routledge.

Sugianto, S., Oemar, F., Hakim, L., & Endri, E. (2020) conducted research on the determinants of firm value in the banking sector: Random effects model. *International Journal of Innovation, Creativity and Change*, 12(8), 208–218.