Effect of Financial Innovation on the Nigerian Economy

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Abstract— **The growth of the financial sector all over the world has been imbued with financial innovations aimed at improving financial services and reducing cost of transactions. In a developing economy like Nigeria, financial innovations have gone digital as in the developed countries. This study has been carried out to investigate the effect of financial innovations on economic growth in Nigeria. Data on the e-payment system were used as financial innovation variables spanning 2008 to 2017. The Generalised Methods of Moments (GMM) employed for data analysed revealed that transactions through ATM, Mobile Banking, Internet Banking and Point of Sale terminals have significant positive effects on economic growth. Further results from the adjusted coefficient of determination (Adj R2) showed that about 79% of changes in economic growth can be explained by financial innovations. The study therefore concludes that financial innovation has high predictive power on economic growth of Nigeria and has impacted positively in determining Nigeria's economic growth. However, care should be taken to identify and eliminate the risk associated with these innovations before promoting them.**

Index Terms— **Financial innovation, Economic growth, E-payment.**

I. INTRODUCTION

Highlight The term "financial innovation" is not a new concept in economics. A debate on financial innovation and its effect on growth was initiated by Schumpeter (1934) who was the first to give an idea of the connection between innovation performance of an economy and the functioning of its credit and capital markets. The relationship between finance, innovation and economic growth can be best explained by first of all understanding the actual meaning of innovation. (Mazzucato, 2013). Financial innovation involves a plan of action with a specific objective. It is perceived to have value only if its adoption and usage can be sustained in the financial sector. (Costanzo, Keasey& Short, 2003). The connection between the financial sector and sustainable development is financial innovation. According to Mention (2011), "financial innovation constitutes the introduction and promotion of financial products and services, the development of new processes, as well as the interaction with customers and the development of new structures for financial institutions". Innovation is a key factor in fostering sustainable development, social and financial inclusion. This is because of its potential to generate tangible and intangible changes which can go a long way in bridging the gap of competitiveness, and uneven knowledge

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between the developed and developing countries (Salas, 2009).

Financial innovation refers to the use of technology to advance financial instruments and services which facilitate access to information, trading and means of payment. It also includes new forms of organization and developments aimed at making the financial markets more complete (Solans, Economics2003).

Financial innovation is increasingly becoming a serious problem for monetary policy in the 21st century, as the new financial products have the ability to diminish the effectiveness of monetary policy. For instance, with the introduction of a new financial product, a contractionary monetary policy targeted at reducing excess liquidity in the economy may be undermined as economic agents can easily switch over from less liquid holdings to more liquid packages being offered by financial intermediaries.

Remarkable operational changes have taken place in the Nigerian banking industry. Use of tallies and registers has been replaced by cutting-edge technologies such as computers, automated teller machines (ATM), point of sale terminals (PoS) among others. In the past, business transactions such as cheque clearing, local and international money transfers were time consuming due to the manual approach to banking transactions then. Also, the internal banking operations such as remuneration, leave application, and other staff requests in the bank were less efficient. As the environment in which the banking industry operates in Nigeria became more and more dynamic, coupled with the challenges of the manual approach to banking, the adoption of modern technologies especially ICT, by the Nigerian banking sector became necessary. This was aimed at improving service delivery and internal operations (Agboola, 2007).Consequently, the adoption of ICT by the Nigeria banking industry significantly increased the efficiency of the banking operation and customers' business transactions. It generated a platform where customers can transact and carry out business dealings across borders without physical interface with their bankers.

II. STATEMENT OF THE PROBLEM

Financial innovation which has been recognized and commended as the engine of growth of society is also at the same time castigated as the source of weakness of the economy (Levine, 2000). According to Arnabaldi & Rossignoli (2013), financial innovation is a double-edged sword, with a bright side and a dark side. They opined that financial innovation leads to economic growth by improving allocative efficiency – the bright side. On the dark side,

financial innovation leads to the introduction of some products perceived to be safe but exposed to neglected risks which may cause crises and instability in the economy. With these risky products, ignorant users are likely to be exploited by financial institutions (Bara, Mugano & Le Roux (2016).

Due to the rising importance of the financial sector in modern economies and the high rate of adoption of financial innovations in the sector, research interests have been generated with regard to the actual effects of these financial innovations. Since economic growth is one of the primary and perennial goals of every society, it becomes pertinent to investigate the extent to which these financial innovations have impacted on economic growth in Nigeria to enable the monetary authorities ascertain whether increased financial innovation can be good for the economy.

