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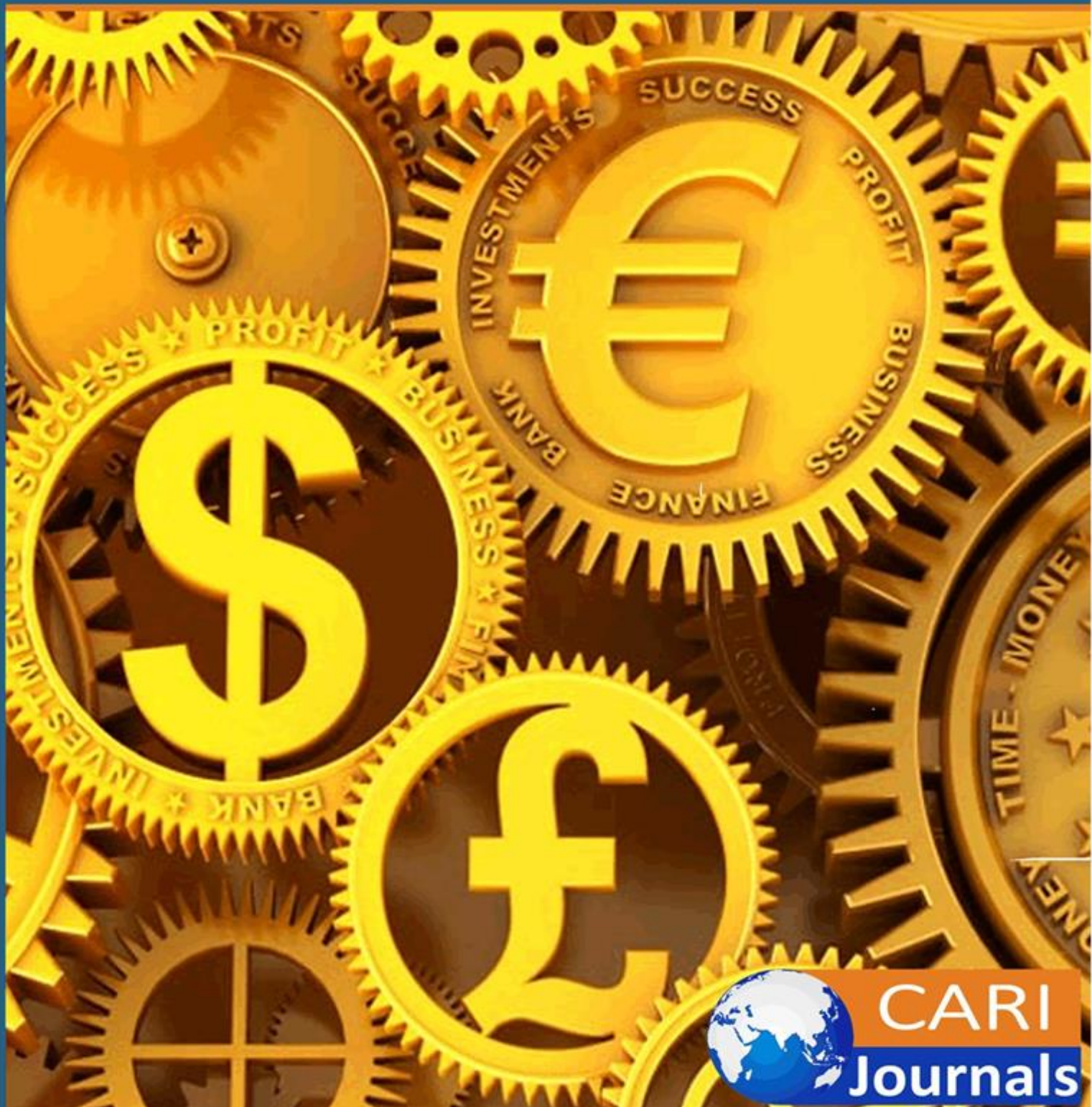

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Effect of Cashless Policy on Financial Sector Development in Nigeria

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Abstract

Purpose: The purpose of this study is to examine the effect of cashless policy on financial sector development in Nigeria specifically it sought to examine the effect of mobile banking automated teller machine and point on sale on financial sector development in Nigeria.

Methodology: The study adopted VAR methodology coupled with the the Philips-Perron test (PPT) to test the stationarity of the variables and ordinary least square (OLS) estimation technique to confirm the robustness of the model, error correction model (ECM) to determine the speed of adjustment, using annual time series data (secondary data) covering the period 2012-2022.

