

Innovation and Economic Growth in Nigeria (2013 -2022)

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ABSTRACT

Innovation has been viewed as one of the major drivers of economic growth but its exact effect is still a topic of debate among researchers. Innovation contributes to new products, services, processes, new product improvements and new business models. Any country or business venture, that has innovative culture in place can grow without difficulty. This is notwithstanding the fact that the innovative process is not always easy. This study investigates innovation and its effect on economic growth in Nigeria for the period 2013-2022. Ex post facto research design is employed, using secondary data sourced from WDIs, WIPO Statistics, CBN Statistical Bulletins, NBS and GII 2022. Generalized Method of Moments (GMM) regression analysis is employed to ascertain the effect of innovation on economic growth. The estimation was done with the aid of EViews version12. The results show that patents, trademarks, industrial designs and research and development expenditures do not have any significant effect on economic growth in Nigeria. The inflation rate as one of the control variables indicates a significant negative effect on economic growth, while tertiary school enrolment as proxy for human capital development, and foreign exchange rate do not show any significant positive effect on economic growth for the period covered by this study. The conclusion is that innovation does not drive economic growth in Nigeria. The policymakers should reassess the existing innovation policies and strategies and consider alternative approaches that would encourage innovation to promote economic growth in Nigeria.

KEYWORDS: Innovation, Economic Growth, Foreign Exchange Rate, Inflation Rate

INTRODUCTION

Innovation has long been perceived as one of the major drivers of economic growth but its exact effect remains a topic of debate among researchers. Any country or business venture, that has innovative culture in place can grow without difficulty. This is in spite of the fact that the innovation process is not always easy. Innovation aids the development of original concepts as well as affords the innovator a proactive and confident attitude to take risks in order to get things done. It is one of the most complex and essential issues facing organizations in recent times. It is also a major success factor for organizations and the economy. Innovation contributes to new products, services, processes, new product improvements, and new business models. The dire need for growth and development in Nigeria (as in some other parts of the world) points to a further need for the enhancement of innovative activities as innovation is viewed as the engine of growth and development.

Innovation is crucial for value creation, growth and development, and innovation processes take place at the enterprise, regional and national level (Gerguri &Ramadani, 2010). Many countries and nations that do not innovate tend to fall behind. Innovation helps with factors such as job creation and competition within society and economy. Innovation can lead to higher purpose-driven employment, learning and personal development, increased market share, and diversification. Technological innovations have created new industries that can be assessed from any part of the world, increased access to resources, allowed people from any background to create businesses of their own; closed the gaps between people, as well as, lead to a more diverse workforce which can bring about better solutions that consider the needs of many different stakeholders.

Despite Nigeria's efforts to promote innovation and technological advancement, the country's growth remains sluggish and the effect of innovation on economic growth still remains understudied. The economic development of Nigeria is hindered by factors such as low productivity, inadequate infrastructure, and a largely informal economy. The economic growth of Nigeria is not encouraging and needs to be rejigged. The per capita gross domestic product growth rate of Nigeria has been consistently negative from 2016 to 2020. It was -4.1% in 2016 and -4.2% in 2020. It slightly improved to 0.8% in 2022. In the same vein, research and development

expenditure in Nigeria has been less than 0.5% of its gross domestic product from 2013 to 2022. The cumulative effect of the low investment in innovation in Nigeria is the low ranking of our country on the Global Innovation Index (GII). Nigeria was ranked 114 out of 132 economies that featured in 2022. In spite of the poor rating, our country still claims to be the giant, and most populous country in Africa.

This study therefore aims to ascertain the effect of innovation (represented by innovation indicators such as patent applications, trademark applications, industrial design applications, and research and development expenditure, tertiary and secondary school enrolment) on economic growth of Nigeria for the period 2013 to 2022. By investigating the effect of innovation on Economic growth in Nigeria, this study seeks to provide insights into the strategies and policies that can be implemented to promote innovation-driven economic growth and development in the country.

