

POVERTY AMIDST PLENTY OF RESOURCES: DOES INSTITUTIONAL FRAMEWORK REINFORCE THE RESOURCE CURSE SYNDROME IN NIGERIA?

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Abstract: Despite the large inflow of government revenue through crude oil sales, poverty still soars, and Nigeria inability to sincerely distribute these economic benefits to trickledown to the generality of the populace has been cited as the basis for its recent awful distinction of being world poverty capital. This study examines the impact of oil revenue on poverty situation in Nigeria and specifically investigates how institutional dynamics affects the impact of oil revenue on poverty in Nigeria in an attempt to provide current empirical evidence for the country resource-curse syndrome. Under the framework of VECM and over the period of 1995-2021, findings showed that in the short-run, oil revenue negatively impact on poverty in the current period; however, in the long-run, the contribution of oil revenue to poverty becomes positive. The result further showed that weak institutions and high level of corruption strengthens the resource-curse syndrome in Nigeria. On grounds of these findings, the study recommends, among others; that policymakers of the government should put in place quality institutions that will promote good governance and ensure that the proceeds from oil are properly utilized by building critical infrastructures like roads, refineries, etc necessary to meaningfully create decent jobs which will in turn, end poverty and inequality in the long-run.

Keywords: Poverty, oil revenue, institutional dynamics, resource-curse, VECM, Nigeria.

1. INTRODUCTION

Staggering extreme poverty in the midst of abundant resources is currently a serious threat to the Nigerian economy. The World Bank (2020) defined extreme poverty as a situation where an individual live with less than the international poverty line of \$1.90 per day. It is also defined as the state in which a subject lacks the means to meet his/her basic needs. Its indicators are identified as insufficient necessities and facilities such as food, housing, safe drinking water, medical care, basic education, sanitation facilities, among others (NBS, 2019). From a more general sense, poverty connotes; lack of material well-being, lack of freedom of choice and action, inadequate physical security, low self-esteem, psychological distress and inability to believe in oneself. In this regard, poverty is a multifaceted concept inclusive of social, economic and political elements.

Nigeria ranks the 15th crude oil producing nation in the world with an output of 1,316,192 million barrels per day (bpd) (Statista, 2022). The Organization of Petroleum Exporting Countries (OPEC) report of May 2023 also, revealed that Nigeria regained its position as Africa's largest crude oil producer in May 2023 with an output of 1.184 million barrels per day (bpd). Following the post COVID-19 rise in oil price, Nigeria recorded a 3.6% growth rate in its gross domestic product (GDP) in the fourth quarter of 2022 (Microtrends, 2022). Expectations are that revenues generated from oil by the country over the years should create jobs on a regular basis as well as infrastructural development which will in turn lead to a rise in income, hence; improvement in the living standard of the citizenry. However, it is sad to note that, after decades of crude oil sales, poverty still ravaged the greater majority of the citizenry and the country wallowed in the abyss of economic uncertainties. As disclosed by the National Bureau of Statistics (NBS) report of November 2022 on its national multidimensional poverty index survey, 63% of persons within Nigeria, about 133 million are living in multidimensional poverty. The indication is that over half of the country's populations are poor. The report also revealed that multidimensional poverty is prevalent in the rural areas (72%) than urban areas (32%). Furthermore, the report disclosed that 86 million (65%) of all the poor people in Nigeria resides in the North, while the remaining 47 million (35%) are in the South.

Apparently, this shows that, even with its oil wealth, Nigeria still has one of the highest rates of poverty in the world. The GDP per capita based on purchasing power parity (PPP) which reveals the income status of Nigerian economy was \$5,429.1 in 2015. It declined to \$5,209.1, \$5,120.0, \$5,089.8, \$5,076.4 and \$4,865.1 in 2016, 2017, 2018 and 2020 respectively (The Global Economy, 2022), but this slightly rose to \$4,922.6 and \$4,963.2 in 2021 and 2022, placing Nigeria at 33rd position out of 154 countries and among the poorest countries in the world. Today, Nigeria is regarded as the world's extreme poverty capital. This is indeed a paradox as after 63 years of independence and with her natural and human resource endowments; many Nigerians are still wallowing in abject poverty and unemployment, thus portraying the country as a nation where there is poverty in the midst of growth and in the midst of abundant resources.

This embarrassing level of poverty in Nigeria has attracted the attention of successive Nigerian governments resulting in motley of poverty alleviation measures/programmes. For instance, the military rule, which hitherto has been blamed for misappropriation of revenue generated from crude oil sales, has been displaced by democracy since 1999 but the issue of poverty still persists. Again, the fiscal and monetary policies tailored towards reducing Nigerian's frightening poverty rates have not yielded much. Nevertheless, given that poverty manifests itself in the form of unemployment and underemployment, there was the creation of National Social Investment Programme (NSIP) by the immediate past president of Nigeria in 2015. The programme commenced in 2016 with four clumps to address poverty and promote economic development which are: N-Power programme which provided youths with job training, education and a monthly stipend of thirty thousand naira; the Home Grown School Feeding (HGSF) programme aimed at increasing school enrollment by providing meals to students, especially those in poor and food-insecure regions; the Government Enterprise and Empowerment Programme (GEPP) aimed at providing loans to targeted entrepreneurs, particularly, young men and women which would help to reduce the starting costs of businesses in Nigeria; and finally, the Conditional Cash Transfer (CCT) programme aimed at supporting impoverished individuals directly by providing no-strings-attached cash and as well helping students to purchase their basic needs while obtaining essential education for the purpose of their integration into the labour market.

Despite all these efforts, the incidence and scourge of poverty in Nigeria have worsened over the years and in fact keeps on rising virtually on a daily basis. Ojeme (2017) was of the opinion that among the factors responsible for this high level of poverty in the land despite the favourable economic fortune bestowed on the nation by God includes: poor quality leadership, mismanagement of the nation's resources, lack of appropriate policy direction and vision, corruption, political allegiance and incontinuity of programmes. Recently, there are increasing concerns that the character and strength of an economy's institutional environment could have serious implication for its macroeconomic outcomes. Strong institutions reduce corrupt tendencies and administrative rigidities which hinder household welfare.

