NON-OIL SECTOR GROWTH AND NIGERIAN ECONOMIC SUSTAINABILITY

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Abstract

The study empirically x-rayed non-oil export value addition to Nigeria economy using agriculture, manufacturing, information communication technology and solid mineral sectors on gross domestic product. The study was anchored on the Staples Theory of Economic Growth and the Keynesian Macro-Economic Theory. The study revealed that the four variables explained the Y by 99%, while adopting multiple regression. There was no significant effect of revenue generated from solid minerals and manufacturing sector on real GDP whereas agriculture information and communication sector had significant effect on the real GDP. The study firmly recommended a sustained and improved budgetary allocation to agriculture and ICT.

Keywords: *Non-Oil Sector Growth, Nigerian Economic Stability, Non-Oil Export*

INTRODUCTION

The Nigerian economy has been generally described as developing economy which rely mostly on oil and gas sector for its survival and thus forms greater proportion of revenue generation. Though, the Nigerian economy in the past had centered on Agro and allied products and solid minerals extracted and exported to other countries. Nigerian economy in past decades strives on the agricultural sector. The Agric sector was known as the mainstay of the Nigerian economy in the early 1960's prior to oil discovery (KamilSertoğlu, Sevin & Victor Bekun (2017)**.** However, a cursory look at the Nigerian economy from its export perspective shows that export is major sector which could be spliced into two products: oil and non-oil exports. These are the major sources of her foreign exchange earnings Mustapha (2010). Nigeria's economy has been perceived as a mono-cultural economy ever since the exploration of crude oil started in the 1970s. A closer examination of Central Bank of Nigeria (CBN) Annual report 2018 showed the dominance of oil as the major source of export earnings in the Nigerian economy. Oil revenue accounts for over 90 percent total of export in Nigeria, while non-oil account for less than 10 percent total of export. Obviously, since the post-independence era, the growth of Nigeria's non-oil sector has been sluggish and further declined from about 40% in 1979 to 5% in 2010 (John & Ogege 2010). Although many factors may have combined in explaining this general adverse development, the trade policy of the country has frequently been seen as a responsible factor.

Economic Growth, among other things, means the attainment of a number of ideas of modernization such as a rise in productivity, social change, economic equalization, improved institutions and values. It involves something more than economic growth. However, development entails growth plus changes towards modernization (Aderinto & Abdullahi, 2007). Such qualitative changes include improved performance of factors of production. It also includes increasing man's control over nature. It may also reflect in the development of institutions and a change in the attitudes and values. Although, the increase in the real Gross Domestic product (RGDP) and Per capital Income (PCI) are the primary objectives or goals of economic growth, it has also become common to interpret economic development in terms of a number of other sub goals such as a certain distribution of income policy objective, redistribution of economic resources among the citizens, avoidance of marked disparities in the prosperity and growth of different regions within a country.

Furthermore, a well-developed non-oil sector driven economy away from oil and gas will equally provide employment opportunity for the people with the attendant reduction in social cost of unemployment. Earnings from non-oil sources will reduce the disequilibrium on the balance of payment position and even improve stable balance of trade. A rewarding non-oil sources drive can turn a hitherto underdeveloped economy into a prosperous economy. Non-oil revenue sources help in increasing the level of aggregate economic activities through its multiplier effects on the level of national income (Usman, 2010). Income earned through non-oil sources will help in increasing the level of demand within the economy. Therefore, the overall success of any strategy to increase the volume of non-oil commodities will depend on, among others; the knowledge of what factors constraints export growth and the responsiveness of the exporters to changes in both price and non-price conditions (Ghura and Grannes 1994, Lukonga 1994, Okoh and Inono 2010). The understanding of the responsiveness of these non-oil revenue commodities to change in price and non-price factors is indispensable in formulating a sound export policy strategy. Where exports respond negatively to price, price change cannot bring about an increase in export volume; likewise, where export response is insensitive to supply, increased production cannot bring about an increase in export volume. Consequently, this study is an attempt at a better understanding of the direction and magnitude of response between aggregate non-oil revenue and its determinants and economic growth of Nigeria. As opined by Christopher Ifeacho, Omoniyi and Olufemi, (2014). The diversification of the Nigerian economy is necessary for important reasons; first the volatility of the international oil market with the attendant volatility of government revenue gives credence to any argument for diversification of exports. Secondly, the importance of other revenue sources from beyond oil and gas sector to a nation's economic growth and development cannot be over-emphasized.

Following the persistent fall in oil prices in the international market and negative impact of global pandemic known as (COVID -19) which invariables implies a fall in the revenue available to the Nigerian economy and challenges in achieving a sustainable level of economic growth, It is well-known that a huge proportion of the government revenue comes from crude and gas export. However, the monoculture nature of Nigerian economy since the commencement of oil exploration in the 1970s has been persistently threatened by several fluctuation and volatilities in oil prices. This has made the government to come to terms with the growing need for economic diversification from oil to non-oil revenue sources through ICT/Communication ,Tourism/Entertainment, agro/allied products, power and energy, service sector, manufacturing sector, and the need to unlock the Nigerian sold minerals potentials for sustainable development and accelerated economic growth and development.

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Anyaehie, and Areji (2015) noted that at the independence of Nigeria in 1960, the main resource for the nation's was agriculture and extraction of solid minerals until oil discovery took over in 1956 at Oloibiri in the present Rivers state and the country forgot its starting points and lost direction. As enunciated in the study of Adams (2016); Okezie, and Azubike (2016) that Nigeria was a major producer of groundnuts (peanuts), cocoa, coffee, cotton, palm oil, and rubber, but lost it because of the over-dependence of crude oil Revenue . The near-total dependence on the oil sector having considered its volatility and fluctuation in price level globally has dire implications for the emerging economies. The non-oil revenues are revenues generated from sources other than the oil-producing activities. These revenues include those from companies not engaged in oil & gas explorations. Its activity sector comprises of agriculture, industry, constructions, trade and services.

In the 1960s, prior to the discovery of oil, more than 70% of the rural population of Nigeria engaged in one type of agricultural activity or the other and between 1963 and 1964, the non-oil sector contributed as much as 65% to the Nation's Gross Domestic product (GDP).The overreliance on the exogenous and volatile nature of oil revenue led the Nigeria government to make structural changes in order to look into alternative means of financing the economy by reconsidering non-oil sector that had been neglected in the past due to oil exploration (Edame and Efefiom, 2013).

