IMPACT OF ALTERNATE BANK CHANNEL (AUTOMATED TELLER MACHINE) ON THE FINANCIAL PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA

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Abstract

Alternative Banking Channels came into effect to ease the rigours of traditional banking system. However, its attendant problems vary from heavy investment, high degree of internet ineffectiveness, payment of hidden charges and threatening online insecurities. The findings determine the impact of alternative bank channels on financial performance of Deposit Money Banks (DMBs) in Nigeria. For this main goal to be achieved, the specific objective will examine how the Automated Teller Machine impacted the financial excellence of DMBs. The study employs after the fact research design and fourteen (14) banks on Nigeria Exchange list were examined out of which Seven (7) of them named by the CBN as Domestic Systematically Important Banks were used as sample size. Panel regression was employed to analysis the data and the Results of findings revealed that for bank excellence in relation to Net Interest Margin, ATM (t-value = -1, p-value = 0.322) have no significant effect. The study concluded generally that for Automated Teller Machine facilities to deliver effective results, other forms of bank delivery channels are required to further boost the excellence of DMB in Nigeria. Therefore, this research work recommended Nigerian deposit money banks to continually pursue heavy investment in alternative banking channels particularly Automated Teller Machine to further surge their performance level.

Keywords: Alternative Banking Channel, Automated Teller Machine, DSIBs, Nigeria
JEL Code:

1.0 Introduction

The banking system has undergone significant financial changes and innovations over the past decade, which has led to promotion of financial inclusion. Millions of Nigerians have been lifted out of poverty as a result of alternative banking and financial inclusion strategies. Financial inclusion is thus crucial for the economy due to its positive influence in the involvement of less privileged to financial services and remains a powerful instrument for reducing the disparities between the rich and the less privileged. A sound financial system is however necessary for achieving the identified goals of financial inclusion. The efficiency of the financial system has been subjected to various challenges ranging from increased volatility, increased competition, to a wide range of risks. These challenges brought about innovative ideas in financial services accessibility. Financial innovation has now become an important tool for providing new products and strategies that are better suited to the varying conditions of time, the market, and the diverse needs of financial market participants.

Financial innovations lead to the design of technological apparatus that aid the discharge of banking responsibilities to various customers and result in the expansion of banking market. The expansion of financial services to the unbanked population increases the customers base to fiscal opportunities, encourages savings and investments and facilitates capital and asset accumulation (Akhisar & Tunay, 2015). The technological approach to banking serves as an alternative to the traditional banking system wherein the customers would appear physically in the bank for every financial transaction. With advent of electronic bank tools such as Automated Teller Machine (ATM), and Point of Sale (POS) terminals, customers now enjoyed an alternative to the traditional mode of banking. ATMs made it possible for customers to

withdraw from their accounts without necessarily visiting the banking hall to having personal interactions with their bank staff. Apart from that, the introduction of POS expressed more the concept of bank agency and expanded the bank market to cover a large number of populations including the people in the rural areas who had for long been excluded from the formal financial system.

As a matter of fact, the alternative banking services are less expensive than traditional banking services (Saleh and Alipour, 2014). Apart from ATM and POS, electronic money transfer and the use of credit card especially in the advanced countries testifies effectiveness and efficiency of the electronic banking as a means of promoting financial inclusion (Kujur & Shah, 2015). Recognizing the growing trend in the alternative banking system (electronic banking), Nigeria banks have keyed into the platforms with huge investment. As the banks grow in terms of size and branch network, their investment in automation of their services also grow (Njuguna, 2010). These investments are made to increase their market share and boost profitability. As expected, the banks' business performance in terms of growth, profitability, and assets has improved dramatically as a result of the substantial investment made in installing ATMs, procuring POS terminals among others (Taiwo & Agwu, 2017). Despite substantial investments in terms of cash introduced into the alternative banking channel, the Nigerian banking sector still encountered attendant problems (Taiwo & Agwu, 2017). For instance, there is daily withdrawal limit on the amount that customer could withdraw at ATM point. At times the charges per transaction discourage many customers from withdrawing from ATM and some would even resort to banking with mobile applications like Opay, Moniepoint and so with no charge or very small charges compared to the conventional banks. Another issue relating to electronic payment platforms of many Nigeria banks is poor internet service. Sometimes customers feel dejected after staying on queue for hours and later the machine could no longer dispense cash. There have also been cases of transaction errors where a customer's account is already debited and reversal of the amount takes more than 24hours. ATM fraud is another challenge that faces electronic banking platform in Nigeria. Unless the challenges are addressed the bank profitability might not be able to justify the huge investment made on alternative banking platforms in the long run.