REVIEW OF RELATED LITERATURE

Conceptual Review

Concept of Innovation: Innovation refers to the application of new ideas, solutions, and technological practices that improve goods, services, and business processes, and is one of the important drivers of economic growth, (Madzar, 2022). It is the process of creating new or improving existing products, processes, or services. It entails thinking outside the box, being creative and taking risks. It can be driven by technology, market needs, or societal challenges. It requires a culture that encourages experimentation, learning from failure and continuous improvement. It can lead to improved efficiency, productivity and competitiveness. Innovation can result to new business models, revenue streams and economic growth.

Various initiatives have been implemented in Nigeria in order to foster economic growth, but their effect has been restricted so far. They include the National Innovation Policy, (2019), the Nigeria innovation Index, (2020) and the startup Act, (2022). The goal of these efforts is to promote a culture of innovation, support startups, and drive technological advancement. However, there are cultural challenges which include limited funds for research and development, brain drain, inadequate infrastructure, and bureaucratic hurdles. Nigeria needs to squarely address these challenges and ensure effective and efficient implementation and coordination of the policies and strategies to fully leverage innovation for economic growth.

Innovation is a major driver of progress and improvement in various aspects of life such as education, healthcare, and sustainability. The innovation variables employed in this study are patents applications, trademark applications, industrial designs, and research and development expenditure as percentage of GDP. The control variables used are tertiary school enrolment (% gross), inflation rate, and foreign exchange rate. According to Global Innovation Index 2022, Nigeria was ranked 114th out of 132 economies that featured in that ranking. The position is not encouraging and requires necessary steps for improvement.

CONCEPT OF ECONOMIC GROWTH

Economic growth is the percentage increase in gross domestic product (GDP) or gross national product (GNP) on year-to-year basis. It means a sustained increase in per capita national output or net national product over a long period of time, (Dwivedi, 2008). The indicators of economic growth include increase in gross domestic product, rise in per capita income, increase in employment opportunities, increase in standard of living, and rise in economic output. The factors which can influence a country's economic growth include innovation, technological progress, investment in human capital (education and training), investment in physical capital (infrastructure and equipment), institutional factors (political stability, rule of law), trade and globalization, startups and entrepreneurship, monetary policy and interest rates, fiscal policy and government spending. The economic growth types include inclusive growth in which benefits are shared by all segments of the society; rapid growth where the growth rates will be high but potentially unstable; and sustainable growth which refers to balanced and stable growth. Per capita GDP growth rate is used as a proxy for economic growth rate in this study.

