Original Research Article

An Analytical Inquiry into the Impact of International Trade on Poverty Reduction in Nigeria

Ugochukwu Henry Agbarakwe[1*], Eugene Abuo Okpe[1]

[1]Department of Economics, Faculty of Social Sciences, University of Port Harcourt, Nigeria

*Corresponding Author: Ugochukwu Henry Agbarakwe
Department of Economics, Faculty of Social Sciences, University of Port Harcourt, Nigeria

Abstract: This work is propelled by the alarming rate at which poverty has continued to increase, thereby aiding socio-economic challenges in Nigeria. The work through the application of the ARDL and ECM framework of data analysis on secondary data sourced from the Central Bank of Nigeria, calibrated the impact of international trade on poverty reduction in Nigeria from 1981-2021. The result of the study has proven that the relationship between the nation's non-oil export and poverty is negative. However, evidence from the study more so alludes that the country's export of crude oil overtime has not had any meaningful effect of reducing poverty in Nigeria, rather the rate of poverty has continued to rise with the increase in oil exports. Empirical evidence from the study further revealed that Nigeria's imports within the scope of the work has had a significant negative relationship with poverty, which negates the theoretical condition of their expected relationship. Hence, to overturn this positive trend between oil exports and poverty rate, the Nigerian government needs to train and equip the unskilled poor Nigerian with requisite skills and knowledge that would make them gainfully employed in the oil industry, more so the country is admonished to restrict its imports to just commodities that cannot be produced locally.

Keywords: International Trade, Poverty Reduction, Economic Growth, Crude-Oil Export.

1.0 INTRODUCTION

According to the World Bank Group (WBG) poverty is a multifaceted menace that is disproportionately ravaging all countries of the world. Thus, the measurement of poverty from the perspective of income insufficiency to meet the basic needs of an individual alone is exceedingly inadequate given that poverty is somewhat a multidimensional phenomenon which extends beyond income deficiency to include several forms of other social exclusion or deprivation, such as the lack of access to electricity, water, sanitation, education, health and decent housing to mention but a few. Hence the phenomenon in recent times has become the flagship of discussions and debates that is in need of solutions, because of the associated socio-economic challenges poverty pose to the world economy and Nigeria to be specific. However, the causative factors of poverty are ubiquitously generic across nations but its attendant incidence, severity and socioeconomic threats are rather disproportionally distributed across countries, regions and continents (Agigbogu, Edoko & Okoli 2016). In fact, IMF (2018) and Hailu & Shiferaw (2018) further asserts that considering, the dangers poverty posed on world peace, stability, growth and development including that of Nigeria, as such this global monster must be relentlessly fought both at the individual country level and collectively at the global front in order to halt the menacing nature of poverty worldwide.

Interestingly, at the global level, combination of policies, programs and strategies have been recurrently launched by the Washington consensus group which comprises of the World Bank Group (WBG), International Monetary Fund (IMF) and the World Trade Organization (WTO) targeted at deescalating the current quantum of the world extremely poor people of 732 million that lives below the world poverty borderline of $1.9 per day. These frontline pro-trade institutions like its mainstream classical and neoliberal economists partners have continued to argue in support of multinational trade and they believe strongly in the capacity and effectiveness of international trade to pull poor people out of poverty

worldwide WBG & WTO (2015). The logic behind the overwhelming consensus in the literature for the quest for global trade among nations of the world including Nigeria is justified by the fact that no economy can exist in autarky and hardly is any country self-reliance or self-sufficient given the intrinsic differentials in a country's versus the rest of the world, in terms of the available technical capacity and the resource endowment required to fully produce and optimally meet its demand for goods and services, amidst competitive ends vis-à-vis limited resources. In so far the protagonists of multinational trade assert that the continuous global integration of economies has grossly amplified the interdependence of nations, resulting in the endless crisscrossing of merchandise and services, as well as, the inwards and outwards movement of human and capital far beyond the national circumference of any economy. For instance, in 2019 alone the value of international transfer of goods and services were worth US$ 19 trillion, Signifying a humongous increase of over 47% from the global trade exchange worth of US$10 trillion in 2005, as such the group applauded that the benefits that comes with international trading often far outweigh the perceived apprehensions of the anti-trade scholars (UNCTAD, 2021).

