



Economic Growth and Quality of Life in Nigeria: Evidence from Anambra and Bauchi States

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Abstract

Economic theory and policy generally aim to improve the economic and social wellbeing of members of society and one of the ways by which this is achieved is the attainment of sustainable economic growth which leads to economic development and better quality of life. This study examines the relationship between economic growth and development in the quality of life in Nigeria. It was based on the Pooled Mean Group and Autoregressive Distributed Lags (PMG/ARDL) model used to assess economic growth and human development Indices on the panel dynamics. The study followed the procedure used by UNDP (2016) which involved assessing economic growth and human development Index on the basis of state comparisons. It analyzed the short and long run relationships between economic growth and quality of life variables used as proxy for economic development with data from Anambra and Bauchi states. Secondary data were collected from 2007 to 2019 from the National Bureau of Statistics (NBS), Anambra state Bureau of statistics (ABS) and Bauchi state Bureau of statistics (BBS) yearly statistical Report. Although the ECM showed that economic growth has a negative short run relationship with human development index, the result was not significant. The coefficient for the long run relationship was however significant. The study concludes that policies aimed at accelerating growth would have a negative impact on human development in the short run but in the long run, equilibrium will be restored by QL adjusting to correct the equilibrium error. This implies that economic growth leads to human development and that macroeconomic policies aimed at achieving sustainable economic growth should be maintained.

Key Words: Economic Growth, Quality of Life, Anambra, Bauchi States, Nigeria

JEL Code: O40

1. *Background to the Study*

Gross Domestic Product (GDP) measures the value of goods and services produced in a country within a specify period of time, usually, quarterly or annually. It is one of the oldest and the most widely used indicator to judge or measure the economic performance of a nation's economy. The reason for reliance on this indicator is that the data used for its compilation is relatively easy to access, and measurements are straight forward (Lashmar, 2018). The use of the GDP as a measure of growth or otherwise of a country is however not without limitations. This includes, its inadequacy as a measure of welfare, none description of income distribution, none consideration of externalities and absence of social progress index.

Attempt by development economists to provide for the identified gaps in GDP as a measure of welfare led to the introduction of Human Development Index of the United Nations as an alternative measure of Welfare. Unlike the Gross Domestic Product (GDP), the Human Development Index (HDI) places greater emphasis on human development. It considers the quality of life of the citizens and not just productive capacity of a country. Also, social factors such as education and health are regarded as very vital measure of human development. The Millenniums Development Goals (MDGs) as well as the Sustainable Development Goals (SDGs) make extensive use of these indicators to evaluate the performance of countries towards achieving those goals.

According to (UNDP, 2020) ranking on human development index, between 2007-2019, Norway has been one of the countries with the highest records of HDI with an Average HDI value of 0.95 and it has been number 1 on the index. Countries with very high records of HDI have an average record of 0.88 in same period, Sub-Saharan Africa have an average HDI value of 0.52 and Nigeria has an average HDI value of 0.51 and ranked 161 out of 189 countries on the index for the period under consideration. From foregoing statistics, it can be seen that Nigeria is marginally lower in ranking than the continent's average and about half on the ladder of global human development index with so much gap between her and the countries with very high human development. Also, the country's inequality rank in the world is not pleasing; Unemployment has been on a steady rise and is currently about 33.3 percent (NBS, 2021) and threatening the fabrics of social cohesion. Prevalence of insecurity, lack of participatory democracy, high poverty rate of about 40.09 percent (NBS, 2021), illiteracy as well as other social vices are all patiently waiting to explode and with attendants' consequences for productivity in the economy

Nigeria alone accounts for about 55% of the West African GDP (Obadan 2016) and with the exception of 2016 which Nigeria witness recession, the country has been reporting positive growths on annual and quarterly basis in nominal and real terms. While there are evidences that economic growth has brought about development in other parts of the globe, the evidences for Nigeria are mixed. Nigeria's economic growth is driven by the oil and non-oil resources exploited from the land with unpleasant human develop records.

The UNDP data shows that the probability of not living past the age of 40 is 39%, adult literacy for ages 15 and above is 30.9%, 52% of the population have no access to clean drinking water and the Human Poverty Index was estimated at 40.09 points (NBS, 2019). Nigeria's HDI dropped from 0.463 to 0.45 (UNDP, 2005). For the same period, average GDP growth rate is 5.7% from 2011 to 2015 (NBS, 2014). It shows that, while the nation recorded growth in the economy, it did not lead to improvement in human development or Quality of Life (QL). While the

official statistics show that the Nigerian economy is growing, the quality of life of the average Nigerians is still low as captured by the Human Development Index. High GDP growth alone does not translate to inclusive growth if it does not bring about improved welfare.

It is against this background, that this study attempts to assess State Economic Growth and Quality of Life in Nigeria and specifically in Anambra and Bauchi, from 2013-2019. Real or perceived, the situation calls for investigation of how the increasing resource accruals affect the States' populations. What accrues to state is expected to trickle to its component units. Such is thus expected to have direct effects on the population of the State.

2..0 Empirical Literature Review and Theoretical Framework

With the application of Error Correction Model, Abraham and Ahmed, (2011) examined the relationship between economic growth and Human development in Nigeria with the data spanning between 1975 and 2008. The result of the ECM analysis indicated that economic growth has a negative but insignificant short run relationship with human development index. However, the coefficient for the long run relationship was however significant.