Findings: The findings revealed that there is positive relationship between ATM and financial sector development is as a result of e-transaction through technology acceptance and diffusion of innovation of cashless policy in Nigeria. The result also revealed that point of sale (POS) and mobile banking (MB) had an inverse and significant effect on financial sector development in Nigeria. This insignificant effect can be attributed to poor internet and power supply, inadequate supply of point-of-sale devices and unfriendly deposits money banks mobile applications of some banks in Nigeria. Mobile banking services, despite having an inverse relationship with financial sector development, reduce commercial bank queues due to their ease of use.

Unique Contribution to Theory, Practice and Policy: The study recommends that to promote cashless economy, massive sensitization campaigns and reliable power supply are necessary. Furthermore, the regulatory bodies must address issues such as faulty ATM machines, robbery, limited access and excessive charges.

Keywords: *Cashless Policy, Automated Teller Machine, Mobile Banking, Point of Sale.*

Introduction

Over the course of history different system of payment systems have been in existence. Initially, trade by barter was common, however the problems of barter system such as the double coincidence of wants necessitated the introduction of various forms of money (Uyan ,2017). Since Nigerian's independence in 1960, there have been different government constitutional reforms, change in economic policies and banking reforms, mainly directed at enhancing socio-economic welfare and achieving developmental goals. According to Hamid, Mehmood & Ahmad (2018), opines that with advancement in information and communication technology (ICT) the Nigerian banking industry have engaged the use of ICT as a platform for effective and efficient means of conducting financial transactions now branded as the Electric Banking System. Unlike the barter system which involved the exchange of one good for another, a cashless environment refers to one in which transactions are carried out with minimal exchange of physical cash. It implies that the payment instrument is not physical cash but other instrument such as cheques, electronic transfers, e-payment and e-commerce industry enabling customers to pay for goods and services, receive money transfers as well as providing retailers with efficient and ease to integrate tool for accepting online, offline payments (Ene, Abba & Fatokun ,2019)

The issue of cashless system is not new to the western world as at the end of the 1980's the use of cash for purchasing consumption goods in the United States (US) has constantly declined unlike, the Less Developed countries (LDC's) like Nigeria are on the transition from pure cash economy to a cashless one for developmental purposes. Thus, as part of its regulatory functions, the CBN, issued a circular dated April 20, 2011 in which it conveyed to operations and the banking public its decision to introduce a cashless banking policy into the Nigerian financial system with effect from January, 1, 2012 using Lagos as the pilot programme that is the policy kick starts from Lagos and eventually all over the other states in the nation to enforce the implementation, the central bank had , in a circular April 2011, declared that "commencing from June1, 2012, a daily cumulative limit of N150,000 and N1000,000 on free cash withdrawals and lodgments by individuals and corporate customers respectively with deposits money banks shall be imposed". Following public outcry, the daily cash withdrawals and deposit limit was raised to N500,000 and from N1000,000 for corporate accounts (CBN, 2018).

According to the central bank of Nigeria (CBN, 2019), the new cashless policy was introduced for a number of key reasons, including to drive development and modernizations of our payment system in line with Nigeria's Vision 2023 goal of being among the top 20 economies by the year 2023. To reduce the cost of banking services (including cost of credit) and drive financial inclusion by providing more efficient transaction options and greater reach and to improve the effectiveness of monetary policy in arranging inflation and driving economic growth. However, the use of cash in carrying out transactions has remained relatively high in Nigeria. This is due to the poor network connections in the use of point -of- sale and bank transfers which often results in debiting

customers' accounts, more than once, high tractions charges by banks, as well as security and technical setbacks. Despite the sensitization carried out by the central bank and deposit money banks about the benefits of cashless model in Nigeria the transition to a cashless economy policy raises a lot of concerns as it seems there is yet no substantial evidence to justify its implementation among the Nigerian families.

There are citizens who are still deeply attached to physical cash particularly the low-income group, the rural dwellers and the unemployed as well. The low-income group generally deals with physical cash and avoids electronic transactions which means they are always left behind in terms of technical knowledge of performing an electronic transaction (CBN, 2017; Bosupeng, 2017). It is against this background that this study is concerned to empirically evaluate the impact of cashless policy on the financial sector development in Nigeria.

The following hypothesis have been formulated to achieve the objectives of the study.

Ho_1: Mobile banking has no significant effect on financial sector development in Nigeria.

Ho_2: Automated teller machine has no significant effect on financial sector development in Nigeria.

