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From Oloibiri to Nowhere: The Missed Opportunity in Diversifying Nigeria's Economy

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Abstract

Oil discovery brought about unprecedented changes to the Nigerian economy, taking over from Agriculture as the economic livewire by accounting for more than 90% of the government's revenue and contributing significantly to the GDP. The Oil industry facilitated the development of various infrastructures, attracting foreign investment, stimulating economic activity, and providing employment opportunities for Nigerians. The impact of the oil discovery on the economy has, however, not necessarily translated to successful economic growth. Interest is drawn on the effect of oil on the GDP, thus this paper studies the GDP of Nigeria before the advent of oil, the current GDP, and the contribution of oil to the GDP as the mainstay of the economy. While oil discovery has had a huge impact on the economy and the GDP, the over-reliance on the oil and gas industry has hindered the diversification of the economy. The volatility of the oil and gas industry and the several challenges arising from the impact of the industry are threatening Nigeria's income source and the stability of the economy. The diversification of the economy or better still, the return to agriculturally based economy is advocated for, as this would help balance the economy, to experience sustained growth

1. Introduction

Before the discovery of oil in Oloibiri in 1956, Nigeria's economy was predominantly agrarian. Its economic structure was heavily dependent on agriculture, and the cultivation of crops such as cocoa, groundnut, and palm oil [1-2]. It constituted the primary source of income and export revenue. In the late 1960s, the agricultural sector contributed an average of 55.18% to the Nation's GDP and 55% of its foreign earnings[3].

The post-oil era altered Nigeria's economy. The oil sector took over as the mainstay of the economy. Oil production boomed in the 1970s and was driven by global oil prices. The shift from an agriculturally based economy to an economy heavily dependent on oil transformed the GDP structure. The oil boom led to an increase in national income, foreign exchange earnings,

and government revenue. It facilitated economic growth and infrastructural development. It was also challenged by economic volatility, over-reliance on oil revenues, governance, and resource management. In terms of exports, the United States was a big importer of Nigerian crude. Nigeria exported 9-11% of its oil to the United States. This share reduced significantly to an average of 4% in 2016, following several factors including technological advancement enabling the development of US unconventional resources and an increase in oil sand production from Canada which contributed 41% of total US imports [4]. This reduction in Nigeria's exporting power, in turn affected its GDP.

The Gross Domestic Product (GDP) is a key indicator of economic growth and plays a crucial role in shaping the overall development of national economies. Its fluctuations can significantly impact various aspects of a country's economy. The GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is evaluated without deducting for depreciation of fabricated assets or depletion and degradation of natural resources. [5]. The Gross Domestic Product (GDP) is one of the primary indicators used to evaluate the health of a country's economy and the rate at which the economy grows. It is also used to measure the standard of living of individuals in an economy. GDP could be defined as the monetary market value of all officially recognized final goods and services produced within a country in a given period. This implies that GDP takes into account the final market value of each good or service rather than adding up the quantities of the goods and services directly. GDP is important in an economy because it is used to gauge the economic health of a country, compare economic productivity, and inform policy decisions [6].

Udo highlighted Nigeria's economy, before and after the discovery of oil, dating from 1956 to 2014. [19] he also examined the impact of oil and gas revenue on the GDP of Nigeria from 1980 to 2023, with data collected from secondary sources like the CBN statistics. Ishioro (2022) examined how crude oil affects the economic growth of the Nigerian economy.

This paper assesses Nigeria's GDP before oil and its current GDP with oil as its mainstay with the sole objective of finding out if our oil journey to Oloibiri is beneficial to the economy.