Ogunlowore and Oladele (2014), expressed that payment of hidden charges for the usage of banking channels is discouraging customers from using the service. Also, due to regulations from CBN to the deposit money banks on reduction of service charge placed on customer's withdrawal, most banks reset their ATM to dispense lower amount so that customers can withdraw many times and incured more charges. James (2015) stated that cost like account maintenance fee, Telco charges on transfer of funds, quarterly card maintenance fees and also SMS alert charges are all pains borne by customers which sometimes discourage them from using banks financial channels.

Many research works on the impact of electronic banking system as an alternative to traditional banking on the performance of banks (Jimoh, Shittu & Attah, 2019; Oniore & Okoli, 2019; Abaenewe, *et al*, 2013) stated many challenges which customers faced via the usage of financial alternative channels. However, no consensus has been reached by the past researchers as mixed reports have been provided making the research on the topic to be inconclusive. It is in the light of this that the research work was carried out to examined the influence of digitalized bank.

2.0 Literature Review

2.1.1 Alternative Banking

According to Bishwas and Ashrafy (2020), alternate payment methods includes digitalize banking, internet banking and mobile banking. To increase productivity and provide customers with an electronic experience, banks are providing their clients with digitalized services and processes. This has resulted in the conventional approaches to digital banking services. Through various

delivery channels, customers can request for loan, demand withdrawal of their deposits, accessing their bank details online, moving money from bank to bank, make purchases, buy phone airtime, and more with digital banking.

Ogutu and Makokha (2018) defined alternative banking channels as those avenues and frameworks via which clients can receive banking services directly. The current financial crisis has put financial institutions under extreme pressure, as has the complexity of the industry. The banking sector is facing tremendous problems at a period of extreme market instability due to the need for an eletronically lifestyle, the revolution that comes to homes as well as workplaces, a significant shift in demographics, and regulatory changes. On the other hand, periods such as these offer commercial banks the chance to welcome change and innovate in the provision of financial services (Kohali & Sheleg, 2011). The use of other bank methods, as well as ways to get cash and make payments, has long been popular in the banking industry. Discussing the reason for adoption of alternative banking channels, Motondi and Bula (2020) stated that commercial banks have accepted alternative banking channels as a crucial means of reducing operating expenses because they are profit-driven.

There have been certain challenges to the adoption of alternative banking channels across in different countries including Nigeria. Motondi and Bula (2020) observed that the implementation of alternative banking channels has encountered a number of obstacles, such as recurring network and system outages, transaction problems, security worries, and low customer confidence. This raises questions about how these routes affect performance. Wisdom (2012) also notes that despite the widespread adoption of alternative banking channels by banks, a significant proportion of clients still visit the actual banking halls.

Alternative banking channels have different variants in the likes of internet banking, mobile banking among others. Internet banking has to do with the procedure that banks uses to enable clients to do transactions via the bank's website using the Internet and a device like smartphone, laptop, or tablet (Bishwas & Ashrafy, 2020). Online banking, i-Banking, virtual banking, and web banking are other names for internet banking.
Another channel of alternative banking that operates without the need of paper documents by providing services via electronic signals and telecommunication networks (Uddin, 2020). These are secure, seamless, expedient, and efficient electronic banking solutions that allow clients to access their bank accounts for online banking operations at any time, day or night. Both the banks and the clients stand to gain from it. It lowers the running costs, lowers those possibility of people's error, decreases manual filing, lowers fixed costs, and increases the number of devoted clients the banks receive (Bonface & Ambrose, 2015).