The SAP of 1965 introduced by IBB really paved a way to device alternative means of growing the Nigerian economy away from oil and gas service sector. According to Iniodu, (1995), options for diversifying an economy abound, such as agriculture, entertainment, financial services, industrialization, information and communication technology, tourism, mining, sectors of the economy. With a major objective of diversifying the productive base of the Nigerian economy with a view to reducing dependence on the oil sector, this study zero in on 'agriculture' and 'mining,' in macroeconomic planning, diversification promotes growth and development through the mobilization of savings from surplus sectors for use in the development of deficit industry forms a crucial sector in Nigeria (Ude and Agodi, 2014). The non-oil sector has the potential or capacity to provide food for human population, source of raw materials for industries and thus, promote economic growth. According to Izuchukwu (2011), Expanding the Nigerian non-oil sectors have the capacity of providing employment opportunities for the teeming population of Nigerian and thereby contributing to the growth of the economy which the emphasis is place of on human capital development.

In view of the above stated background, the emphasis of this research work is to determine the economic effect of non-oil revenue sources towards the growth of Nigerian economy using agric produce, manufacturing performance index (MPI) mining and quarrying and service sector contribution to match with Nigerian GDP for period of thirty years.

Statement of the Problem

Although, oil revenue has been contributing immensely to the economic growth of the country, it has not been reliable sources of revenue due to the unpredictable global crisis and fluctuation in the prices of crude oil in the international market. However, following the Corona-virus (COVID-19) pandemic outbreak in 2019 and coupled with the shrink in price of crude oil as a result of the United State of America's reduction in the number of barrels she imports from Nigeria, this has created terrible markets globally. As such, a country whose major revenue is dependent on oil has had no option than to re-consider diversification of its economy to the non-oil sector. This unpredictable economic phenomenon had contributed immensely to the shaking-economy of major oil exporters like Nigeria, Saudi Arabia, Iraq and Libya. The 2019-2020 year has been a turbulent one for Nigeria due to the double shock of oil price decline and the covid-19 pandemic that has prompted a call for total reliance of non-oil revenue to provide for the government and the public.

It is undisputable that Nigeria is a country naturally endowed with various kinds of resources to place her amongst the top emerging economies of the world. Unfortunately, the nation has not adequately utilized and benefited from the economic prosperity expected of a nation so richly blessed. According to Samson Adeniyi Aladejare & Saidi. (2014). Nigeria is a country believed to be too rich to be poor. Ironically, global economic indices from reputable international organizations have consistently categorized Nigeria as an economically backward state. For instance, in 2005, the UNDP human development index ranked (HDI) Nigeria as 164th and 141st among 197 nations with low per capital income and "low quality of life" respectively (World Bank Development Report, 2010).

Several factors including poor management of resources, over-dependent on oil as source of revenue, poor human capital Investment, widespread corruption, political instability, under-investment on key Infrastructure lack of diversification, and the 'Dutch disease' have jointly resulted to lack of sustainable growth bedeviling the economy while the price level itself is a problem, a bigger challenge lies with oil price volatility. As a nation that relies so much on oil for its revenues, the implicit multiplier effects for the entire economy, have been most staggering and pervasive (Yemi, 2017). Despite the unprecedented number and scale of the policy intervention and measures introduced to diversify the economy by developing other sectors, such as Nigeria Industrial Revolution Plan (NIRP) – initiated to boost manufacturing activities and the National Enterprises Development Programme (NEDEP), systemic pressures have yet to fully abate. Nigeria economy is still wallowed with unfriendly business environment ranking, high bottlenecks, poor patronage of locally made goods, wider gap between skills required by industry and those provided by our educational institutions, and very difficult access to finance for our Small and medium-Scale Enterprises (SMEs). In fact, the contributions of primary and secondary sectors to real GDP still stand at about an average of 63 per cent and 11 per cent, respectively (CBN, 2016).

Another huge blow to crude oil exporters was America's reduction in the number of barrels they import from nations. These factors have created a bad market for Nigeria and thus, her economy is presently shaking. This scenario is worsening by Nigeria's running mono-economic economy and the abandonment of agriculture. The adverse effect of this boom and euphoria led to the establishment of new urban cities that necessitated mass exodus of able-bodied men and women from the rural areas to the cities in search of white-collar jobs and quick money. This development drastically reduced interest in agriculture and agrarian economy. Ariyo, (1997).

Agricultural sector has been the leading provider of employment in Nigeria since the sixties and seventies, when the sector provided employment for more than 70 percent of the Nigerian population. Unfortunately, in the wake of oil discovery, the attention on this sector of the economy was gradually and myopically shifted to the oil sector where employment opportunities were very low and the traditional agricultural exports have been on a progressive decline. Regrettably, the scenario has given rise to acute unemployment as oil sector could only employ limited number of the population and worse still, only experts marginal few can be absorbed by oil industry. It has limited opportunities for the rest of the population to participate in the national economy. Everyone including the government looks up to the oil in determining the standard of living and since the other sectors of the economy are poorly developed, they cannot assure any standard. Hence, there are dissatisfaction and disgruntlement among the people. The situation creates a divide between the very rich, which operates on oil economy (government agencies and their cronies) and the very poor that operates on the mainstream of the economy (the workers, peasants and the small and medium scale entrepreneurs) with almost a complete vacuum in-between these two divides. The over concentration on oil as the only major source of government revenue has adversely affected the socio-political stability of the nation. The quest for the control of oil revenue is what precipitates aggressive struggle to control the Federal Government by the different sections of the country. The federal nature of the nation has been truncated by the interest of any group that controls the Federal Government to control the oil revenue. All the tiers of the government have shown poor leadership and initiative to develop other sectors of the economy because of their overdependence on oil revenue. It is worrisome for governments to solely depend on oil revenue for them to pay their workers talk less of providing any infrastructure. The politics of control of oil revenue has over heated the polity that discussions on national economy revolve around the sharing of oil revenue and not on the development and sustainability of the economy through diversification and engagement of the teaming work force in productive ventures for wealth creation. The concept of job creation revolves around government expanding its bureaucratic structures and sustaining them with oil revenue and not creating structures for the gainful engagement of the people in productive ventures.

The Nigerian economy has not recovered from the resultant disequilibrium in both domestic and external sectors, this has therefore brought about the need for adjustment in Nigeria to diversify and restructure the productive base of the economy in order to reduce its dependence on oil export sector. Despite the huge potentials of solid minerals, mining in Nigeria over the years had been rudimentary and predominately undertaken by small entrepreneur unlicensed, unskilled individual, a situation that aggregates health hazards and environmental degradation. (Vanguards News September, 2018). Hence, the objective of this study is to expand Nigerian revenue base profile through diversification and public private business partnership aimed at stimulating Nigerian Economic growth plan and recovery (ERGP).