Ho_3: Point on sale has no significant effect on financial sector development in Nigeria.

LITERATURE REVIEW

Conceptual Review

Cashless policy

Cashless banking may be defined as the banking system which aims at reducing (not eliminating) the amount of physical (notes and coins) circulating in the economy, whilst encouraging non-cash (little cash) and more electronic -based transactions (payment for goods, services, transfers etc.) through non-physical cash means. In other words, it is a combination of e-banking and cheque-based system (Kar Hoong Chan, Tuan Hock Ng, & Hwee Yee Ng, 2020). The term should not be however, confused or mistaken for a situation in which the use of cash is totally eradicated from the economy. The term cashless should be differentiated from the term" Cash-Less". The later denotes a situation of complete stoppage or eradication of the use of physical cash. The aim of cashless policy is to encourage as be possible the use of "less cash" or limited amount of cash for business transactions (John, Emmanuel, Ikechi & Eze,2020; Mohd Sapian, Nursyazana & Siti Norziah).

The cashless policy aims at to curb some of the negative consequences associate with high usage of physical cash in the economy, including, high cost of cash, high risk of using cash, high subsidy, informed economy and inefficiency and corruption (CBN.2017). The cashless policy is not free from online attacks and fraud. This means high technological development is essential and

developing economies often find it difficult to cover expenditures to create safe, secure, reliable and fast on-line payment system (Nwakoby Chukwu & Oghenetega (2020).

Tools of Cashless policy.

Mobile Banking

This product offers customers of banks access to services as they go. Customers can make transactions anywhere. Services such as account balance, transaction enquires, stop cheques, account verification, bill payment, electronic fund transfer, updates and history and other customer services are all deliverable via mobile phones (Okon & Amaegbaeri (2019). In Nigeria the use of phone for banking and payments has come to stay. NIBSS data showed that at June 2017, total number of customers using mobile money stood at 2.3million with a transaction volume of 24.17million at a value of N555.83billion. furthermore, it is also record that the total number of agents enrolled under this platform stood at 5,517 in 2017 while 21 operators were fully licensed. The coefficient of mobile banking is expected to be positive since an increase in the volume and value of mobile baking transactions enhance payment system and hence increase financial sector development (Ugbede, Yahaya & Ediche (2019).

Automated Teller Machines (ATM)

According to Ene & Fatokun (2019) the automated teller machines (ATM)

are computer -enhanced telecommunication machines that permit bank customers to access their accounts, make cash withdrawals or cash advances using credit cards and checking their account balances and perform financial transactions, usually situated in public places and in without need for human cahier. However, available statistics on various e-payment channels in Nigeria as reported by CBN indicate that number of ATMs stood at 17,712 with active card user of 29.24million people, while the volume and value of transactions amounted to 336.77million and N3.05Triiilion, at end -June 2017, respectively. Automated teller machine (ATM) is captured in this study by value of ATMs transactions. An increased in the number of ATMs leads to an increase in the volume and value of transactions and it enhances the payment system in turn, which leads to banking sector development. Thus, the coefficient of ATM is expected to be positive in relation to financial sector development (CBN,2017).

Point on Sale (POS)

Point on sale (POS) is one of the e-payment systems introduced by the monetary regulatory body in Nigeria, following its resolved to curb many challenges facing the financial institutions in the economy. And to further the course of cashless policy. POS is an electronic device which enables individuals to make purchases with electronic cards. POS accepts ATM cards for payment of goods and services. According to Metaka, Goko (2019 the POS device allows customers to make payment for goods and services purchased without the physical use of cash. In Nigeria, POS are

connected to interbank networks, enabling people to withdraw and deposit money from machines not belonging to the bank where they have their account thus enabling cash withdrawals in local currency. Available data shows that CBN have deployed over 126,608 POS with a volume of 59.42million and 610billion as total value as at June 2017 (CBN,2017). Thus, a positive relationship is expected on the coefficient of POS since POS terminal reduces the cost of banks transactions, access to credit and reduces the cost of setting bank infrastructure such as bank branches.

Financial Sector Development

The financial sector of every economy is very essential for its intermediary role of mobilizing excess funds from households and other savers and channeling some for productive use in the real sector. Financial sector comprises of all the financial intermediaries that operate within an economy (CBN, 2017). This definition is anchored on the belief that economic agents are categorized into surplus and deficit spending units. The surplus spending units are individuals, groups or organizations operating within the economy that have excess funds above their immediate needs. They constitute suppliers of surplus funds to the financial system. The deficit spending units are those that have a shortage of funds and thus require borrowing to fund their operations. They are the users of the excess funds supplied by the surplus spending in the financial system (Udenwa and Uwaleke, 2016).