Indonesia began applying the Human Development Index (HDI) calculation with the new method in 2014. HDI used in Indonesia is the same as the calculation method used by United Nations Development Programme (UNDP).

Ntogwa (2012) explored the relationship mechanisms between the economic growth and human development using cross country survey research design. The research covers 40 countries, 10 countries from each of human development ranks. Multivariate multiple regression model was used to analyse data. The research found that there is a strong relationship between economic growth and human development. But the relationship is not perfect it starts after a country attained a certain level of human development.

Isola and Alani, (2012) examined the contribution of different measures of human capital development to economic growth in Nigeria. It used data from Nigeria and adopted the growth account model which specifies the growth of GDP as a function of labour and capital. The model also included a measure of policy reforms. Based on the estimated regression and a descriptive statistical analysis of trends of government commitment to human capital development, it was found that though little commitment had been accorded health compare to education, empirical analysis showed that both education and health components of human capital development are crucial to economic growth in Nigeria.

Abdalla and Arabi, (2013), empirically investigated the impact of human capital on economic growth in Sudan for the period 1982-2009. The study applied simultaneous equation model that links human capital of school attainment; and investment in education and health to economic growth, total productivity, foreign direct investment, and human development index. Based on three-stage least squares technique, the empirical results of the study showed that quality of the education has a determinant role in the economic growth; health quality factor has a positive impact on economic growth as expected and total factor productivity which mainly represents the

state of technology has adverse effect on economic growth and human development due to the obsolete and old fashion technology.

Ajide (2014) applied a Multivariate Regression approach to estimate augmented growth models between 1980 and 2010 in Nigeria. The results of the study revealed that labour, life expectancy, degree of openness and economic freedom are factors affecting the level of economic growth in both but at different levels of significance. Fang and Chao (2015) made use relevant data of 1997-2012 for linear regression to verify the degree of contribution which human capital promotes to the development of the third industry in Shandong province. The result revealed that the stock and level of human capital have a positive contribution to the development of the tertiary industry.

Onifade, (2015) examined the long run relationship between human development and economic growth in Nigeria between 1970 and 2011 through the application of Johansen Cointegration technique and Vector Error Correction Methodology. The result of the cointegration analysis suggests a long run relationship between these variables and economic growth. The findings also show that the greatest proportion of the variations in the real GDP can be attributed to the shocks in educational component among other identified human development components in the study. Though there are mixed evidences on the impact of income inequality on economic growth, our findings suggest that increasing income inequality and high mortality rate have a significant negative effect on the real GDP in the case of Nigerian economy.

Grubaugh, (2015) applied dynamic panel estimate of economic growth using standard measurement of GDP per capita and are compared to estimates of a model of growth in the Human Development Index (HDI) developed by the United Nations. The only independent variables that are found to be significantly related to growth in HDI are population, population growth, and the initial level of GDP

Wang and Liu (2016) constructed a panel data model to investigate the effect of education human capital on economic growth, using the latest education data of 55 countries and regions from 1960 to 2009. Education as human capital was subdivided into higher education, secondary education and primary education, it also examines the effect of different education level on economic growth. Health human capital was introduced into the model to explored the influence of different economic development level and some important historical events. The result shows that in general, education human capital has a significant positive impact on economic growth. The positive impact of higher education on economic growth is especially significant, however, the primary education and secondary education does not have a significant impact on economic growth; as for human capital, life expectancy and per capita GDP growth also showed a significant positive correlation.

Ramos and Mourelle, (2018) considered education as a channel for human capital improvement and then for economic growth. The study made use of nonlinear framework by applying smooth transition specifications. The empirical analysis for Spain points to the existence of nonlinearities in the relationship between education and economic growth at country level, for both secondary and tertiary education. For the regional analysis for a number of representative Spanish regions. The results show that both secondary and tertiary education matter for economic growth and that nonlinearities in this relationship should be taken into account.

Elistia, Barlia Annis and Syahzuni (2018) examined the effect of HDI on economic growth in 10 (ten) ASEAN member countries between 2010-2016. Using linear regression analysis. The result of the study indicated that each country has a strong and significant correlation between HDI and GDP and Economic growth makes it possible to reach a high level of human development, on the one hand, increasing levels of human development leading to increase opportunities for economic growth on the other hand.

Appiah, Amoasi and Frowne, (2019) empirically examined the impact of Human Development on Economic Growth and Development in African countries, between 1990 and 2015. The results of the study suggested the existence of a positive and significant impact of human development on economic growth and development in Africa. The found that Labour and foreign aid also have a positive and significant relationship with growth as recorded by most researchers.

Bhowmik (2019), relates education expenditure, health expenditure and GDP per capita of SAARC bloc with its human development index during 1990-2016 using Panel data analysis. This result of the study showed that that HDI of SAARC have been increasing with upward structural breaks. Similarly, HDI is negatively related with education and health expenditures and positively related with GDP per capita during the period of the study. Furthermore, there were at least one cointegrating equation and there were significant long run causalities from education expenditure, health expenditure and GDP per capita to the human development index of SAARC but they had no short run causalities.

Bundala, (2019) examined the nature of impact- reversible reactions, the catalytic (activators) of forward and backward impact reactions of economic growth and human development variables. The data set used in the analysis was constructed by merging countries' human development indices; gross national income (GNI) per capita of the 20 selected countries from 2011 to 2016. The polynomial regression was used to analyse the data for examination of the nature of the impact- reversibility behaviour of the economic growth and human development variables. The study indicated that the ICT development, government expenditures, net export, life expectancy, personal income and education are activators of the forward and backward impacts-reactions.