A number of studies have investigated the impact of financial innovations on economic growth of Nigeria. Okereke (2016) using multiple regression analysis and vector error correction model (VECM) investigated the effect of cashless banking transactions on economic growth in Nigeria and found out that growth effect of financial innovation depends largely on the variables used to proxy the innovations. Okafor, Ezeaku & Anyalechi (2017) using Johansen co-integration test established a long run relationship between growth and financial innovation. However, the responsiveness of growth to the individual innovation channels varied. Omotunde, Sunday & John-Dewole (2013) using survey method found out that cashless transaction reduced cash-related corruption and hence attracts foreign investors resulting in economic growth. Empirical evidence on this topic is not quite conclusive, hence there is the need to continue to investigate the relationship between financial innovation and growth. Again, policies to pursue financial innovations keep coming up on regular basis in Nigeria, thus making their adoption an on-going process. It therefore becomes imperative to examine their impact in totality since according to Arnabaldi & Rossignoli (2013), there is a bright side and a dark side. This is to ensure that financial institutions do not exploit the market by introducing risky financial products/services which can be harmful to both the institutions and the economy. This study therefore seeks to investigate the effect of financial innovations on economic growth of Nigeria.

The study investigated the effect of financial innovations in the context of the four major e-payment innovations in the banking industry in Nigeria – Automated Teller Machines (ATM), Point-of-Sale (PoS) terminals, Internet Banking and Mobile Banking. The time frame spans 2008 to 2017 being from inception of financial innovation services in Nigeria. The Nigeria economy is a context, thus Nigerian economy is studied

III. Literature Review

Conceptual Framework
Financial Innovation:

Innovation is the process that renews something that already exists, or the birth of something new. According to entrepreneur perspective, innovation means creativity (Gartner, 1988). "Innovation represents the changes in the process of ideation, evaluation, selection, development, and implementation of new or improved products, services, or programs with the purpose of increasing the number of ideas, improving the quality of ideas and a more efficient implementation of quality ideas" (Ajide, 2016). For innovation to be successful, it should add value to the customer and commercial return for the creator (Hussain, ,Asif, Ahmad & Bilal, 2011).

Innovations mostly come up as a result of developments in information technology which brings significant changes in the economy (Arnoud & Matej, 2010). Thus, developments in the financial sector can be said to be responsible for financial innovations in Nigeria. According to Ajide (2016) the growth of financial innovation is stimulated by an important set of financial reforms.

The term "financial innovation" according to Frame & White (2000) refers to technological progress in banking which leads to the introduction of new products, services, processes or instruments that bring significant reduction in cost and risk, and at the same time better satisfies participants' demand within a financial system through changes in the regulatory environment that facilitate transactions (Melnik & Eran, 1994). Basic features of a financial innovation include: strong discontinuity with the past, significant improvement on service delivery as well as profit enhancement. Financial innovation brings with it the introduction of new liquid assets that partially replace traditional money in agents' portfolios. In general, financial innovations include a range of changes in the financial system which results in the broadening, diversification, structural transformation, internationalization and sophistication of the entire financial system.

Financial innovation channels in Nigeria

These are non-paper computer-based technology payments instruments. The e-payments system comes in the form of automated teller machines (ATM), point-of-sale (PoS) terminals, internet banking, e-wallets, mobile payment wire transfers, etc. Banks have realized that to become relevant globally, they must embrace technology, repackage products in manners acceptable to customers and use it as competition strategy for their core competence. Smart card or electronic purse (use of point of sale terminal), electronic fund transfer (EFT), internet banking, ATM, telephone banking and personal computer banking are the major products of electronic banking in Nigeria (Idowu, 2013).

Economic Growth

Economic growth is the increase of per capita gross domestic product (GDP) or other measures of aggregate income typically reported as the annual rate of change in real GDP (Jones, 2002).Hardwick, Khan &Langmead (1994), defined economic growth as an increase in a country's productive capacity, identifiable by a sustained rise in real national income. According to Schumpeter (1934), economic growth is the increase in inflation-adjusted market value of the goods and services produced by an economy over time. Economic growth is generally indicated by an increase in the real gross domestic product (GDP) or real gross national product (GNP), and has been a primary and perennial goal of all societies and governments. In this study, economic growth

is measured with Gross Domestic Product in real terms.