The financial system produces an enabling environment for economic growth and development, capital formation and management of the payments system. Savers lend to intermediaries, who in turn lend to firms and other fund using units. These institutions provide a useful service by reducing the cost of individuals, of negotiating transactions, providing information, achieving diversification and attaining liquidity. The regulators are responsible for enacting the rules that provide enabling environment for all participants within the sector (Yusuf, (2016).

Empirical Review

Detailed historical validation has provided empirical evidence among scholars on the crucial role of cashless policy on the financial sector of emerging economies. Empirically, studies such as Nwakoby Chukwu & Oghenetega (2020); Ugbede, Yahaya, & Ediche, (2019); Ene, Abba & Fatokun (2019); Metaka, Gogo & Omagwa (2019), and many others were conducted. However, these studies paid little attention to the impact of cashless policy on financial sector development.

Nwakoby Chukwu & Oghenetega (2020) investigated the effect of cashless policy on deposit money banks profitability in Nigeria from 2009-2019. Secondary data from the statistical bulletin of Central Bank of Nigeria was used in the study and ARDL Auto- Regressive Distributive lag model was used as a method of data analysis. The explanatory variables are point of sales (POS) Terminal, Automated Teller Machine, Mobile Banking and Web Payment while the dependent variable is Profit before Tax. The result from the research indicates that cashless policy has a

negative and insignificant effect of profit before tax of deposit money banks in Nigeria within the study period. The study, therefore, makes the following recommendations; banks should educate their customers more on the importance of cashless policy and some of the innovative products they are bringing in the market.

John et al (2020) evaluates the impact of cashless policy on the Nigerian payment system. with the aid of paired data samples between 2007 and 2017. The operation of a cashless economy was assessed based on the use of cheques, funds transfer channels and automated teller machines (ATMs). Analysis of data showed that the volume and usage of cheques as a means of financial settlement has failed and was partially replaced by electronic payment systems. Banks are getting more involved in the use of interbank fund transfers rather than a cash settlement. It was also ascertained that the of ATMs as a means of financial intermediation is increasing. It is anticipated that the use of ATMs will become even more popular in Nigeria in the near future.

Ugbede, Yahaya, & Ediche, (2019), examined the effects of electronic payment on financial performance of deposit money banks in Nigeria. Data for the study were collected from statistical bulletin of central bank and annual reports and account of Nigerian banks. Electronic banking measured with the automated teller machine, internet banking and point on sales and financial performance was measured with profitability of deposit money banks in Nigeria. Multiple regression technique was used. The study revealed that automated teller machine has insignificant effect on profitability while, point of sales and internet banking have positive significant effect on profitability.

Okon and Amaegberi (2019) examined the impact of mobile banking transactions on bank profitability in Nigeria using four selected banks for the period of 2007 to 2016. Data were sourced from electronic payment system office, central bank of Nigeria CBN statistical bulletin for 2007-2016. The study adopts panel unit root and SURE model estimation technique to conduct quantitative analysis for four selected old and new generation banks. The study revealed that mobile banking, automated teller machine and POS has positive significant effect on profitability. Thus, they are all a major factor that contributes to old and new banks performance in Nigeria.

Ene, Abba & Fatokun (2019) used econometric analysis to test two hypotheses on the impact of e-banking, defined in terms of the number of installed ATM's and POS, on the attainment of the Nigerian government's financial inclusion goal. The authors established that the trend in the number of points of sale (POS) had a significant impact on financial inclusion (defined as the ratio of banked adult to bankable adult).

Mateka, Gogo & Omagwa (2019), established the effect of internet Banking on the financial performance of listed commercial in Kenya. This study used descriptive survey design. the target population was all employees of listed commercial banks in Kenya simple random sampling method was used to identify the study respondents, primary sources of information were used and

were gathered using questionnaires. Finally, data from the questionnaires was sorted, coded and input into a software for analysis. Data was analyzed using statistical package for the social sciences (SPSS) to generate diagrams, frequencies, descriptive statistics and inferences on bank incomes, operating costs, loans booked and customer deposits. The findings of this study will give a deeper insight to government regulatory institutions particularly the central bank of Nigerian as the primary regulation of the financial sector. It is expected that this study will enables them on the transition from pure cash economy to a cashless one for developmental purposes.