Genus, (2020) investigated the effect of the socioeconomic development on life expectancy at birth as an indicator of mortality or longevity in five EU accession candidate countries (Macedonia, Serbia, Bosnia and Herzegovina, Montenegro, and Albania). With the application of aggregate time series pool data on an annual level from 1990–2017 and Full Information Maximum Likelihood model, it was found that there is relationship between the socioeconomic conditions and life expectancy at birth a prerequisite for longer life in all these five countries. The main results are that higher values of GDP per capita and lower values of infant mortality levels lead to higher life expectancy at birth suggesting that longevity of people in these five countries is increasing.

Using panel data of 49 African countries from 2000-2018, Tsegaw,(2020) evaluated the association between good governance indicators and the Human Development Index in Africa. The study applied descriptive statistics and panel regression analysis and the result revealed a very high correlation between governance indicators and the human development index. Similarly, Munyemana,(2013) empirically assessed the relationship between economic growth and HDI in Rwanda between 200-2012 using Ordinary Linear Regression (OLS). The result of

the analysis showed that there is moderate relationship between economic growth and HDI and high growth rate contributed to improvement in HDI while Inequality persistence helped the highest income holder group to gain much more to the economic growth than the lowest income holders.

Thach, (2020), Tested the endogenous growth of the Vietnamese economy by applying Bayesian nonlinear regression, the research results revealed the elasticity of factor substitution (ES) lower than one. Investments in physical and human capital and technological progress are the determinants of endogenous growth.

Omodero and Nwangwa, (2020), study investigated the extent of co-integration between education and economic growth in Nigeria and the causality effect of education on economic growth between 2000 to 2018 with the application of secondary data set. Using Johansen co-integration and Granger causality tests for analysis, the result showed that education and economic growth in Nigeria have a long-term co-integration while Granger causality test reveals that education and gross enrolment ratio of higher education are not affecting economic progress and the GDP is not influencing both of them too.

Omar, (2020) examined the inter-relationship between economic development and human development indicators for Jordan, Egypt, Kingdom of Saudi Arabia and Bahrain with the application of two stage least Square Test. The results of the test showed that there is a causality relation between the economic development and human development. Suggesting that economic development has clear effect on human development indicators in the selected Arab countries.

Akara, Saritasb and Kizilkayac (2021) analyzed the effect of human development on economic growth using the panel data from 25 transition economy countries for the period 2002- 2018. two different models were established on which the economic growth series depended. In the first model, only human development series is the independent variable. In the empirical findings obtained, it was found that economic growth increased as human development increased. In the second model, the unemployment series with human development are independent variables. In the second model findings, it is understood that economic growth increases as human development increases, similar to the first model. In addition, an inverse relationship between unemployment and economic growth were identified in the model.

The current understanding of economic growth is largely based on the neo-classical growth model developed by Robert Solow (1956). In the Solow model, capital accumulation is a major factor contributing to economic growth. Productivity growth – measured as an increase in output per worker– results from increases in the amount of capital per worker, or capital accumulation (Fagerberg, 1994). Capital deepening will continue until the economy reaches its steady state – a point at which net investments grow at the same rate as the labour force and the capital-labour ratio remains constant. The further the economy is below its steady state, the faster it should grow (Jones, 1998). In the steady state, all per capita income growth is due to exogenous technological change. The rate of technological process is assumed to be constant and not impacted by economic incentives. Several authors have found that capital and labour actually explain only a fraction of output growth and that allowing for the quality of the labour force (human capital) only partially reduces the unexplained growth or Solow residual.

3.0 Methodology

3.1 Sources of Data

The time series cross sectional panel data required for this study were sourced from National Bureau of Statistics (NBS), Anambra State Bureau of Statistics (ASBS) and Bauchi State Bureau of Statistics (BSBS) while Education and Health data from Anambra State Accountant General Office of (ASAGO) Bauchi State Bureau of Statistics (ASBS) and Bauchi State Accountant General Office of (BSAGO).

3.2 Model Specification

The independent variable is economic development measured by the level of quality of life, which include the Life Expectancy Index, based on life expectancy at birth. The index is 1 when it is 85 years and 0 when it is 20 years, Education Index, based on mean years of schooling and Income Index, based on Gross National Income (GNI) per capita by Purchasing Power Parity (PPP), which considers exchange rates and inflation adjustments when determining individual wealth. The index is 1 when GNI per capita is US\$75,000 or above, and 0 when it is US\$100.

The dependent variable of community welfare is measured from the Human Development Index through a three basic dimension approach, namely the dimensions of health, education, and decent life. This study uses correlation analysis, granger causality test and regression analysis with panel data.

