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INTERNET BANKING AND COMMERCIAL BANKS' PERFORMANCE IN NIGERIA

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ABSTRACT

Using time series yearly data from 2002 to 2023, the research aims to examine how online banking affects deposit money banks' profitability in Nigeria. The Central Bank of Nigeria Statistical Bulletin, 2023, provided the secondary data that the researchers used in their ex-post facto design. The study's dependent variable is the return on assets, whereas the independent variables are the value of online transactions, POS transactions, and ATM transactions. We tested the hypotheses using the ordinary least squares estimation approach. The values of WEB transactions have a negligible and adverse effect on Nigerian commercial banks' return on assets. The value of point-of-sale transactions significantly reduces the return on assets (ROA) for Nigerian banks. Additionally, the ROA of Nigerian commercial banks is positively and significantly affected by the value of automated teller machine transactions. The research comes to the conclusion that online banking significantly improves the viability of Nigerian banks. In order to prevent financial loss at the hands of hackers, the research suggested that bank management periodically educate users about online banking, its advantages, risk exposure, and physical and technological security. Additionally, bank employees should get brief training to familiarize themselves with the latest advancements in cutting-edge technology in these dynamic times.

Keywords: Internet Banking Transactions, Commercial Banks,' Performance, Nigeria

INTRODUCTION

Over the last ten years, there has been a swift integration of the Internet across nearly all economic sectors, with a notable emphasis on the banking sector. Oguejiofor and Ikedima (2021) noted that the mixture of this skills and competencies improves performance. The arrival of internet banking has, on one hand, yielded numerous advantages (Olaegbe, 2021). These encompass diminished expenses, market expansion, and enhancements in service speed (Oruç & Tatar, 2017). The banking sector in the 21st century functions within a multifaceted and competitive landscape marked by evolving circumstances and a notably uncertain economic atmosphere. The research conducted by

Ovia (2020) elucidates that mobile phones, functioning as instruments of internet banking, have redefined the landscape of commerce through innovations such as mobile banking, wireless electronic payment systems, micropayments, online wallets, and payment solutions, and advertising strategies. Pavlou (2022) described online banking as a medium that permits customers to access their bank accounts through the web, utilising computers or mobile phone.

Performance denotes the capacity of an enterprise to attain various objectives, including substantial profit, operational efficiency, effectiveness, product quality, significant market share, favourable financial outcomes, and sustainability within a specified timeframe, employing an appropriate strategic approach (Batu et al. 015). The assessment of performance serves as a lens through which one can gauge an enterprise's standing regarding profitability, market share, product quality, and its growth relative to other entities within the same sector. Consequently, the performance measure employed in the study is the ROA. This metric reflects the efficacy with which bank management has utilised the institution's real investment resources to generate profit (Simon, 2021).

Statement of the Problem

Studies have been carried out in this domain across both developed and developing nations, including those by Margaret et al. (2022), Malhotra and Singh (2019), and Taiwo and Agwu (2017). The majority of these investigations have concentrated on online banking and the financial viability of deposit banks, with only a limited number addressing internet banking, a specific facet of electronic banking. Consequently, additional scholars, including Pavlou (2022) and Simon (2021), have uncovered varied findings concerning the outcome of internet banking on the level of profit of banks. Consequently, these diverse conclusions underscore the necessity of conducting a study from a Nigerian perspective, with the aim of clarifying the interplay between online banking and the viability of Nigerian banking firms. The results previously discussed have created an opportunity for the researcher to explore the influence of internet banking on the performance of commercial banks in Nigeria during the period from 2002 to 2023.

Research Hypotheses

The following null hypotheses are:

1. Value of web transactions does not have a significant impact on return on assets of commercial banks in Nigeria.
2. Value of point of sales transactions has no significant impact on return on assets of commercial banks in Nigeria.
3. Value of ATM transactions does not have a significant impact on return on assets of commercial banks in Nigeria.

Literature Review

Nature of Internet Banking

The concept of internet banking can be interpreted through various lenses. According to Daniel (2020), online banking is "the process of the provision of banking services to customers through Internet technologies." Through proactive electronic communication pathways, internet banking is the automated conveyance of conventional and novel banking products to consumers (Daniel, 2020; Margret, 2022).

Electronic banking enables customers to execute financial transactions independently of human intervention (Rasiah, 2020; Daniel et al., 2020). Many services offered by internet banking allow bank clients to use their computers and smart devices to seek information and complete the bulk of their financial operations (Oruc & Tatar, 2017). It is the process through which clients conduct financial transactions online thereby obviating the necessity of physically visiting a bank or engaging with a traditional brick-and-mortar establishment.