Empirical Review

Theoretical Framework

This study anchored on Technology Acceptance Model (TAM), propounded by Fred Davis in 1989. He argued that "people adopt an application primarily because of the functions it performs and secondarily because of the ease or difficulty associated with making the system perform these functions" (Fabris, Nikola 2019). The primary objective of TAM was to shed light on the processes underpinning the acceptance of technology, it explains the adoption behavior of individuals in relation to technology adoption such as POS, ATM, mobile and internet banking (Davis, 1989; Erdogmu, & Murat 2011).

Aduba (2021) documented that customer are now seeking for an easy and convenient technology with more rewarding banking experience. Tam has two dimensions, Perceived Ease of Use (PEOU) and Perceived Usefulness (PU). It was evidenced that the Perceived Ease of Use (PEOU) is vital in affecting consumers' perceived ease of use regarding e-wallets. The experience of using e-wallets app was reported to easy to use by many consumers. The PEOU reflects the ease of using a technology to access a website to purchase on line.

While the Perceived Usefulness (PU) refers to one's belief that using the system will improve job performance. Essentially, it describes a user's cognitive expectation about the system performance. Hence, the consumers believe that using such a system can fill their financial and lifestyle desires, besides increasing efficiency in the way they conduct various transactions. PU has been proven to display a positive effect on the intention to use e-payment in uncertain conditions. These two dimensions determine the attitude of users towards the use of a particular technology. (Offei & Nuamah, 2016). TAM has been criticized based on lack of understanding of the antecedents of technology acceptance. Nonetheless, the limitations cannot overshadow the contribution of the theory.

Methodology

The study is purely quantitative therefore, the analyses employed a Vector Auto -Regressive (VAR) model to understand the direction of causality among the variables. The ex-post facto designs were adopted for the purpose of this study. This is because it helps to identify the previous events and present conditions collect data to investigate a possible relationship between the

independent and dependent variables. (Aigbedion, 2021). This study relied basically on data covering 2012 to 2022 mainly obtained from secondary sources. These data are tools of cashless policy which was proxied by Mobile banking (MB) in Nigeria, Automated teller machine (ATM) in Nigeria, and point on sale (POS) in Nigeria. Based on the research objectives, secondary data sourced from the central bank of Nigeria (CBN) publications the CBN Statistical Bulletin, December 2022 edition, was used in the study. The study employed the Unit root test using Phillip-Parron methods for each of the variables to ascertain the time series properties of the data set and obtain the stationary status. The Johansen Co-integration Test was also carried out to establish the existence of long-run relational properties of the data. Furthermore, the study obtains the error correction model (ECM) which helps to analyze the dynamic short-run behavior of the model. Thus, the ECM was used to test the short-run dynamic effect of cashless policy on financial sector development in Nigeria. In this case, the equations are estimated by VAR, as follows, in a simple regression of the equation:

$$InFSD_t = \phi + \sum^{k}_{i=1} \beta_I \, InFSD_{t-1} + \sum^{k}_{j=1} \lambda r \, In_{MB}I_{t-j} + \sum^{k}_{m=1} \vartheta m \, InATM_{t-m} + \sum^{k}_{r=1} \emptyset j \, InPOS_{t-r} + \mu_{1t} \ldots\ldots (1)$$

where μ_t, is the stochastic error terms, called shocks in the VAR system, k- lag length, β_1, intercept λr, and ϑm are the short-term coefficients. VAR is the most appropriate technique for this study because the research wishes to establish the causality and direction of causation among the studied variables. In addition, it helps to relate the dynamic behaviour of economic and financial time series and forecasting (Gujarati 2009). Forecasts using the VAR model are fairly flexible because they can be made conditional on the potential future paths of specified variables in the model (Vo et al. 2020).

Model Specification

To achieve this objective, this study adopts the model of (Ugbede, et al, 2019) as specified below;

FSD = *f* (MB, ATM, POS) …… (1)

However, the model is econometrically stated as in equation (2) below;

$$InFSD_t = \phi + \sum^{k}_{i=1} \beta_I \, InFSD_{t-1} + \sum^{k}_{j=1} \lambda r \, In_{MB}I_{t-j} + \sum^{k}_{m=1} \vartheta m \, InATM_{t-m} + \sum^{k}_{r=1} \emptyset j \, InPOS_{t-r} + \mu_{1t} \ldots\ldots (1)$$

Where;

FSD = Financial Sector Development, MB = Mobile Banking; ATM = Automated teller machines; POS = Point on Sale. β_0, β_1, β_2, β_3 = Parameters to be estimated; β_1, β_2, β_3 = coefficient of the independent variable; β_0 = intercept; μ_t = the stochastic error term with zero mean and constant variance. The a priori expectation are β_1, β_2, $\beta_3 > 0$.