In modern era, the debate for multilateral trading and trade openness is further re-enforced by the pro-trade Chinese poverty eradication achievements, which has become the litmus test and further reaffirm the Washington consensus earlier assertion in support of international trade to have the panacea to lift and effectively eradicate poverty globally (Ravallion, 2009). For instance, the poor people-centered and free trade oriented economic reforms, strategies and policies that started in China in the late 70s has had an unprecedented record of being able to pull out over 66.3% or 655 million people that were living in poverty in 1982 to merely 0.3 % of China's population of 1.41 billion people as at 2021 (Ravallion, 2021).

Unlike the pro-trade scholars, pessimists of free trade have hinged their arguments on the asymmetric distribution of the benefits of international trade between the developed and developing countries. And Frankel and Rosen (2008) and Dowrick & Golley (2004) comparatively argue that the benefits accruable from international trade are disproportionately biased towards the advanced nations because of their inherent advantage in terms of the human capital resource development, technological advancement, infrastructural development and the ease of capital formation, availability and accessibility for production and service delivery that are costs effective, as against the Less Developing Countries (LDCs) that are increasingly suffering from both human capital and infrastructural deficits which have by far stifles production and service delivery in the LDCs. Thus, the anti-trade advocates admonished the LDCs to adopt restrictive or protectionist trade measures because of their disadvantage trade position. And given the prevailing infrastructural and developmental imbalance, international trade to them would neither positively impact on the living condition of the poor nor help in reducing poverty in the LDCs (Ghosh, 2010).

From the theoretical spectrum, Adam Smith absolute advantage theory, Ricardo trade theory of comparative cost advantage and the Hechsher-Olin theory of factor endowment generically gives a background overview into the various ways in which international trade benefits a country and by extension the very poor of the poor in any economy. In the nutshell these theories aptly encourage multilateral trading that is backed by the international specialization of economies. Such specializations would engenders states reliance on one another through trade, and more so has the enormous benefits of uplifting the global standard of living, by providing opportunity for people across all the geographical divide to consume an assorted range of goods and services, which hitherto an individual country could not optimally produced, as well as reduced the cost of living engendered by the competitive macroeconomic space stirred by International trade. Most importantly, global trade can be used as a tool to combat poverty through the opening up of new employment opportunities for the underprivileged in the society. The creation of new jobs enabled by the surge in demand from other nations of the world for the goods and services produce in the country vice versa has a far reaching multiplier effects across the trading partners more so help in up-scaling the global standard of living (Gbosi, 2001) and (Gbanador, 2005) in (Umeh, Nwali & Obi, 2022)

Globally, a cursory review of the trend of poverty according to the World Bank and United Nations poverty indices reveals that the number of extremely poor people living below the global poverty threshold of US$ 1.9 per a day measured by 2011 PPP, has grossly declined overtime from 1.94 billion people amounting to 43% of the entire world population of 4.5 billion people in 1981 to an approximately 10% of the world inhabitants amounting to 689 million people in 2019 out of the world 7 billion people. Conversely, poverty within the Sub-Saharan Africa and Nigeria to be specific, is seemingly upwards mobile and the Sub-region account for an estimated 430 million people, which amounts to over 70% of the world poor in 2019 and Nigeria alone account for roughly 13% and 21% of the total extremely poor people in the world and the sub-Saharan Africa respectively (Chandy & Gertz, 2012) and (Haider, 2020). In spite of the global effort to end poverty worldwide by 2030, ironically, the feasibility of eradicating all dimensions of poverty is currently being hampered by both the global pandemic (Covid-19) and the expansionary nature of poverty in the sub Saharan Africa and Nigeria in particular which has further pushed roughly 97 million people into poverty of which 54 million or 56% of this new entrants into poverty lives in the sub Saharan Africa. And between 88 to 115 million people are very much susceptible to fall into the poverty trap, thereby suppressing the global efforts of ending all ramifications of multidimensional poverty worldwide or

at least reduce world extremely poor people to 3% of the world total population by the year 2030, as targeted by the United Nations (UN) sustainable development goals (SDGs) WBG (2020).