Development of Internet Banking in Nigeria

Electronic banking represents not a singular technology but rather a confluence of various technologies, each progressing along its own distinct trajectory (Onodugo, 2020). The initial implementations of the computer era in banking involved the utilisation of mainframes and minicomputers. These were used to examine information from accounting software, bank inventory, personnel files, and client accounts. During that time, technology served primarily as an auxiliary instrument for banking functions, and the concept of direct customer service was not yet well defined. Technology was subsequently employed to enhance the efficiency of staff, enabling them to perform their tasks with greater speed and convenience and reducing the likelihood of human error. Rasiah (2020) notes that the initial manifestation of electronic banking, the Automated Teller Machine (ATM), was introduced to the commercial sector in 1968. The ATM has evolved from a basic money dispenser into an advanced tool that enables users to do a number of tasks, such as bill payment, transferring money, and keeping track of accounts.

The evolution of banking in Nigeria has progressed significantly from the era characterised by ledger cards and various manual filing systems (Begona et al., 2014). At that time, the profession was characterised by its tediousness and cumbersome nature, with substantial files managed and retrieved manually. Customers often found themselves enduring lengthy queues, and at times, they would leave without having accomplished their objectives by the end of the day. Currently, every bank in the nation offers some variant of e-banking services, including those located in the most isolated regions of the globe (Amu & Nwezeaku, 2016). In an effort to adapt to the evolving landscape of contemporary banking, the ATM was integrated into the Nigerian banking framework in 1989 as an electronic delivery mechanism, subsequently accompanied by the advent of mobile telephony in 2001. Mobile banking represents a significant advancement that has increasingly manifested itself in widespread manners, influencing numerous financial institutions and various sectors of the economy.

Theoretical Review

This research is grounded in instrumental theory, which presents the most widely recognised perspective on technology. It is founded on the fundamental notion that technologies function as "tools" prepared to fulfil the objectives of their users. Technology is considered "neutral," lacking any inherent evaluative content. Nevertheless, what is the true core of the idea of "neutrality" in respect to technology? The notion typically encompasses a minimum of four aspects. Initially, technology, in its essence as a mere tool, exhibits a neutrality towards the diverse objectives it may be utilised to fulfil (Wario & Okibo, 2014). Consequently, the impartiality of technology represents a particular instance of the impartiality of instrumental means, which are only incidentally connected to the fundamental values they support.

Empirical Review

Kabir et al. (2019) explored the implication of the emergence of online banking on the financial viability of institutions in Bangladesh. Each of the annual reports from Bangladesh's 30 publicly traded banks was meticulously analysed for secondary data. The findings indicated that online banking institutions exhibited superior ROA and ROE compared to their traditional counterparts. The outcomes, however, were rather ordinary. Following the emergence of internet banking, a notable decline in both ROA and ROE was observed, supported by statistical evidence. The findings may be elucidated by a deficiency in broad client adoption of online banking, as well as the preliminary investment required for essential infrastructure. Consequently, the realisation of the investment's return was deferred until a considerably later time, notwithstanding the fact that it was executed prior to the advent of online banking becoming a standard practice.

Olushola (2020) investigated the outcome of technical efficacy on the operations of banks in Nigeria. The findings from a multiple regression analysis indicated that the technical efficiency of Nigerian banks remained relatively stable following the implementation of internet banking. The findings indicate that the technological efficiency of Nigerian banks in managing deposits has not seen enhancement despite investments in electronic banking. The research indicates that for electronic banking to achieve success, it is imperative to establish robust promotion and awareness initiatives to encourage customer utilisation of the services.

Ngungi (2020) examined the implication of the emergence of digital banking on Kenyan banks efficiency. The investigators collected data employing a descriptive methodology. The entirety of the commercial banking sector in Kenya, comprising all 39 institutions, was enumerated. The introduction of online banking has led to a modest enhancement in the technological efficiency of Kenya's commercial banks. This arises from the mutual benefits that both clients and financial entities experience through the enhanced efficiency of online banking. The research indicates that financial institutions should encourage a greater number of clients to engage with online banking

services, given their efficacy in minimising expenses for both the institution and its patrons, enhancing security measures, and improving accessibility.

Cheruiyot (2019) analysed the influence of online banking on the operational efficiency of Kenyan banking firms, utilising data gathered from these institutions. This research employed online banking as a proxy to assess internet usage. The assessment of performance was conducted through the utilisation of both return on assets and equity metrics. The availability of digital banking demonstrates a modest yet statistically significant impact on profitability, as evidenced by a multiple regression analysis.