1.1 The GDP before Oil

Agriculture was the mainstay of Nigeria's economy from the earliest time up to the 1950s. Nigeria had a good record of food availability and was able to export its agricultural products. Nigeria had groundnut pyramids in the North, Cocoa in the West, and palm oil existed in commercial quantities in the East. Nigeria was well recognized for its agrarian economy before the 1956 discovery of oil and through that economy, cash crops like groundnuts, cocoa, rubber, and lumber were exported, making Nigeria a big exporter of agricultural products. Over 95% of the nation's foreign exchange profits, 60% of its employment potential, and roughly 56% of Nigeria's GDP were generated by the agricultural sector at the time [1]. The period did not extend past the 1960s; the economy started to decline into a critical dependence on imports. The economy had previously experienced significant self-sustaining growth and expansion before crude oil became the primary focus.

After gaining independence in 1960, agriculture was still a dominant sector in Nigeria's economy, providing significant employment and meeting household needs. At that time, agriculture contributed 67.0% to the GDP, while petroleum accounted for 23.4%. By 1980, both sectors experienced a decline; agriculture's share was reduced to 15.55%, and petroleum's share increased to 28.0%. In 1990, agriculture's share was 30%, and petroleum's was 12.8%. By 2000, agriculture contributed 24.6% and petroleum 51% to the GDP. By 2006, the shares had shifted to 50.78% for agriculture and 66.21% for petroleum [1].

1.2 The Discovery of Oil

Nigeria's oil industry was established at the beginning of the 20th century. It started playing a prominent role in the economy at the end of the Nigerian civil war (18). Oloibiri, in the Eastern Niger Delta, is where commercial oil was first discovered in 1956 by Shell-British Petroleum.

Nigeria became a member of the Organization of Petroleum Exporting Countries (OPEC) in 1971 and nationalized the oil industry, creating the Nigerian National Petroleum Corporation (NNPC) in 1977. Oil discovery has had a meaningful impact on Nigeria's economic growth. Nigeria is one of the largest oil producers in Africa and the eleventh largest producer in the world. According to the Ministry of Petroleum Resources, Nigeria has approximately 160 oil fields and over 1400 oil wells in operation. The Niger Delta region, being the most productive region of Nigeria, has over 80 of the 160 oil fields. Most of the oil fields are scattered and small, and these small fields accounted for 62.1% of Nigerian production as of 1990. Oil and gas exports accounted for over 98% of Nigeria's export earnings, 83% of Federal Government revenue, and generated over 14% of the GDP as of the 2000s. It also accounted for 95% of foreign exchange earnings and about 65% of government budgetary revenue [6]. Nigeria exports a blend of light sweet crude oil and low sulfur contents of 0.05% to 0.2% [7].

Nigeria has five refineries with refining power of 1.93 million barrels per day. The Port Harcourt refinery was Nigeria's first refinery, commissioned in 1965, and had an initial capacity of 35,000 barrels per day (bpd) [8]. The Warri refinery was commissioned in 1978 with a capacity of 100,000bpd. The Kaduna refinery was commissioned in 1980 with an initial refining capacity of 100,000bpd. The second Port Harcourt refinery was commissioned in 1989 with 150,000 refining capacity. The privately owned Dangote refinery was commissioned in 2023 with a refinery capacity of 650,000 bpd. It was designed to supply the domestic market majorly and export its surplus. These refineries are currently operating below initially installed capacities as they were abandoned in the military era. The recently constructed and privately owned Dangote refinery is expected to increase Nigeria's refining capacity. But with declining production, there is the need to get the solidarity of the host communities to ensure consistent supply to the refineries. [9]

The three main oil sectors in Nigeria are the upstream sector, downstream sector, and gas sector. The downstream sector is responsible for the sale, marketing, and distribution of petroleum products. It connects to the final consumer of the refined petroleum products [12]. Nigeria's oil is notable for its high quality, compared to those of other countries. As a member of OPEC, Nigeria attracts international markets and huge buyers with major export destinations being Europe and Asia. Nigeria's daily average production as of July 2024 averaged 1.61 million bbl/day, a slight increase from the quarter in 2023, following assiduous efforts to optimize production despite challenges such as oil theft and infrastructure issues. [10]

Despite this gains, over \$400 billion earned from oil proceeds since 1960 have either been stolen or misappropriated by state actors. [11]. To further escalate the issues, oil theft and pipeline vandalism in the Niger delta have led to systematic withdrawal of investments by the international oil companies. [12]

1.3 Nigeria's Current GDP

Nigeria is a developing country and has a population of about 223 million people, and the largest economy in Africa with a GDP estimate of 362.81 billion dollars [1].

