DO EDUCATION OUTCOMES ENHANCE SUSTAINABLE DEVELOPMENT IN NIGERIA?

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ABSTRACT
The study assessed the effect of education outcomes on sustainable development in Nigeria for the period 1990q1–2018q4. An Autoregressive Distributed Lag Model (ARDL) bounds test technique was used for the analysis. Adjusted net savings (ANS) were utilized as a measure of sustainable development. The adult literacy rate, primary school enrolment, and secondary school enrolment were used as proxies for educational outcomes. The research found that adult literacy rates had a strong favourable effect on sustainable development in both the short-run and long-run. Secondary school enrolment exhibited a positive, significant impact on sustainable development only in the long run, while primary school enrolment had an insignificant effect on sustainable development in both the short-run and long-run. Based on the findings, the study recommends increased budgetary allocation and subsidies for Nigerian education.
Keywords: Education Outcomes, Sustainable Development, ARDL, Nigeria.
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1. INTRODUCTION

As a critical component of human capital development, educational investment should be prioritized in Nigeria's development strategy. Sadly, this is not the case, since education has consistently received less than the UNESCO-recommended level of 26% of the annual budget in Nigeria. The implication is that Nigeria's poor performance in all development indices (economic growth, employment, inequality, poverty, etc.) may be attributed to education's poor funding. Investment in education is important as it leads to human capital production, which is a crucial factor that determines economic growth and sustainable development (Mishra, 2016). Investment in the education and training of the workforce enhances the skills of the workers and their productivity. It also enhances the workers' occupational mobility, earnings, and employability.

Adult literacy rates, primary and secondary school enrolments, and other important outcomes of educational investment in Nigeria have been falling in recent years. World Development Indicator (2021) data showed that the adult literacy rate decreased from a peak of 70.20% in 2006 to 62.01% in 2018. Similarly, the primary school enrolment in

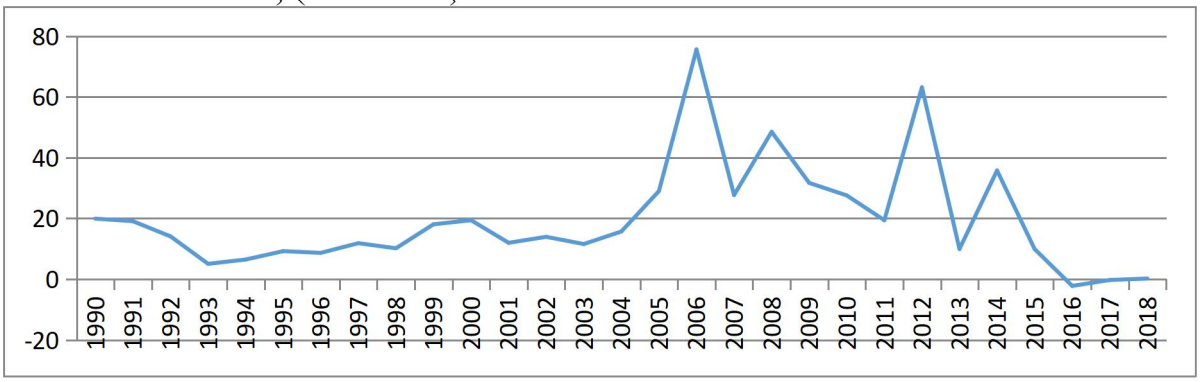
Nigeria declined from a peak of 113.07% in 1983 to 84.73% in 2016 and the secondary school enrolment declined from a peak of 56.21% in 2013 to 42% in 2016. The downward trends in educational outcome variables can be linked to Nigeria's declining education funding. The federal government's budgetary allocation to education has fallen from a high of 17.59 percent in 1970(Central Bank of Nigeria (CBN), 2015) to 5.68 percent in 2021(BudgIT, 2021). The scenario corroborates the report that 10.5 million children aged between 5 and 14 years are not attending school in Nigeria (UNICEF, 2021).