Sullivan (2020) conducted a study involving a sample of banks situated in the Tenth Federal Reserve District, distinguishing between those that have embraced digital banking and those that have not. After examining their risk characteristics and financial results, he discovered that these banks' risks and profitability were very comparable.

Mohammad and Saad (2021) ascertained the influence of digital banking on the viability of banking firms in Jordan. A panel data set comprising 15 banks in Jordan over the decade spanning from 2000 to 2010 was used. Data pertaining to accounting were employed to assess the performance of the banks and subsequently regressed against pertinent variables utilising regression. The findings indicate that digital banking exerts a considerable adverse effect on the viability of banks. The implementation of electronic banking has not yielded enhancements in the operational efficacy of these financial institutions. Customers of banks in Jordan rely on conventional methods to conduct their banking transactions. Consequently, the expenses linked to the implementation of digital banking continue to surpass the income generated from the provision of electronic services. It is advised that banks concentrate their efforts on fostering confidence in electronic banking services and motivating customers to engage with these offerings.

Methodology

The paper employed an ex-post facto design. To indulge in the empirical analysis on the implication of digitalized banking on profitability of deposit money bank in Nigeria, Multiple regression models will be used. The value of web transaction, point of sales and automated teller machine are the Independent variables while return on asset is the Dependent variable. The functional relation of the model is given as:

ROA= f (VWEB, VPOS, VATM) (1)

The model is specified as follows:

ROA= $\beta_0 + Ln\beta_1 VWEB + Ln\beta_2 VPOS + Ln\beta_2 VATM + \mu$ (2)

Where: ROA= Return on Assets,

VWEB=Value of Web Transactions,

VPOS= Value of POS, VATM= Value of ATM.

Where: $\beta_0 > 0$, $\beta_1 > 0$ $\beta_2 > 0$, β_0, β_1, β_2 β_3 = Constant Parameters,

RESULTS

Data Presentation

The data set for this study is secondary source. Data ranges from 2002 to 2023. See appendix 1 for data.

Descriptive Statistic

Table 1: Descriptive Statistic

	ROA	VWEB	VPOS	VATM
Mean	1.483429	254.0350	1846.461	4355.246
Median	2.322500	111.9700	603.7550	4479.190
Maximum	4.090000	790.3200	6923.340	7564.430
Minimum	-9.820000	25.05000	11.03000	399.7100
Std. Dev.	3.429211	258.1474	2330.815	2554.091
Skewness	-2.770772	0.869707	1.040985	-0.270990
Kurtosis	9.849240	2.307766	2.678853	1.596702
Jarque-Bera	45.27880	2.044439	2.588679	1.320075
Probability	0.000000	0.359796	0.274079	0.516832
Sum	20.76800	3556.490	25850.46	60973.45
Sum Sq. Dev.	152.8734	866320.7	70625083	84803919
Observations	22	22	22	22

Source: Author Computation from E-View 10.1

Note: ROA (return on assets), VWEB (value of web transaction), VPOS (value of POS) and VATM (value of ATM). Table 1 shows that ROA has an average value of 1.483429%, maximum value of 4.090000% and minimum value of -9.820%. Meanwhile, VWEB showed the mean of N' 254.0350billion, maximum of N' 790.3200 billion and minimum N'25.050 billion in the descriptive statistic. Furthermore the VPOS mean is N'1846.461billion, maximum of N' 6923.340 billion and a minimum of N'11.030 billion. Also VATM shows a mean value of N'4355.246billion, maximum value of N' 7564.430billion and minimum of N'399.710 billion. A positive skew indicates an increase in profit, while a negative skew indicates a decline or regression. Jarque-Bera contains both Kurtosis and Skewness. Jarque-bera is a test for normalcy that determines whether or not data is regular.

Unit Root Test

The study used the ADF Unit Root Test to check whether the variables were stationary. All the variables are integrated at levels, i.e. 1(1) at the 5% or 1% level of significance, according to the results in Table 2.

Table 2: **Unit Root Test Analysis**

Variables	ADF test Statistics	Mackinnon (5%) critical value	No of the time difference	Remark
ROA	1.5648258	-3.6732867	1(I)	Stationary
VATM	-3.4352756	-1.7525362	1(I)	Stationary
VPOS	-4.3254875	-4.7957683	1(I)	Stationary
VWEB	5.7682341	4.3636484	1(I)	Stationary
[i				

Test for Co-Integration

After determining that every variable is stationary at first difference, the Johansen co-integration process is used to determine if the GDP, pension portfolio, inflation rate, and interest rate are co-integrated in the same order. Table three displays the test's findings.

Table 3: Multivariate Johansen's Co-Integration Test Result.