Theoretical Framework

The study was anchored on the theory of Task Technology Fit (TTF) developed by Goodhue & Thompson in 1995. The theory posits that Information Technology will most likely impact positively on individual performance and be used if the capabilities of information communication and technology (ICT) match the tasks that the user must perform. This suggests that the usefulness of financial innovation lies in the capability of the user and its value in helping the user achieve a certain purpose. According to Goodhue & Thompson (1995), some factors that measure task-technology fit are: quality, locate-ability, authorization, compatibility, ease of use/training, production timeliness, systems reliability and relationship with users. This model is useful to this study because of the diverse range of information systems including electronic commerce systems and combined with or used as an extension of other models related to information systems outcomes. The theory maintains that for information system to be successful there must be a match between business tasks and information technology adopted. (Goodhue & Thompson, 1995; Zigurs & Buckland, 1998). Some of these innovations as seen in the banking industry are Mobile Banking services, Automated Teller Machine, Point of Sales and so on. According to this theory, for e-payment channels to fit into the need of the banking public, the common man must be capable of using it and it must fit into serving the particular need of the user. Thus this theory fits this study because no one needs higher degree to use mobile banking, ATM and even the PoS services of the banking system in Nigeria.

IV. EMPIRICAL STUDIES

A number of empirical studies have been carried out on financial innovation in Nigeria. Odularu & Okurinboye (2009) examined the extent to which demand for money explains financial innovation in an economy. Using the Engle and Granger Two-Step Co-integration technique, the study attempted to analyse whether financial innovations that occurred in Nigeria after the Structural Adjustment Programme of 1986 have affected the demand for money in Nigeria. The results confirmed the theory that income is positively related to the demand for cash balances; interest rate is inversely related to demand for real cash balances and the financial innovations had insignificant effect on demand for money. It was also discovered that the financial innovations introduced into the financial system have not significantly affected the demand for money in Nigeria.

Another study from Dunne & Kasekende (2016) investigated the impact of financial innovation on demand for money in sub-Saharan Africa. The study employed panel data estimation techniques for 34 countries between 1980 and 2013. The results showed that demand for money was negatively related to financial innovation. This suggests that financial innovation plays a crucial role in explaining money demand in sub-Saharan Africa and can have important implications for future policy design.

Matthew, Fasina, Olowe & Adegboye (2010) also carried out similar study to understand the effect that financial innovations that occurred in Nigeria after the Structural Adjustment Programme of 1986 had on the demand for money in Nigeria. Using Engle and Granger Two-Step Co-integration technique, the study also confirmed that a positive relationship exists between income and demand for cash balances and interest rate is inversely related to the demand for real cash balances. Also, financial innovations introduced into the financial system during the period under review have insignificant effect on the demand for money in Nigeria.

Ajide (2016) used bank competition to moderate the effect of financial innovation on sustainable development in eight West African countries covering the period between 2000 - 2013. Two variables of competition and two variables of financial innovation, with other control variables were regressed on a growth indicator. The dependent variable was adjusted net savings while the independent variables included bank competition, bank return, financial innovations, and banking sector development. The results from panel data estimations indicated that increase in banking efficiency driven by competition and financial innovation improved economic growth and development. It was also discovered that the effect of financial innovation on growth and development depends on the variable adopted, as one of the variables showed a negative relationship while the other had a positive relationship with development though the two were insignificant. However, the two proxies of competition were significant. The researcher concluded that a reduction in demand for money caused by financial innovations could deter economic growth and development.

Okafor, Ezeaku & Anyalechi (2017) employed quarterly data covering 2009:Q1-2014:Q4 to examine the effectiveness of financial innovation in driving growth in Nigeria. The Least Squares (Gauss-Newton/Marquardt steps) based on vector autoregressive (VAR) system was used to estimate the system model whereas Johansen co-integration test was utilized to test for long-run relationship among the series. The results showed a long-run relationship between growth and financial innovation. The findings indicate that financial innovations do not jointly have positive effect on growth as the responsiveness of growth to the individual innovation channels varied. ATM, mobile and internet transactions all have relative positive effect on growth, while transactions via POS channel had a negative influence on growth. The study therefore concluded that financial innovations have not had the desired effect on the Nigerian economy.

Okereke (2016) investigated the impact of cashless banking transactions on economic growth of Nigeria. Using the ordinary least square (OLS) method of multiple regression analysis and vector error correction model (VECM), the study revealed that the growth effect of financial innovations depends largely on the variables used as proxy financial innovation.

Omotunde (2013) adopted survey method in analysing the impact of cashless policy on the Nigerian economy. The study revealed that cashless policy has a positive impact on the Nigerian economy. It increased employment, reduced cash related crimes and attracted foreign investors. This led to growth in the economy.