This study adapted modified version of the Math model, in order to take care of those variables not captured in the previous study. The modified version of the model is specified as follows:

3.3 Anambra States' econometric model;

$$AEG_t = f(APCI, APEXH+APEXE) \dots\dots\dots(3.1)$$

$$AEG_t = \beta_0 + \beta_1 APCI_{t-1} + \beta_2 APEXH_{t-1} + \beta_3 APEXE_{t-1} + \beta_4 APOP_{t-1} \dots\dots\dots(3.2)$$

$$\Delta E G_t = \alpha_0 + \gamma(Q L_{t-1} - n_2 G D P_{t-1}) + n_1 \Delta G D P_t + U_t \dots\dots\dots(3.3)$$

Where:

AGDP = Anambra Gross Domestic Product (Proxy for Economic Development)

APCI = Anambra Per Capita Income

APEXH = Anambra Public expenditure on Health

APEXE = Anambra Public expenditure on Education

$\Delta G D P_t$ & $\Delta Q L_t$ = First difference of Quality of Life and Gross Domestic Product

$$A G D P_t = \beta_0 + \beta_1 \sum_{i=0}^p A E G_t - 1 + \epsilon_t$$

B_0 = Intercept

$\beta_1, \beta_2, \beta_3, \beta_4$ Slope Parameters of the model μ = Error Term

t = Time

3.4 Bauchi States' econometric model;

$$BGDP_t = f(BPCI, BPEXH+BPEXE+BPOP) \dots\dots\dots(3.4)$$

$$BGDP_t = \beta_0 + \beta_1 BPCI_{t-1} + \beta_2 BPEXH_{t-1} + \beta_3 BPEXE_{t-1} + \beta_4 BPOP_{t-1} \dots\dots\dots(3.5)$$

$$\Delta GDP_t = \alpha_0 + \gamma(QL_{t-1} - n_2 GDP_{t-1}) + n_1 \Delta GDP_t + U_t \dots\dots\dots(3.6)$$

Where:

BGDP = Bauchi Gross Domestic Product (Proxy for Economic Development)

BPCI = Bauchi Per Capital Income

BPEXH = Bauchi Public expenditure on Health

BPEXE = Bauchi Public expenditure on Education

ΔGDP_t & ΔQL_t = First difference of Quality of life and Gross Domestic Product

$$BGDP_t = \beta_0 + \beta_1 \sum_{i=0}^p AEG_t - 1 + \varepsilon_t$$

B_0 = Intercept

$\beta_1, \beta_2, \beta_3, \beta_4$ Slope Parameters of the model μ = Error Term

t = Time

3.5 A Priori Expectations

Our a priori expectations are that:

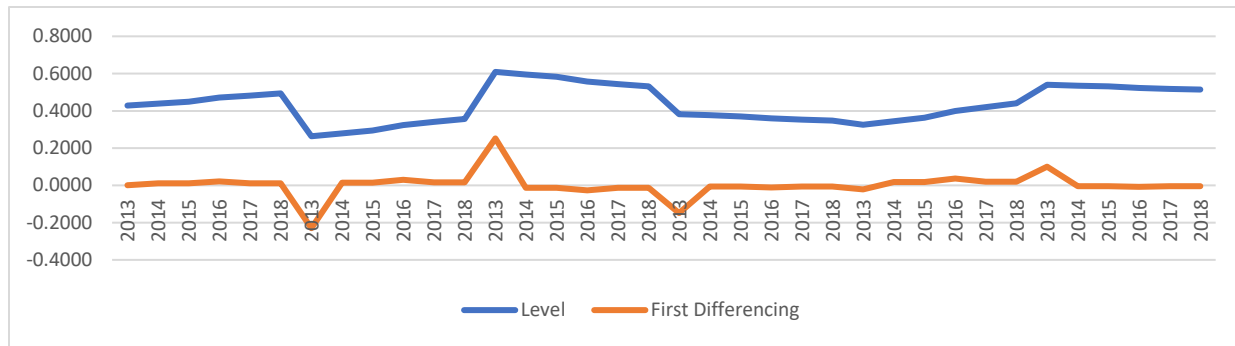
- (i) If quality of life (QL) in Nigeria increases, real gross domestic product (RGDP) in the country is expected to rise. Thus, $\beta_1 > 0$
- (ii) As expenditure on health (EXH) rises, real gross domestic product (RGDP) in the country is expected to rise. Therefore, $\beta_2 > 0$
- (iii) As the expenditure on education (EXE) increases, real gross domestic product (RGDP) in the country is expected to increase. Hence, $\beta_3 > 0$.

4.0 Data Presentation

4.1: Trend Analysis

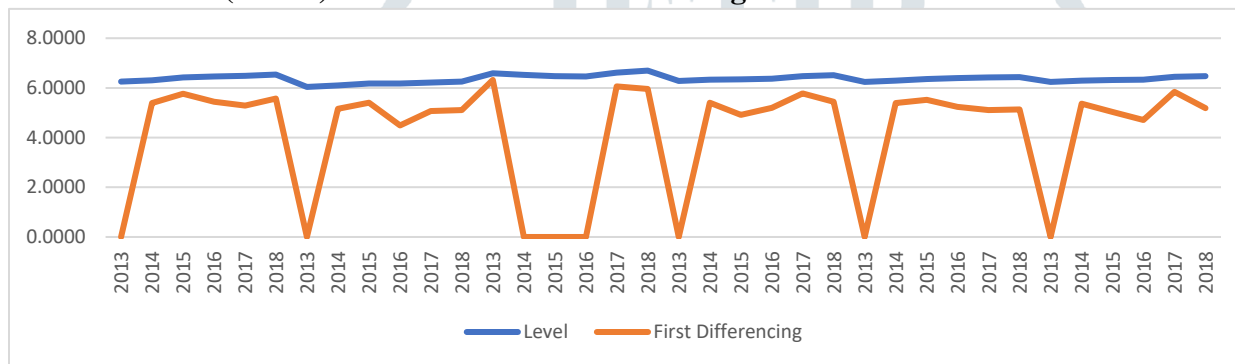
The trends in the variables are captured in separate figures below. This is to give an insight regarding the existence of any unique characterization of the variables over the study period.