Variable Measurement

S/N	Variable	Measurement	Sources
1	Financial Sector Development (FSD) (Dependent variable)	Measures the aggregate sectorial GDP for the financial sector over the study periods	John Emmanuel Ikechi & Eke (2020), Mamudu & Gayonu (2019)
2	Mobile Banking (Independent variable)	Measured by total mobile banking transactions over the study period.	Okon and Amaegberi (2018)
3	ATM (Independent variable)	Measured by aggregate value of quarterly ATM transactions for the relevant years.	Nwakoby, Chukwu & Oghenetega (2020)
4	POS (Independent variable)	Measured by total POS transaction over the period of the study	Ene, Abba & Fatokun (2019) and Ugbede, et al, (2019)

Source: Researchers' compilation 2022

Results and Discussions

Table 1. Unit Root Test Results

Variable	Level	First Difference	Order of integration
FSD	-2.653209 (0.2218)	-8.874538(0.0000)	1(1)
MB	2.898778(1.0000)	-6.876659(0.0000)	1(1)
ATM	2.456786 (0.9999)	-4.338967(0.0023)	1(1)
POS	9.745989(1.0000)	-3.917809(0.0044)	1(1)

Source: *Authors computation from E-view 9.0, 2023.*

Most econometric studies have shown that usage of non-stationary macroeconomic variables often leads to spurious regression. Granger (1969). As a result, the stationarity status of the selected cashless policy indicators and financial sector development in Nigeria was examined using the Philips-Perron Test (PPT). Table 1 showed the results of the unit root tests for variables in first difference. The test showed that all the variables were stationary at first difference 1(1). This implies that the hypotheses of non-stationarity are rejected for all the variables at their first difference. The result has therefore justified the need to test for co-integration. Given the unit - root properties of the variables, we proceed to conduct the Johansen Co-integration Test to ascertain the co-integration among the variables used in the study. Before estimating the model using VAR, the study checked for long term equilibrium relationship using the Johansen co-integration test below.

Table 2: Johansen Co-integration Test

Hypothesis No. of CE(s)	Trac Stat.	Critical Value	Prob*	Hypothesis No. of CE(s)	Max-Eigen Value	Critical Value(0.05)	Prob**
None*	422.8256	125.6154	0.0000	None*	212.133	46.32532	0.0000
At most1*	32. 62534	29.82899	0.0230	At most1*	25.14543	21.13173	0.0129
At most2*	118.5685	69.82889	0.0000	At most2*	45.24701	33.87976	0.0015
At most3*	73.32536	47.85615	0.0000	At most3*	40.69675	27.58543	0.0006

Both Trace and Max Eigen value test indicates 5 cointegration equations respectively at the 0.05 level. * Denotes rejection of the hypothesis at the 0.05 level. ** Mackinnon-Hauh-Michelis (1999)

Source: *Authors computation from E-view 9.0, 2023.*

The Johansen Co-integration Test result in table 2 above indicates that there exists at least four cointegration relationship in the model as both the Trace and Max -Eigen statistics reject the null of r = 0 as against the alternative of r = 1 at 5% level of significance which shows that there is a unique long-run relationship between mobile banking in Nigeria, automated machine payment in Nigeria, point of sale payment in Nigeria and financial sector development in Nigeria.

Table 3: Error Correction Model (ECM)

Regression	Coefficient	Std. Error	T-radio	Prob
D(MB)	-18.45876	9.28468	-1.98765	0.0655
D(ATM)	7.554667	3.092906	2.466848	0.0375
D(POS)	-17.67210	14.55863	-1.344877	0.0880
ECM (-1)	0.578605	0.224842	2.280825	0.0652

Source: *Authors computation from E-view 9.0, 2023.*

Table 3 above shows the Error Correction Model (ECM) short-run results of the effect of cashless policy on financial sector development in Nigeria. From table 3. Value of the point of sale (POS) and mobile banking (MB) in Nigeria are inversely related to financial sector development and a unit change in the value of point of sale and mobile payments decreases financial sector development by 17.67210 and 18.67210 respectively. On the other hand, the automated teller machine (ATM) in Nigeria has a positive and significant relationship with the financial sector development measured by Real GDP. This indicates that a percentage increase in the automated

teller machine payment values payments in Nigeria leads to 7.554667 increasement in real GDP in Nigeria, this finding is in line with the publications of Mamudu & Gayovwi (2019). Finally, the ECM parameters were negative (-) and significant which are given -57%. this means that there is a very high adjustment process in the adoption and practice of the cashless policy in Nigeria. It also affirmed that indeed the financial sector development mobile banking payment, automated teller machine payment, and point of sale payment in Nigeria are cointegrated.