While the literature is replete with studies into the impact of oil revenue on economic growth, vis-à-vis the resource curse hypothesis (Nweze & Edame, 2016; Aregbeyen & Kolawole, 2016; Nwoba & Abah, 2017; Olayungbo & Adediran, 2017; Asangunla & Agdede, 2018; Al-Rasasi et al., 2019; Jabir et al., 2020; Efang et al., 2020; Ilori & Akinwunmi, 2020; Akinyele et al., 2021; Ebimobowei, 2022), there are, however, limited researches on the extent to which oil revenue impacts on poverty in Nigeria despite interest in the overwhelming rate of poverty over the years. More so, the resource-curse literature has failed to incorporate institutional dynamics into the explanation of this prevalence. This study fills the observed gap in the literature by focusing on oil revenue and poverty and at the same time, examine if institutional framework amplifies the oil effect on poverty in Nigeria. It is hoped, therefore, that the outcome of this study will assist policymakers to fine-tune their policies on poverty alleviation to address institutional challenges in Nigeria.

The remainder of this study is organized as follows: Section 2 contains stylized information on oil revenue and poverty in Nigeria, while the empirical review is articulated in Section 3. The methodology for the study is explained in Section 4, the results and discussion of findings are presented in Section 5, while Section 6 concludes the study.

2. STYLIZED FACTS ON OIL REVENUE AND POVERTY IN NIGERIA

Prior to the commercial exploration of crude oil in the late seventies in Nigeria, the country earned her foreign exchange majorly from exportation of agricultural products such as rubber, cotton, cocoa, groundnut, palm oil etc. Gaiya, Ikenna-Ononugbo and Ajala (2016) affirms that before this period, agriculture contributed about 70% of the country's GDP, employed about 70% of the populace and accounted for about 90% of its foreign exchange earnings and government revenue. Meanwhile, with geometric progression in oil revenue coupled with various oil windfalls in 1970's, the government began to concentrate on this sector to generate more funds hence, neglecting the other vital sectors of the economy such as the agricultural and manufacturing sectors. This situation has made the country to depend so much on oil as a major source of revenue ever since its discovery in commercial quantity in 1956 at Oloibiri in Bayelsa State.

Nevertheless, Nigeria's dependence on oil has made her vulnerable to world oil price fluctuations. Despite the fluctuations in oil revenue over the years due to volatility in oil price, the oil sector still remained the main contributor to Nigeria total revenue. As noted by Daferighe, Emah and Offiong (2017), the sector contributes over 80% as annual source of government revenue, with daily production of 1.36 million barrels per day (bpd). In terms of the percentage contribution of oil to total revenue, evidence in Figure 1 shows that it rose from an average of 69.01% to 70.76% in 1981-1984 and 1985-1988 respectively. It further rose to 78.46% in 1989-1992 and a steady fall was witnessed from 1993-1996 and 1997- 2000, where the percentage contribution of oil to Nigeria's total revenue was 78.01% and 75.32% respectively. In the opinion of Nwokoye, Igbunugo, Mukaosolu and Dimnwobi (2019), the reason for this decline in oil contribution to total revenue was as a result of the global financial crisis which occurred within the period in question leading to a fall in international price of oil. A sharp increase was again witnessed from 2001-2004 and 2005-2008, when it rose to 78.43% and 83.87%. However, as the economy plunged into recession between the first quarter of 2016 at 0.67% negative growth till the first quarter of 2017 at 0.91% negative growth due to the fall in oil prices in the international market in mid 2014, it dropped from an average of 73.74% in 2009-2012 to 60.15% in 2013-2016. This phenomenon lingered till 2020 when it declined to 54.52%, and this was the COVID-19 period when global oil price suffered a huge decline. On the other hand, except in 2016 the non-oil source of revenue has been relatively low till date.

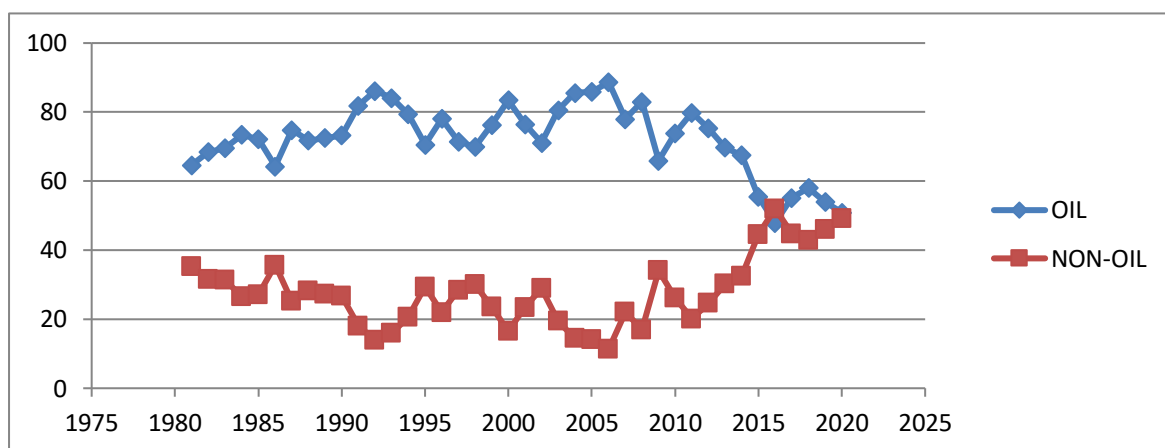


Figure 1: Trend of Oil and Non-Oil Revenue as percentage of Total Revenue.

Source: Author's computation using data from the CBN Statistical Bulletin, 2021.