Other objectives include:

i. To determine Agricultural sector contribution to GDP in Nigeria

ii. To ascertain manufacturing sector contribution to GDP in Nigeria

iii. To evaluate ICT/Communication sector contribution to GDP in Nigeria

iv. To determine Solid mineral contribution to GDP in Nigeria

THEORETICAL FRAMEWORK AND CONCEPTUAL DEVELOPMENT

The Staples Theory of Economic Growth

The theory is closely related to export-driven theories of economic growth and used to explain the growth and economic development of resource-rich economies. It was developed by departments of political economy in Canadian universities. The two prominent among them were Harold Innis and Mackintosh, William whose works were rooted firmly in the historical examination of the development of the Canadian economic, social and political history between 1920 and 1940.A staple is a commodity which dominates an economy's exports like cotton, fish, yam, cassava, wheat, timber, cocoa beans, palm oil, rubber, etc. used to drive their development process. According to this theory, the availability of resources or staples in any region determines the type of economic activity in that region given a strong export demand and this has a pervasive impact on the entire economy. It attempts to show how regional natural resource endowments led to the linkages or spreading effect to the rest of the economy and to technological innovations. Well harnessed backward and forward linkages are expected to result in agricultural-industry interdependence leading to diversification around the staples production to the extent that the nation ceases to be a staples producer. If this is not the case, staples trap occurs where the economy becomes tied to the boom and bust cycles of primary commodity markets and therefore unable to achieve diversification, industrialization and long term prosperity. Hence, this particular study on Non-oil revenue will be anchored on this theory since the study is strictly on export commodities beyond oil and gas export and percentage of its GDP contribution to the Nigerian economy.

The Keynesian Macro-Economic Theory

Keynesian macroeconomic thinking, which for some time is called the demand side of the economy, postulates that public spending on agriculture can contribute positively to economic growth. Therefore, an increase in public spending on agriculture could lead to the same proportional increase in employment opportunities and investments through the multiplier effect on overall demand. Based on this, public spending is total demand, which causes increases in production depending on the expense multiplier (Saaded and kalakech, 2009). However, Barro and Sala-I-Martin (1992) classify public spending on agriculture as productive and unproductive and suggest that production costs such as cash, wheat, crops, fishing, etc. They have a direct impact on the degree of economic growth while unproductive expenses for salary, rent, etc. they have an indirect or zero effect.

However, public spending on crop trimming plays a crucial role in economic growth. Therefore, the nature of the population determined their ability to contribute to economic performance. Babatude (2012) stated that better health allows for better gains for workers and businesses, which in turn improves government taxation based on a better financial situation. These interactions, all similar, will lead to better economic results. The way in which growth is shared also affects poverty reduction.

The Theory of Absolute Advantage

The theory of Absolute Advantaged which was propounded by Adams smith in 1776 explains the relationship between export of one country and that of another in terms of exchange of highest produce using agricultural produce or minerals stipulates that a country should produce a product massively which it earns enough foreign exchange when compared with other products of another country. Adams smith theory and David Ricardo comparative advantage relates to export products. In this theory, it is assumed that there are two countries involved in the trading of two commodities and using only two factors of production; labour and capital. The theory says that a country should export products in which it is more productive than other countries: that is, goods for which it can produce more output per unit of input than others can, while in return, importing those goods where it is less productive than other countries. This theory encourages the government to utilize her resources effectively to ensure revenue generation and provision of other resources that are necessary for pursuing economic development in the country (Opera, 2010).

According to this theory, a favorable balance of payment is expected because both countries involved will benefit from the trade. Thus, a nation need not gain at the expense of other nations, as all nations could gain simultaneously (Sylvester & Aiyelabola, 2012). In the case of Nigeria, it is believed that there are certain resources which are critical to economic development and are not necessarily available to achieve such objectives. Therefore, the government can engage in exchange relationships between one or more countries, for the exportation of local resources in exchange for revenue (in currency or other resources) that can be utilized to ensure economic growth and development in terms of improving the citizens' economic welfare. Therefore, following the theory of absolute advantage, government revenue from oil and gas exports can be directly used to import resources from other countries; resources that are critical to economic growth and human capital development in Nigeria. The theory further advocates among others, they argued that countries should specialize to produce and export according to their comparative advantage. The theory of comparative advantage suggests a country gains the greatest economic benefit relative to other countries by producing at lower overall cost.

Other countries will therefore benefit from trade only if they accept the cost advantage of the trading country and focus on producing a commodity in which they have an advantage (Igbesere, 2013). It is this theory that guides resource endowment economist's belief in free trade, specialization and the international division of labour. This was their reasoning behind why some countries produce agricultural and mineral commodities while others produce industrial goods (O'Toole, 2007; Igbeasere, 2013). The doctrine of comparative advantage according to the Heckscher- Ohlin (HO) theory states that countries produce and export the commodities which require the use of its abundant productive factors intensely (Feenstra, 2004). This model is based on the assumption of two countries, two goods and two factors and assumes that both countries have identical technologies, identical tastes, free trade in goods and different factor endowments (Feenstra, 2004).

This theory was based on the proposition that countries (developed nations: Japan, Germany, United Kingdom, etc.) with an abundance of capital would export capital intensive goods and import labour intensive goods, while countries (most third world countries: African and part of Asian countries) with an abundance of labour would export labour intensive goods and import capital intensive goods (Igbeasere, 2013).

Non-oil sector comprises those groups of economic activities which are outside the petroleum and gas industry or those not directly linked to them. It consists of sectors such as manufacturing, agriculture, telecommunication, service, finance, tourism, real estate, construction and health sector. Non-oil (mostly agriculture) products such as groundnut, palm kernel, palm oil, cocoa, rubber, cotton, coffee, beans, hides skin and cattle dominated Nigeria's export trade in the 1960's. But the discovery of crude oil in commercial quantity shifted the attention from non-oil export to a Petroleum Mono-cultural Economy, since the 1970's while petroleum export was growing, non-oil exports were declining, this made the dominance of oil export over non-oil export much more rapid and pervasive. This non-oil sector include such sub-sectors like the agricultural sector, service sector, building and construction, wholesale and retail trade, utilities and other manufacturing activities that are not related to oil (Aderoju, 2017). In the manufacturing sub-sector, items currently exported include soaps and detergents, textiles, chemicals, beer and beverages. The non-oil export sector is expanding though slowly, to include non-traditional items such as notable development has been the disappearance of some traditional exports such as palm oil, groundnuts, ginger and hides and skins.

Agricultural and manufacturing exports are catalyst necessary for the overall development of an economy. The primary objective of export policies in any economy is to increase the level of economic activities. It follows, therefore that export policies should be directed to the sector in which the impact of an increase in export demand will be both desirable and large. It is a source of foreign exchange earnings and since trade transaction followed by the oil boom era which arose from oil glut in the world oil market since 1981 only led to the neglect of non-oil export productive base. This has also led to panic measures by successive government from the economic stabilization Act of 1982.. Prior to the phenomena emergence of the oil sector, Agriculture is one of oldest occupations in Nigeria and has been the mainstay of the Nigerian economy contributing 80% of the export earnings and 75% of the Gross Domestic Product (GDP).The emphasis of this study is the critical role to GDP and per capital of an individual. There been no consensus in the literature on the subject of agricultural sectors contribution on economic growth. Izuchukwu (2011) found a positive causality i.e. a positive relationship between the agricultural sector and the Nigerian economy while Dim and Ezenekwe (2013) found contrary results. Several scholars found positive causality using varying econometric techniques ranging from cross sectional to panel approach (Oluwatoyese, 2013; Ahungwa et al., 2014; Olajide et al., 2012; Ebere , 2014) while (Dim, 2013; Aggrey, 2009; Oluwatoyese & Applanaidu 2013) found a negative relationship between agriculture and economic growth.