Contextually, the incidence of poverty as it relates to Nigeria reveals that the phenomenal level of poverty and unemployment rates in the country are basically two of the major macroeconomic woes that are ravaging the nation economy and these two prominent vices are instrumental in energizing the preponderance of socio-economic unrest that has befallen the Nigerian Economy till date. Hence Ozughalu & and Ogwemike (2018) likened the growing debates in the literature on the need for Nigeria to promptly end all forms of poverty to a number increasing socio-economic problems that poverty has unleashed on the nation, these challenges include but not limited to terrorism, Boko haram malaise, banditry, prostitution, armed robbery, social unrest, theft, corruption and advanced fee fraud otherwise called 419 or yahoo-yahoo. All these enumerated criminal minded tendencies taking place in the country are more than average necessitated by the state of socioeconomic and political hopelessness of the majority of our people that are living deprived lives with income that can hardly meet their needs?

According to the world poverty clock, Nigeria endowed with huge natural and human resources is ironically the contemporary poverty capital of the world, with a population of 83 million of its people living below the poverty frontier out of the entire population of 200 million WBG (2020). More worrisome is the continuous positive linear progression of poverty over the years in the country that has seen the number of people living in poverty rose exceedingly from 28.1% or 18.1 million in 1980, 69.5% or 68.0 million in 1998 to as high as 88.0% but declined to 84.02 million in 2002 and in 2020 the number of people living in absolute poverty in Nigeria has hit a high of 89.1 million. And to further corroborate on ton high level of poverty in Nigeria from its multifaceted perspective, the national bureau of statistics (NBS) data show that about 133 million of Nigeria's estimated population of 213,401,323 people are multidimensionally poor NBS (2021). This implies that in addition to income poverty, an equivalent of 66.3% of Nigerians are living below the global threshold in the measurement of poverty from the multifaceted outlook, because the Nigeria poor masses are still very much challenged with the problems of shortages or the non-existence of gamut of social deprivations which include, educational poverty, inequality, housing poverty, health poverty, water poverty, energy poverty and so on, Adeoti (2014).

Although, the poverty burden in Nigeria is endemic, nonetheless there have been a handful of poverty abatement policies, strategies, reforms and programs which include but not limited to better life for rural women, national directorate of employment (NDE), national poverty eradication program (NAPEP), national economic empowerment and development strategy (NEEDS, SEEDS & LEEDS) and the anchor borrowing program were introduced by each successive government in the country, aimed at dampening the rate at which poverty is growing in the country. Incidentally, the successes of these programs are yet to fully permeate into the nooks and crannies where the rural poor live in order to combat the rising level of both urban and rural poverty in Nigeria. From the foregoing, this paper is targeted at establishing the nexus between foreign trade and its trickle-down effect on poverty in Nigeria and also look at the opportunity available to Nigeria to leverage on the perceived capacity of international trade to act as a catalyst to de-escalate and possibly eliminate the mountainous level of poverty in Nigeria.

To achieve the aforementioned objectives, the work further undertook a synoptic dissection of the structure of Nigeria's trade with the rest of the world vis-à-vis poverty headcount in Nigeria. A synoptic exposition of the structural evolution of Nigeria's trade with the rest of the world can be best analyzed in three different approaches. These dimensions of structural changes can be dichotomized into a set of changes that have occurred over the years with particular reference to the shift in demand and supply for the goods and services that have dominated the nation's imports and exports. Seconded by the sectorial adjustments that have evolved pertaining to Nigeria's external trade and lastly by the changes that have taken place in terms of the leading exports and imports destination countries.

However, to explore the nature of the structural shifts of Nigeria's trade with the rest of the world, it is also proper that we examine the changes that have characterized the nation's total trade volume over time. Notably, Nigeria's external trade both from the bilateral and multilateral perspectives has witnessed significant variations, which has seen the volume of external trade grow exponentially from a mere trade worth of #276,993,500 in 1960 with a corresponding trade-to-GDP ratio of 9.2% to over #14.768 billion in 1980, #748.887 billion in 1995 and hit its all-time high of #22.834 trillion in 2012, before depleting heavily to #9.456 trillion in 2016, with a further increase to #20.711 trillion in 2019 and nose-dived again to #13.62 trillion in 2020. And the ratio of trade to the country's GDP within the reference periods hovered between 9%and 29% respectively.