In another vein, the contribution of the oil sector to the country's GDP remains the highest, even though it has been fluctuating over the sample period. However, even with her wealth in economic potentials, Nigeria is still rated as one of the poorest countries of the world placed at 152 positions out of 188 countries on HDI ranking. Figure 2 depicts the trend relationship between the contribution of oil revenue to Nigeria's GDP and the rate of relative poverty. A closer look shows that over the years, oil revenue as percentage of GDP has been displaying rising trend, though with some periods of falling trend, while Nigeria's poverty rate has continuously observed a

rising trend. Worthy of note is the fluctuating nature of the trend of oil revenue which indicates the volatile nature of oil price in the global market. The implication of this is that its contribution to GDP is not sustainable as it depends on exogenous price shocks. The figure shows that between 2012-2016, there was a drastic fall in the contribution of oil revenue to the nation's GDP to 2.80% as a result of the global fall in oil price. However, within these periods, the poverty rate in Nigeria assumed a rising trend. The poverty rate for 2012 was 55.01%. In 2013, 2014, 2015 and 2016, poverty rate rose to 55.21%, 55.90%, 57.0% and 57.2% respectively. In 2017 and 2018, there was a recovery in oil revenue as its contribution to the GDP improved from 6.06% to 8.84% in the respective years while poverty continued in its increasing trend from 61.2% to 63.50% within the same period. Again in 2019 and 2020, share of oil revenue to GDP slightly declined to 7.40% and 6.28% respectively according to World Bank, World Development Indicator (WB, WDI) annual report 2021. The decline was as a result of the COVID-19 outbreak in China which affected the global economy, thus pushing oil prices lower than Nigeria's budgetary benchmark of \$57 per barrel. This consequently left so many unemployed and living in abject poverty as about 69.01% of the population lived below the poverty line. It is obvious that Nigerian economy has grown Post-COVID, with the contribution of oil revenue to the nation's GDP rising to 7.49% in the third quarter of 2021, still, the poverty level is high as about 133 million Nigerians representing over 71% of the population are extremely poor. This recently, earned Nigeria the awful distinction of being the world capital of poverty (NBS, 2023).

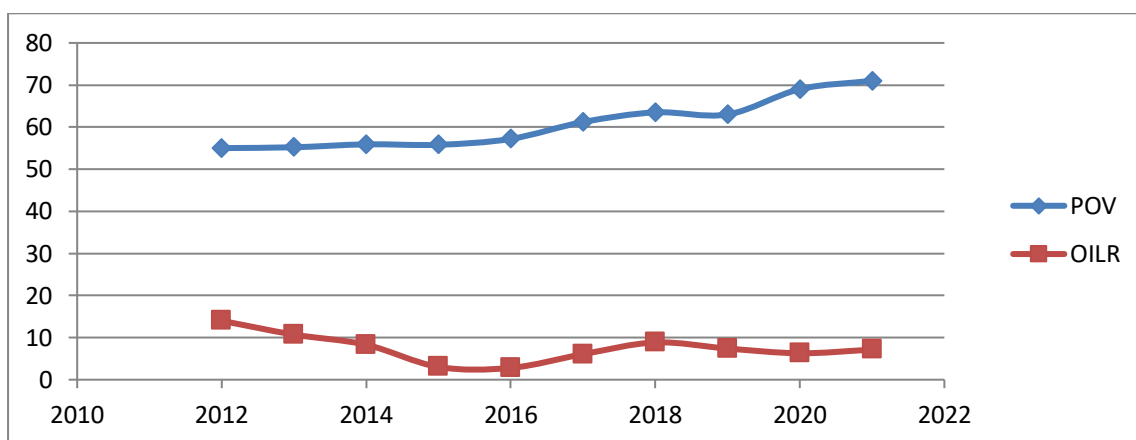


Figure 2: Trend of Oil Revenue as a percentage of GDP and Poverty in Nigeria (%)

Source: Author's computation using data from World Bank's (WB), World Development Indicators (WDI) database, 2021

Furthermore, the poverty analysis of Nigeria based on regions as reported by Olu, Afeikhena, Olanrewaju, Kristi and Olufunke (2015) clearly shows that the northern regions are the hardest hit with high poverty level when compared with the southern regions. As can be gleaned from Figure 3, the North-East recorded the highest poverty incidence in 2004, 2008 and 2021 in contrast to all the regions of Nigeria. The North-West followed suit by topping the poverty level in 2012 and 2016. South-East recorded the least poverty incidence in the year 2004. However, from 2008 up to 2021, South-West took over the leading role in least poverty incidence (see Table 1). This high incidence of poverty in the country presents a dangerous scenario which is expected to erode human dignity and cause tension within the family, social unrest, low self-esteem, loss of motivation, social exclusion, mental health issues, violence and crimes such as arm robbery, kidnapping for ransom, and other forms of fraudulent activities.

Table 1: Incidence of Poverty by Region in Nigeria (%), 2004-2021

Regions	2004	2008	2012	2016	2021
North-Central	67.0	35.1	59.5	67.5	42.7
North-East	72.2	43.8	69.0	76.3	71.86
North-West	71.2	38.0	70.0	77.7	64.84
South-East	26.7	42.8	58.7	67.0	42.44

South-South	35.1	40.6	55.9	63.8	21.28
South-West	43.0	29.4	49.8	59.1	12.12

Source: Adapted from Olu et al., 2015; Bello and Abdul-Hakim, 2010 and NBS (Various Years)