Many methods of measuring sustainable development have been developed in the literature since the Bruntland Report, which described sustainable development as a development that meets present needs without endangering future generations' capacity to meet their own needs (World Commission on Environment and Development, 1987). Due to data availability and emphasis on human capital investment (education expenditure), adjusted net savings (ANS) were used as a proxy for sustainable development in this study. The World Bank calculates adjusted net savings as a measure of sustainability, following Hartwick (1977) and Solow's (1986) endogenous growth models that define sustainability as the preservation of an economy's capital stock in order to achieve intergenerational equity. According to Naikal (2015), the World Bank constructs adjusted net savings as follows:

Adjusted Net Savings = Gross National Savings – Fixed Capital Consumption + Human Capital Investment – Natural Capital Depletion – Pollution Damages

A positive adjusted net savings shows that a country is investing in the future, accumulating the assets needed to generate wealth and assure long-term economic growth. A negative adjusted net savings indicates that a country's capital stock is diminishing and it is on an unsustainable development trajectory (Naikal, 2015). Figure 1 showed that Nigeria had a positive adjusted net savings from 1990 to 2015. The economy witnessed negative adjusted net savings from 2016 to 2017 and returned to a positive in 2018. It showed that gross national savings and human capital investment (proxy: education expenditure) were not enough to offset fixed capital consumption, natural capital depletion, and pollution damage in 2016-2017, indicating that Nigeria's development was not sustainable in 2016-2017. As a monoculture economy that is entirely dependent on crude oil, the adjusted net savings trend reflects fluctuations in global crude oil prices. The trend also reflects the savings culture of successive governments within the research period.

Figure 1: Nigeria's adjusted net savings, including particulate pollution damage (current US dollars in billions) (1990–2018)



Source: Authors' plot using World Development Indicator (2021) data

The peak of the adjusted net savings in 2006 coincided with the highest rate of adult literacy, while the negative adjusted net savings period from 2016-2017 coincided with the lowest rates of primary and secondary school enrolments (see World Development Indicator, 2021). It shows that adjusted net savings respond positively to changes in education outcomes in Nigeria. The implication is that in order for Nigeria's economy to maintain a positive adjusted net savings, it must diversify its economic base away from crude oil, increase public savings, and adequately fund the education sector.

To our knowledge, none of the Nigerian-specific studies investigated the influence of education outcomes on sustainable development. In order to fill the identified gap in literature, the objective of the study is to assess the effect of education outcomes (adult literacy rate, primary and secondary school enrolment) on Nigeria's sustainable development. The remainder of the paper is organized as follows: Section 2 contains the literature review. The methodology is presented in Section 3. Section 4 contains the results and discussion of them. The conclusion and recommendation are reported in Section 5.

2. LITERATURE REVIEW

2.1 Conceptual and Theoretical Literature

According to human capital theory, education and training are critical investments in human beings to increase and improve their productive capacity for enhanced employability and earning potential. This theory is hinged on Smith's 1776 postulation that the wealth of nations lies in human efforts and abilities. Education is important for stability, financial security, self-dependency, inclusive growth, and equality, among other benefits. Thus, individuals and governments direct funds to education to earn returns and enjoy its potential benefits. The expected output from this investment is termed "education outcomes." These outcomes can be quantitative as well as qualitative and include various indicators such as school enrollment, attainment, attendance, and performance. These outcomes are frequently expected to be positive; for example, increased education investment is expected to increase school enrollment, attainment, attendance, and performance.

In the last decade, there has been a global shift from economic growth to a focus on sustainable development. Focus on economic growth alone leads to environmental degradation and other socio-economic imbalances such as massive destruction of natural ecosystems and land degradation; increases in soil, air and water contamination; accumulation of enormous amounts of waste; global climate change; alarming increases in the population of the less developed countries; food crisis; and widening the gap between the poor and the rich (Diaconu and Popescu 2016). These portend danger for future generations. The Bruntland Commission report is the most cited definition of sustainable development in recent times. The report defined sustainable development as a development that ensures that the needs of the present generation are met without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development, 1987). The above definition of sustainable development posits that the economy, environment, and society are interconnected, leading to the three pillars of sustainability: economic sustainability, environmental sustainability, and social sustainability (Mensah, 2019).