Figure 4.1: A Line chart showing distribution of Trends of two (2) selected States' Human Development Index (HDI) at levels and First Differencing



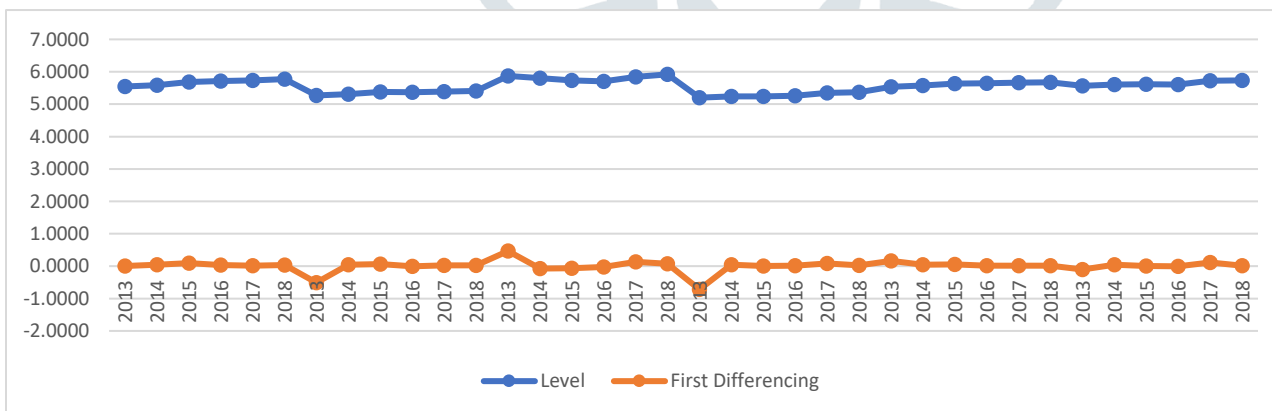
Source: Researcher's own computation,2022

Figure 4.2: A Line chart showing distribution of Trends of two (2) selected States' Gross Domestic Product (SGDP) at level and First Differencing



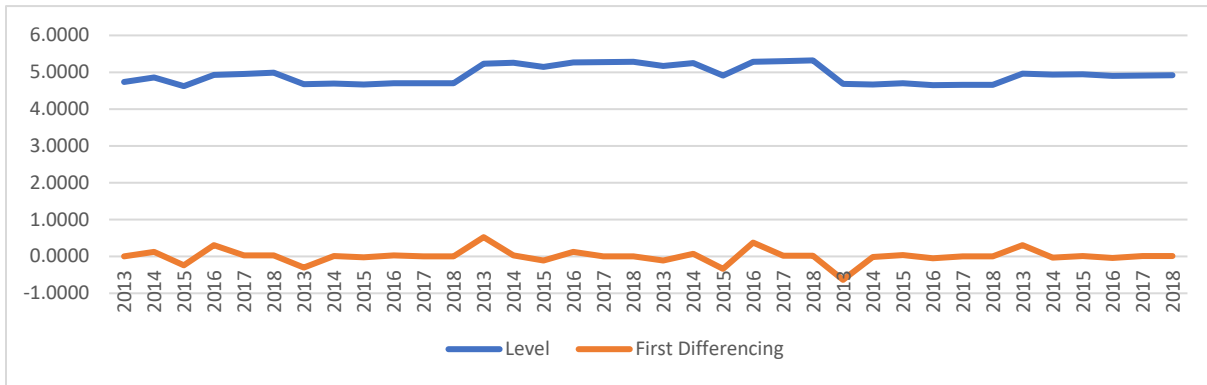
Source: Researcher's own computation,2022

Figure 4.3: A Line chart showing distribution of Trends of two (2) selected States' Per Gross Domestic Product (SPGDP) at level and First Differencing



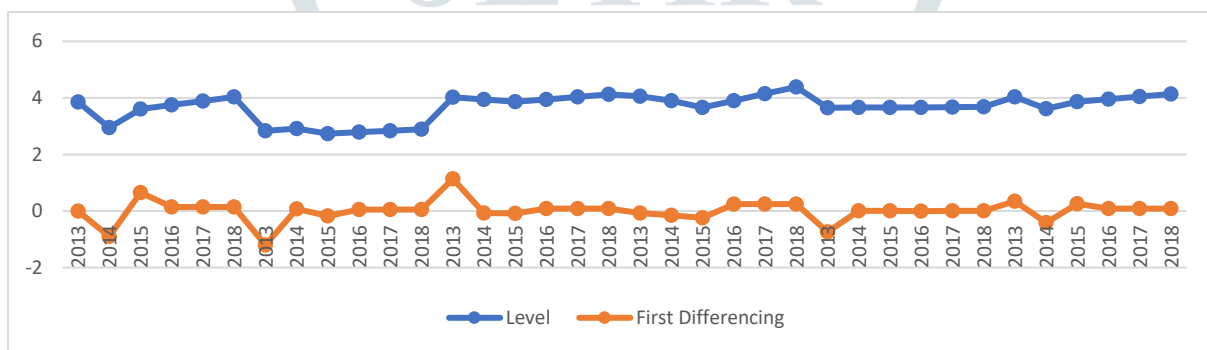
Source: Researcher's own computation,2022