In another study, Ibenta & Anyanwu (2017) investigated the relationship between financial innovation and efficiency of the banking sub-sector in Nigeria. Using the four major e-payment channels available in Nigeria - ATM, PoS, Internet and Mobile Banking- the study revealed that financial innovation products have no significant impact on efficiency ratio of deposit money banks in Nigeria.

Omotoso, Dada, Adelowo & Siyanbola (2012) adopted survey method to explain the role of ICT in linking financial innovation and banking sector productivity in Nigeria. The result of the study confirmed that ICT had made impacts on the productivity of the bank. However, the application of ICT in Nigeria's banking sector is still faced with a number of challenges such as high overhead and maintenance cost, cultural factors, capability factors, inadequate skilled manpower, power supply, network access, cybercrime among others.

Mieseigha & Ogbodo (2013) also used survey method to analyse the benefits of cashless policy on Nigeria's economic development. They discovered a positive significant relationship between cashless transactions and transparency, accountability and crime reduction, leading to a positive impact on the economy.

Bara, Mugano & Le Roux (2016) investigated the causal relationship between financial innovation and economic growth in fifteen SADC countries. Using an Autoregressive Distributed Lag (ARDL) Model, estimated by Pooled Mean Group and Dynamic Fixed Effects, the study confirmed a weak positive relationship between financial innovation and economic growth in the long run for SADC. The study also found no causality in any direction between financial innovation and growth both in the short and long run.

Njenga, Kiragu & Opiyo (2015) examined the effect of financial innovations on financial performance of Savings and Credit Co-operative Societies (SACCOs) in Kenya. With a sample of 30 of the 56 active SACCOs operating in Nyeri Kenya as at 2013, the study employed a cross sectional survey research design and stratified sampling technique on a semi structured questionnaire to collect data for the study. The results of the percentage frequency, model fitness (R^2), ANOVA and regression coefficients indicated that telephone banking (62%), internet banking (83%), and electronic funds transfer (78%) affected financial performance to a great extent. The hypotheses testing showed that telephone banking (p=0.000) and internet banking (p=0.032) were statistically significant at 95%. The study concludes that a significant relationship exists between financial innovations and the financial performance of SACCOs. Also, telephone banking and internet banking were found to be the main drivers of the financial performance of SACCOs.

In Pakistan, Hussain, Afzal, Asif, Ahmad & Bilal (2011) investigated the impact of innovation, technology and economic growth on entrepreneurship. Results from the correlation and regression model showed that innovation, technology and growth are highly correlated with entrepreneurship.

Using the Autoregressive Distributed Lag (ARDL) bounds tests and Granger causality tests, Bara & Mudzingiri (2016) investigated the causal relationship between financial innovation and economic growth in Zimbabwe from 1980 to 2013. The real income (gross domestic product) per capita was used as the dependent variable while the independent variables were growth in banking sector credit to private sector, ratio of broad to narrow money, government expenditure, consumer price index, trade openness, lagged real per capita income and domestic credit to the private sector. The study found that the growth effect of financial innovation varies depending on the variable used to measure financial innovation. Causality running from economic growth to financial innovation in the long run was confirmed. Bi-directional causality also exists after conditionally netting-off financial development. The study recommends that policies that enhance economic growth and financial innovation are essential for sustained economic development in emerging economies like Zimbabwe.

Anthony &Aboagye (2014) examined the relationship between bank competition, financial innovations and economic growth in Ghana using quarterly data from 1990 to 2009. Using the ARDL co-integration procedures, the result showed a long-run positive relationship between bank competition and economic growth and a negative relationship between financial innovation and economic growth. Bank competition was found to be negatively related to economic growth in the short run. By the same token, the study revealed a positive relationship between financial innovation and economic growth in the short run. The Granger causality test showed a uni-directional causality from bank competition to economic growth. However, a bi-directional Granger causality exists between financial innovation and economic growth. The study recommends increased competition in the banking sector with more innovative products tailored toward mobilization of savings and investment to growth inducing sectors of the economy.

From the review of literature above, the results are conflicting as some studies support growth effects (Omotunde:2013; Okafor et al:2017; Anthony & Aboagye:2014) and other oppose it (Dunne & Kasekende:2016; Okereke:2016; Matthew et al:2012). The empirical evidence is thus not quite conclusive. Adoption of financial innovation is an on-going process in the Nigerian financial sector, and as such investigation of the relationship between financial innovation and growth should be a continuous process since according to Arnabaldi & Rossignoli (2013), there is the bright side and the dark side of financial innovation. It becomes pertinent therefore to examine the impact of financial innovations in totality to ensure that financial institutions do not exploit the market by introducing risky products /services in their quest to maximize their profits.