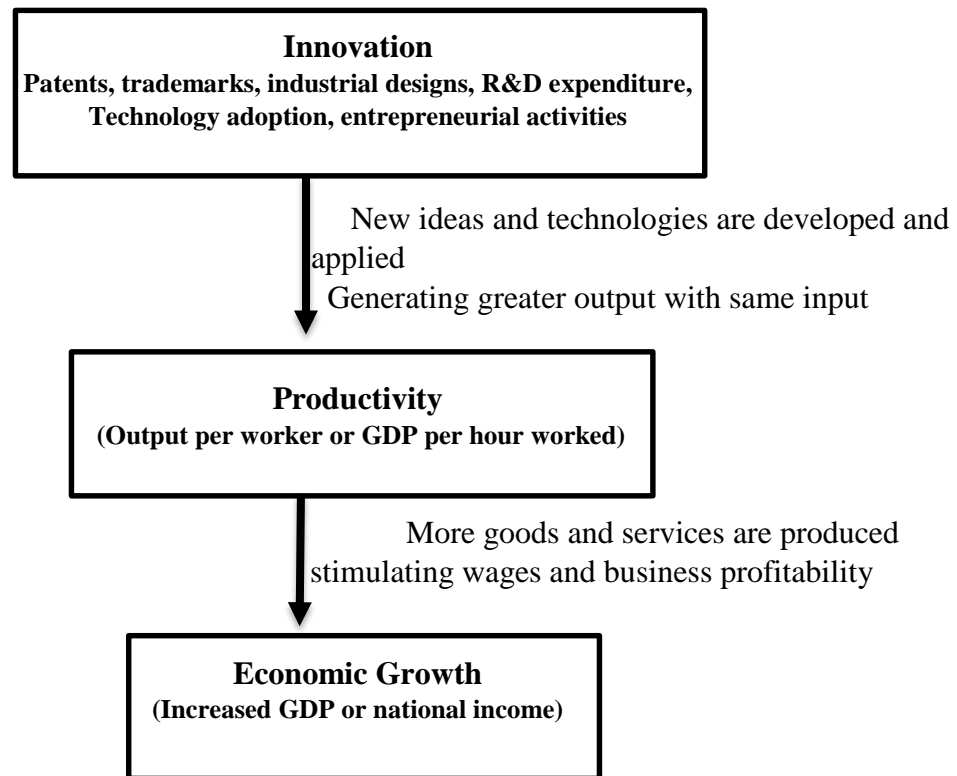
THEORETICAL FRAMEWORK

This study is anchored on a combination of three theories: the Schumpeter's innovation theory (1934) as cited in Sledzik (2013) which posits that innovation in business is the major reason for investments, and business fluctuations. According to him, the cyclical process is almost exclusively the result of innovation in an organization, both industrial and commercial. The theory emphasizes innovation as a key driver of economic growth and development. Another theory that supports this work is the economic complexity theory by Hausmann and Hidalgo (2011) which emphasis that innovation and economic growth are driven by the complexity of a country's

economy. The third theory, which this study rests on, is the Institutional Theory by North (1990) as cited in Faundez (2016) which emphasizes the role of institutional factors such as policy and regulatory frameworks in supporting innovation and economic growth. These theories provide a foundation for understanding the relationship between innovation and economic growth in Nigeria, and are used to guide the study.

THEORETICAL MODEL OF INNOVATION-LED ECONOMIC GROWTH

The model highlights the crucial role of innovation in driving economic growth through productivity enhancements. By investing in innovation, economies, can unlock new growth potentials and improve living standards. Innovation leads to improved productivity through the adoption of new technologies, processes and business models. Increased productivity drives economic growth by producing more output with the same inputs or by enabling the creation of new industries and jobs.



Source: Adapted from ECB (2017) as cited in Sarangi et al. (2022)

EMPIRICAL REVIEW

Pece et al., (2015) examine the influence of the innovation potential of an economy on the long-term economic growth in CEE countries of Poland, Czech Republic, and Hungary for the period 2000-2013. Each study was carried out independently, with estimations made using multiple regression models. The factors used were the number of trademarks, the number of patents, and the amount spent on research and development. The findings show that innovation and economic growth are positively correlated.

Maradana et al., (2017) analyze the long-run relationship between innovation and per capita economic growth in the 19 European countries from 1989 to 2014. The following indicators of innovation were used: patents-residents, patents-nonresidents, research and development expenditure, researchers in research and development activities, high-technology exports, and scientific and technical journal articles. The results, which are based on the co-integration technique, generally point to evidence of a long-term association between innovation and per capita economic growth, usually with the use of specific innovation indicator. They discover the existence of both unidirectional and bidirectional causality between innovation and per capita economic growth using the Granger causality test. Depending on the types of innovation indicators utilized in the empirical inquiry method, these results vary from nation to nation. The most significant finding of the study is the strong correlation between per capita economic growth and all of these innovation metrics. This specific relationship can be supply-leading or demand-following depending on the situation; on other occasions, it occurs in both ways. This study's recommendation for policy is that nations should acknowledge the variations in innovation and per capita economic growth in order to maintain sustainable development in these countries.

Alheet and Hamdan (2020) examine the role of innovation in promoting economic growth in Jordan by adopting a quantitative approach and using Jordan's macroeconomic data of 18 years (2000-2017). The data was collected from secondary sources using the World Bank database. The findings show that the progress in Jordan about technology and innovation does not contribute to GDP growth. Internet penetration in Jordan increased, but GDP recorded a persistent decline. However, patent applications (non-residents) have a significant impact on reducing unemployment in the country. Thus, it is recommended to focus more on innovation in the form of promoting patents to reduce unemployment and propel growth in the country.