According to Alene et al. (2005) Nigeria is endowed with a large deposit of agricultural resources, available land for the cultivation of crops and rearing of animals. In the 1960s and 1970s the agricultural sector constituted over 65% of total export. The Nigerian agricultural sector was renowned for the export of cash crops (agricultural crops and produce with export value) namely cocoa, rubber, hides and skin, groundnut palm among a host of many others. The agricultural sector holds an enormous potential for the growth and economic development of the country.

Relevance of the Agricultural Sector on Nigerian Economy

In a developing economy like Nigeria, agriculture can play a crucial role of providing food security, raw materials for industries, employment, a market for industrial goods such as agrochemical, tractors and fertilizer, and foreign exchange within the context of capital formation. These functions are very significant in Nigeria and, indeed, other developing countries, because of the peculiar characteristics of their economies. Federico (2005:1) says that agriculture has always been absolutely indispensable for the very survival of humankind.

In view of Tolulope and Etumnu (2013), agriculture sector and industry are the largest contributors to economic growth in Nigeria. Without considering the size of contribution per period, the results show that from 1961 to 2011, the agriculture sector contributed most consistently to economic growth relative to the other sectors of the economy. Also, we observe that the trend in the contribution of the building and construction, trade and service sector are more similar to that of the industry sector than the agricultural sector. This suggests that the industry may have stronger linkages to other sectors relative to agriculture and other sectors. For centuries, agriculture has provided people with food, clothing and heating. It has employed most of the total active population. Each of the functions can now be briefly discussed.

i. **Provision of Food Security:** According to Elkan (1995), he argues that poverty, population growth and increased urbanization all call for an increase in the output of agriculture. The importance of adequate food provision is acknowledged, and the problem seems to worsen, considering the following facts: Nigeria has a rapidly growing population, with the population growth rate of the country more than 3.0 percent. This teeming population has to be fed. In addition to feeding the growing population, the food nutrition content of the people’s diet, which is mainly starchy food such as rice, cassava, yam, coco yam, millet and maize, may also be problematic. The food content of the diet of majority of the people is lacking in nutrition and is not balanced due to high prices of protein-rich food like fish, meat, chicken, eggs, beans and beverages. Unfortunately, the outbreak of a bird flu epidemic in Nigeria in 2005 has automatically discounted chicken as protein source. Overall, therefore, any type of modern agricultural production proposed for the country should be rich in nutrition and able to reach the population, to improve their nutritional content of their food intake on a daily basis.

ii. **Provision of Raw Materials for Domestic Industries:** Agriculture is important in feeding local agro-process industries with raw materials such as animal skins for leather processing; cotton for textiles; cocoa for beverages and confectionary; maize and wheat for brewing; and so on. The import substitution industrialization policy adopted by Nigeria in the 1980s compelled most manufacturers, both local and foreigners to establish and embark on domestic production of raw materials to feed their industries.

iii. **Provision of Foreign Exchange from Exports:** Most developing countries' exports are still primary agricultural products, ranging from textiles and clothing, leather, and cocoa beans to mention a few. In addition, export taxes from producers serve as a source of capital and can contribute to capital formation for economic development. Nigeria has recognized the importance of agriculture in capital formation.

iv. **Provision of Employment Opportunities:** In a developing economy like Nigeria, agriculture employs about 90 percent of the population. This figure can be reduced with increased large-scale commercial farming and export manufacturing industries that will attract surplus labour from the agricultural sector. However, agriculture still creates employment opportunities for the growing population in developing countries, and this is why the World Bank (2003) says agricultural subsidies and escalating tariffs in developed countries costs developing countries an estimated 27 million jobs annually. This often frustrates efforts by poor countries to diversify their economies and move up the technology ladder.

v. **Provision of Large Markets for Industrial Products:** Agriculture also plays an important role in providing a market for agricultural capital products, tools, and machinery, such as tractors and harvesters, agro-chemicals and fertilizers. It is generally recognized that growth in agricultural production has become critically dependent on yield increases primarily based on the development of new high-yielding varieties (Srinivasan, 2003). As noted by Johnson (2002), agricultural biotechnology can contribute significantly to overcoming the problems of food shortages in developing countries by increasing yields and the nutritional quality of raw products, and ensuring an adequate amount of vitamin A for children. The role of the agricultural sector in improving food security, creating employment, reducing poverty and hunger, and stimulating much-needed growth and development is with little or no doubt vital for a developing country like Nigeria.

According to Daramola (2004), he identified the following constraints to agricultural export growth:

Government Policies

Nigeria's agricultural sector became a victim of policy discrimination after the large oil discoveries. In the early 1970s, labour and capital left agriculture for manufacturing, mining, construction and services. This chronic 'Dutch disease', arising from overvaluation of the Nigerian currency, has remained with Nigeria until the present despite several structural adjustment programme. The explanation for this development will be presented in the next section. Before the present democratic regime was re-elected in 2003 and a new economic form agenda was introduced, evidence-based policy-making was limited. There was little research, analysis or evaluation and an absence of in-depth knowledge and understanding of the technical issues within the public sector. Research institutes and universities were isolated from policy-making.

Agricultural Export Potential in Nigeria

Private sector concentrates on gaining access to the presidency for special favours rather than pressing for broad improvements in policy. The concern among private agents about government not keeping its word is legitimate, and their concern about policy discontinuities is valid. Another detrimental policy has been the government's emphasis on local agricultural processing. Local value addition as a policy is desirable to the extent that it promotes employment and enhances foreign exchange earnings. Two major problems have caused this policy to fail in Nigeria. First, poor infrastructure and high input costs (for example energy and credit) put Nigerian goods at a competitive disadvantage. Second, importing countries often impose barriers that are sometimes insurmountable for exporting countries. (Personal communications with members of various bilateral chambers of commerce, mines and agriculture reveal this trend.)