Table 4. Diagnostic Result

R- squared	0.826068	Mean of dependent var	243.4876
Adjusted R- squared	0.712843	S.D. dependent var	1236.432
S.E. of regression	814.4304	Akaike info criterion	17. 75493
Sum squared resid	9372687	Schwarz criterion	16. 85862
Log likelihood	-181.7237	Hannan-Quinn criter	16. 57875
F-statistics	5.977653	Durbin-Watson stat	1.857844
Prob(F-statistic)	0.000469		

Source: *Authors computation from E-view 9.0, 2023.*

To confirm the robustness of the model, a diagnostic test was performed as shown in table 4 above. The Ordinary Least Square (OLS) estimation technique was used to estimate the model. As shown on the table the Durbin Watson statistics is 1.857844. This implies absence of autocorrelation among the explanatory variables. The R^2 value indicates that the exogenous variables are able to explain over 82% of systematic variations in FSD; the endogenous. The F-value is significant at 5% thus complementing the R^2 to affirm the existence of a linear relationship between the dependent and independent variables.

VAR Estimation

Table 5. VAR Estimation Result

Vector Autoregression Estimates
Date: 02/13/25 Time: 05:26
Sample (adjusted): 2012 2022
Included observations: 9 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	FSD	MB	ATM	POS
FSD(-1)	-0.25E-17	2.000003	-0.000001	0.028282
	(4.00045)	(3.000422)	(0.00405)	(0.003311)
	[-0.00056]	[1.00006]	[-0.00092]	[0.006210]
FSD(-2)	-1.98E-16	2.63515	0.000005	0.003403
	(2.80004)	(3.200534)	(0.00005)	(2.000904)
	[-0.00340]	[0.24240]	[-0.00002]	[0.001630]
MB(-1)	-0.007821	0.06660	-0.036161	2.000322
	(0.00367)	(0.23108)	(0.00012)	(0.000456)
	[-2.13308]	[0.31169]	[-2.5316]	[0.000666]
MB(-2)	-0.001807	0.148133	-0.00014	-2.060003
	(0.00323)	(0.190927)	(0.00110)	(0.022006)
	[-0.56026]	[0.775701]	[-0.65028]	[-0.006006]
ATM(-1)	0.000439	01.132007	0.000019	-2.316789
	(0.96205)	(0.001113)	(0.004761)	(0.005000)
	[0.07634]	[1.000002]	[0.000601]	[0.000038]
ATM(-2)	-0.000713	-000.00012	-0.004332	3.000006
	(1.003214)	(0.000123)	(0.005453)	(1.000073)
	[-0.000013]	[-1.00090]	[-0.00001]	[0.000209]
POS(-1)	-0.799783	-49.28452	0.00008	-1.236010
	(1.933973)	(114.848)	(0.66054)	(2.234790)
	[-0.12232]	[-0.42913]	[0.53671]	[-0.000275]
POS(-2)	-0.820628	-30.82093	-0.567203	2.166670
	(1.30536)	(77.2884)	(0.44452)	(1.762101)
	[-0.62866]	[-0.39878]	[-1.27599]	[0.00445]
FSD	2.024527	9.97082	0.299013	1.000000
	(1.23171)	(2.0275)	(0.41944)	(1.000003)
	[1.64368]	[1.23370]	[0.71289]	[0.00009]
C	-0064.744	-346631.8	-2119.239	2.00002
	(0005.04)	(0.27892)	(1833.80)	(0.05067)
	[-1.53476]	[-1.00706]	[-1.15521]	[0.00763]
R-squared	0.836765	0.821478	0.970981	1.000000
Adj. R-squared	0.780261	0.759683	0.960936	1.000000
Sum sq. resids	1.52E+09	5.32E+12	1.76E+08	3.32E-17
S.E. equation	7637.014	452176.0	2600.673	1.13E-09
F-statistic	14.80887	13.29341	96.66256	1.28E+27
Log likelihood	-367.0916	-514.0099	-328.3111	696.4096
Akaike AIC	20.94953	29.11166	18.79506	-38.13387
Schwarz SC	21.38940	29.55153	19.23493	-37.69400
Mean dependent	19859.24	871200.9	9710.731	42131.05
S.D. dependent	16291.83	922390.6	13158.21	20467.23

Source: Author's Computation from E-views 12, 2025

The result on table 5 shows the outcome of the VAR model estimations that there is a positive effect on cashless policy and financial sector development through the use of Nigerian data. The economic growth (FSD) and Point on Sale (POS) had an inverse but positive statistical relation, which is insignificant at the 5% level. This implies that economic growth influenced the smooth running of the POS device allows customers to make payment for goods and services purchased without the physical use of cash In Nigeria.