In Malaysia, Bekhet and Latif (2018) examine the dynamic relationships among gross domestic product, capital, employment, electricity consumption, technological innovation, governance institution quality, and the interaction of technological innovation and governance institution quality for the period 1985 to 2015. They employ augmented production function, F-bound, dynamic ordinary least squares, and Granger causality tests. The results confirm the dynamic relationship among the above variables. In the long run, unidirectional causality runs from governance institution quality and technological innovation-governance institution quality toward Malaysia's financial development. However, in the short run, there is bidirectional causality between financial development and economic growth. The interaction between technological innovation and governance institution quality has a significant positive impact on Malaysia's economy in the long run. Also, capital, employment, and electricity consumption have a positive significant impact on economic growth in the long run. These three variables are vital growth inputs and should be accompanied by technological innovation and governance institution quality.

Jammeh (2022) explores the impact of technological innovation on economic growth in the Economic Community of West African States (ECOWAS) from 2008 to 2020; He empirically explores the impact on economic growth in these countries. He also studies the advancement in these variables: human capital, foreign direct investment, institutions, physical capital and annual population growth and how they can trigger economic growth. Utilizing a panel model with a fixed effect, two-ways, and time random effect estimation method that aids in observing the heterogeneities in these nations, the results show that technological innovation has a negative effect on economic growth in these nations because their weak institutions and governments' inability to develop and implement policies that will foster the development of human capital necessary to generate new technologies or make effective use of those already in existence.

Sarangi et al. (2022) analyze the relation of causality between innovation and economic growth in G20 countries using innovation variables for the period 1961-2019. The causality tests confirm this link in some G20 countries. In two countries, there is no significant causal long-run relationship between economic growth and all innovation variables used. In the majority of the countries, a one-way causal relationship can be seen depending on the country and the variables deployed. There is no constancy because all innovation variables seem to have caused economic

growth differently both in the long-run and short run; and vice versa. The findings suggest that economic growth and development may vary from country to country, depending upon the particular drive of causality (one-way or two-way).

In China, Nilsson (n. d.) carried out a study on innovation proxy: A study of patents and economic growth, using three different patent classes that are important for the economy. Employing provincial data from 1995 to 2007 in a panel data study, he tested these patent classes and their effect on economic growth. The results show that the highest patent class is not significant to economic growth.

Dempere et al. (2023) investigate the impact of innovation on three macroeconomic indicators: GDP, self-employment, and foreign direct investment (FDI). The study analyses a sample of 120 countries using the Global Innovation Index (GII) and its constituent sub-indices and pillars, which provide a holistic evaluation of national innovation. Gross domestic product (GDP) per capita measures a country's economic output, self-employment assesses entrepreneurial activity, and FDI indicates confidence in a country's economic prospects and innovation trends. This study analyzes the data using generalized-linear and panel-corrected standard-error models. The results show that innovation positively influences GDP, domestic institutional framework, local infrastructure, local knowledge and technology, and creative outputs. In contrast, innovation negatively correlates with domestic self-employment, often associated with necessity-driven entrepreneurship. The study concludes that innovation positively affects human resources, research, and creative outputs and has no significant impact on FDI. The findings suggest that a practical regulatory framework, institutional support, domestic human capital, research and development, infrastructure, technology, and creative outputs are essential for a vibrant economy. National innovation policies supporting the GII and its constituent factors can positively affect the economy while reducing self-employment.

Ejemeyovwi and Ayanda (2020) examine the role of research and development (innovation) on human development in West Africa (2004—2014). The estimation techniques utilized to carry out the objective are the standard variations of the Generalized least squares -Panel Fixed and Panel Random effects estimation techniques. The empirical results show that research and development in West Africa has a statistically significant positive impact on human development, emphasizing the potential of human development to be harnessed by consistent research and development. The study recommends increased research and development (innovation) through adequate research

and development funding and university-industry partnership for real human development problems to be solved.

Iyoboyi and Abdelrasaq(2014) study the impact of innovation on economic growth in the Nigerian economy during the period 1970-2011. Applying the Dynamic Ordinary Least Squares model, they find evidence in support of the positive impact of innovation, proxied by technology-embodied capital imports, on economic growth. Other variables with significant positive impact are human capital and the structure of the economy. On the other hand, factors such as openness to trade, high share of government expenditure as well as institutional quality are found to be associated negatively with growth.