The GDP has grown by 3.19% which is higher than the 2.98% recorded in the second quarter of 2023. Several sectors contribute to the influence of the GDP in Nigeria. They are divided into mainly the Oil and the non-oil sectors.

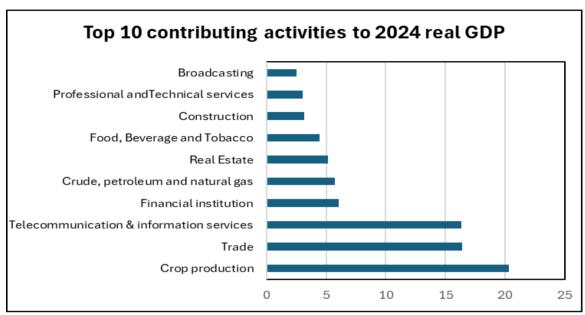


Fig 1: Contributing activities to 2024 GDP (Source: World bank, 2024) Figure 1: Top Contributing activities

The data from this information shows the contribution of different sectors to the current GDP of Nigeria. Oil contributed 5.7% of total GDP, this has significantly declined in recent years in comparison to 1980.

The non-oil sector grew by 2.80%. This sector was mainly driven in 2024 by Financial and Insurance (Financial Institutions), Information and Communication (Telecommunications); Agriculture (Crop production), Trade, and Manufacturing (Food, Beverage, and Tobacco), which accounted for a positive GDP growth. The non-oil sector contributed 94.30% to the GDP of Nigeria.

The agricultural sector has increased at a growth rate of 1.41% since the second quarter of 2023 and presently contributes 18.54% to the nominal GDP.

2. Methodology.

To help us fully understand the problem, data extracted from the NBS [15] spanning from 1960 to 2024 were deplored. These data affirmed the contribution of the agricultural and Oil sector to Nigeria's GDP from independence. An explanatory analysis was adopted to provide further insight into the missed opportunity of using the oil wealth to fully diversify the economy from a non-Oil centric based sector. An extensive literature review helped to draw conclusion from the analysis.

Table 1: Oil/Agriculture GDP contribution (source: 15)

Percentage GDP Contribution From 1960 to 2024			
Year	Agriculture (%)	Oil (%)	
1960	64.1	0.3	
1970	47.6	7.1	
1980	30.8	22	
1981	15.5	32.6	
1982	16.2	29.7	

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1983	17.4	29.3
1984	16.7	33.1
1985	18.3	32.9
1986	19.6	31.7
1987	18.9	30.8
1988	19.6	29.8
1989	19.2	31.3
1990	17.9	35.4
1991	18.7	32.4
1992	18.7	32.5
1993	18.8	32.1
1994	19.2	31.2
1995	19.5	31.3
1996	19.5	32.3
1997	19.8	31.8
1998	20.0	31.7
1999	21.0	29.2
2000	20.4	30.7
2001	19.9	30.3
2002	27.0	25.0
2003	26.4	28.2
2004	25.4	26.4
2005	25.4	24.8
2006	25.6	22.2
2007	25.5	19.7
2008	25.3	17.3
2009	24.7	16.0
2010	23.9	15.4
2011	23.4	15.0
2012	21.3	12.2
2013	23.3	11.2
2014	22.9	10.4
2015	23.1	9.6
2016	24.4	8.4
2017	25.1	8.7
2018	25.1	8.6
2019	25.2	8.8
2020	26.2	8.2
2021	25.9	7.2
2022	25.6	5.7
2023	25.2	5.4
2024	21.1	6.4
2024	22.6	5.7

Additionally, using Descriptive Analysis, the growth & decline patterns of the agricultural and oil & gas sectors over time, focusing on their annual percentage contribution to GDP will show a trend with valuable insight on the window of opportunity to diversify the economy. Two phases

from the trend analysis will be identified and grouped as 'the decline and the growth phase'. While the growth phase presents an opportunity, the decline phase highlights the missed opportunity for diversification.