Again, most of the studies especially in Nigeria employed survey method, others employed ordinary least square regression method of analysis.This study seeks to analyse the effect of e-payment services on economic growth of Nigeria using the Generalised Methods of Moments (GMM).

V. Methodology

The data for this study were obtained from the Central Bank of Nigeria (CBN) statistical and news bulletin covering

2008 – 2017.

Model Specification

The model was developed on the assumption that financial innovation affects economic growth. Thus the model depicts that GDP is a function of financial innovation. This model was adapted from the work of Mwinzi (2014) wherein the amount of money transferred through the mobile transfer system, the real-time gross settlement (RTGS) system, the new check clearing system and prevailing interest rates were regressed on GDP Growth. The model is:

$Y = f(X_1, X_2, X_3, X_4)$.   From the above model, the equation is then specified thus:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$
……………………………Eqn 1

Where: Y = GDP

X_1 =   Automated clearing house transactions

X_2 =   RTGS Turnover

X_3 =   Volume of cheques cleared

X_4 =   Prevailing interest rate

β_0 =   The Constant

β_{1-4} = The coefficients of the independent variables

The present study used the four major e-money products in Nigeria as proxies for financial innovation. Thus the model is:

GDP Growth = f(ATM, Internet, PoS and Mobile)

Where:

ATM   =   Amount of Automated Teller Machine (ATM) transactions.

Internet =   Amount of web transactions

PoS   =   Amount of Point-of-Sale (PoS) Transactions

Mobile =   Amount of Mobile Payments

This can be rewritten in equation form thus:

$LnGDPg = \beta_0 + \beta_1 LnATM + \beta_2 LnINTERNET + \beta_3 LnPoS$

Model Estimation

$+\beta_4 LnMOBILE + \mu$ …..Eqn 2

Where:

β_0 is the constant while β_{1-4} are the coefficients of the independent variables. Ln is the natural log of the variables introduced to smoothen possible stochastic effects of the time series. μ captured the error term.

The theoretical expectation is that increased use of financial innovations will lead to growth in the economy.

VI.   METHOD OF ANALYSIS

The Generalised Methods of Moments (GMM) was used for the model estimation. Since the time frame is short, the GMM was used, as it is expected that autocorrelation, heteroskadascity and endogeneity problems will occur in the model. The use of the GMM in this case is more suitable because it does not rely on the assumptions of normality (Kelejian & Prucha, 1999). In a Mento Carlos analyses, Kelejian & Prucha (1999) had grossly found that GMM spatial error estimator is superior to that of the OLS. Furthermore, Eager, Larch, Pfaffermayr & Walde (2005) were of the view that when studies aim at obtaining robust results from small samples, the GMM becomes the most suitable.

VII.   RESULTS AND INTERPRETATION

The regression result was obtained for the model of the relationship between financial innovation and economic growth. The data on Appendix 1 were used for analyses. The analysis was performed using the GMM technique. The justification for use of GMM is to accommodate the small sample time frame used in the study.

Table 1: GMM Regression Result for Financial Innovation and Growth Model

Dependent Variable: GDP
Method: Generalized Method of Moments
Sample: 2008 2017
Included observations: 10
Linear estimation with 1 weight update
Estimation weighting matrix: HAC (Bartlett kernel, Newey-West fixed
    bandwidth = 3.0000)
Standard errors & covariance computed using estimation weighting matrix
Instrument specification: GDP ATM INTERNET POS MOBILE
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ATM	4.030883	3.863167	3.013414	0.0134
INTERNET	81.1844	26.3679	3.643989	0.0008
POS	35.98498	17.68191	2.035129	0.0047
MOBILE	63.59321	58.86048	4.080406	0.0091
C	34.79	7524.30	3.200448	0.0493

R-squared	0.801873	Mean dependent var	67804.77
Adjusted R-squared	0.787299	S.D. dependent var	39103.19
S.E. of regression	14902.72	Sum squared resid	7.66E+08
Durbin-Watson stat	2.151049	J-statistic	6.991467
Instrument rank	7	Prob(J-statistic)	0.029070

From the result of the adjusted coefficient of determination (Adj. R-Squared), that is 0.7872, it showed that about 79% of changes in GDP can be explained by the variables of financial innovation included in the model. The result indicates that financial innovation has a very high explanatory power to the growth of Nigerian economy. However, the J-statistics being 6.9915 with 0.02907 probability value is used to test the goodness of fit and is used to determine the overall significance of the model. Since the p.value is less than 0.05 level of significance, it indicated that financial innovation model has significant effect on growth of Nigerian economy. The Durbin Watson statistics result is 2.15104 which is approximately equally to 2. This indicates that there is no autocorrelation in the model. Thus the model is adjudged reliable for the analyses.