The indicators of economic sustainability are: organic farming, genuine savings, gross domestic product (GDP), employment, and public debt. Food and water sufficiency, safe sanitation, clean air and water, a healthy lifestyle, education, gender equality, income

distribution, and good governance are all indicators of social sustainability. Indicators of environmental sustainability are made up of air quality, biodiversity, renewable energy and water sources, consumption, and green house gases (see Sustainable Society Foundation, 2012).

The failure of the neoclassical growth theory to explain long-run economic growth as well as the dangers of unsustainable growth led to the formation of endogenous growth theories with technological progress as an endogenous factor. Among the major determinants of technological progress is investment in human capital through learning by doing and the acquisition of new skills and knowledge. The importance of education and its outcomes on attaining sustainable development comes through the social sustainability pillar of sustainable development.

Endogenous growth theory, as demonstrated by Bretschger (1999), provides a strong framework for analyzing sustainable development. Lucas (1988) emphasized the critical role of human capital acquisition in the endogenous growth model. In this model, acquiring new skills and knowledge does not only increase the productivity of the worker but also the productivity of other workers in the economy as well as the productivity of other capital used in production. Therefore, new knowledge makes new ideas possible, making the benefits of economic growth sustainable for the present and future development. Furthermore, citizens are taught and better able to understand the importance of sustainable production and consumption through education. It helps people make better choices. Through schooling, citizens are introduced to concepts that make them environmentally aware, such as the green economy, green jobs, green skills, etc. These positive educational outcomes are expected to increase sustainable development.

2.2 Empirical Literature

In Nigeria, the existing empirical literature is dominated by studies on the relationship between government education spending and economic growth, with few studies focusing on government education spending and education outcomes. Ogundipe and Oluwatobi (2013), Ogbonna and Azubuike (2015), Babatunde (2018), Uzodigwe, Umeghalu, and Ozoh (2019), Otubu (2020), Ifionu and Nteegah (2013), Obi and Obi (2014), and Nura and Mustapha (2015) are among the Nigerian studies that used Ordinary Least Squares (OLS) to verify the effect of government education spending on the economic progress of the country. The studies found a strong and favourable connection between government education spending and the economic success of Nigeria. Using the Fully Modified Ordinary Least Squares (FMOLS) approach, Osoba and Tella (2017) assessed the interactive influence of education and health spending on the economic success of Nigeria from 1986 to 2014. They discovered that the interactive term had a significant favourable influence on Nigerian economic growth. Olulu, Erhieyovwe, and Ukavwe (2014) and Jaiyeoba (2015), on the other hand, discovered that government education spending had a negligible influence on Nigerian economic growth.

The differential influence of government educational recurrent and capital spending on Nigeria's economy was studied by Urhie (2014) through the Instrumental Variable Two-Stage Least Squares technique. The study revealed that recurrent education spending boosts economic growth, whereas capital education spending slows it down. Using an integrated sequential dynamic Computable General Equilibrium (CGE) model, Odior (2011) discovered that re-allocating government investment to education is crucial to economic success in Nigeria.

Oriakhi and Ameh (2014) utilized a linear forecasting model to verify the influence of government education spending on the development of Nigeria's education system. They discovered a favorable and substantial connection between government education spending and the development of the education sector. Obi, Ekesiobi, Dimnwobi, and Mgbemena (2016) utilized the Ordinary Least Squares (OLS) approach to assess the extent of the influence education spending has had on education outcomes in Nigeria from 1970 to 2013. According to the findings, education spending in Nigeria has a strong favorable influence on education outcomes. For the period 1980–2014, Umar (2017) utilized the Error Correction Model to verify the influence of education and health outcomes on Nigerian economic growth. The findings show that secondary school enrolment has a substantial beneficial influence on economic growth, whereas the under-five mortality rate has a substantial negative influence. Their interaction had a considerable detrimental effect on economic growth.