3. Result and Discussions

3.1 Contribution of Oil to the GDP of Nigeria (1960-2024)

With an average daily production of 1.6 million bbl/day in the second quarter of 2024, Nigeria is ranked the 15th largest oil producer worldwide. The oil sector contributes about 6% of the GDP and 92% of the value of exports. Oil contributes a relatively small percentage to Nigeria's GDP in comparison to other sectors, it is still considered the mainstay of Nigeria's economy due to its contribution of over 90% to Nigeria's exports and this has an impact on the government's revenue, foreign exchange, and economic structure.

Nigeria has been a notable oil exporter, and this is a significant source of its revenue and also the foreign currency of the government. The exports of oil have fluctuated significantly from 1 million in 1969 to N22 Million in 1975, N8 Million in 1986, and 106 million in 1993 [13]. It was N390 billion in 2005 and N2.6 trillion in the second quarter of 2014. Between 1961 and 2000, based on real growth, price stability, money supply growth, and real GDP, Nigeria ranked among the ten most unstable countries [1]. The economy has experienced rapid growth since the discovery of oil, albeit in a very inconsistent manner as a result of the volatility in oil prices. Nigeria, an oil-producing country is challenged greatly on how to promote its national development and diversify its economy with its oil revenue.

Between 1960 and 1970, the GDP of Nigeria increased by 3.1%. Between 1970 and 1978, the oil boom helped the GDP grow by a 6.2% average. The price fall of crude oil in the early 1980s caused a GDP growth decline. Economic and structural adjustments increased the GDP favourably, and from 1988 to 1997, the GDP increased by 4 times more [14]. Since 1990, there has been an average increase of 6.3%. The growth history of Nigeria's economy remains unstable as Nigeria still has a great poverty percentage.

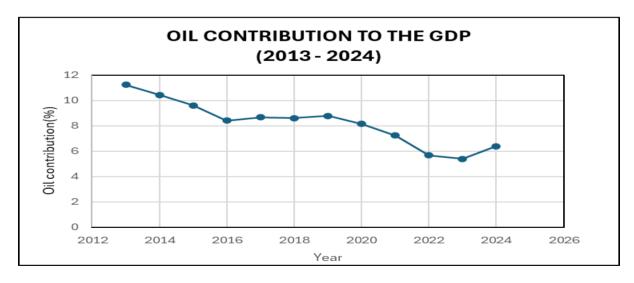


Figure 2: Oil Contribution to GDP

From the table above, a consistent decline is noticed in the oil contribution to the GDP in recent years which could be attributed to the fluctuations in the world oil price which negatively affects the revenue from oil exports. Before the COVID-19 pandemic in 2020, the Nigerian oil sector

accounted for a 9% contribution to the GDP. It has accounted for less since 2020 to date where it currently accounts for just 5.7% in the second quarter of 2024 Nigerian Bureau of statistics (NBS). It is worth noting that as of 2020 till date, there has also been a push towards diversifying the economy.