In Malaysia, Law, Sarmidi, and Goh (2020) empirically investigate the effect of innovation on economic growth, using the neoclassical economic growth model. Embarking from the traditional labour growth, physical capital, and human capital framework, innovation is postulated to be the main driver for robust economic growth. Using time series techniques and the following variables real GDP per capita, total patent application, total grants, population growth, human capital, physical capital, and institutions, they find that innovation measured by the quantity of a total number of patent applications is statistically insignificant. The result is robust for various innovation measurements, including total local patent applications and total foreign patent applications. Switching to total patent grants instead of a total number of patent applications (local or foreign), the empirical result shows a significant impact on economic growth. The finding indirectly reveals the crucial impact of quality innovation rather than the quantity concern. They also test for the prominent institutional quality in mediating economic growth under a knowledge-based economy. The interaction between institutional quality and the total patent grant has significantly accelerated the role of innovation channels in economic growth. The empirical findings imply that the inadequacy of innovative technology flow over the long term has a detrimental effect on national innovative capacity. Thus, the innovation-economic growth nexus needs to be complemented with a good institutional quality framework, skilled human capital, and broader networking to commercialize the innovative product to ensure that the innovation activities promote economic growth.

Diaconu (n.d.) carries out a study on the role of innovation in the economic growth and development of the States: The case of the emerging countries. The purpose of this paper is to determine how innovation influences the economic growth and prosperity of a country. Knowing

that between the stock of human and social capital, on one side, and the innovation, on the other side, there is a strong positive correlation, we will try to identify the possibilities that developing economies have to foster innovation. The relationship between human capital and innovation will be analyzed to see how it could be optimized to obtain the best results on both micro and macroeconomic levels. The example of China, whose fast development astonished the world, will serve as a model for reaching our purposes.

Innovation is an essential determinant of economic growth and development, which can be achieved only by those countries with a high level of human and social capital. So, to catch up with the advanced levels of growth from the industrialized states, the developing countries have to improve the stock of these two types of capital, by promoting policies that foster the accumulation of this capital. In the case of human capital, one method of improving its level would be stopping the migration of talent, a problem that the majority of developing countries confront. Moreover, as the Chinese case illustrates, talent production, innovation, and economic growth are all powered by a small number of large urban centers.

GAP IN LITERATURE

The major gap in literature is the paucity of past studies done in this area in Nigeria. Not more than three past studies could be found in Nigeria by the researchers, even the ones available, do not employ core innovations variables. In addition, there is no up-to-date research in this area in Nigeria as the most current study, to the best of our knowledge, which did not even use core innovation variables was that of Iyoboyi and Abdelrasaq (2014). Therefore, there is need to add to the existing literature, as well as, help to update knowledge in this area of study in Nigeria.

RESEARCH METHODOLOGY

Table 1: Description of Variables

Below is the description of the variables employed in this study.

Dependent Variable	Symbol	Description	A priori Expectation
Per Capita Gross Domestic Product Growth rate is used as proxy for economic growth	PCGDPR	This is the sum of market value of goods and services produced within the national boundary, averaged across everyone who lives within this territory.	+
Independent Variables			
Main Explanatory Variables:			
Patent applications for residents and non-residents	PARN	Patents applications by residents and non-residents expressed in numbers per thousand population	+
Trademark applications for residents and non-residents	TARN	Trademark applications by residents and non-residents expressed in numbers per thousand population	+
Industrial design applications residents and non-residents	IDDN	Industrial design applications by residents and non-residents expressed in numbers per thousand population	+
Research and development expenditure (%GDP)	RDEX	Research and development expenditure expressed as a percentage of gross domestic product	+
Control Variables:			
Tertiary School Enrolment (% gross)	TSEN	This is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown.	+
Inflation Rate	INFR	This is defined as all items 12 months average change.	-
Foreign Exchange Rate	FERN	Foreign exchange rate is the price of one currency expressed in terms of another i.e. the number of units that may be exchanged for one unit of another currency. This is related to UD Dollar.	-