Utilizing returns on intellectual capital and property as proxies for returns on human capital, Uzomba and Ibeinmno (2020) found that the return on intellectual capital has a significant effect on the Nigerian economy, while the return on intellectual property does not. Oriakhi (2021) reported a bi-directional causality between government expenditure and poverty in Nigeria. Mohammed, Idris and Shehu (2021) utilized Smooth Transition Regression (STR) and found that public expenditure is above the optimal level in Nigeria and it has a strong favourable influence on economic growth. Anjande, Ahemen, and Ijirshar (2020) discovered that government expenditure positively impacts national income and adversely affects unemployment in selected African countries using the Pool Mean Group (PMG) estimator. Ogungbenle (2020) discovered a substantial positive relationship between public education investment and school enrolment in Nigeria. Asogwa, Anumudu, Ogbuakanne, and Ugwuanyi (2019) utilized gini coefficient decomposition analysis and logistic based regression and found that advancement in human capital development in education before migration would reduce the inequality in remittance inflow in Nigeria.

Using data from selected African nations, Anyanwu and Erhijakpor (2007) examined the effect of education spending on school enrolment for the period 1990–2002. They discovered that education spending had a significant beneficial influence on primary and secondary school enrollment rates. Liao, Du, Wang, and Yu (2019) studied the relationship between education spending and sustainable economic development in Guangdong Province and discovered that education spending has a substantial positive influence on sustainable economic development. In his India study, Bangay (2016) reported a strong beneficial connection between education spending and sustainable development. Using a sustainable society index as a measure of sustainable development, Ojike et al. (2021) found that education and health spending had a strong favorable influence on sustainable development in Nigeria.

From the empirical studies discussed above, none of the Nigerian research examined the effect of educational outcomes on sustainable development. Most of the research in Nigeria is on education spending and economic growth. This study addressed the aforementioned gap by studying the effect of educational outcomes on sustainable development in Nigeria, using adjusted net savings to measure sustainability. The study also contributed to the scant literature by estimating the short-run and long-run impacts of educational outcomes on sustainable development using the ARDL bounds test approach.

3. METHODOLOGY

3.1 Theoretical Framework

The research used Lucas's (1988) endogenous growth model as a theoretical foundation. The model is founded on the idea that investment in education results in human capital production, which is a vital component of economic success (Mishra, 2016). It believes that investing in human capital rather than physical capital has spillover effects that boost technical development. The model demonstrates that educating a worker increases his production, which then spreads to capital and other workers. The theory advocates increased education subsidies and incentives for firms that invest more in the research and development of new technology in developing countries (Mishra, 2016). The Lucas (1988) model creates output using the following production function:

$Y = AK^{\alpha}(\ell hL)^{1-\alpha}$ $0 < \alpha < 1$ …… (1)

Y = output, A = total factor productivity (TFP), K = physical capital, h = human capital, L = labour force, and ℓ = proportion of total labour time spent working.

The production function in per capita form becomes

$y = Ak^{\alpha}(\ell h)^{1-\alpha}$ …… (2)

which is a constant return to the scale of production in k and ℓh.

The differential equation below is used to calculate capital accumulation.

$\dot{k} = y - c - (\xi + \delta)k$, …… (3)

h accumulates in accordance with

$\dot{h} = \emptyset h(1 - \ell)$

$\dot{h}/h = \emptyset(1 - \ell)$ …… (4)

The Lucas (1988) model has at least two versions of interpretation. The first is the aggregate level. It considers ℓ as the proportion of the population engaged in productive activity to produce goods and services, and a proportion (1 - ℓ) engaged in scientific and technological research to produce knowledge. The second interpretation focuses on a single agent. Such an agent might be considered to be running a production function of the type shown in equation (2), where $(1 - \ell)$ represents the proportion of time spent learning and ℓ represents the time spent working (Carroll, 2020).