The result obtained from the individual variables is represented in the equation below:

GDP = 4.03ATM + 81.18INTERNET + 35.98POS + 63.59MOBILE + 34.79

Findings of the Study

Based on the equation above, the effect of financial innovation on economic growth is discussed based on the variables of financial innovation adopted in the study.

ATM: The coefficient of the amount of transactions on ATM is 4.03. This suggests that ATM usage has positive effect on economic growth in Nigeria. The t-statistics is 3.03 with probability value of 0.0134. Since the p.value is less than 0.05 level of significance, we reject the null hypothesis and conclude that ATM has significant positive effect on economic growth in Nigeria.

Internet Banking: The coefficient of INTERNET is 81.1844. This indicates that internet banking has a positive effect on economic growth in Nigeria. Since the p.value (0.0008) of the t-statistics (3.64) is less than 0.05 level of significance, we reject the null hypothesis and conclude that internet banking has a significant positive effect on economic growth of Nigeria.

PoS: The coefficient of PoS is 35.98498. This shows that PoS has a positive effect on economic growth of Nigeria. The test of hypothesis showed significant effect with t-statistics of 2.035129 and p.value of 0.0047. The study thus concludes that PoS has a significant positive effect on growth of Nigerian economy.

Mobile Banking: The result showed that the coefficient of MOBILE is 63.59321 indicating that mobile banking services have positive effect on economic growth. The t-statistics (4.08) has p.value (0.0091) less than 0.05 level of significance. Thus the study concludes that mobile banking has a significant positive effect on economic growth of Nigeria.

VIII. SUMMARY OF THE STUDY

The study investigated the effect of financial innovation on economic growth of Nigeria using the four major e-payment channels - ATM, Internet banking, mobile banking and PoS as financial innovation proxies. The regression analyses done using the GMM showed that ATM, INTERNET, MOBILE and PoS all have significant positive effect on economic growth. In addition, the adjusted coefficient of determination (Adj. R-squared) showed that about 79% of changes in economic growth can be explained by financial innovation and the overall effect is statistically significant on economic growth in Nigeria.

IX. CONCLUSION

The study showed that the independent variables (ATM, INTERNET, POS, and MOBILE) can be used to predict economic growth in Nigeria as these variables could explain 79% of the variation in economic growth (AdjR-squared =0.7872). This indicates that the regression model had a strong explanatory power as only about 21% of variation in economic growth is not explained by the model. It is therefore concluded that financial innovation is a growth enhancing practice in the Nigerian economy since all the financial innovation variables employed in the study have significant positive effect on growth

X. RECOMMENDATIONS

The monetary authorities and financial service providers will have to review the e-payment services to boost their quality and efficiency so that it can become more significant to the economy.

Financial innovations have been found to have positive relationship with growth in Nigeria. However, the policy makers should be aware of the risk associated with these innovations and devise ways of eliminating them before promoting them because a well-meaning financial innovation can lead to unintended ugly consequences in the economy.

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Appendix: M-payment channels and Economic Growth in Nigeria

SN	YEAR	GDP	ATM	INTERNET	PoS	MOBILE
1	2008	24,296.33	399.7	25.1	16.1	0.7
2	2009	24,794.24	548.6	84.2	11.0	1.3
3	2010	54,612.26	954.0	99.5	12.7	6.7
4	2011	62,980.40	1,561.8	58.0	31.0	20.5
5	2012	71,713.94	1,984.72	31.5	48.0	31.5
6	2013	80,092.56	2,828.9	47.3	161.0	142.8
7	2014	89,043.62	3,679.9	74.3	312.1	339.2
8	2015	94,144.96	3,971,651	91,581	448,512	43,933
9	2016	18,564.59	4,988,133	132,360	758,996	47,053
10	2017	21,584.21	5,324,657	213,554	987.765	67,876

Source: CBN Annual Report and Accounts, CBN Statistical Bulletin and CBN News Bulletins.