The Relevance of the Manufacturing Sector on Economic Growth and Development in Nigeria

Modern industry is seen as the hallmark of a developed economy (Lall, 2002). Indeed, industrialization is widely accepted by both developed and developing countries as the centerpiece of the development process. Apart from the material benefits that industrialization can bring, there is a general belief that it expresses a nation's success on earth and its ability to cope with the modern world. More broadly put, industrialization is relevant to both developed and developing countries. Delbridge and Lowe (1998) identify the main contributions of the sector to economic growth and development as increasing the productivity rate in the production of goods and services; generating employment and skills; generating of wealth; distributing wealth; being a source of innovation and development of technological capacities; generating foreign exchange and trade services; and being an agent of cultural change and the impact on urban- rural transformation. Brown (1995) says that in all economies, manufacturing industries have been critical agents of structural transformation that make the transmission from a private, low-productivity, low-income state, to one that is dynamic, sustained and diversified. Industrial production is important for the development of the Nigerian economy for the following reasons:

Therefore, manufacturing can serve as an additional major source of employment. In fact, manufacturing can complement the absorptive employment capacities of agriculture, mining, and construction. In the view of Ogwuma (1996) says that the manufacturing sector plays a catalytic role in the modern economy it is an avenue for increasing productivity, employment generation and enhancing foreign exchange earning capacity. Furthermore, the manufacturing sector creates investment capital income at a faster rate than any other sectors of the economy.

Industrialization and Promotion of National Integration

Industry involves large numbers of transactions, including farmers selling raw materials to wholesalers, manufacturers selling to wholesaler after processing, manufacturers purchasing electricity, legal services, communications, and so on, both in and outside the country. This helps each sector to develop stronger linkage with other sectors. The greater the degree of linkage, the greater the interdependence and possibility of building a spatially integrated society.

Wield (1994) argues that industrialization is at the centre of development. According to Wield (1994), industrial development brings about most profound changes to the social and economic make-up of societies. Ogwuma (1996) believes that the manufacturing sector promotes wider and more effective linkages among different sectors in the economy.

The Manufacturing Sector Providing Additional Income

Manufacturing has the potential to earn foreign exchange from exports after entrepreneurs have acquired the necessary technology and expertise and met domestic demand. According to Szirmai (2005) the industrial sector offers much better opportunity for capital accumulation, large-scale production and technological progress. Manufacturing plays a critical role as foreign exchange earner rather than saver, since attempting to conserve foreign exchange by restricting imports. For example, the adoption by many developing countries of import substitution strategy, often fails woefully. In Nigeria, import substitution has failed, because the foreign exchange was being spent on plants and machinery imports, licensing fees and import of materials for agric development.

Relevance of Mining and Quarrying (Solid Minerals) in Economic Growth and Development of Nigeria

Mining, minerals and metals are important to the economic and social development of many countries. Minerals can either be extracted from the surface of the earth or from deep in the earth. The process of extracting minerals from open mines is termed as quarrying while the process of extracting minerals from shaft mines is termed as mining. For example, in case of limestone and marble stones quarrying processes take place, whereas mining is done in case of iron, coal, gold etc. (Jhingan& Sharma, 2008). The Nigeria mining sector has the potential of driving the nation's economic growth (compared to its current contribution of less than1.0% of GDP). Growth of the sector will diversify the national economy and minimize over- dependence on Oil and Gas as primary sources of revenue. Right's to ownership of mineral resources is held by the Nigeria government, which grants titles to organizations to explore, mine and sell mineral resources. Mining regulation is handled by the Ministry of Solid Mineral Development established in 1995, which oversees the management of all mineral resources. Mining law is codified in the Federal Minerals and Mining Act of 1999with a reform in 2005 and 2007. The domestic mining industry is underdeveloped, leading to Nigeria having to import minerals that could be produced domestically, many factors are responsible for this, this range from the overdependence of the Nigerian economy on oil and gas sector which has led to the neglect of other critical sectors of the economy, to the inadequate legislation and poor law enforcement which has made the sector to be largely informal, inefficient state operations, environmental degradation, jurisdictional conflicts between federal and state governments, depleted surface alluvial deposits(especially tin) among others(Alison-Madueke, 2009).

It is important to emphasize that the mining and construction industries constitute an important part of the growth sector of a country. These sectors have the potential of contributing significantly to the development of the country. Nigerian has been ranked one of the most highly endowed in renewable and non-renewable resources (Oladunni, 2004). The mineral resources include copper, iron ore and steel that can generate employment, income and provide raw materials for other industries in the country. Workers on road, dam and bridge construction in Nigeria have large potential in the production of iron, steel and natural gas. This can trigger the inflow of foreign investment into the manufacturing sector. The mining, construction and industrial activities in Nigeria hold great appeal and elicit very strong commitment for rapid growth and development of the country. Nevertheless, an analysis of the importance of mining and quarrying for Africa in economic growth and development is necessary so that Nigeria can draw lessons of policy relevance and interest from the activities of other African countries in policy deregulation.

In line with Hilson, (2003) has shown that an economy can gain significantly from large-scale mining operations and even more from small and medium-scale artisan operations. Reviewing the role of large-scale FDI mining policies as a context for small-scale mining in developing countries, Etemad and Salmasi (2003), argue that FDI theory from a mining perspective is no longer rich enough to provide enough guidelines for decision-making and policy formulation in the mining sector. The general theory of FDI is partly responsible for the misguided inadequacies of mining regulations in most countries where large-scale FDI mining multilateral firms hold monopoly power over medium and small-scale mining activities. To date, many international initiatives for the regulation of small-scale mining have been designed, yet very few have been successfully implemented by governments Andrews, Minying, Lei and Cao, (2003). It is a known fact that every geo political zone in Nigeria has unexplored or untapped mineral deposit due to the focus on the oil and gas sector and lack of investment and funding in other sectors.in view of this, the federal government released a document known as Economic recovery and growth plan (ERGP) of 2017 -2020 aim at dealing a state of emergency in mining and quarreling sector to stimulate a sustainable growth. Mining sector has grown Nigerian GDP from 52b in 2010 to 103b in 2015.quarrying and other mining activities accounted for 89% while coal mining represented 7 %. (Vanguard, 2018).

According to the UN (1996) many large companies seeking to establish operations in developing countries have concerned themselves with the small-scale mining issue, establishing specialized divisions that deal with community relations. Artisan and small-scale mining activities are now widespread simply because there are few alternative employment opportunities in many parts of the developing world, and an increasing number of rural inhabitants are turning to artisan and small-scale mining in order to feed their families. This further reinforces assertions that the industry is poverty-driven. Hilson, (2003) showed that the small-scale mine employment capability in selected Africa countries. The employment capability of the peasant poor located around the mines in 25 African countries. It is evident that large numbers of people could be empowered to participate in these mining activities in the various countries shown above. This is useful since mining could be the only direct means these people have of access to the wealth and income generated by the mining and quarrying sector.