2.1.2 Bank Performance

Financial institutions including must operate at a high standard of efficiency and competitiveness which dictate the prices and quality of their products (Bikker, 2010). As efficiency and competitiveness are impossible to monitor directly, a variety of indirect measures are put in place which are applied in both theory and practice (Bikker, 2010). These measurements might include ratio measures, and efficiency models. According to Indriastuti and Muharam (2021), a bank's ability to function effectively is determined by its performance, which serves as a gauge. Many companies including banks are actively involved in assessing, reviewing, and organizing plans in the hopes of enhancing their performance because the performance systematics itself contains numerous distinct aspects and indicators that determine whether the organization is considered healthy or not (Indriastuti & Muharam, 2021).

Rose (2016) states that the dimensions of bank performance are profitability and risk, and that the two indicators of bank performance are quality and quantity. Jalal (2018) reiterates that LDR (Loans to Deposit Ratio) and CAR (Capital)

are the measurements used as proxies for the risk dimension, and that RoA (Return on Assets) and RoE (Return on Equity) are the measures used as proxies for profitability. Adequacy Ratio.

Profitability can measure the performance of bank as well. Gitman and Zutter define profitability as a company's capacity to turn a profit. One way to gauge a bank's performance is through its profitability. Businesses that make significant earnings will draw and invite investors to contribute their capital. Investors look for evidence of a company's ability to finance itself based on both healthy returns and solid profitability. According to Taswan, banks can utilize RoA and RoE to determine profitability.

2.2 Theoretical Discussion

Theory of Constrained-induced Financial Innovation serve as the foundation for this investigation. The investigation was conducted within the framework of Silber's (1983) constraint-induced financial innovation theory. The hypothesis declares the introduction of new bank services that increases the profitability of financial service providers, which in turn spurs economic growth. That is why bank and other financial institution management constantly aims to increase their profitability and industry competitiveness. However, it has been stated that both internal and external restraints are encountered in the attempt to increase the firm's financial as well as competitive standing. These limitations impair management's capacity, which results in managerial ineptitude (Mbogoh, 2013). Then, in order to overcome the obstacles and increase the firms' profitability, financial innovation was welcomed. Put differently, any financial services company's primary motivation for financial innovation is to strengthen its financial position (Silber, 1983). According to Lerner's (2006) explanation of the notion of constrain-induced financial innovation, the level of limitations in the banking market significantly incentivizes commercial banks to adopt financial innovation. Because of the innovation, they can increase their financial performance while lowering their operating expenses (Lerner, 2016). Any bank that does not embrace financial innovation will not be able to endure the competition and is likely to fail in such a competitive climate with so many internal and external restraints (Johnson & Kwak, 2012).

Another pertinent theory to this study is the innovation diffusion theory, created by Everett Rogers in 1962, which aims to elucidate the process of adopting and achieving success with new inventions. Upon the release of new products onto the market, an organisation must implement specific strategies to educate prospective customers about the products, their intended use, and their potential advantages, the independent variables in this study were well expressed by this theory. In a social context, the acceptability of a new concept, activity, or product (referred to as "innovation") is determined by the likelihood of people embracing it more readily than others. Researchers have come to the knowledge that early adopters of innovations exhibit distinct traits from later adopters. It's critical to comprehend the traits of the target audience when promoting an innovation to them because these traits can either facilitate or impede the innovation's adoption.

2.3 Empirical Review

A number of empirical examinations have been carried out on the impact of indispensable banking channel on bank performance. Some of these studied were reviewed in this study.