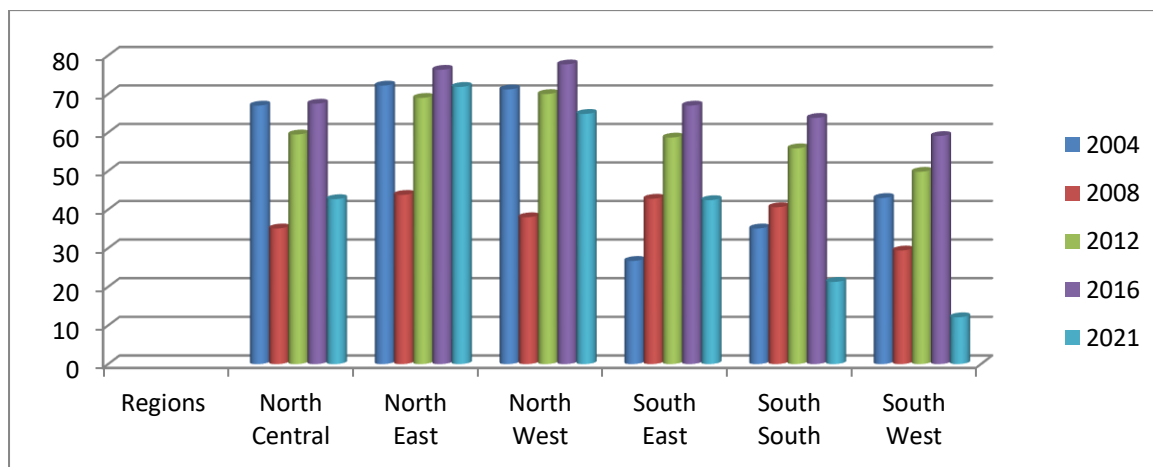


Figure 3: Incidence of Poverty by Region in Nigeria (%), 2004-2021

Institutional environment is a major propelling force that drives macroeconomic outcomes. The institutional environment of a country depends on the efficiency and the behaviour of both private and public stakeholders. The legal and administrative framework within which individuals, firms and governments interact determines the quality of the public institutions of a country (World Economic Forum, 2019). It determines the nature and magnitude of economic outcomes and plays a key role in the ways in which societies distribute the benefits and bear the costs of development strategies and policies. Citing the pioneer of the institutional economics, North (1990) contended that a country’s institutional frameworks create incentives that encourage growth and development because these incentives directly impact economic and political activities. That is to say, the quality of institution is essential in providing an enabling environment for economic prosperity to the poorer proportion of populations in Nigeria.

As noted by Nwokoye et al (2019), the logistic performance index (LPI), custom efficiency index, quality of infrastructure index, quality of institution index and competitive index are the veritable tools for an economy’s institutional framework assessment. They are of the view that the logistic performance index is a trade performance assessment framework which measures the efficiency and effectiveness of trade logistics in a country; the custom efficiency measures efficiency in custom clearance service; quality of infrastructure measures the extent to which quality of infrastructure support production and trade; quality of institution index captures the extent to which strength of legal and administrative framework of an economy influences the efficiency and behaviour of both public and private institutions; while the global competitive index (GCI) captures the fundamentals of an economy and is a collection of indicators which measure how well an economy can sustain basic economic activities of production and consumption.

Table 2 display information on five measures of institutional framework of selected countries in sub-Saharan Africa (SSA). It is clearly seen that Nigeria ranks very low in these indicators of institutional framework. Out of 167 countries assessed in 2022, Nigeria ranked 99th, 154th, 138th, 132nd and 142nd in LPI, custom efficiency, quality of infrastructure, quality of institution and GCI respectively while South Africa which is Nigeria’s closest rivalry in terms of GDP size emerged continental tops in all indicators of institutional framework (see Table 2). This is a clear indication that Nigeria’s economic environment is characterized by weak institutional framework which is thus, the gateway for the looting of oil revenue.

Table 2: Logistic Performance Index, Custom, Infrastructure and Economic Complexity Ranking for Selected sub-Saharan Africa (SSA) Countries (2022)

Countries	South Africa	Mauritius	Botswana	Namibia	Nigeria
Logistic Performance Index (LPI)	3.41 (33 rd)	2.78 (84 th)	3.04 (57 th)	2.76 (83 rd)	2.65 (99 th)
Custom Efficiency	3.17 (34 th)	2.71 (69 th)	3.05 (37 th)	2.65 (68 th)	1.97 (154 th)
Quality of Infrastructure	59.6 (68 th)	64.6 (53 rd)	52.5 (95 th)	50.9 (100 th)	36.9 (138 th)
Quality of Institution Index	57.6 (49 th)	63.8 (36 th)	61.5 (41 st)	58.3 (46 th)	36.5 (132 nd)
Global Competitive Index	58.7 (75 th)	65.6 (47 th)	57.8 (83 rd)	56.4 (90 th)	44.0 (142 nd)

Source: World Economic Forum (2022-2023) Edition. Note: The figures outside bracket and those in bracket () are the scores with their respective ranks.

3. EMPIRICAL REVIEW

Several studies have been carried out at both country-specific and cross-country to investigate the effect of oil revenue on key macroeconomic variables, especially its impact on GDP and poverty on one hand, as well as the role of institutions in the natural resource-economic growth on the other hand. In an evaluation of the role of institutions in the natural resource-economic growth in Nigeria, Akinwale (2012) revealed that corruption, weak institution and the Dutch disease reinforce the resource curse in Nigeria, while there is no strong link between crude oil price volatility and the resource curse in the economy. The study opined that efforts geared towards eliminating this curse from the economy would remain futile as long as corruption and weak institutions remain dominant in the country. Also, Ologunla, Kareem and Raheem (2014) shared similar view with Akinwale as they affirm that the relationship between institutions and the resource curse in Nigeria is negative. Contrarily, a study by Abubakar (2020) used the OLS technique to show that economic growth responds to institutional quality. Similar view was shared by Abere and Akinbonola (2020) which employed the structural vector autoregressive (SVAR) approach to prove that institutional quality improves the macroeconomic environment.

Other studies on the degree of impact and direction of the association between oil revenue and economic growth on different countries have established mixed evidences. For instance, Nweze and Edame (2016) used both the Johansen Cointegration Technique and Error Correction Mechanism (ECM) to empirically analyze the growth of Nigeria's economy and oil income between 1981-2014. Finding reveals that oil revenue impacted negatively on economic growth in the short-run in Nigeria but advanced economic growth in the long-run. They argued that the government is faced with the challenge of imprudent spending as well as embezzlement. Hence, the study advocated increased investment of oil revenue in other domestic industries with particular reference to the agricultural and manufacturing sectors so as to diversify the economy's sources of income and broaden its base of tax revenue. Also, Aregbeyen and Kolawole (2016) using Ordinary Least Square and Vector Error Correction Mechanism shared similar view with Nweze and Edame as they proved that oil revenue remains the principal source for growth and the major channel which government spending is financed.

Time series data on oil proceed from 1960-2010 was used by Nwoba and Abah (2017) to investigate the influence of crude oil revenue on economic growth in Nigeria. Utilizing the ordinary least square technique, they discovered that a positive long-run relationship existed between proceeds from oil and gross domestic product in Nigeria. They suggested that oil revenue policies be expanded in other to consolidate budget discipline, accountability and transparency so as to improve the living standards of its populace. However, Olayungbo and Adediran (2017) employed an ARDL technique over the period of 1984-2014 to prove that oil revenue improves growth in the short-run, but retards it in the long-run. They equally claimed that institutional quality enhances growth in the short-run, while it depresses the latter in the long-run. They therefore, concluded that institutional quality is key in elucidating the oil revenue-economic growth nexus in the country.