An appraisal of the structure of Nigeria's external trade with regard to the sectorial shifts and the leading commodities imported and exported in and out of the country over time reveals that at the verge of the nation's political independence up-to early 70s. The constituents of the country's exports was dominated and led chiefly by agricultural products like groundnut, palm oil, Rubber, Cocoa, cotton and the like. Such that the agricultural sector and its products were the leading sector that drove the country's exports and accounted for approximately between 90% and 44% of the

nation foreign exchange earnings and contributed about 63%, 49% to 26% of the country's GDP in 1960, 1970 and 1975. While, all other sectors of the economy put together with an export worth of #8.8 million, #136.2 million and #510.0 million in 1960, 1965 and 1970 correspondingly contributed about 2.8%, 25.4% and 57.6% of the nation's total Foreign Exchange inflow.

However, the discovery of crude oil in 1957 in Oliobiri has grossly altered the initial condition of Nigeria's trade with the rest of the world and have brought about both sectorial and commodities shifts in the country's merchandise exports. Incidentally, the prominence of oil as the leading foreign exchange earnings started in the mid-70s and up to date oil exports remains the single and the topmost exports earnings merchandise and oil is currently the lifeblood of the nation's economy. Consequently, the petroleum (the mining or extractive industry) sector and oil exports substantially accounted for roughly 92% of Nigeria's foreign exchange earnings in 1975, since then and up to date oil exports on the average accounts for roughly 82% to 94% of Nigeria's foreign exchange earnings. While, the other sectors of the economy including the agricultural sector and its products which were hitherto the frontline exports commodities have hugely decline to about 7.4% in 1974, 3.0% in 1985 and fluctuates between 6.43% and 11.32% of the country's total exports from 2018 to 2021 NBS(2022).

A cursory examination of the leading exports and imports destination countries revealed the dynamic changes that have taken place over time. In terms of the leading export destination countries in the 60s and the early 70s the leading destination countries were mostly European countries and America, led by Great Britain which accounts for 45% and 65% of the nation's total exports. Furthermore, by 2000 America still led with over 42.47% followed by India 14%, Spain 8.66%, France 6.12% and Italy 4.13% of the country's total exports. In recent years the leading exports destination countries has also change and in 2019 out of the country overall exports worth of #13,165,127.35 billion, Nigeria's exports to India displaced the United States and took the lead accounting for 15.41%, Spain 9.92%, Netherland 9.08%, Ghana 7.47% and France 6.62% respectively.

On the other hand, the country imports over the years reveals that the volume of imports has grown exponentially from just #432 million in 1960 to #576,592 million in 1995, and #16,959,875.08 million in 2019, before falling to #12,700,943.81 million in 2020, with a further increased to #20,843,964.95 million in 2021. A further appraisal of Nigeria imports with respect to the top imported commodities, more so depicts an occurrence of significant shifts over the year. While the leading commodities imported into the country in 1970 were machinery #285.3 million, manufactured goods #227.0 million and chemicals importation #88.5 million accounting for about 38%, 30%and 12% of the total imports. However, in 1994 fuel imports being a major constituent of chemical importation took the lead and accounted for 30% of the total imports of #66938.9 million, followed by machinery and transport equipment 29% or #19546.2 million and manufactured goods #17136.4 million or 26% respectively.

In modern times the type of commodities imported into the country have also changed and from 2018 to 2021, the following sectors or commodities top the list of imports, manufactured goods accounts for 56.7%, 70%, 56% and 50%. Fuel importation 31%, 16%, 23% and 31%. And raw material imports 8.6%, 8%, 11% and 9.2% in 2018, 2019, 2020 and 2021 respectively. Nevertheless, the leading imports originating countries have also changed over the years, from mostly European countries that dominated Nigeria imports in the 60s and 70s, to the USA that took the lead accounting for 18% of Nigeria's total imports in 2010. And currently Nigeria's imports is grossly dominated by imports from China and India that constitutes over 25.5% and 12% of the country's total imports of #16 trillion in 2019.

Incidentally, in assessing the poverty level of Nigeria vis-à-vis the significant growth in the volume of the nation exports, imports and total external trade values portray that the rate of poverty in Nigeria is seemingly positively related to the growth in the country's trade with the rest of the world. For example Nigeria's trade with the rest of the world phenomenally rose from just #276,993,500 in 1960 to hit the first billion mark of #4.208 billion in 1975 and later increased to it all time high of #22.824 trillion in 2012. Although, the volume of total trade decline to #9.456 trillion in 2016, however, the volume of trade rose again by over 56% in 2019, before a downward close of #13.62 trillion in 2020.