Factors Militating Against the Development of the Non- Oil Sector in Nigeria

According to (Adeyemi and Abiodun 2013), the following factors hinders the development of non-oil sector in Nigeria:

1. **Poor Performance of the Economy**. The successful execution of the plans depended on the realization of the planned flows of resources from good economic performance. The overly optimistic projections of resources flows, inflows and internally generated, that characterized the plans proved unrealistic due to a variety of factors. As for inflows, there was a general shortfall in development aid due to stringent requirements for projects support by donors and inadequate capacity in projects preparation. Despite episodes of commodity booms, export receipts still fell below expectation because OPEC quota constraints and inability of the country to develop other export products. Domestic tax efforts could also not be improved due to institutional bottlenecks and limited real growth in the economy. The behavior of policy makers in the face of shortage of development resources aggravated the effects of these resource shortfalls. Through plan distortion policy makers failed to ensure that actual expenditures on priority sectors remained as large as the proportion of planned spending on those sectors.

2. **Inadequate Executive Capacity**: Inadequate executive capacity is manifested in poor co-ordination among agencies of government; the failure of an agency to make decisions or take actions at the times required; and in the failure to produce new information or to

use information already available. The Nigerian bureaucracy did not possess the right quantity of personnel with the specific types of training and experience needed for these tasks. Also, the system of incentives that characterized the bureaucracy could not facilitate effective performance.

3. **The Dominance of Government in Economic Activities:** Two major developments, the political economy of oil and the indigenization programme of the 1970s, fostered this. The dominance of oil in the export list for Nigeria meant that Nigeria moved away from the export of a broad range of agricultural products, where about 75% of Nigerians participated in production, to a commodity using foreign capital and technology for production with minimal Nigerian labour participation. Furthermore, the manner of expenditure of oil revenues created additional problems that did not promote the development of a viable private sector. Oil expenditures mainly funded non-traded goods, urban infrastructures and government consumption expenditures, and this led to contraction in traded-goods sector. As the private sector contracted, government became the major source of wealth accumulation, turning politics in Nigeria into a fight to capture and privatize an enormous power resource Ake, (1993). The indigenization programme, which sought to transfer the ownership of foreign controlled businesses to Nigerians, resulted in foreigners selling between 60% and 100% of their ownership stakes in companies to Nigerians, depending on the technical nature of the enterprises.

Diversification and Nigerian Economic Recovery and Growth Plan

Diversification entails movement of new fields of resource and expansion of existing traditional products. Diversification does not discourage specialization, but requires that resources be channeled into the best alternative uses (Ayeni, 1987; Iniodu, 1995).Economic diversification is the process of expanding the range of economic activities both in the production and distribution of goods and services. It is the widening of the economy to create opportunities for diverse economic activities to create a broad based economy. It provides job for wide spectrum of people and stabilizes the economy against economic fluctuations of commodities, and sustains the developmental prospects of nations diversification of Nigerian economy beyond oil and gas sector is one the major economic plans of FG government to achieve sustainable development and vision 2020 according to the contents of ERGP, 2016-2020.

Nigeria needs to use her huge oil revenue to diversify her economy into sectors like solid minerals, Agricultural food chain, power and energy, information and communication technology, innovation, tourism and entertainment, bio-economy and renewable energy sources would no doubt attract Foreign direct investments opportunities, create job opportunities and satisfy the basic needs of her large population and sustain her quest for development. To achieve this, she has to conscientiously confront the challenges that hinder her economic diversification to reposition herself on the path of productivity. These challenges make industrial investment in the country very expensive and unattractive.

Diversified economy will stabilize Nigeria's economy against the vagaries of oil market, and provide opportunities for the satisfaction of needs and aspirations of her population. Different sections of the nation and tiers of government should develop other aspects of economy where they have comparative advantage. The efforts should accommodate the key requirements of sustainable development which include meeting the basic needs of man (job, food, health, clothing and shelter), maintaining equity both within and between generations, improving on technology and social organization to expand the environmental ability to sustain human needs. Prior to the discovery of crude oil in a large scale in late 1960s and the subsequent oil boom in 1970s, the major source of revenue in Nigeria was agriculture and extraction of solid minerals (Anyaehie & Areji, 2015). This shows that if government devotes much effort to revenue generation from the non-oil sector, the flow of government revenue will be sustainable and appreciable overtime. According to Izuchukwu (2011), the non-oil sectors have the potentials of providing employment opportunities for the teeming population and thereby contributing to the growth of the economy.

Selected Empirical Review

Ogunbiyi and Abina (2019) researched on the nexus between oil and non-oil revenue on economic growth. The economic development was proxy with human development index and stands for the dependent variable while oil and non-oil revenue were used as independent variable. It obtained data from the central bank of Nigeria bulletin and index mudi for the period 1981 to 2018. It employed the Descriptive Statistics, Augmented Dickey-Fuller Unit Root test, Johansen Co-integration and Error Correction Estimates. The estimated result discloses that oil revenue has a negative but significant relationship with human development index. It is believed that the negative contribution came as a result of the resource curse ideology. On the other hand, non-oil revenue has a positive but insignificant association with dependent variable. Aptly, it considered the need for diversification of exportable product.

Doki, et al., (2019), researched on the export diversification affects economic growth. It made use of the Bounds Co-integration test and the Error Correction Model (ECM) under the Autoregressive Distributed Lags (ARDL). The result showed that export diversification has positive but immaterial effect on economic growth in Nigeria in the long and the short run. It therefore, recommended that the government should intensify the effort to diversify the economy and properly channels towards the manufacturing and service industry export with the optimism that bulk of revenues comes from these sectors.

Salami (2018), evaluated the impact of non-oil revenue on government revenue and economic growth. The study used secondary data. The data were analyzed using inferential statistics, comprising of the simple regression analysis of the ordinary least square method. The independent variable is the non-oil revenue while gross domestic product (GDP) and total government revenue served as dependent variables. The findings shows a significant relationship non-oil revenue and economic growth at 1% level of significance ($t = 26.58$, $p =$

0.00); significant relationship exists between non-oil revenue on total government revenue at 1 percent level of significance (t = 25.25, p = 0.00). It was concluded that government should use the revenue generated from petroleum to invest in other domestic sectors such as Agriculture and manufacturing sector in order to increase the revenue source of the economy.

Edeme, Onoja, and Damulak (2018), believed that proper records and account of the solid minerals has not reflected in the nation's economy and as such there is need for wide awake inter-agency cooperation to monitor the volume of mineral resources illegally escaping the shores of the country without proper account. The need to increase revenue from this sector has brought about many programmes initiated to revitalize the agricultural sector by the government (Ogunbiyi, & Abina, 2019). Some of these programmes in time past are; Anchored Borrowers Programme (ABP), National Economic Empowerment Development Strategy (NEEDS) and Agricultural Transformation Agenda (ATA). The most recent among the programme is diversification from oil dependence to non-oil based. This diversification should be holistic in nature and such; it should embrace accountability and transparency.