Figure 4.4: A Line chart showing distribution of Trends of two (2) selected States' Expenditure on Health at level and First Differencing



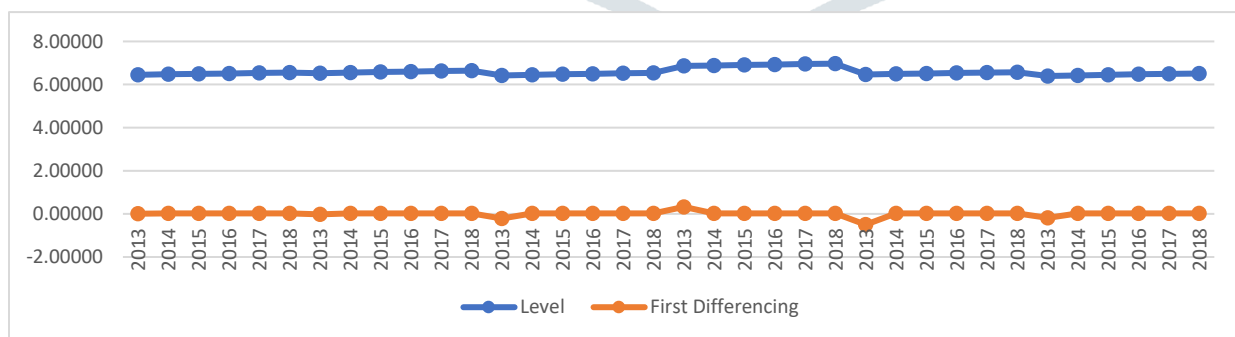
Source: Researcher's own computation,2022

Figure 4.5: A Line chart showing distribution of Trends of two (2) selected States' Expenditure on Education at level and First Differencing



Source: Researcher's own computation,2022

Figure 4.6: A Line chart showing distribution of Trends of two (2) selected States' Labour Force at level and First Differencing



Source: Researcher's own computation,2022

4.2 Augmented Dickey-Fuller (ADF) Unit Root Test

Since the seminar work of Granger and Newbold (1974) on possible spurious regression among non-stationary variables, testing for the unit root test has been greatly developed in the time series approach data series. The unit root testing result shown on the table 4.2 below.

Table 4.1: Augmented Dickey-Fuller (ADF) Unit Root Test

Series	Levin, Lin Chu	Im Pesaran & Shin W- stst	ADF Fisher Chi-square	PP Fisher Chi- square	Prob Value	Order of cointegration
QL	-5.00171	-1.26859	15.4727	21.3521	0.0000	1(1)
GDP	-3.45218	-0.52888	11.4125	11.2985	0.0003	1(1)
PGDP	-3.35120	0.82831	7.35985	16.4896	0.0004	1(1)
EXH	-9.34869	-0.29586	12.5060	13.7408	0.0000	1(1)
EXE	-33.5786	-10.1665	42.3641	42.5504	0.0000	1(1)

Source: Researcher's own computation, 2022

The results of unit root test shown on table 4.2 above revealed that all the absolute values of ADF test statistics is greater than their critical values at 5% as well as probability values of probability benchmark are stationary at 5% and implying that RGDP, PGDP, EXH, and EXE are stationary at 5%. It is integrated of order level 0 and 1 that is, I(0) and I(1). The results also showed that all the variables are stationary at 5% since their absolute value of ADF statistics are respectively greater than their critical values at 5% as well as probability benchmark values less than probability values calculated.

4.3: Granger Causality Test

Pairwise Granger Causality test is conducted to examine the causality between gross domestic product and the included variables in Nigeria. The results are shown in table 4.2 below.

Table 4.2: Pairwise Granger Causality Tests

Pairwise Granger Causality Tests

Date: 05/30/21 Time: 20:12

Sample: 2007 2018

Lags: 2

Null Hypothesis:	F-		
	Obs	Statistic	Prob.
QL does not Granger Cause LGDP	60	0.79844	0.4552
LGDP does not Granger Cause QL		6.47300	0.0030
EXE does not Granger Cause LGDP	60	0.78870	0.4595
LGDP does not Granger Cause EXE		3.58590	0.0344
EXH does not Granger Cause LGDP	60	2.93215	0.0617

LGDP does not Granger Cause EXH		0.01003	0.9900
EXE does not Granger Cause QL	60	0.50949	0.6036
QL does not Granger Cause EXE		3.00954	0.0575
EXH does not Granger Cause QL	60	1.80691	0.1738
QL does not Granger Cause EXH		0.00924	0.9908
EXH does not Granger Cause EXE	60	2.45451	0.0953
EXE does not Granger Cause EXH		3.04929	0.0555

Source: *output, E-views version 9.0, 2022*

The results of granger causality test presented on table 4.2 reveals that the direction of relationship flows from QL to GDP, and then from GDP to QL (since the F-statistics values of GDP greater than F-statistics values of QL). This implies that the relationship between QL and GDP is uni-directional and that changes in gross domestic product precede changes in Quality of life in the period under review. This suggests that, to a large extent GDP tend to exhibit strong influence on quality of life. 2007-2019.