3.2 Model Specification

The Lucas (1998) model is modified to include education outcomes and other determinants of sustainable development. The functional form of the research model is specified as follows:

lnANS = F(lnGFCY, lnLBRF, lnEDOU, lnEMPR, lnINFR) …….. (5)

Where,

ANS = Adjusted net savings (a proxy for sustainable development)

GFCY = Gross fixed capital formation (% of GDP) (a proxy for physical capital)

LBRF = Labour force

EDOU = Education outcomes (proxies for human capital)

EMPR = Employment rate (one of the indicators of economic sustainability, see Sustainable Society Foundation, 2012)

INFR = Inflation rate

ln = Natural log

Dividing equation (5) by labour force to convert it to a per capita form;

lnANSL = F(lnGFCY, lnEDOU, lnEMPR, lnINFR) ……..(6)

Where ANSL = Adjusted net savings as a ratio of labour force and the other variables remain as defined in equation (5).

Including the individual educational outcome variables in equation (6), the econometric model specification becomes:

$$\ln ANSL_t = \beta_0 + \beta_1 \ln GFCY_t + \beta_2 \ln LITR_t + \beta_3 \ln PSER_t + \beta_4 \ln SSER_t + \beta_5 \ln EMPR_t + \beta_6 \ln INFR_t + \epsilon_t \quad \ldots\ldots (7)$$

Where LITR = Adult literacy rate, PSER = Primary school enrolment, SSER = Secondary school enrolment, t = Time, ϵ = Error term, β_0 = Intercept, and $\beta_1 - \beta_6$ = Slope coefficients of the explanatory variables. Other variables remain as defined in equations (5) and (6). The a priori signs of the slope coefficients of the explanatory variables are: $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$, $\beta_4 > 0$, $\beta_5 > 0$, $\beta_6 < 0$.

3.3 Method of Analysis

Pesaran, Shin, and Smith (2001) Autoregressive Distributed Lag Model (ARDL) bounds test technique was used for the analysis. In cases when the explanatory variables are stationary at level or first difference or are mutually cointegrated, the bound test technique of testing for cointegration is appropriate, and it is efficient in a small sample size (Pesaran and Shin, 1999). Equation (7) is presented in ARDL (p, q) model form as follows:

$$\ln ANSL_t = \beta_0 + \beta_1 \ln ANSL_{t-1} + \cdots + \beta_p \ln ANSL_{t-p} + \alpha_0 \ln GFCY_t + \alpha_1 \ln GFCY_{t-1} + \cdots + \alpha_q \ln GFCY_{t-q} + \delta_0 \ln LITR_t + \delta_1 \ln LITR_{t-1} + \cdots + \delta_q \ln LITR_{t-q} + \lambda_0 \ln PSER_t + \lambda_1 \ln PSER_{t-1} + \cdots + \lambda_q \ln PSER_{t-q} + \varphi_0 \ln SSER_t + \varphi_1 \ln SSER_{t-1} + \cdots + \varphi_q \ln SSER_{t-q} + \upsilon_0 \ln EMPR_t + \upsilon_1 \ln EMPR_{t-1} + \cdots + \upsilon_q \ln EMPR_{t-q} + \gamma_0 \ln INFR_t + \gamma_1 \ln INFR_{t-1} + \cdots + \gamma_q \ln INFR_{t-q} + \epsilon_t \quad \ldots\ldots (8)$$

The Akaike information criterion (AIC) is utilized in selecting the lag orders p and q.

The unrestricted error correction (bounds tests) model is stated as follows:

$$\Delta \ln ANSL_t = \beta_0 + \sum_{i=1}^{p} \beta_i \Delta \ln ANSL_{t-i} + \sum_{j=0}^{q} \alpha_j \Delta \ln GFCY_{t-j} + \sum_{k=0}^{q} \delta_k \Delta \ln LITR_{t-k} + \sum_{l=0}^{q} \lambda_l \Delta \ln PSER_{t-l} + \sum_{m=0}^{q} \varphi_m \Delta \ln SSER_{t-m} + \sum_{n=0}^{q} \upsilon_n \Delta \ln EMPR_{t-n} + \sum_{o=0}^{q} \gamma_0 \Delta \ln INFR_{t-0} + \omega_0 \ln ANSL_{t-1} + \omega_1 \ln GFCY_{t-1} + \omega_2 \ln LITR_{t-1} + \omega_3 \ln PSER_{t-1} + \omega_4 \ln SSER_{t-1} + \omega_5 \ln EMPR_{t-1} + \omega_6 \ln INFR_{t-1} + \varepsilon_t \quad \ldots\ldots (9)$$

Where; Δ represents the difference and the variables remain as defined in equation (5), (6) and (7).