Akilo (2012) examined the significance of oil in the development of Nigerian economy over the period 1960 and 2009. The study showed that oil could cause other non-oil sectors to develop. However, oil had adverse effect on manufacturing sector. Findings revealed bidirectional causality between oil and manufacturing, oil and building and construction, manufacturing and building and construction, manufacturing and trade and services, and agriculture and building and construction. It also confirmed unidirectional causality from manufacturing to agriculture, and trade and services to oil. However, the study found no causality between agriculture and oil, likewise between trade and services and building and construction. In conclusion, the study recommended appropriate regulatory and pricing reforms in the oil sector in order to integrate it into the economy, and as well reverse the negative impact of oil on the manufacturing subsector in Nigeria.

Oladipo and Fabayo (2012) examined global recession and oil sector, based on its effects on economic growth in Nigeria. Analysis from the study revealed a negative and significant relationship between economic growth and oil produced in the country. The result also showed the existence of a decline in the oil sector due to global recession. The study, therefore, recommended deregulation of the oil sector for efficient performance, and more rigorous policies that will reduce global effects on the sector as it contributes the largest percentage of income to the Nigerian economy.

Omo and Bashir (2015) also empirically examined the relationships among oil revenue, government spending and economic growth over the period 1980 and 2012 using time series data, ordinary least square, co-integration, vector error correction model and granger causality test. Findings from the analysis revealed that oil revenue granger caused both of total government spending and growth while there was no causality between government spending and growth in the country. The study, therefore, recommended that government should increase spending on capital projects as well as intensify efforts at increasing output in the oil sub-sector in order to boost economic growth in Nigeria. Victor (2015) investigated the relationship between oil revenue and industrial growth in Nigeria using Augmented Dickey Fuller test, Johansen Co-integration test, Ordinary Least Square and Vector Error Correction mechanism. The result of the study revealed that oil revenue significantly impacted positively on industrial growth in Nigeria. The study recommended a sustained policy formulation and implementation in the industrial/petroleum sector of the economy through the involvement of stakeholders. Joseph et al (2016) examined the contribution of oil revenue to economic development in Nigeria over the period 1991 to 2012 using regression analysis with the aid of SPSS version 20. Empirical analysis from the study revealed that a unit change in growth rate of oil revenue will lead to an equal unit change in growth rate of gross domestic product.

Christopher Ifeacho et al (2014), the study applied ordinary least square estimating technique and the result show that non-oil export exhibits a significant positive relationship with per capita income. This indicates that if non-oil export volume is increased it is going to lead to a significant improvement in the Nigerian level of economic development. However, other variables do not have individual significant impact of economic development but jointly they can significantly influence economic development. In addition, the result shows that the coefficient of trade openness is negative thus, indicating that Nigeria might not be benefiting enough by trading with outside countries. This shows that trading partners of Nigeria are gaining more from trade transactions than Nigeria. This calls for review of trade policy of Nigeria if the positive effect of non-oil export on Nigerian economic development is to be promoted.

Okezie and Azubike (2016) evaluated the contribution of non-oil revenue to government revenue and economic growth in Nigeria from 1980 to 2014. To achieve the research objective, relevant secondary data was sourced from the statistical bulletin of the Central bank of Nigeria and statement of accounts. The data was analyzed using the Ordinary Least Squares Regression. The result revealed a positive and significant contribution of non-oil revenue to economic growth and positive but slightly insignificant contribution to government revenue. The study recommended that efforts should be intensified by the government mostly at the Federal level in bringing to fruition the diversification of the nation’s productive sector judging from the great potentials and capacity of the non-oil sector in enhancing revenue and economic growth. Also, machinery need to be set in place to drive the policy and strategies aimed at opening up the non-oil productive sector and setting it on track for revenue generation and sustainable growth. All efforts to sabotage this course must be nibed in the bud as the development of the non-oil sector remains a veritable channel for tapping into Nigeria’s hidden wealth.

Ude and Agodi (2014) investigated the time series role of non-oil revenue variables on economic growth in Nigeria. This study thus extends the literature in this area by employing co-integration methodology alongside error correction mechanism to investigate the impact of non-oil revenue on economic growth in Nigeria. The study employed annual observations from 1980 to 2013. The non-oil revenue variables analyzed are: agricultural revenue and manufacturing revenue. Results show that agricultural revenue, manufacturing revenue and interest rate have significant impact on economic growth in Nigeria. Results also show the existence of long-run equilibrium relationship and short run dynamic adjustment with speed of about 52% to restore equilibrium. The study concludes that non-oil revenue has the potential to unlock Nigeria's economic morass a policy recommendations are provided Anthony.

Igwe, et al (2015) examined the impact of non-oil export to economic growth in Nigeria for the period 1981-2012. The study adopted the export-led growth hypothesis as the framework of study. A production function which specified economic growth as a function of capital stock, labor and non-oil export is formulated to express the relationship between the dependent and the independent variables. The econometric techniques of Johansen co integration and the vector error correction model are chosen to ascertain the impact and the long run relationship between the dependent and the explanatory variables. Also, the Granger causality technique is used to investigate a causality relationship between economic growth and the independent variables. Findings from the VEC analysis reveal that in both the short and long runs, non-oil export determines economic growth. Also, the co-integration analysis indicates a long run relationship between non-oil export and economic growth over the period under study. These two findings agree with the theory of export-led growth hypothesis. However, the Granger causality analysis indicates no causality relationship between non-oil export and economic growth. A uni-directional causality relationship runs from capital stock to economic growth. Also, a uni-directional causality relationship runs from economic growth to labor force.

Identification of Research Gap

From the literature and empirical review above, many studies have been carried on Non-oil export revenue and Economic growth in Nigeria and other countries. Many researchers have used Gross Domestic Product (GDP) to measure Economic Growth and most of these studies centered specifically on GDP without much emphasis on Per capita income per individual head (PCI) and moat of these studies were very scanty in Nigeria especially studies on exploring and tapping solid, minerals potentials because of the activities of illegal, unskilled miners, thereby reducing the Growth of GDP. The study tends to expand the scope of revenue generation beyond oil and gas sector by employing three set of independent variable as Agric sector to GDP, Manufacturing sector to GDP, Solid minerals to GDP aim at ascertain its impact to Nigerian citizens welfare in terms of better living standard ,quality and accessible education and reduction of poverty level which could as well stimulate economic growth and development in Nigeria.

This study tends to use GDP and PCI as dependent variable. Finally, from the review of the literature above, almost all the studies employed mainly qualitative and descriptive analysis in their research work as against this current research which focus on the quantitative assessment of the contribution of Agric sector, manufacturing sector and mining sector to the economic development in Nigeria towards diversification of Nigerian economy through mainly quantitative and time series data analysis.

The study however will span for up to 30 years (1986-2017), unlike other studies that spanned shorter period. It could be deduced that the findings of those studies were based on the data far back from 2007. Hence, this study fills the gap by increasing the number of years of study and the use of statistical software known as Econometric views version 9 (E-views) so as to increase the reliability of findings. It is based on this vacuum created by previous studies that this study intends to fill.