In contrast, the level of Nigeria's poverty has continuously grown from 18.1 million people equivalent to 28.1% of the country's overall population of 66.6 million in 1980 to 60% which amounts to 59.3 million people out of Nigeria's entire population of 98.4 million people were credited to be living in absolute poverty in 1995. And, in a decade and half the number of Nigerians living below the poverty benchmark skyrocketed to 99.3 million people which was far beyond the entire population of Nigeria in 1995. However, the percentage of Nigerians that lived below the poverty frontier seemingly declined from a high of 84.02 million in 2002 to 69.01 million in 2003. Nevertheless, in recent times the poverty figures are on the rise hitting its all-time high of 121.4 million in 2017. Although, the trend has decline to 85.2 million in 2018, afterwards the rate of poverty in Nigeria is on the rise again and as at 2020 over 89.1million Nigerians are still living in extreme poverty. Considerably, the volume of Nigeria's external trade over the years vis-à-vis the country's huge poverty deposits has remained a source of concern and demand for more academic exploration. Hence, the main fulcrum of this

study is to scholarly contribute to the endless debates by further interrogating both the empirical and theoretical efficacy that underpins the nexus between external trade and poverty reduction in the context of Nigeria.

2.0 LITERATURE REVIEW

This section of the paper is set to dissect the theories underpinning International trade. Historically, these theories have evolved at every point in time of the global development, nevertheless, trade theories began in the 17th and 18th centuries with the mercantilist trade rationalisation that was not in itself a theory per se but it is still contestable in the literature followed by Adams Smith theory of absolute advantage, the theory of comparative costs advantage postulated by David Ricardo and the theory of factors endowment put forward by Heckscher, Ohlin and Samuelson.

2.1 Review of Theoretical Literature and Empirical Literature

The mercantilist trade rationalisation which supposedly became the watershed of subsequent the global trade theories in the 17th century reliably supported the regulations, control and protection of trade among nations of the world. Mercantilism as a trade philosophy absolutely places emphasis on protectionist trade methodologies which encourages nations of the world to focus more on increasing their exports and import less in order to earn positive trade balances. The more surplus balances a country accumulates goes to show the level of a country's wealth vis-à-vis other nations of the world and the wealth of any nation was measured by the quantum of gold and silver otherwise referred to "Spie" owned and continually amassed by the country at the expense of other nations.

Theory of Absolute Advantage

The Smithian theory of absolute advantage is an antithesis of the mercantilist trade idiosyncrasies. Adam Smith critically interrogated the mercantilists' rationalisation and in his usual conventional laissez-faire idiosyncrasy believed strongly in the deregulation of trade, the International division of labour and specialisation. According to Smith, trade would be of mutual benefits to the trading partners if and only if each of the nation trading specialises in the production of a commodity for which they have absolute advantage and import the commodity that they have absolute disadvantage. The theory hypothetically envisaged a model of international trade were there exists 2 countries, 2 commodities and labour as the only factor of input ($2\times2\times1$ model), underlying this framework Smith advocated that each of the nation should engage in the production of commodity to which they have the least labour cost of production and yet produces more of the commodity as against its trading partner.

The Theory of Comparative Cost Advantage

Comparative cost advantage is an international trade theory propounded by David Ricardo in his book titled Principles of Political Economy and Taxation published in 1817. The theory took a critical appraisal of Adams Smith theory of absolute advantage, by and large Ricardo substantially adopted the Smithian hypothetical $2\times2\times1$ model. However, by contrast he came to the conclusion that nations could engage and mutually benefit from trade on the basis of comparative cost advantage more so seamlessly referred to as opportunity costs. Ricardo rather argued that a country may have absolute advantage in the production of both commodities as alluded to by Smith but such a country might fall short of comparative cost advantage in the production of both commodities. Thus, countries should engage in the production of a commodity with the least opportunity cost of production between the countries.