Another study by Asangunla and Agbede (2018) utilized the OLS technique to examine how oil revenue affects Nigeria's economic growth. They discovered that oil receipts do not have immediate effect on Nigeria's economy. Nevertheless, the policy's long-term impact gave it an authentic level because it was found that Nigeria's economy will eventually develop as oil revenues continue to rise. A study for Saudi Arabia by Al-Rasasi, Qualls and

Algamdi (2019) used the ECM to reveal that a highly significant short and long-run relationship existed between oil revenue and economic growth. Furthermore, the granger causality tests indicated that causality was running from real oil revenues growth to real private-sector GDP growth. In a cross-country study comprising 83 oil producing countries, Jabir, Karimu, Fiador and Abor (2020) employed a panel VAR framework to assess the contribution of oil revenue to economic growth in 83 oil producing countries. The scholars discovered that government investment of oil revenues exerted a positive impact on economic growth through banking sector development. However, while no effect was found on market development, a negative impact of the private investment of oil revenues on banking sector development was established.

Another study for Nigeria by Efanga, Ugwuanyi and Okanya (2020) utilized an ARDL technique over the period of 1981-2018 to ascertain the impact of oil revenue on economic growth of Nigeria. Their results disclosed that oil revenue positively and significantly affects the economic growth of Nigeria for the period under study. This result finds support in Akinyele, Olowookere and Fajuyagbe (2021) which used co-integration and error correction analysis to show that oil revenues directly relate with the real gross domestic product in Nigeria. Furthermore, the works of Ilori and Akinwunmi (2020), and Ebimobowei (2022) contradicts the opinion of Efanga et al as they disclosed that oil and non-oil revenues negatively affect real gross domestic product in Nigeria.

On the area of poverty, Adelowokan and Osoba (2015) used OLS to examine the precise relationship among oil revenue, government expenditure and poverty rate in Nigeria over a period of 1970-2013. Finding reveals that gross domestic product and oil revenue exerted a negative effect on poverty rate in Nigeria. They expressed disappointment as the situation contradicts what would have been expected for an economy endowed with rich resources. However, the study attributed the situation to misappropriation of spending by the government with respect to their capital and recurrent spending. By investigating the oil wealth dependence in Nigeria as it relates to poverty reduction, Nweke and Ubona (2017) finds that Nigeria has made substantive amount of money from oil while the rate of poverty despite this huge sum of money was informed by the inability of the leaders to use the revenue generated in the oil sector to develop the other sectors of the economy. They identified lack of access to socio-economic and infrastructural facilities, weak institutional arrangements, poor governance, neglect of other sectors and sub-sectors of the economy and lack of transparency as reasons why the people have continued to remain in abject poverty in the midst of abundant oil wealth.

Lawal, Hawau and Aliyu (2022) using a historical approach, shared the same view with Adelowokan and Osoba. Although the study focused on the effect of poverty on socio-economic development in Nigeria, it noted that the solution to poverty in Nigeria lies on the ability of the government to select areas of priorities in tackling the issue of poverty rather than trying to proffer a holistic solution that yields no result. This was based on the reality of impossible holistic solution to poverty in the country. Also, in a subsequent study, Chijoke and Olisah (2023) used descriptive approach to examine the effect of oil revenue on poverty reduction in Nigeria with particular reference to the South-South region. From their analysis, they reported that an independent relationship existed between oil revenue and the rate of poverty in the region. Furthermore, they noted that despite huge sum of money generated from oil which is naturally domiciled in the South-South region, high rate of poverty still persists in the region.

Contrarily, Imeokparia, Peter, Bello, Osabohien, Aderemi, Gershon, Aaron and Abidemi (2023), using data over a period of 1991-2020 and under the framework of the panel ARDL, showed that oil revenue impacts positively on poverty reduction in oil-exporting African countries although this was not statistically significant in the long-run. The scholars suggested that efficient utilization of revenue generated from oil exports for human development-oriented programmes should be the watch word of the policymakers in African oil exporting countries so as to moderate poverty rate in these countries.

It is evident that the literature review above focused on the institution quality-economic growth relationship on one hand and oil revenue-economic growth/poverty reduction relationship on the other hand. To this end, this study focus on filling this knowledge gap as literature survey show a dearth of studies on how institutional dynamics affects the impact of oil revenue on poverty reduction in Nigeria.

4. METHODOLOGY

4.1. Variables for the Study

This study utilized annual data over the period of 1995 to 2021. The selection of the time was based on the accessibility of appropriate data. The data were extracted from the Central Bank of Nigeria (CBN) Statistical Bulletin and World Bank's (WB), World Development Indicators (WDI) database. The data on poverty (POV) was gotten from the WB, WDI database. Here poverty depicts the condition in which income is meagre to meet the basic human needs such as food, housing, clothing, health care and at least access to basic education. It is measured as percentage of the population living below \$1.90 a day, based on 2011 Purchasing Power Parity. Oil revenue (OILREV) data was sourced from the Central Bank of Nigeria Statistical Bulletin and is measured in ₦Billion. The data on Institutional quality (INSQ) index based on voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption were drawn from the World Bank Global Governance Indicators (WGI) database. The institutional quality index measures the strength of public institutions and is a composite indicator computed from the aforementioned dimensions of governance.