METHODOLOGY

Research Design

The descriptive research design will be adopted in this study. The reason for using such design is as result of Ordinary Least Square and Multiple regression to be employed aim at examining the relationship of the independent variables with the dependent variable using time series data.

The population with regards to this study covers the totality of non-oil revenue in Nigeria. Hence, the accessible population will cut across Agric sector revenue, manufacturing sector and revenue from mining sector.

Sample and Sampling Techniques

The study intends to employ the convenience sampling technique because the sample were chosen because they are accessible and within the reach of the researcher.

Nature/Source of Data

The nature and source of the data that the researcher intends to use are secondary sources which are to be obtained from CBN statistical Bulletin 2017, Nigeria Bureau of Statistics, ministry of Agriculture and rural development, ministry of mines and steel development, ministry trade and investment, Nigerian Mining Corporation (NMC)Yearly Report.

Methods of Data Collection

In the course of this research work, time series data will be used and the researcher intends to obtain it from Central Bank of Nigeria Statistical Bulletin 2017 and other Federal Government relevant publications and statistical report from United Nations development programme.

Operational Measure of Variables

PCI	GDP per capita as a proxy for Economic Development.
GDP	Total monetary values of all the three sectors to GDP contribution.
Value of Agriculture	Contribution of Agriculture to the GDP as a proxy for Mining operation of Forestry, Cropping, food and cash crops etc.
Value of Manufacturing	Contribution of Manufacturing to the GDP as a proxy for Mining operation of Lime stone, cement etc.
Value of Solid Mineral	Contribution of Solid Mineral to the GDP as a proxy for Mining operation of coal, iron ore and Quarrying etc.

The variables in the model comprises of the independent variable and the dependent variable. The independent variable or explanatory variable are proxy with Agric sector output, manufacturing sector and solid minerals whereas the dependent variable are proxy with GDP and PCI in Nigeria.

Data Analysis Techniques

Given the nature and objective of this study, multiple regression will be adopted, the Ordinary Least Square (OLS), Diagnostic test and Granger Causality regression estimation technique through the econometric views (E-views) statistical package version 9 will be used. The ordinary least square method was chosen because it possesses some optimal properties. Its computational procedure is fairly simple and it possesses the property.

This is deemed an appropriate data analyses technique for the purpose of this study with regards to the nature of data collected and the research objectives. To estimate the effect of criterion variable PCI, and GDP the predictor (Agric sector, manufacturing sector, mining sector) unit root test will be used to determine the statistical properties of the variables and to determine if they are stationary. This is done in order to avoid spurious regression and misleading judgment. The unit root and the co-integration test will be employed to examine whether the variables exhibit both the short and long run relationship within the variables in the model.

Specification of Model

Independent variable	Coefficient	Std. Error	t-ratio	P-value
Agriculture	2.185	0.242	9.007	0.000
Solid minerals	115.250	114.487	1.006	0.326
Manufacturing	-0.189	1.723	-0.109	0.913
Information and communication	1.636	0.543	3.008	0.006

This study adopts David, Noah & Ayodele (2016) model with little modification. According to them, solid mineral, manufacturing and agriculture determine economic development in Nigeria, proper exploitation and utilization determine the output of mining and production in all the sectors, there is no wastage of resources. We therefore postulate the relationship between per capita income and mining activities as;

PI = f(PNG, SM, MF, AGR) .This model can be modified to suit this work as follows

This is written in a functional form as:

GDP= f (AGS, MS, SMS,) .... (i)

MODEL 1

Equation (i) can be expressed in a linear form or mathematically as

GDPt = β0 + β1AGSt + βMSt + β3SMSt ………… (ii)

By turning equation (ii) into econometric model, to include random term, is expressed as:

GDPIt = β0 + β1AGSt + βMSt + β3SMS+µt ……….. (iii)

Where: β_0+β_1 and β_3 are Constants; GDP=Gross Domestic product; AGS=Agric Sector; MS= Manufacturing Sector; SMS=Solid Mineral Sector; ε=Error Term; Apriori expectation: β_0+β_1& $\beta_{3>0.}$

MODEL 2

PCI=f(AGS,,MS,SMS,) ………… (iv)

Equation (iv) can be expressed in a linear form or mathematically as

PCIt = β0 + β1AGSt + β2MSt + β3SMSt ………… (v)

By turning equation (v) into econometric model, to include random term, is expressed as

PCI t = β0 + β1AGSt + β2MSt + β3SMCt +µt ……….. (vi)

Where: β_0+β_1 and β_3 are Constants; PCI=Per Capital Income; AGS=Agric Sector; MS= Manufacturing Sector; SMS=Solid Mineral sector; ε=Error Term; Apriori expectation: β_0+β_1& $\beta_{3>0.}$

Table 1: Effect of Non-Oil Export on Real GDP

Independent variables	coefficient	std error	t-ratio	P-value
Agriculture	2.185	0.242	9.007	0.000
Solid minerals	115.250	114.487	1.006	0.326
Mfg	-0.189	1.723	-0.109	0.913
ICT	1.636	0.543	3.008	0.006
Intercept	10162656.218	1444945.280	7.033	0.000
R^2	0.996			
F-ratio	1250.115			
P-value	0.000			

Multiple regression analysis was used to investigate the effect of revenue generated from agricultural sector, information and communication sector, solid minerals and manufacturing sector on the real GDP. The result of the regression indicated that the four predictors explained 99.6% of the variance in the real GDP and there was a collective significant effect of agricultural sector, information and communication sector, solid minerals and manufacturing sector on the real GDP ($F(4, 20) = 1250.115$, $p < 0.05$, $R^2 = 0.996$). The individual predictors were examined further and indicated that there is no significant effect of revenue generated from solid minerals (t=115.250, p = 0.326) and manufacturing sector (t= -0.189, p=0.913) on real GDP whereas agriculture (t = 2.185, p = 0.000) and information and communication sector (t=1.636, p = 0.006) had significant effect on the real GDP.

GDP = 2.185AGS – 0.189MS + 115.250SMS + 1.636ICS + 10162656……............................... (i)

Equation (i) shows the impact of revenue generated from agricultural sector, information and communication sector, solid minerals and manufacturing sector on the real GDP. The equation depicts that for every #1000 increase in the revenue generated from agricultural sector the real GDP is expected to increase by #2185 provided there is fixed revenue generated from all other non-oil sectors. Real GDP is expected to decrease by #189 when the revenue generated from manufacturing sector goes up by #1000 provided there is fixed revenue generated from all other non-oil sectors. Real GDP is expected to increase by #115250 for every #1000 increase in the revenue generated from the solid minerals sector provided there is fixed revenue generated from all other non-oil sectors. Also, for every #1000 increase in the revenue generated from information and communication sector the real GDP is expected to increase by #1636 provided there is fixed revenue generated from all other non-oil sectors. Real GDP is expected to be #10162656 provided there is no revenue generated from the non-oil sectors.

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