This was observed in both lags of economic growth (FSD), which are statistically significant at 5%, respectively. Mobile Banking is statistically significant at a 5% to Point on Sale (POS), which implies that banking activities promotes widespread adoption POS terminals; thus, the use of POS has reduced the need of cash handling, making it easier to track sales within and outside of the nation adds value to the financial sectordevelopment. Automated teller machines affect the financial liquidity, and it is positive at a 5% significance level. This implies that a raise in the use of Automated teller machines has an impact on the economy's financial liquidity. Furthermore, the economic growth variable had a favourable impact on significant economic activity at the 5% level.

The aforementioned regression result indicates that the VAR model used for this investigation had a good overall estimate. The ability of the independent variables to account for 84 percent of the systematic fluctuations in the dependent variables, while the error term is responsible for the remaining 16%, was revealed by the R-squared value of about 84 percent. Meanwhile, the adjusted R-squared value of about 78 percent indicated that the model had a high predictive power, as the independent variables could predict for about 78 percent of the changes in the dependent variable.

The coefficients of the VAR estimate showed that MB had a nfavourable impact on financial sector development. Therefore, we also accept the first null hypothesis which states that MB has no significant impact on financial sector development. in Nigeria. The findings were consistent with the findings of the research projects carried out by Okon and Amaegbaeri (2018) examined the relationship between stock market and economic growth in Nigeria; Hariyanto (2020) examined the impact of cashless policy in Nigeria

The ATM had positive statistical relationship financial sector development. Therefore, we also accept the second null hypothesis which states that ATM has no significant impact on financial sector development in Nigeria. This favourable correlation coefficient coincided with the research findings discovered by Nwakoby, Chukwu & Oghenetega (2020) examined the effect of cashless policy on deposit money banks. Profitability.

The coefficients of the VAR estimate showed that POS had a negative and significant impact on financial sector development. Therefore, we accept the third null hypothesis which states that Point on Sale has no significant impact on financial sector development in Nigeria. This study is consistent with the findings of the research projects carried out by Ene, Abba & Fatokun (2019)

and Ugbede, et al, (2019) who investigated the impact of cashless policy financial sector development in Nigeria.

Conclusion and Recommendations

The main objective of this study is the empirical investigation of the effect of cashless policy on financial sector development in Nigeria. The study adopted econometrics tools of analysis in determining the correlation among economic variables. Both the Philip Perron (PP) and the Johansen Co-integration stationarity test results show that all the economic variables were stationary at first difference 1(1). This implies that the economic variables are fit and suitable to been used for the analysis. On the side of the theories, the Technology Acceptance Model (TAM) theory was reviewed, this gave the study a good theoretical framework for analysis.

Based on the results of the Error Correction Model (ECM) one can deduct from the findings that the significant effect of ATM on financial sector development in Nigeria is as a result of heavy acceptance of cashless policy transactions in Nigerian economy. It was revealed that the positive relationship between ATM and financial sector development is as a result of e-transaction through technology acceptance and diffusion of innovation of cashless policy in Nigeria. The result also revealed that point of sale (POS) and mobile banking (MB) had an inverse and significant effect on financial sector development in Nigeria. This insignificant effect can be attributed to poor internet and power supply, inadequate supply of point-of-sale devices and unfriendly deposits money banks mobile applications of some banks in Nigeria.

Based on the above discussions, the following suggestions are made for policy considerations:

The study concludes that ATM payment system significantly effect on Nigerian's financial sector development. However, the regulatory bodies must address issues such as faulty ATM machines, robbery, limited access and excessive charges. Mobile banking services, despite having an inverse relationship with financial sector development, reduce commercial bank queues due to their ease of use. To promote cashless economy, massive sensitization campaigns and reliable power supply are necessary. Furthermore, the central bank of nigeria should review and reduce excessive charges by commercial banks and online payment platforms to encourage widespread adoption of cashless system.

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