In equation (9), the lagged level form variables are subjected to an asymptotic non-standard F-test. Upper and lower critical bound values are created in the process. The null and alternative hypotheses are stated thus:

$H_0: \omega_0 = \omega_1 = \omega_2 = \omega_3 = \omega_4 = \omega_5 = \omega_6 = 0$, (no cointegration)

$H_1: \omega_0 \neq \omega_1 \neq \omega_2 \neq \omega_3 \neq \omega_4 \neq \omega_5 \neq \omega_6 \neq 0$, (presence of cointegration)

The null hypothesis is rejected when the estimated F-statistic is greater than the upper critical bound value. We do not reject the null hypothesis when the estimated F-statistic is less than the lower critical bound value. When the estimated F-statistic is greater than the lower bound critical value but less than the upper bound critical value, the test is inconclusive.

3.5 Data

Quarterly data that spanned from 1990q1 to 2018q4 were utilized for the research. Linear interpolation was used to fill in the missing years' gaps in adult literacy rate and secondary school enrolment using primary school enrolment data. Eview 9.0 was used to interpolate the annual data into quarterly series. We sourced all the data from World Development Indicators (2021).

4. RESULTS AND DISCUSSION OF FINDINDS

4.1 Unit root test

In order to incorporate unknown structural breaks into the unit root test, the study used the Zivot and Andrews (1992) unit root test.

Table 1; Zivot-Andrews Unit Root Test

Variable	Level form		First difference		Order of integration
	Brake date	t-statistic	Brake date	t-statistic	
lnANSL	2012q4	-2.7185	2007q1	-10.2503***	I(1)
lnGFCY	2014q1	-2.1164	2000q1	-11.3980***	I(1)
lnLITR	2008q1	-5.1375**	2006q3	-11.0888***	I(0)
lnPSER	1999q1	-4.7481	1999q1	-10.8736***	I(1)
lnSSER	2014q1	-2.8327	2013q3	-11.7153***	I(1)
lnEMPR	2012q1	-5.9871***	2012q1	-11.9665***	I(0)
lnINFR	1996q1	-4.4754	1995q2	-11.0608***	I(1)

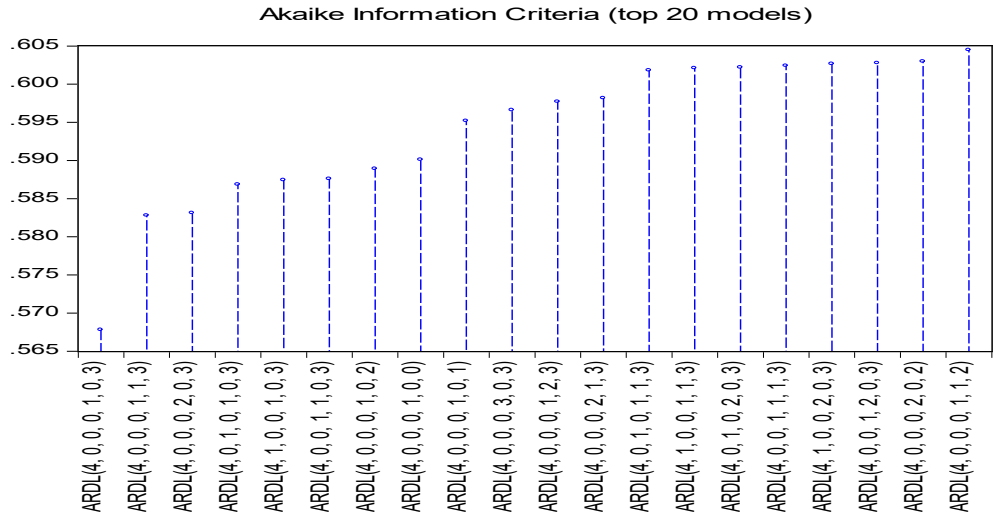
Source: Authors' calculation
Note: **shows significant at 5% level, ***shows significant at 1% level

The unit root tests results show that lnLITR, and lnEMPR, are integrated of order zero, while lnANSL, lnGFCY, lnPSER, lnSSER, and lnINFR are integrated of order one. Since none of the regressors is integrated of order two or above, the Pesaran et al. (2001) bounds test approach for cointegration test is appropriate for the analysis.