Ndugu (2015) studied the effect of indispensable banking channels on fiscal performance of marketable banks in Kenya between 2010 and 2014. Data collected from banks periodic fiscal reports and websites. Quantitative data collected was anatomized using descriptive and deducible statistics. Retrogression model was used to establish the relationship between the study variables. The study set up that fiscal performance of marketable banks in Kenya was explained concertedly by operating charges, agency banking, and mobile banking and client

deposits. Motondi (2011), assessed the influence of indispensable banking channels on the performance of marketable banks in Nairobi City County, Kenya. The collection of primary data was conducted via the use of a questionnaire.

Qualitative primary data was anatomized via thematic analysis. piecemeal from the deducible statistics like retrogression analysis, other forms of analysis similar as ANOVA and correlation were used to determine the relationship between the study variables. The study set up out that agency, mobile, internet and ATM banking have a positive influence on performance of marketable banks in Nairobi City, county, Kenya. also, Awendo and Mwanzia(2022) delved effect of indispensable banking channels on performance of marketable banks in Kenya. The study used five- time(2015-2019) data for analysis. Analysis was done with the help of statistical package for social lores(SPSS) interpretation 21 and Microsoft excel 2016. Means and standard diversions were the descriptive statistics used to dissect the trend of mobile banking, ATMs banking, agency banking and internet banking. Retrogression analysis was used to find out the effect of indispensable banking channels on the fiscal performance of marketable banks in Kenya. The study indicated that there's a strong relationship between indispensable banking channels and fiscal performance of marketable banks in Kenya.

Oleka and Agu (2017) conducted a study in Nigeria to examine the impact of Automated Teller Machine (ATM) banking channel, Point of Sale (POS) banking channel, and Web (internet) banking channel on the country's gross domestic product. The data used in this research were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin for the period 2002 to 2015. The study used the Ordinary Least Squares (OLS) multiple regression model as the analytical tool. The findings indicate that the use of Automated Teller Machine (ATM) and Point of Sale (POS) banking channels has a favorable and substantial impact on profitable growth in Nigeria. However, the research found that the use of online banking has a detrimental and substantial impact on the profitability growth in Nigeria.

Arinze-Emefo and Ibrahim (2023) carried out a study on cashless banking and performance of deposit money banks in which he expressed the beauty of alternate bank delivery channels, however many short falls in the executions of the many benefits in the delivery channels rendered them a pain in the neck for the customers.

The research suggests that banks in Nigeria should develop more creative packages to enhance the attractiveness and functionality of essential financial channels, with the aim of promoting economic growth in Nigeria. Oyewole et al (2013) delved the impact ofe-banking on return on asset(ROA), return on equity(ROE) and net interest periphery(NIM). The panel data consisted of regularly audited financial statements from eight banks that implemented e-banking and maintained their brand name banking services from 2000 to 2010. Additionally, macroeconomic control variables were included. Result from pooled OLS estimations indicate thate-banking begins to contribute appreciatively to bank performance in terms of ROA and NIM with a time pause of two times while a negative impact was observed in the first time of relinquishment. It was recommended that investment decision on electronic banking should be rational so as to justify cost and profit counteraccusations on bank performance. Empirical review indicates that exploration work on indispensable banking channels and their effect on bank performance are in Nigeria are still skimp. This study thus contributes to the general body of literature on the subject matter.

3.0 Methodology

This study employed Ex-post-factor research style which makes use of past occurrences in order to have a full knowledge of a current state. It engaged both a dependent and an independent variables, which the investigator or researcher cannot manipulate. The population comprises all 14 listed Commercial banks with the Nigeria Exchange

as at the end of 2022. However, the Central Bank of Nigeria (CBN) listed seven of these Commercial banks as domestic systemically important banks (D-SIBs), therefore, the seven DSIBS has been picked purposively as the samples for this work. Banks annual reports from 2010-2022 which is the period of post consolidation of banks and also the period of adoption of financial inclusion supplies data for this work. This study employs independent variables that have broad end-user acceptance, such as automated teller machines (ATM). Also, a financial performance proxy known as the Net Interest Margin (NIM) was used as the dependent variable because it provides more information regarding the smooth operations of banks in terms of growth, profit and customer responses to financial service products. In order to avoid biasedness, bank size was used as a control variable.