Meanwhile, available literatures have shown that institutional quality consists of a broad range of factors, some of which are hard to measure (Bruinshoofd, 2016). Nevertheless, the World Bank constructed institutional quality index from six World Bank Governance Indicators and this have been used by various scholars such as Kuncic (2013), and Fabro and Aixala (2014). This study also utilized the World Bank's institutional quality index as noted earlier and the measure ranges from -2.5 (weak) to 2.5 (strong). The data on Corruption perception index (CPI) was derived from the Transparency International database. An interaction variable (OIL*INSQ) and (OIL*CPI) between institutional quality, corruption index and oil revenue was constructed to account for how institutional dynamics affects the impact of oil revenue on poverty in Nigeria and this construction was based on inspiration drawn from Nwokoye et al. (2019). Based on the foregoing, institution-adjusted oil revenue and corruption-index-adjusted oil revenue were derived as follows:

Institution-adjusted oil revenue (INSAOILREV) = Oil revenue × IQI

Corruption-index-adjusted oil revenue (CORAOLREV) = Oil revenue × CPI

4.2. Model Specification

This study builds on Nwokoye et al. (2019) model with some modifications and specifies poverty as a function of oil revenue, institution-adjusted oil revenue and corruption-index-adjusted oil revenue. Consequently, the following model is specified to examine how institutional dynamics affects the impact of oil revenue on poverty in Nigeria. The model is specified in the linear regression form as:

$$POV_t = \alpha_0 + \alpha_1 OILREV_t + \alpha_2 INSAOILREV_t + \alpha_3 CORAOLREV_t + \varepsilon_t \quad 1$$

Where:

POV_t = Poverty rate at time t, $OILREV_t$ = Oil revenue at time t, $INSAOILREV_t$ = Institution-adjusted oil revenue at time t, $CORAOLREV_t$ = Corruption-index-adjusted oil revenue at time t, α_0 = Intercept or constant coefficient, $\alpha_1, \alpha_2, \alpha_3$ = The parameters to be estimated, ε_t = Error term or stochastic variable accounting for other variables affecting the dependent variable (PCI).

The theoretical expectations of the above equations are as follows: $\alpha_1 < 0, \alpha_2, \alpha_3 > 0$

The Augmented Dickey-Fuller (ADF) and Philips-Perron (PP) unit root tests were employed to check the time series properties of the data for stationarity before estimating the growth equation. The existence of a co-integrating relationship among the variables was investigated using the associated co-integration model proposed by Johansen (1991) for co-integration after ascertaining the unit root. Also, the specification was subjected to

diagnostic and stability tests to ascertain the goodness of fit and model adequacy. Thereafter, an estimation technique based on a restricted vector autoregressive framework developed by Sims (1980) was employed for the estimation of the growth equations. Econometric theory asserts that positive and long-run relationship is needed for a meaningful representation. This simple framework provides a systematic way to capture rich dynamics in multiple time series and allows simultaneous estimation of linear equations. While Palm (1983); Akano and Adebisi (2012); Mordi, Bandele, Amoo, Emeka, Odey and Matthew (2014) show that any linear structural model can be expressed as a VAR model, Akano and Adebisi (2012) emphasized that a VAR model serves as a flexible approximation to the reduced form of any wide variety of simultaneous structural models. The VECM adopted in this study is specified as follows:

$$\Delta POV_t = \alpha_0 + \sum_{i=1}^n \alpha_{1i} \Delta POV_{t-i} + \sum_{i=1}^n \alpha_{2i} \Delta OILREV_{t-i} + \sum_{i=1}^n \alpha_{3i} \Delta INSAOILREV_{t-i} + \sum_{i=1}^n \alpha_{4i} \Delta CORAOILREV_{t-i} + \lambda_1 ECT_{t-1} + \varepsilon_{1t} \tag{2}$$

$$\Delta OILREV_t = \beta_0 + \sum_{i=1}^n \beta_{1i} \Delta POV_{t-i} + \sum_{i=1}^n \beta_{2i} \Delta OILREV_{t-i} + \sum_{i=1}^n \beta_{3i} \Delta INSAOILREV_{t-i} + \sum_{i=1}^n \beta_{4i} \Delta CORAOILREV_{t-i} + \lambda_2 ECT_{t-1} + \varepsilon_{2t} \tag{3}$$

$$\Delta INSAOILREV_t = \phi_0 + \sum_{i=1}^n \phi_{1i} \Delta POV_{t-i} + \sum_{i=1}^n \phi_{2i} \Delta OILREV_{t-i} + \sum_{i=1}^n \phi_{3i} \Delta INSAOILREV_{t-i} + \sum_{i=1}^n \phi_{4i} \Delta CORAOILREV_{t-i} + \lambda_3 ECT_{t-1} + \varepsilon_{3t} \tag{4}$$

$$\Delta CORAOILREV_t = \pi_0 + \sum_{i=1}^n \pi_{1i} \Delta POV_{t-i} + \sum_{i=1}^n \pi_{2i} \Delta OILREV_{t-i} + \sum_{i=1}^n \pi_{3i} \Delta INSAOILREV_{t-i} + \sum_{i=1}^n \pi_{4i} \Delta CORAOILREV_{t-i} + \lambda_4 ECT_{t-1} + \varepsilon_{4t} \tag{5}$$

Where: Δ = First difference operator, n = lag lengths for each of the variables, t = time, $t-1$ =lag one (previous year), $\alpha_1 \dots \alpha_4; \beta_1 \dots \beta_4; \phi_1 \dots \phi_4$ and $\pi_1 \dots \pi_4$ = short-run dynamic coefficients of the model's adjustment to equilibrium, $\lambda_1 \dots \lambda_4$ = coefficient of error correction model which is expected to be negative and significant to verify the existence of co-integration among the variables and ECT_{t-1} is the error correction term which indicates the speed of adjustment of the short-run shocks towards the long-run equilibrium in the case of any disturbance. Other variables are as defined earlier.

5. PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

The result of the study are displayed and discussed in this section starting first with the results of stationarity tests.

5.1. Augmented Dickey-Fuller (ADF) and Philip-Perron (PP) Unit Root Tests Results

Confirming the order of integration is a pre-requisite for almost all time series analysis. The rationale behind this is to avoid regressing non-stationary variables which results to spurious regression results. In this study, testing for the stationarity of the variables, the techniques of Augmented Dickey-Fuller (ADF) and Philips-Perron (PP) unit root tests were employed to determine the order of integration of the variables. The null hypothesis of no stationarity against the alternative was tested at 5% critical value. The null hypothesis is accepted if the t-statistic is

less than the critical value at the 5% level, otherwise it is rejected. Table 3 displays the summary of results of the unit root tests at levels and at first difference respectively.