4.2: ARDL Model Selection result

Figure 2 shows that, using Akaike Information Criteria (AIC), an ARDL (4, 0, 0, 0, 1, 0, 3) model was selected for the study. The model has an R-squared of 0.7825, showing that it has a good fit. It shows that 78.24% of the dependent variable variations are caused by the model regressors. The F-statistic (21.8362) indicates that the model is statistically significant.

Figure 2: Model Selection Graph



R-squared = 0.7824 F-statistic = 21.8362 Prob(F-statistic) = 0.0000

Source: Authors' computation from the selected model.

4.3: Cointegration test

Table 2: Bounds test result
Null Hypothesis: No cointegration

F-statistic = 5.75		
Significance level	Critical bound value	
	Lower bound I(0)	Upper bound I(1)
10%	2.12	3.23
5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

Source: Authors' calculation from the selected model

At a 1% significance level, the estimated F-statistic from the cointegration test result is greater than the upper critical bound value. It shows that cointegration exists in the model.

4.4 Diagnostic tests for the model

4.4.1 Serial autocorrelation test

F-statistic	0.9687	Prob. F(2, 83)	0.3838
Obs*R-squared	2.2809	Prob. Chi-square(2)	0.3197

Source: Authors' calculation from the selected model.

The insignificant Breusch-Godfrey Serial Correlation LM Test result suggests that the model is devoid of serial autocorrelation.

4.4.2: Stability test

At a 5% significance level, the plot of the CUSUM and CUSUM Squares test statistics is within the border lines. It means the model coefficients are stable.

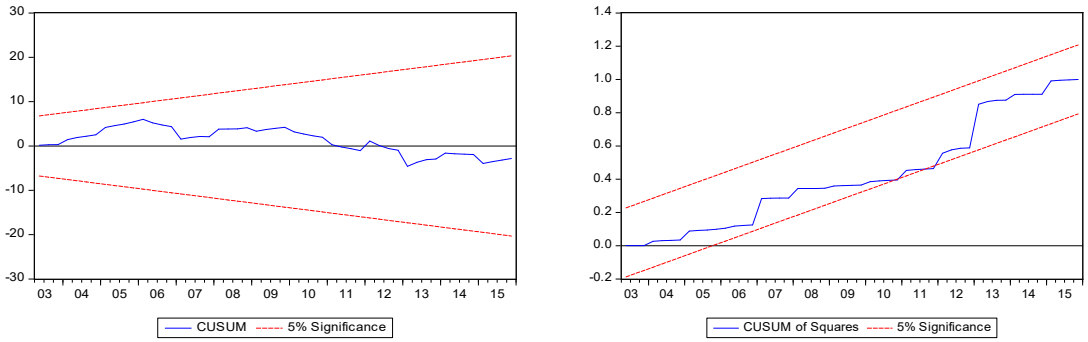


Figure 3: Cumulative Sum (CUSUM) and CUSUM of Squares Tests
Source: Authors' calculation from the selected model.

4.4.3 Normality test

Table 5: Jarque-Bera normality test

Skewness	Kurtosis	Jarque-Bera	Probability
-0.1787	3.5737	1.9037	0.3860

Source: Authors' calculation from the selected model.

The non-significant Jarque-Bera test results indicate that the model has a normal distribution.

4.4.4 Heteroskedasticity Test:

Table 6: Breusch-Pagan-Godfrey Heteroskedasticity Test

F-statistic	0.6899	Prob.F(14,85)	0.7782
Obs*R-squared	10.2039	Prob. Chi-Square(14)	0.7471

Source: Authors' calculation from the selected model.