The model is as follows: $NIM = \beta_0 + \beta_1 ATM_{it} + \beta_2 \beta S_{it} + U_{it}$

4.0 Results and Discussion

This study used banks yearly fiscal reports from the Deposit Money Bank of the Central Bank of Nigeria (2010–2022). Also, the Nigeria Deposit Insurance Corporation (NDIC) reports on deposit money banks in the same time frame. These data were combined to generate a panel data series.

Table 1 Results of summary statistics

Variable	Mean	Std. Dev.	Min.	Max.
NIM	7.19	1.04	5.40	9.3
ATM	2,100	1,072	779	7,352
BS	2,500,000,000	1,630,000,000	10,500,000	5,960,000,000

Source: Author's Computation, 2023

The summary statistics results presented in Table 4.1 show that net interest margins have mean values of 7.19, standard deviations of 1.04, minimum values of 5.40, and maximum values of 9.3. This indicates that the deposit money banks, on average, recorded net interest income of 7.19 percent of their total interest income, which trends towards the maximum net margin interest, i.e., 9.3 percent of total interest income. This suggests that a deposit bank earns an average of 7.9 percent. The standard deviation also suggests that deposit money banks differ in terms of net interest margin, as their minimum net interest margin has a higher standard deviation than their maximum net interest margin. The outcome also shows that the deposit money banks with the lowest net interest margin during the period recorded 5.40 percent, while the deposit money banks with the highest net interest margin recorded only about 9.3 percent.

The results show that the automated teller machine (ATM) has a mean value of 2,100, a standard deviation of 1,072, a minimum of 779 ATMs, and a maximum of 7,352 ATMs. This indicates that deposit-money banks have an average of 2,100 ATMs. This suggests that there have been several machines supporting the operation of deposit money banks over the years. The standard deviation value of 1,072 indicates that these deposit money bank ATMs are widely spread from this average behaviour. The deposit money bank with the lowest ATMs recorded 779 ATMs. The deposit money bank that recorded the highest number of ATMs across the country had 7,352 ATMs.

The results also show bank size having a mean of 2,500,000,000 indicating that most deposit money banks are of larger size. The standard deviation value of 1,630,000,000 suggests that this firm are widely spread from this average behavior. The deposit money bank with the lowest bank size recorded 10,500,000 while the highest bank size recorded is 5,960,000,000.

Table 2 Results of Correlation Analysis

	(1)	(2)
Variable	NIM	ATM
NIM	1	
ATM	0.4594	1
	(0.0002)	
BS	0.3092 (0.0162)	0.0206 (0.8761)

Source: Author's computation, 2023

Inferential Analysis

This section present the results obtained from the inferential analysis of variables. Regression analysis is the main tool used to examines the impact of alternative payment channels on the fiscal performance of deposit money banks in Nigeria. The results are presented in line with those obtained from the pooled OLS, fixed, and random effects models. Appropriate specification tests were used to select the most appropriate method for the data at hand. Prior to presenting the regression results, the nature of the data suggests the relevance of a pre-regression test, that is the unit root test.

Outcomes of a unit root analysis are shown below. This test is carried out to examine the stationarity of the variables employed in this study. With the time series property of the panel data employed for this study, it is important to test if these variables are stationary to avoid a spurious regression result. Due to the fact that the panel dataset used in this study is not balanced, a unit root test was done using the test procedures for unbalanced panel data to see if these variables are stationary. These are the Fisher-type augmented Dickey-Fuller test procedure (Fisher-type ADF) and the Fisher-type Phillip-Perron test procedure (Fisher-type PP). The results of the unit root test are shown in Table 3, with the unit root test statistics of each procedure and their respective p-values.