Table 3. ADF and PP unit root test results

Variable	Augmented Dickey-Fuller (ADF)				Philip-Perron (PP)			
	At level	1 st Difference	5% critical value	1(d)	At level	1 st Difference	5% critical value	1(d)
POV	-0.9592	-4.8863**	-2.9862	1(1)	-0.9738	-4.8946**	-2.9862	1(1)
OILREV	-1.8937	-5.1092**	-2.9862	1(1)	-1.8239	-5.5314**	-2.9862	1(1)
INSAOILREV	-1.8777	-6.0924**	-2.9862	1(1)	-1.8033	-6.1682**	-2.9862	1(1)
CORAOILREV	-2.6508	-8.1244**	-2.9862	1(1)	-2.5845	-9.4025**	-2.9862	1(1)

Source: Researcher’s Compilation (2023) using E-Views 9; **Note:** ** denotes statistical significance at 5% level of significance.

The ADF and PP unit root test results as presented in Table 3 clearly reveals that the variables (POV, OILREV, INSAOILREV, CORAOILREV) were integrated at the first difference 1(1) because the ADF and PP statistics (in absolute terms) were lesser than the Mackinnon critical values at 5% level of significance, hence, leading to the first differencing of the series after which they all achieved stationarity. Therefore, the unit root test results of 1(1) exhibited by the variables justify the usage of the VECM technique to estimate the parameters of the model. However, in order to proceed there is need to determine the optimal lag length before carrying out a co-integration test to check if there exists any relationship among the variables in the long-run.

5.2. Determination of Optimal Lag Length

Table 4. Lag Length Selection

Lag Length	LogL	LR	FPE	AIC	SC	HQ
0	-912.0100	NA	7.86e+26	73.28080	73.47582	73.33489
1	-851.2164	97.26970*	2.23e+25*	69.69732*	70.67242*	69.96777*
2	-842.3125	11.39699	4.41e+25	70.26500	72.02018	70.75182

Source: Researchers’ Compilation (2023) using E-Views 9; **Note:** * indicates lag selection by the criteria.

Table 4 revealed that the four different information criterion namely: Akaike information criterion (AIC), Hannan-Quinn information criterion (HQ), Final prediction error (FPE) and Sequential modified LR test statistic suggests 1 as the optimal lag length for the model. Therefore, the study goes with AIC, SC, HQ, FPE and LR selected optimal lag criteria.

5.3. Co-integration Test

The co-integration analysis was done through the Johansen co-integration test to test whether the variables are suggesting long-run relationship or not. Johansen’s approach uses two statistical tests for the number of co-integrating vectors: the trace test (λ trace) and the maximum eigenvalue (λ max) test. The model with lag 1 was chosen with linear deterministic trend assumption test. The results are presented in Table 5.

Table 5. Co-integration Test Result using Trace and Max-Eigen Statistics

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.672937	52.98088	47.85613	0.0153	27.94005	27.58434	0.0450
At most	0.458230	25.04083	29.79707	0.1600	15.32286	21.13162	0.266

1								9
At most	0.265973	9.717969	15.49471	0.3031	7.699592	14.26460	0.410	
2								1
At most	0.077562	2.018378	3.841466	0.1554	2.018378	3.841466	0.155	
3								4

Source: Researcher’s Compilation (2023) using E-Views 9; Note: * denotes rejection of the null hypothesis at the 0.05 level.

The results of the Johansen co-integration test in Table 5 showed that the trace and maximum eigen tests statistic indicates one co-integrating equation each since their values are statistically significant. This is evident from their p-values being less than 0.05. Based on this evidence, the null hypothesis of no co-integration between POV and the explanatory variables in the model is rejected. The study therefore concludes that there is a long-run relationship among the variables in the model. Owing to the fact that the existence of co-integration has been established, this study proceeds to estimate the Vector Error Correction Model (VECM). However, there is need to carry out some diagnostic test.

5.4. Results of Diagnostic Tests for VECM

Table 6. Diagnostic results for VECM

Test	Test Statistic	P-value	Null hypothesis	Decision
Jarque-Bera normality test	8.635522	0.0709	H_0 : The error terms are normally distributed.	Cannot reject H_0
Heteroskedasticity Test	167.5632	0.3251	H_0 : No heteroskedasticity	Cannot reject H_0
Serial Correlation LM test	24.27713	0.0836	H_0 : No serial correlation	Cannot reject H_0

Source: Summary of result compiled by researcher (2023) using E-Views 9.

The results of the diagnostic tests for this study were shown in Table 6. The normal distribution of the residuals was tested through the Jarque-Bera normality test. The null hypothesis that the error terms follow a normal distribution was sustained because the probability value of 0.0709 was greater than the proposed 0.05% level of significance. Hence, all the variables were normally distributed. The result of the heteroskedasticity test showed that there was no heteroskedasticity in the model. The result shows a probability value of 0.3251 which is greater than the chosen 0.05% significance level, indicating the acceptance of the null hypothesis. Hence, there is no presence of heteroskedasticity in the model. Again, it was observed that the probability value of 0.0836 against the serial correlation LM test was greater than the proposed 5% level of significance. As a result, the null hypothesis of no serial correlation was accepted. Thus, concluding that the model does not suffer from serial correlation.

5.5. Discussion of Regression Results

Table 7. Regression Results of the Vector Error Correction Model

Cointegrating Eq:	CointEq1
POV(-1)	1.000000
OILREV(-1)	0.068545** (0.03569) [1.92075]
INSAOILREV(-1)	0.028210** (0.03474) [0.81212]
CORAOILREV(-1)	0.001562*** (0.00042)