The insignificant Breusch-Pagan-Godfrey heteroskedasticity test results show that the model is homoskedastic.

4.5 Short-run and Long-run results

The short-run results in Table 7 show that the adult literacy rate (lnLITR) has a substantial, beneficial impact on sustainable development, while primary and secondary school enrolment have an insignificant influence on sustainable development. A 1% rise in literacy rates leads to a 0.9% boost in sustainable development. The employment rate exhibits a positive and significant influence on sustainable development, while gross fixed capital formation and the rate of inflation have a negligible influence on sustainable development in the short-run. The CointEq (-1) that measures the speed of adjustment to any disequilibrium is negative and statistically significant with an adjustment speed of 0.6656. It shows that about 66.56% of the discrepancy between long-run and short-run sustainable development is corrected in a quarter.

Table 7: Results of the short-run and long-run models

Short-run result			Long-run result		
Dependent variable: D(lnANSL)			Dependent variable: lnANSL		
Variable	Coeffecient	t-Statistic	Variable	Coeffecient	t-Statistic
D(lnGFCY)	0.0130	0.0459	lnGFCY	0.0195	0.0460
D(lnLITR)	1.4519	2.3363**	lnLITR	2.1814	2.8014***
D(lnPSER)	-0.3708	-0.7859	lnPSER	-0.5571	-0.8128
D(lnSSER)	-1.5565	-1.6969	lnSSER	1.5643	2.4267**
D(lnEMPR)	5.9824	4.1263***	lnEMPR	8.9884	4.3211***
D(lnINFR)	-0.0037	-0.0303	lnINFR	-0.3383	-4.0208***
CointEq(-1)	-0.6656	-6.0773***	C	-41.1482	-4.3096***

Source: Authors' computation from the selected model
Note: **shows significant at 5% level, ***shows significant at 1% level

The long-run results reveal that, except for primary school enrolment, the independent variables conform to a priori expectations. Adult literacy rate and secondary school enrolment exhibit a positive and significant influence on sustainable development while primary school enrolment has also an insignificant influence on the sustainable development in the long-run. A percentage increase in the adult literacy rate and secondary school enrolment result in a 2.18% and 1.56% increase in sustainable development, respectively. The result is consistent with Umar (2017), who used only secondary school enrolment to capture education outcomes in an error correction study that focused on Nigeria's economic growth. The results show that public policy actions geared towards increasing investment in education will increase adult literacy rates and secondary school enrolment in Nigeria. Such policy actions will result in increased worker productivity, better wages, reduced inequality, increased employability, a reduction in the poverty level, and greater sustainable development. The insignificant influence of primary school enrolment on sustainable development corroborates the fact that more than 10.5 million Nigerian children aged between 5 and 14 years are not attending school.

The long-run results also show that the employment rate has a strong favorable influence on sustainable development. A 1% rise in the employment rate will increase sustainable development by 8.99%. It calls for the proper implementation of the 2016 National Employment Policy (NEP) review in order to provide satisfying and sustainable employment and eliminate poverty, unemployment, and underemployment in Nigeria (Evoh and Agu, 2016). Inflation exhibits a significant negative impact on sustainable development. A percentage increase in inflation will decrease sustainable development by 0.34%. It shows the need to formulate and properly implement economic policies that will reduce the inflation level in Nigeria for the country to achieve its sustainable development goals. The insignificant result of gross fixed capital formation can be attributed to low savings mobilization and declining capital inflows to support domestic investment and boost sustainable development.

5. CONCLUSION AND RECOMMENDATIONS

Following the findings, the study concludes that education outcomes (adult literacy rate and secondary school enrolment) are vital factors that determine sustainable development in Nigeria. It also concludes that the employment rate is a necessary factor that will help Nigeria achieve sustainable development goals and should be encouraged. The study attributed the insignificant impact of fixed capital formation on sustainable development to the low savings mobilization and declining inflow of capital in Nigeria to finance domestic investment. It also concludes that the inflation rate in Nigeria is impeding the country's ability to achieve its sustainable development goals and should be checked. The study recommends increased budgetary allocation and subsidies for education in Nigeria.

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