Theory of Factors Endowment

The theory of factors endowment more so refer to as modern trade theory emanated from the seminar works of Heckscher and further supported by his student Ohlin, which is why in some literature the theory is often referred to as the H-O model. However, a further modification of the theory by Paul Samuelson has altered the initial abbreviation of the H-O model to H-O-S model which stand for Heckscher-Ohlin-Samuelson model. The thrust of the H-O-S theory is conceived on the argument that the production of any commodity is neither completely depended on labour as a single factor input nor is it an absolute function of the comparative opportunity cost alone. Conversely, according to H-O-S framework, production depends on labour and capital as the only factor input. The H-O-S framework hypothetically propagated a $2\times2\times2$ model which depicts 2 countries, 2 commodities and 2 factors input (labour and capital). The H-O-S model using the aforesaid model asserts that two nations stand a chance of mutually benefitting from trade if each of them specializes in the production of commodities which they have more factor endowments or advantage and import commodity that they have the least factor advantage or factor disadvantage. In a nutshell, the H-O-S model noted that nations are by nature disproportionately endowed with various proportions of Labour and capital, as such a country that is labour endowed is advised to specialize in the production of labour intensive goods, this is because labour would be relatively cheaper than capital. On the other hand, a country that is capital endowed should produce capital intensive goods and import Labour intensive goods vice verse.

Empirically, a significant amount of scholarly energies have been invested and would be continuously deploy to empirically unearth the link between International trade and poverty reduction. Nonetheless, there are a handful of conflicting evidence in the empirical literature that had calibrated the nexus between foreign trade and poverty reduction,

while some of the study results give credence to the theoretical assertion that international trade act as a catalyst for poverty reduction in a number of countries surveyed Umeh, Nwali and Obi (2022) and Komal and Madan (2020). Contrarily, studies by Muhammad, Aye and Chinnasamy (2013), and Thelle *et al.*, (2015) discovered otherwise that international trade does not significantly lead to poverty reduction in some of the nations investigated. Interestingly, amidst the increasing debates a study by Aigheyisi (2013) uniquely discovered that international trade rather induces the level and rate of poverty. From the foregoing, some of these research are reviewed as follows.

Umeh, Nwali and Obi (2022) interrogated the impact of international trade on poverty reduction in Nigeria. The work deployed the Johansen co-integration and ECM data analysis techniques, the outcomes of the Johansen co-integration and ECM tests reveals that trade significantly leads to poverty reduction both in the short and long runs in Nigeria. The paper encourages Nigeria to diversify her exports in order to maximise the benefits accruable from trade.

Komal and Madan (2020) surveyed the impact of India's exports on the country's poverty reduction, using a combination of OLS and GMM estimating methods. The findings of the OLS framework reveals that the nexus between India's exports and poverty reduction is both statistically significant and apriori acceptable, meaning that the growth in India's exports has had a diminishing effect on the country's poverty level. Similarly, the GMM result aligned perfectly with the OLS.

Thelle *et al.*, (2015) in a country specific analysis explore the performance of exports of 78 developing countries on their poverty reduction, spanning over fourteen years. The study employed GMM estimation technique, empirical evidence from the paper which evaluated the link between exports and poverty reduction inferred that exports do not in any way significantly lead to poverty reduction in these countries. However, the work encourages countries to implement sound internal policies that could be of benefit to them.

Muhammad, Aye and Chinnasamy (2013) examined the link between trade, economic growth and poverty reduction in Nigeria. The data sets were extracted from the CBN, using the ARDL framework; empirical facts from the work indicate that trade does not significantly lead to poverty reduction in Nigeria. As such, the paper admonished the government to embrace protectionist trade policies.

Using a multiple regression estimation technique, Aigheyisi (2013) examined the impact of economic growth and human development effect of globalization in Nigeria. Evidence from the paper inferred that trade has led to the increase in poverty rate in Nigeria, consequently, the work implored Nigeria to be circumspect in adopting full blown liberal trade policies, and rather the country should protect her baby enterprises to her advantage.

3.0 METHODOLOGY
This study adopted expost-facto research framework of analysis to empirically established the nature of the nexus between International trade and poverty reduction in Nigeria from 1981-2021. Thereof, the paper relied on secondary data sourced from the annual statistical bulletins of the CBN and the WBG, and further deployed the following techniques for data appraisal unit roots test, ARDL Bounds cointegration test and ARD ECM framework to calibrate the hypothesize relationship underpinning the dependent and independent variables.