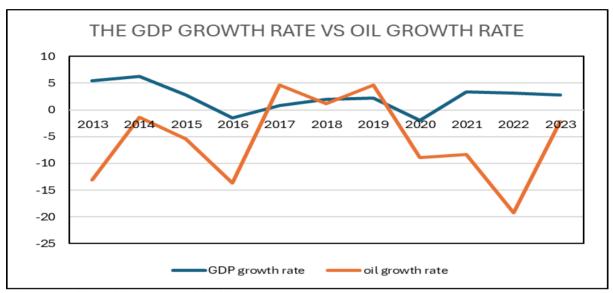


Figure 3: GDP Growth Vs Oil Growth Rate

The Figure above shows the relationship between the oil growth rate and the growth rate of the GDP. Oil had a positive impact and direct relationship on the growth of the GDP from 2013 to 2020. In 2020, due to low demand and reduction of oil production and exportation as a result of the COVID-19 Pandemic, the growth of oil decreased rapidly as well as the GDP growth rate. The GDP growth increased in 2021 while the Oil growth rate decreased. This shows that oil production and exportation affected the growth rate of the GDP till 2021. Apart from the marginal economic growth up to 2014 as well as between 2017-2019, the window of opportunity to use oil earnings to diversify the economy was lost.

As GDP calculates the flow of economic activities, the oil sector requires extremely specialist and skilled labour which is in limited supply. This makes the sector a small employer of labour compared to the country's population. The absence of a viable and vibrant downstream sector contributed to the marginal impact the oil sector had on the GDP. Nigeria's GDP growth rate from the plot, is seen to have had a stunted growth. The Oil growth rate fluctuates mainly because of the volatility in the price of oil, and this had an impact on the GDP growth. The low economic activity in the oil sector and lack of sustained growth are mainly a result of the lack of diversification of the proceeds from oil. Economies with export earnings majorly focused on oil production, experience fluctuations in their exchange rate due to shocks from the over-dependence on Oil revenues. While nations who have a vibrant downstream sector have shown over time to be more economical stable. Beyond just the case of embezzlement by Nigeria state actors, the lack of political will of her leaders to strategically invest in Agriculture, moving the nation from subsistent farming to mechanized faming system created the decline in the agricultural contribution to the GDP from 1967 to 2002. Had we invested 30% of our oil earnings from 1960 till date in the Agricultural sector, the story could have been different.

Ideologically, Nigeria must change from being seen as an extractive industry for other nations especially the West to a productive nation. With a population of over two hundred million people,

a well-designed policy can change the narrative to develop the agricultural sector that has the potential of employing over 60% of her growing populates.

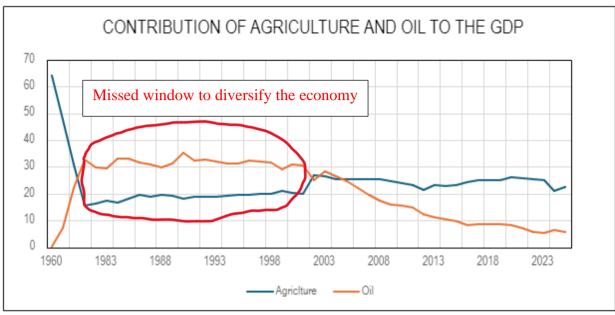


Figure 4: Contribution of Agriculture and Oil to the GDP

The figure above highlights the extent Agriculture and Oil have contributed to the GDP of Nigeria from 1960 till date. Agriculture was the main source of the economy and the main Gross domestic product. The advent of Oil decreased the impact of agriculture. Oil became the main source of the economy and GDP contributor. Agriculture, however, has contributed more to the GDP than Oil in recent times, despite Oil being the main source of the economy. This is a result of the non-diversification of the economy and over-dependence on oil, which is very volatile. Dependence on the very volatile oil has had adverse effects on the economy. Just like it was before 1960, Agriculture is the highest contributor to the GDP, as such the nation must never make the mistake of neglecting her agricultural sector.

Again, the missed opportunity as highlighted from 1981 to 2001. Oil sector contribution picked at over 30% while agriculture declined to below 20% exposing the policy misalignment and lack of intent by the state actors to look beyond oil. This window spanning over 20 yrs would have been the best time for the nation to reposition the nation's economy by prioritizing sectorial reforms and along like other nations like the UAE and Norway. Unfortunately, most of the oil wealth were embezzled, why the most important document that governed the oil sector was abandoned for over 2 decades signaling the decline of investment in the oil and gas sector. Compounding theses woes was the advent of the energy transition championed by the environmental activist in the west creating a roadblock to accessing cheap capital to unlock the already depleted reserves.