However, results of granger causality test presented on table 4.2 reveals that the direction of relationship flows from EXE to GDP, and then from GDP to EXE (since the F-statistics values of EXH greater than F-statistics values of GDP). This implies that the relationship between EXH and GDP is uni-directional and that changes in gross domestic product precede changes in expenditure on education in the period under review. This suggests that, to a large extent EXH tend to exhibit strong influence on expenditure on GDP. 2007-2019.

Similarly, the results on table 4.2.4 results of granger causality test presented on table 4.2 reveals that the direction of relationship flows from EXH to GDP, and then from GDP to EXH (since the F-statistics values of GDP greater than F-statistics values of EXE). This implies that the relationship between EXE and GDP is uni-directional and that changes in gross domestic product precede changes in expenditure on education in the period under review. This suggests that, to a large extent GDP tend to exhibit strong influence expenditure on education. 2007-2019.

Moreover, results of granger causality test presented on table 4.2 reveals that the direction of relationship flows from EXE to QL, and then from QL to EXE (since the F-statistics values of EXE greater than F-statistics values of QL). This implies that the relationship between EXH and QL is uni-directional and that changes in expenditure on health precede changes in quality of life in the period under review. This suggests that, to a large extent EXE tend to exhibit strong influence quality of life. 2007-2019

Nevertheless, results of granger causality test presented on table 4.2 reveals that the direction of relationship flows from EXH to QL, and then from QL to EXH (since the F-statistics values of EXH greater than F-statistics values of QL). This implies that the relationship between QL and EXH is uni-directional and that changes in expenditure on health precede changes in quality of life in the period under review. This suggests that, to a large extent EXH tend to exhibit strong influence quality of life. 2007-2019

Lastly, Nevertheless, results of granger causality test presented on table 4.2 reveals that the direction of relationship flows from EXE to EXE, and then from EXE to EXH (since the F-statistics values of EXH greater than F-statistics values of EXE). This implies that the relationship between EXH and EXE is uni-directional and that changes in expenditure on health precede changes expenditure on education in the period under review. This suggests that, to a large extent EXH tend to exhibit strong influence expenditure on education. 2007-2019

Table 4.3: South East/Anambra State: Impact of Anambra State Gross Domestic Product on Quality of Life on the citizenry

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-1.065459	1.036555	-10278847	0.0000
D(DQL)	-0.172480	1.266176	-25.055608	0.0000
D(DEXE)	0.108994	3.500875	31.133298	0.0000
D(DEXH)	0.191616	1.379860	13.886613	0.0000
C	0.067980	4.225219	1.614509	0.0000

Source: E-views output, version 9.0, 2022.

$$\text{Model 1: } \text{GDP} = -0.067 + 0.172\text{QL} + 0.109\text{EXE} + 0.192\text{EXH} + \text{U}_t$$

$$(1.615) \quad (-25.056) \quad (31.133) \quad (13.886)$$

Where;

QL = Anambra State Quality of Life (QL)

GDP = Anambra State Gross Domestic Product (GDP)

EXH = Anambra State Expenditure on Health (EXH)

EXE = Anambra State Expenditure on Education (EXE)

4.4 Discussion of Results

The result on table 4.3 above revealed the following:

The error correction mechanism coefficient as shown by cointeQ01 for Anambra is negative (-1.655). This means the last period deviation from a long-term run equilibrium (Error) influences its short run dynamics. In other words, estimates the speed at a dependent variable return equilibrium alter a change in independent variables (QL, EXH and EXE).

The equation shows that $\alpha = -0.067$ which is the intercept. This is the base level of prediction for the dependent variable when all the independent variables are equal to zero. The coefficients of the independent variables measure how a percentage change in independent variables affect the dependent variable.

(i) 1% increase in Quality of Life (QL) leads to about 0.172% increase in gross domestic product (GDP). It was found that coefficient of Quality of Life (QL) is positive, indicating positive relationship between QL and

GDP in the State during the periods 2007-2019, and this is in line with a priori expectation that output impacted on the living standard of the citizenry of the State. This result is statistically significant at 5% as the p-value of 0.0000. The standard error measures the statistical reliability of the coefficient estimates- the larger the error, the more statistical noise in the estimates. The standard error is 1.266176% which is small or significant and thus shows that QL is statistically reliable to predict GDP proxies for economic growth in the State.

(ii.) 1% increase in expenditure on education (EXE) leads to about 0.109% increase in in gross domestic product (GDP). It was found that coefficient of expenditure on education (EXE) is positive, indicating positive relationship between EXE and GDP in the State during the periods 2007-2019, and this is in with a priori expectation that expenditure on health impacted on the living standard of the citizenry of the State. This result is statistically significant at 5% as the p-value of 0.0000. The standard error measures the statistical reliability of the coefficient estimates- the larger the error, the more statistical noise in the estimates. The standard error is 3.500675% which is small or insignificant and thus shows that EXE is statistically reliable to predict increase GDP proxies for economic growth in the State.

(iii.) 1% increase in expenditure on Health (EXH) leads to about 0.192% increase in gross domestic product (GDP). It was found that coefficient of expenditure on education (EXE) is positive, indicating positive relationship between EXH and GDP in the State during the periods 2007-2019, and this is in with a priori expectation that expenditure on education impacted on the living standard of the citizenry of the State. This result is statistically significant at 5% as the p-value of 0.0000. The standard error measures the statistical reliability of the coefficient estimates- the larger the error, the more statistical noise in the estimates. The standard error is 1.379860% which is small or significant and thus shows that EXH is statistically reliable to predict increase GDP proxies for economic growth in the State.