Table 3 Unit Root Test Results

	Fisher-ADF		Fisher-PP	
Variable	Statistic	p-value	Statistic	p-value
NIM	2.57	0.004	20.77	0.000
ATM	22.05	0.000	14.72	0.000
BS	2.79	0.002	19.65	0.000

Source: Author's Computation, 2023

Unit Root Test

The unit root test results presented above shows that both the Fisher-type ADF and Fisher-type PP test statistics presented for net interest margin and automated teller machine, are statistically significant because their p-value are less than 0.1 level of significance. This signifies that there is absence of unit root in these variables and they are stationary.

Regression Analysis

The regression analysis was conducted to investigate the influence of different banking channels on the financial performance of deposit money banks in Nigeria. This research used the pooled OLS,

fixed effects, and random effects approaches, following the results of the unit root test.

The impacts of these factors are examined on the performance of deposit money banks in Nigeria. The OLS method assumes homogeneity of panel individuals, while both the fixed and random effects models are alternative heterogeneous panel regression methods. Hence, we interpret the fixed and random effect models.

Table 4 Panel Regression Results for Net Interest Margin

	OLS			Fixed Effects			Random Effects		
Variable	Coefficient	T	p-value	Coefficient	T	p-value	Coefficient	z	p-value
ATM	0.14	0.32	0.749	-0.4816945	-1	0.322	0.140605	0.32	0.747
BS	0.18	3.28	0.00	0.2536144	0.6	0.549	0.183429	3.28	0.001
Constant	-3.53	-1.45	0.152	0.4703442	0.06	0.95	-3.52754	-1.45	0.146
R-squared	0.454			0.442			0.676		
F-statistic	8.98		0.00	7.79		0.00			
Wald Chi squared							44.9		0.00
F-test of Homogeneity	4.64	0.001							
Hausman test	17.56	0.003							
Autocorrelation test	1.339	0.299							
Heteroskedasticity	1.65	0.198							
Average VIF	2.18								

Source: Author's computation 2023

The F-test of Homogeneity indicate a statistic value of 4.64 and p-value of 0.001, this shows that the statistic is significant. With the test's null hypothesis being that there is no heterogeneity among panel members, the test statistic suggests rejection of such hypothesis in favour of the alternative that panel members are heterogeneous. This implies that the pooled OLS method that assumes homogeneity among panel members is not appropriate for this model and hence, heterogeneous panel methods such as the fixed and random effects methods are preferred.

The Hausman test shows a statistic value of 17.56 and p- value of 0.003 which is statistically significant. The test results indicates that the null hypothesis is rejected since the Hausman test's statistic is significant, therefore the most appropriate result is that of the fixed effect method. Wooldridge test of autocorrelation has a statistic value of 1.339 and p-value of 0.299 this shows that the test's null hypothesis of 'no autocorrelation' is accepted for this model. The Breusch-Pagan heteroskedasticity test shows a statistic value of 1.65 and p-value of 0.198, which indicates that the statistic is not significant ahd the test null hypothesis could not be rejected. Therefore, the model is free from heteroskedasticity problem. The variance inflation factor (VIF) also has an average value of 2.18, with this value being less than

the suggested rule of thumb value of 10 (Asteriou & Hall, 2016), there is no evidence that there is problem of severe multicollinearity in the model.

5.0 Conclusion and Recommendations

The study concluded generally that there is no growth in automated teller machine facilities, which in turn does not further boost the performance of deposit money banks (DMBs) in Nigeria. In relation to the findings of this work and the conclusion that emerged from them, this study encourages the introduction of more alternative banking channels in the forms of mobile banking, POS, internet banking, and the likes, so that there will be high financial performance in deposit money banks in Nigeria. Therefore, the study recommended the need for DMBN to continually pursue heavy investment in alternative banking channels, particularly automated teller machines, to further improve their performance level.

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