Even though oil investment is rapidly declining due to ongoing energy transition, Nigeria has a golden opportunity to harness her enormous gas reserves and use it to support the agricultural sector by building gas infrastructures and fertilizer plants. Unlike oil exploit, the downstream sector that has the highest employment window across its value chain must be developed. Nigerian leadership must rise to the urgency of the times to reverse the declining investment inflows in the oil sector by taking a bold step to stem the massive oil theft in the Niger delta. Beyond the currently implementation of the petroleum industry act, Government must extricate herself from playing

politics with the very delicate sector, industry stakeholders with the know-how must be called to the table to prefer solutions and steer the ship from the murky waters of lack of transparency.

With the incoming President Trump administration in USA from 2025, a narrow window of oil exploration and possible investment outflows will be opened, and Nigerian and industry leaders must rise to the occasion to lock in investments. More importantly is the need to return the Nigerian economy to the golden age where Agriculture contributed more 60% to her GDP. Key to exploring this window, is the need for a policy direction to use gas as feedstock to set up several strategic fertilizer producing companies in Nigeria to support agriculture sector. Also, there must be a national agenda to open up the agricultural sector to investment at a scale that will guarantee food supply to the growing population.

5. Conclusion

According to the International Monetary Fund (IMF), Nigeria has the fourth largest GDP in Africa, with a GDP of \$252.74 billion in 2024 [3].

This study was to review the GDP of Nigeria before Oil, explore the advent of oil, and highlight the effect of Oil discovery on the GDP as the mainstay of the economy. Before the advent of oil, Agriculture was the mainstay of the economy. As of 1960, it contributed 67% to Nigeria's GDP while being a major form of export. Nigeria exported a lot of agricultural products like cash crops and this contributed significantly to the Government's revenue. Agriculture, which does not require the level of highly skilled labor necessary for the oil and gas industry, has a major impact on GDP growth. Todays present reality visibly agrees with the pressure to return to agriculture.

Since the discovery of Oil in Oloibiri, Bayelsa State, Oil became the mainstay of the economy. This is a result of oil being the major export and main source of the government's revenue. Nigeria's economy has been volatile and has experienced slow growth due to the fluctuation in oil prices and over-dependence on oil. While being the mainstay of the economy, it currently contributes less than 10% to the GDP. Nigeria's monocultural economy and the lack of diversification have made stunted economic growth. The government did make some efforts in diversifying the economy; however, these efforts did not yield the expected results when compared to other nations who have successfully diversified their economy from being oil reliant.

Oil resource dependence has made the economy unsuccessful. Having lost the window of oil boom, the current global trend in the use of renewable energy, and less reliance on fossil fuel has complicated Nigeria's position with the expected reduced appetite for the black gold. Even though we have not moved the needle since oil discovery in oloibiri, there is still a chance to use gas as an untapped resource to grow the agricultural sector as well as other sectors of the economy. The urgency of the times requires the foresight and thoughtfulness of the Nigerian leadership to turn the tides around. Otherwise, our over the 60 years Oloibiri journey will lead to nowhere.

References

- [1] World bank data (2013) https://data.worldbank.org/country/nigeria, Accessed, October 2024
- [2] Onochie UP, Obanor AI, Aliu SA, Ighodaro OO (2017), Proximate and Ultimate Analysis of Fuel Pellets from Oil Palm Residues. *Nigerian Journal of Technology (NIJOTECH)*, 36(3): 987-990
- [3] Ganesh, D., Paul K., Dinara M. (2017) Economic Impacts of Canadian Oil and Gas Supply in Canada and the US (2017-2027). Canadian Energy Research Institute, ISBN 1-927037-51-5
- [4] CBN Annual report (2014), https://dc.cbn.gov.ng/cbn_annual_report/2/, accessed October 2024.
- [5] Onuoha, M. E., & Elegbede, I. O. (2018). The Oil Boom Era: Socio-Political and Economic Consequences. In *The Political Ecology of Oil and Gas Activities in the Nigerian Aquatic Ecosystem* (pp. 83–99). Elsevier Inc. https://doi.org/10.1016/B978-0-12-809399-3.00006-9