	[3.76183]			
C	-80.72210			
Error Correction	D(PCI)	D(OILREV)	D(INSAOILREV)	D(CORAOILREV)
CointEq1	-0.427066 (0.00218) [-2.28040]	-0.683981 (0.01456) [-1.64989]	-0.482098 (0.00465) [-1.08421]	36.18322 (11.7923) [3.06839]
D(P0V(-1))	-0.084345 (0.20487) [0.91443]	0.860320 (2.22447) [0.38675]	-0.069549 (2.38593) [-0.02915]	-106.2571 (63.2754) [-1.67928]
D(OILREV(-1))	-3.34E-05 (0.00163)* ** [-0.02049]	0.919885 (0.68382) [1.34522]	-1.544096 (0.00677) [-218473]	-8.985311 (0.87436) [-0.47938]
D(INSAOILREV(-1))	0.028348 (0.04736)** [0.59852]	0.873855 (0.51428) [1.69918]	1.376868 (0.05161) [2.49609]	0.656475 (0.06288) [0.04488]
D(CORAOILREV(-1))	8.18E-06 (0.08449)* [0.47788]	0.011518 (0.00859) [1.34134]	0.007760 (0.01023) [0.75834]	0.040234 (0.25668) [0.15675]
C	0.324603 (0.80966) [0.40091]	61.50905 (363.112) [0.16939]	-151.8012 (389.468) [-0.38977]	16021.82 (10328.8) [1.55118]
R-squared	0.424182	0.392725	0.336155	0.631827
Adj. R-squared	0.052371	0.002333	-0.090602	0.395144
F-statistic	5.184486	3.005977	2.787696	2.669508

Source: Summary of result compiled by researcher (2023) using E-Views 9. Note ***, ** and * denotes significance at the 1%, 5% and 10% levels, respectively. The figures outside bracket, those in bracket () and in [] are the parameters coefficient with their respective p-values and t-statistic.

As depicted in Table 7 for the VECM short and long-run results using poverty as the dependent variable, the coefficient of the error correction term (ecm) for the growth equation has the expected significant sign at 1%, which supports the result of the co-integrating relationship among the variables. The adjustment coefficient is (-0.427066) and its probability value is (0.00218). This means that divergence from short-run to long-run equilibrium in poverty is 43% within one year.

It was observed that increase in oil revenue is associated with fall in poverty rate in the short-run. Oil revenue exerted a negative and significant impact on poverty in Nigeria. The result suggests that a ₦1 increase in oil revenue will reduce poverty by 3.34%. However, in the long-run oil revenue becomes positively associated with poverty. Specifically, poverty rises by 0.07% as oil revenue increases by ₦1. This trend confirms the observation by Nwokoye et al. (2019) that as oil revenue increases, revenue expectation effect materializes immediately thereby raising household welfare but poverty gradually return to its previous level as expectation dies gradually from the long-run.

The findings equally revealed that as oil revenue interacts with quality of institution and corruption, its impacts on poverty both in the short and long-run reverts. Their coefficients indicate that weak institutions and corruption suppress the negative impact which oil revenue could have had on poverty in Nigeria. Their long-run coefficients are 0.0282 and 0.0016, indicating that a rise in institution-adjusted and corruption-index-adjusted oil revenues by ₦1 raises poverty by 0.03% and 0.002% respectively. There has been a belief that countries endowed with an abundance of natural resources are expected to experience growths in their real gross domestic product (GDP) and household welfare because of the huge revenues accruable from the sale of these resources. Nevertheless, when an economy is bedeviled with high corruption and weak institution, the capital surge effect of oil revenue dominates. This assertion supports the argument by Ross (1999) that the interaction between oil rent and institution is a dynamic process; oil rent first weakens the institutional framework, thus political holders as well as public servants who draw large oil largesse are likely to dismantle any institutional framework that can hinder their assessment drive. In turn, through the resulting weak institutions, revenue leakages are sustained overtime.

According to Abiodun (2022), Nigeria scored 24 out of 100 points while ranking 150 among 180 countries on the 2022 corruption perception index released by Transparency International. Also, the World Bank Global Competitive Index suggests that Nigeria's average quality of institution index is 3.09 on a seven-point scale. These indicators recommend that Nigeria has high corruption level with a weak institutional framework. Meanwhile, the result from this study goes a long way to prove that the interaction between weak institution, corruption and oil revenue hamper the theoretical effect of oil revenue on poverty, implying that institutional framework strengthen the resource-curse hypothesis in Nigeria. That is to say, the prevalence of poverty has its root cause in corruption and weak institutional environment. Corruption undermines development goals, promotes economic loss and inefficiency as well as poverty and inequality, among others. Nigeria's oil wealth is largely diverted from source due to absence of accountability which is strengthened by the presence of weak institutions. These lingering impacts of weak institutions have undermined household welfare and exacerbated poverty and vulnerability in the country.

6. CONCLUSION AND RECOMMEDATIONS

This study has examined the impact of oil revenue on poverty situation and specifically investigated how institutional dynamics affects the impact of oil revenue on poverty in Nigeria using data obtained from World Bank, World Development Indicator (WB, WDI) and Central Bank of Nigeria (CBN) statistical bulletin (2022) for the period of 1995 to 2021. Under the framework of VECM, a key revelation from this study is that forces of corruption and institutional weakness reinforce the resource-curse syndrome in Nigeria. Another major conclusion from this study is that the impact of oil revenue on Nigeria's poverty situation is contingent on the quality of institutional arrangements. This finding was in tandem with the claim that large flow of oil revenue into government coffers were siphoned by Nigerian leaders to safe havens in Western Europe, hence do not translate into acquisition of social and productive capital, technology and infrastructural facilities that could enhance jobs creation for the teeming population and in turn, reduce the rate of poverty in the country.

Based on the foregoing, the study recommends that policymakers should ensure that quality institutions are in place and promote measures of good governance. This will ensure that the proceeds from oil are properly utilized by building critical infrastructures like roads, refineries, iron and steel company necessary to meaningfully create decent jobs which will in turn, end poverty in the long-run. There is also need for government institutions like Economic and Financial Crimes Commission (EFCC), the Independent Corrupt Practices Commission (ICPC), among others established to fight corruption to declare a holistic war on corruption. In other words, they must declare corruption war at all levels of government including the executive, legislature, judiciary, ministries, departments, agencies (MDAs), boards and government institutions (education, health etc). There should be no sacred cows and sacred places because the plunders of the national wealth are everywhere. More so, the asset declaration forms of all public officers must be scrutinized and published in national dailies before and after leaving office for public inputs and comments. There is also need to ensure that those that abandon projects after collecting the money for these projects must be prosecuted, the money recovered and jailed for life. It is believed that if these wars on corruption are won, the war on poverty, unemployment, inequality, lack of basic amenities, insecurity such as kidnapping, terrorism, among others would have been won.

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