Source: Authors' compilation

MODEL SPECIFICATION

This study investigates the effect of innovation on economic growth of Nigeria for the period 2013 to 2022. Ex post facto research design is employed, using annual time series data sourced from World Development Indicators, WIPO Intellectual Property Statistics Profile, CBN Statistical Bulletins, National Bureau of Statistics and Global Innovation Index 2022. The model used by Sarangi et al. (2022) and Maradana et al. (2017) is followed in this study with slight modification in the number of variables and choice of some other indicators employed in this work. The functional form of the model is:

$$PCGDPR = f(PARN, TARN, IDDN, RDEX, TSEN, INFR, FERD)$$

The operational form of the model is as follows;

$$PCGDPR = b_0 + b_1PARN + b_2TARN + b_3IDDN + b_4RDEX + b_5TSEN + b_6INFR + b_7FERD + e_i$$

Where b_0 = intercept; $b_1, b_2 \dots b_7$ = coefficients of the explanatory variables; e_i = error term which represents omitted variables in the specified model.

PCGDPR = Per capita gross domestic product growth rate

PARN = Patent applications for residents and non-residents

TARN = Trademark applications for residents and non-residents

IDDN = Industrial design applications residents and non-residents

RDEX = Research and development expenditure (%GDP)

TSEN = Tertiary School Enrolment (% gross)

INFR = Inflation rates

FERD = Foreign Exchange rates US Dollar to one Naira

The above model is used to estimate the effect of innovation indicators and the control variables of tertiary school enrolment, inflation rates and exchange rates on economic growth of Nigeria for the period 2013-2022.

METHOD OF DATA ANALYSIS

We employ regression technique to analyze the model of innovation and its effect on economic growth of Nigeria. The Generalized Method of Moments (GMM) is used for the regression analysis. It is a highly flexible estimation technique that allows for efficient estimation of parameters under different model specifications and data structures. The method is capable of handling regression issues that distort reliability test such as presence of non-linearities, and issues of heteroscedasticity and autocorrelation. It enables correction of bias in parameter estimation and bias introduced by measurement errors in variables,(Rodrigues, 2024).

RESULTS AND DISCUSSION

The data is a 10 year time series that shows the variables of innovation in an economy and how it can translate into economic growth. These variables include the per capita GDP growth rate as proxy for economic growth and dependent variable, the patent applications, trademark applications, industrial designs and research & development expenditure as main explanatory variables, controlled with tertiary school enrolment, inflation rate and foreign exchange rate. The data are shown on Table 1 below:

Table 2: Annual time series data for investigating the effect of innovation on economic growth of Nigeria

Year	Per Capita GDP Growth Rate PCGDPR	Patent Applications (Residents and Non-residents) PARN	Trademark Applications (Residents and Non-Residents) TARN	Industrial Designs (Residents and Non-residents) IDDN	Research & Development Expenditure (% GDP) RDEX	Tertiary School Enrolment (% Gross) TSEN	Inflation Rates (%) INFR	Foreign Exchange Rates (N/USD) FERD
2013	3.8	64	20,987	1,045	0.13	33	8.5	158.79
2014	3.6	11	1,475	36	0.172	36	8	171.1
2015	0.1	60	535	101	0.214	37	9.01	197.78
2016	-4.1	98	926	674	0.256	37	15.7	258.95
2017	-1.7	116	16,440	916	0.298	38	16.5	333.72
2018	-0.6	415	11,883	1,891	0.34	38	12.1	361.4
2019	-0.3	452	14,720	2,017	0.38	39	11.4	361.40
2020	-4.2	423	1,681	1,124	0.38	40	13.25	381.00

2021	1.2	23	2,226	21	0.42	41	16.95	403.12
2022	0.8	16	1,037	53	0.421	42	18.85	423.75

Sources: World Bank, WDIs, WIPO, GII, CBN Statistical Bulletins, NBS

MODEL ESTIMATION

Table 3: Result of GMM regression Analysis

Dependent Variable: PCGDDR
 Method: Generalized Method of Moments
 Date: 06/14/24 Time: 05:32
 Sample: 2013 2022
 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: PCGDDR PARN TARN IDDN RDEX TSEN INFR FERD C