- [6] Oyeranmi, S. (2011). Globalisation as a source of environmental tragedy in sub-Saharan Africa: The role of multinational oil corporations in Nigeria. Global South-SEPHIS e-magazine, 7 (3) 46-57.
- [7] Olabiri, Y. A (2010). An analysis of the impact of oil exports and economies of Sub-Saharan countries, UNECA Annual Conference, Dakar, July 23-25th, 2010.
- [8] Chukwu J. O., Nnaji, C. E., & Uzoma, C. C. (2010) The role of renewable energy resources in poverty alleviation and sustainable development in Nigeria. Continental Journal of Social Sciences, 2(3), 31-37
- [9] Emeke, C., Alumonah, J. A., Usman, A. H., & Cynthia, O. E. (2024). International Journal of Economics, Commerce and Management United Kingdom Licensed under Creative Common STRATEGIES FOR BUILDING A LASTING HOST COMMUNITY TRUST FUND MANAGEMENT SYSTEM FOR THE OIL AND GAS INDUSTRY IN NIGERIA (Vol. 12). https://ijecm.co.uk/
- [10] Business day https://businessday.ng/news, Accessed, November 2024.
- [11] Vanguard New (2014) https://www.vanguardngr.com/2012/08/nigeria-loses-400bn-to-oil-thievesVanguard New (2014) https://www.vanguardngr.com/2012/08/nigeria-loses-400bn-to-oil-thieveshttps://www.vanguardngr.com/2012/08/nigeria-loses-400bn-to-oil-thieves Accessed October, 2024.
- [12] Chukwu E (2022). Economic and Environmental Impact of Pipeline Incidents: a case of Delta North Pipeline Network in Niger Delta, Nigeria. IOSR Journal of Environmental Science, Toxicology and Food Technology (IOSR-JESTFT) 08-17
- [13] Kabir, G., (2014). A review of multi-criteria decision-making methods for infrastructure management. Structure and infrastructure engineering, 10(9), 1176-1210.
- [14] **Ekpo**, A. H. & 0. J. **Umoh**, (**2014**) An Overview of The Nigerian Economic Growth and Development, http://www.onlinenigeria.com/economics
- [15] NBS data (2024) https://www.nigerianstat.gov.ng/elibrary?queries=GDP, Accessed, October 2024
- [16] Ishioro, B. O., & Ishioro, B. O. (n.d.-a). CRUDE OIL AND ECONOMIC GROWTH IN NIGERIA: A SIMPLIFIED PAIRWISE CAUSALITY TEST. https://www.researchgate.net/publication/365770052
- [17] Kareem, R. O., Bakare, H. A., & Ologunla, E. S. (2013). Globalization and Economic Growth in Nigeria: Any Nexus? In *Service Science and Management Research* (Vol. 2, Issue 1). www.seipub.org/ssmr
- [18] Kingsley, M. I., Nicholas, H., & van Bergeijk, P. (2017). *The Impact on Economic Growth of Nigeria's Oil Dependency*.
- [19] Sebastian Udo, S., Amos Umoh, S., & Ufot, J. (2024). Impact of Oil and Gas Revenue on Economic Development in Nigeria. *Eleviv Publishing Group, USA*, 2(1). Statista https://www.statista.com/statistics/1165865/contribution-of-oil-sector-to-gdp-in-nigeria/
- [20] Adams, S. O., & Olamide Bello, J. (2022). Modeling the effect of crude oil production and other factors on Nigeria's economy: an autoregressive distributed lag approach. *Science Archives*, 03(01), 72–79. https://doi.org/10.47587/sa.2022.3109