Null hypotheses	Alternative hypotheses	Eigen value	Likelihood ratio	Critical vales 5%	Critical value 1%	Hypothesized No. of CE(s)
r=0	r=1	0.7634252	56.42535	62.44	42.02	None **
rd≤1	r=2	0.7534228	52.63555	52.21	36.34	At most 1
rd≤2	r=3	0.6234654	48.87463	46.76	22.63	At most 2
rd≤3	r=4	0.5345768	41.35465	42.56	20.43	At most 3

Source: E-views Econometrics 10.1. Note* (**) denotes rejection of hypothesis at 5% (1%) significance level.

Table 4: Ordinary Least Square

Dependent Variable: ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.411495	1.493273	-2.285384	0.0711
*Ln*VWEB	-0.067263	0.151384	-0.446283	0.6749
*Ln*VPOS	-0.329364	0.145283	-2.262273	0.0034
*Ln*VTM	0.824288	0.238384	3.457284	0.0082
R-squared	0.761273	Mean dependent var		0.971364
Adjusted R-squared	0.617182	S.D. dependent var		0.330263
S.E. of regression	0.204394	Akaike info criterion		-0.038384
F-statistic	5.302485	Durbin-Watson stat		2.731273
Prob(F-statistic)	0.000001			

Test of Hypothesis

Hypothesis One: Value of WEB Transaction does not have a significant impact on and return on assets. In Table 4, the p-value = 0.6749 > 0.05, suggest that the null hypothesis is accepted. This implies that value of WEB transaction has no significant impact on ROA.

Hypothesis Two: Value of POS Transaction does not have a significant impact on return on assets in Nigeria.

In Table 4, the p-value = 0.0034 < 0.05, implies that the null hypothesis is rejected. Thus, the study settled that value of POS transaction has a substantial implication on ROA.

Hypothesis Three: Value of ATM Transactions has no significant impact on return on assets of commercial banks' in Nigeria.

From Table 4, the p-value = 0.0082 < 0.05 implies that the null hypothesis is rejected. Thus, the study settled that value of ATM transaction has substantial relationship on ROA.

Conclusion

The research comes to the conclusion that online banking significantly improves the performance of Nigerian commercial banks. Table 4 makes this clear. Consequently, a high rate of online banking fraud has deterred some consumers from using automated teller machines (ATMs), an electronic banking tool.

Internet banking offers many benefits, including speedier financial transactions, innovation of new goods and services, lower bank costs and expenditures that result in more income, and improved service delivery and shorter client lines, which raise consumer satisfaction.

It is impossible to overestimate the operating effectiveness of deposit money institutions. To be relevant in the market, banks should thus continuously improve their banking offerings.

Recommendations

In order to prevent money loss at the hands of hackers, the research advises that bank management periodically provide training to customers concerning online banking, its merits, uncertainties, and security. Also, bank employees should get brief training to familiarise them with the latest advancements in cutting-edge technology in these dynamic times. That the banking sector should adapt to the full and efficient use of information technology because of its complexity, irreversibility, and perceived benefits. According to the bank's overall business and strategic strategies, the Nigerian bank should be able to accept the amount of risk that it can handle in the electronic banking system. However, there are risks associated with not using e-banking.

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Appendix 1:

Internet Banking and Commercial Banks' Performance in Nigeria; 2002-2023

YEAR	VWEB (N' Billion)	VPOS (N' Billion)	VATM (N' Billion)	ROA %
2002	84.15	11.03	548.60	1.85
2003	25.05	12.72	399.71	1.61
2004	59.61	31.02	1,561.74	3.7
2005	31.57	48.01	1,984.66	3.95
2006	47.32	161.02	2,828.94	-9.82
2007	74.04	312.07	3,679.88	4.09
2008	91.58	448.51	3,970.25	-0.04
2009	84.15	11.03	548.60	1.85
2010	25.05	12.72	399.71	1.61
2011	59.61	31.02	1,561.74	3.7
2012	31.57	48.01	1,984.66	3.95
2013	47.32	161.02	2,828.94	-9.82
2014	74.04	312.07	3,679.88	4.09
2015	91.58	448.51	3,970.25	-0.04
2016	132.36	759.00	4,988.13	2.4
2017	184.60	1,409.81	6,437.59	2.3
2018	404.60	2,383.11	6,480.09	2.5
2019	478.13	3,204.76	6,512.60	2.529
2020	513.23	4,836.72	6,893.34	1.234
2021	639.93	5,309.34	7,123.49	2.345
2022	790.32	6,923.34	7,564.43	2.12
2023	790.32	6,923.34	7,564.43	2.12

Source: Central Bank of Nigeria Statistical bulletin, 2023**.**