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PARN	-0.038980	0.010415	-3.742714	0.0646
TARN	-4.04E-05	0.000134	-0.301502	0.7915
IDDN	0.004825	0.002296	2.101547	0.1704
RDEX	-11.80991	34.74000	-0.339951	0.7663
TSEN	0.234870	0.714982	0.328498	0.7737
INFR	-1.498809	0.281608	-5.322329	0.0335
FERD	0.060572	0.046209	1.310824	0.3202
C	-1.407492	22.70409	-0.061993	0.9562
R-squared	0.962628	Mean dependent var	-0.140000	
Adjusted R-squared	0.831827	S.D. dependent var	2.730161	
S.E. of regression	1.119608	Sum squared resid	2.507043	
Durbin-Watson stat	2.351695	J-statistic	2.443167	
Instrument rank	9	Prob(J-statistic)	0.118038	

Source: Output from GMM regression using EViews version 12.

The result of the regression is shown on Table 3. The core variables of innovation are patent applications (PARN), trademark applications (TARN), industrial designs (IDDN) and research & development expenditure (RDEX). The results show that PARN (-0.0389), TARN (-0.00004) and RDEX (-11.8099) have negative coefficients which suggests that these innovation indicators tend

to pull down the growth tendencies of Nigerian economy. However, the variable of IDDN (0.0048) has a positive coefficient which indicates the tendency to contribute to the growth of Nigerian economy. The p-values of the t-statistics for all the core variables of innovation (PARN, TARN, IDDN, and RDEX) are greater than 0.05 which is the benchmark criteria of hypothesis testing. For this, the study posits that core variables of innovation do not have any significant effect on growth of Nigerian economy.

The control variables which are tertiary school enrolment (TSEN), inflation rate (INFR) and foreign exchange rate (FERD) showed mixed results. TSEN and FERD have positive coefficients while INFR has negative coefficient. However, only inflation rate (INFR) indicated a p-value (0.0335) that is statistically significant and hence showed a significant negative effect on economic growth in Nigeria.

The overall implication from the coefficient of determination and corresponding J-statistic indicates that innovation model does not show significant effect on per capita GDP growth of Nigeria. The adjusted R-squared is 0.8318 which suggests that about 88% of factors that influence economic growth in Nigeria can be explained with innovation engagements. The J-statistic (2.4431) has a p-value of 0.1180. The small value of J-statistic indicates that the sample moments are close to the population moments suggesting that the model is well specified. A high p-value of J-statistic is an indication that the null hypothesis, (that is, the moment conditions are valid), cannot be rejected, suggesting that the model is a good fit since the p-value of J-statistic is greater than 0.1 (> 0.1). The null hypothesis is rejected if the p-value of J-statistics is less than 0.1 (< 0.1).

CONCLUSION AND POLICY IMPLICATIONS

The study analyses innovation and its effect on economic growth in Nigeria for the period 2013 to 2022. According to theories, innovation is expected to drive economic growth. The results of the GMM regression, using core innovation variables show that patents, trademarks, industrial designs and research & development expenditures do not have any significant effect on economic growth in Nigeria. The inflation rate as one of the control variables, indicates a significant negative effect on economic growth, while tertiary school enrolment as proxy for human capital development, and foreign exchange rate do not show any significant positive effect on economic growth in Nigeria for the period covered by this study. The conclusion is that innovation does not drive economic growth in Nigeria and has no significant effect on it for the period 2013 to 2022.

The policy implications of our results are obvious. The policymakers should reassess the existing innovation policies and strategies and consider alternative approaches that would make residents and non-residents of Nigeria to come up with large numbers of patents, trademarks and industrial designs to stimulate innovation to drive economic growth; reconsider research and development funding schemes and tax incentives to encourage innovation that promotes economic growth. Furthermore, the governments might develop context-specific policies as well as recognize that innovation effects on economic growth could vary depending on industry, region or country-specific factors. The government and monetary authorities should evolve effective policies that would reduce the inflation rate to low single digit to make it contribute significantly to economic growth. The major areas to address in this regard are the fuel pump prices, unstable energy or power supply and its high tariffs, as well as foreign exchange rate, all of which have multiplier effects on the costs and prices of goods and services and general price levels.

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