4.6 Discussion of Results

The result on table 4.4 below revealed the following:

Table 4.4: North East/Bauchi State: Impact of Bauchi State Gross Domestic Product on Quality of Life on the citizenry

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	0.187136	0.053093	3.524644	0.0388
D(DQL)	0.421823	1.251700	5.130479	0.0143
D(DEXE)	0.514634	0.013678	37.62629	0.0000
D(DEXH)	0.782700	0.800515	5.974529	0.0094
C	-0.019093	0.000191	-100.0797	0.0000

Source: E-views output, version 9.0, 2022.

$$\text{Model 2: } \text{GDP} = -0.019 + 0.422\text{QL} + 0.515\text{EXE} - 0.0782\text{EXH} + \text{U}_t$$

$$(-100.08) \quad (5.131) \quad (37.626) \quad (5.975)$$

Where;

QL = Bauchi State Quality of Life (QL)

GDP = Bauchi State Gross Domestic Product (GDP)

EXH = Bauchi State Expenditure on Health (EXH)

EXE = Bauchi State Expenditure on Education (EXE)

4.7 Summary of major Findings

The result of the study above revealed the following:

The error correction mechanism coefficient as shown by cointeQ01 for Bauchi is positive (0.187). This means the last period deviation from a long-term run equilibrium (Error) influences its short run dynamics. In other words, estimates the speed at a dependent variable return equilibrium alter a change in independent variables (QL, EXH and EXE).

The equation shows that $\alpha = -0.019$ which is the intercept. This is the base level of prediction for the dependent variable when all the independent variables are equal to zero. The coefficients of the independent variables measure how a percentage change in independent variables affect the dependent variable.

- (i) 1% increase in Quality of Life (QL) leads to about 0.422% increase in gross domestic product (GDP). It was found that coefficient of Quality of Life (QL) is positive, indicating positive relationship between QL and GDP in the State during the periods 2007-2019, and this is in line with a priori expectation that output impacted on the living standard of the citizenry of the State. This result is statistically significant at 5% as the p-value of 0.0143. The standard error measures the statistical reliability of the coefficient estimates- the larger the error, the more statistical noise in the estimates. The standard error is 1.251700% which is small or significant and thus shows that QL is statistically reliable to predict GDP proxies for economic growth in the State.
- (ii) 1% increase in expenditure on education (EXE) leads to about 0.515% increase in in gross domestic product (GDP). It was found that coefficient of expenditure on education (EXE) is positive, indicating positive relationship between EXE and GDP in the State during the periods 2007-2019, and this is in with a priori expectation that expenditure on health impacted on the living standard of the citizenry of the State. This result is statistically significant at 5% as the p-value of 0.0000. The standard error measures the statistical reliability of the coefficient estimates- the larger the error, the more statistical noise in the estimates. The standard error is 0.013678% which is small or insignificant and thus shows that EXE is statistically reliable to predict increase GDP proxies for economic growth in the State.
- (iii) 1% increase in expenditure on Health (EXH) leads to about 0.783% increase in gross domestic product (GDP). It was found that coefficient of expenditure on education (EXE) is positive, indicating positive relationship between EXH and GDP in the State during the periods 2007-2019, and this is in with a priori expectation that expenditure on education impacted on the living standard of the citizenry of the State. This

result is statistically significant at 5% as the p-value of 0.0094. The standard error measures the statistical reliability of the coefficient estimates- the larger the error, the more statistical noise in the estimates. The standard error is 0.800515% which is small or significant and thus shows that EXH is statistically reliable to predict increase GDP proxies for economic growth in the State.

5.0 Conclusion

This research work was conducted to find out the impact of quality of life on economic growth in two (2) selected states in Nigeria. This study was necessitated by the fact that the economy is often said to be growing in terms of Gross Domestic Product (GDP) and yearly budgetary provisions running into trillions of Naira but poverty keep on increasing on the populace. However, such growth is insufficient in the real sense of it, as many Nigerians are still living below the poverty line, with high level unemployment rate, lower per capita income and low human development index. Therefore, this study employed the unit root test, cointegration test, Error Correction Model, granger causality test, Mean Group Pooled/ARDL model and other diagnostic tests to investigate whether or not gross domestic product has impacted on quality of life on the citizenry of the two (2) selected states in Nigeria. This study made use of three explanatory variables which included (quality of life, expenditure on health and education) while gross domestic product (GDP) serve as a proxy for economic growth. This study revealed a stable long run and short run relationship between the regressors of Gross Domestic Product and quality of life, expenditure on health and education.

5.1 Policy Recommendations

Therefore, policy makers should take advantage of the individually and collective influence of gross domestic product on quality of life as a proxy's for economic development and further explore more avenues such as National Economic Council (NEC), National Economic Sustainable Committee (NESC), Federal Ministry of Finance and National Planning, Central Bank of Nigeria among others to come out with policies that will serve as a growth enablers with a view to growth real sector of the economy that have direct impact on the populace. Also, they should engage relevant stakeholders, formulate social inclusive policies as well as using participatory approach in delivering dividends of democracy to the people capable of lifting people out of poverty line of one dollar per day since about 40.0 percent of the populace live below the poverty line as reported by National Bureau of statistics (NBS, 2021).

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