3.1 Model Specification
The model for the work is a modified version of Sheereen (2020) and Umeh et al, (2022) models. Therefore, the functional model for this work is constructed as follows.
POV =F (NOE, OLE, IMP, GDP, FDI, FOR,) --------------equ (1)
Equ (1) can further be transformed into an econometric linear or Log-linear model as provided below.
Linear Form
$POV = X_0 + X_1 NOE + X_2 OLE + X_3 IMP + X_4 GDP + X_5 FDI + X_6 FOR + u$ -------------equ (2)
Transformation of equ (2) into Log-Linear model
$LPOV = X_0 + X_1 LNOE + X_2 LOLE + X_3 LIMP + X_4 LGDP + X_5 LFDI + X_6 LFOR + u$----equ (3)
Where:
X_0 = coefficient of the intercept
$X_1 - X_6$ = Are the coefficient of the estimated parameters.
L= Represent the natural logarithm
A-priori or the theoretical expectations of the estimated parameters. $X_1<0$, $X_2<0$, $X_4<0$, $X_5<0$, $X_6<0$ and $X_3>0$,

Variables
POV= Number of people living below the poverty line in millions. NOE= Non-oil exports. OLE= Oil exports. GDP= Gross Domestic Product.
IMP= Imports. FDI= Foreign Direct Investment. FOR= Foreign Remittances.

4.0 RESULTS AND DISCUSSIONS
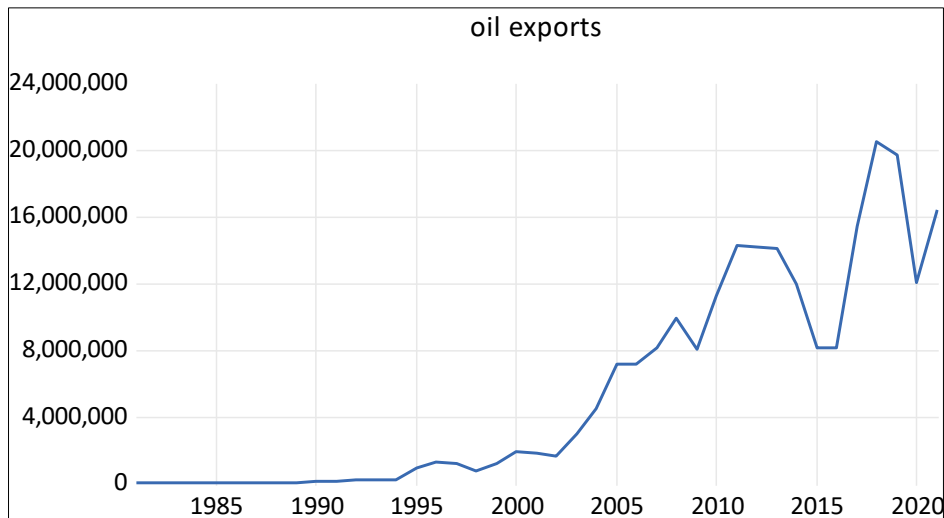**Data Presentation and Trend analysis on the relationship between international trade and poverty in Nigeria**
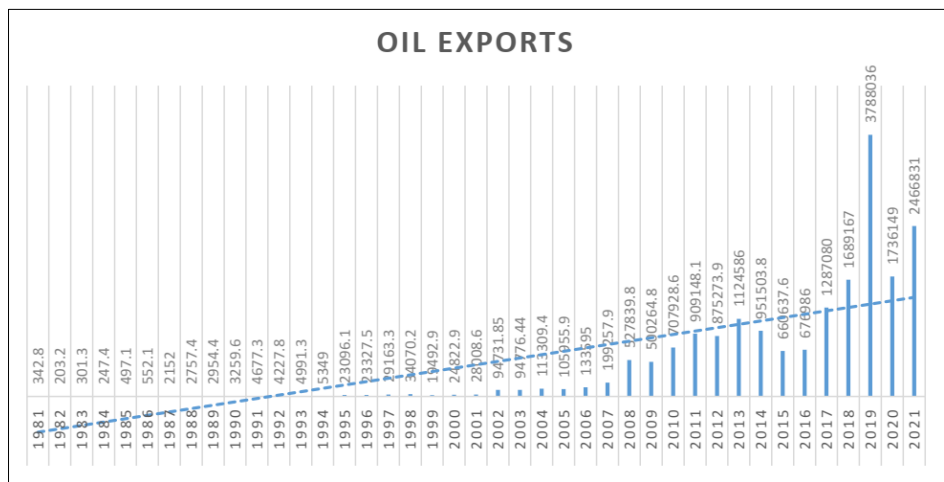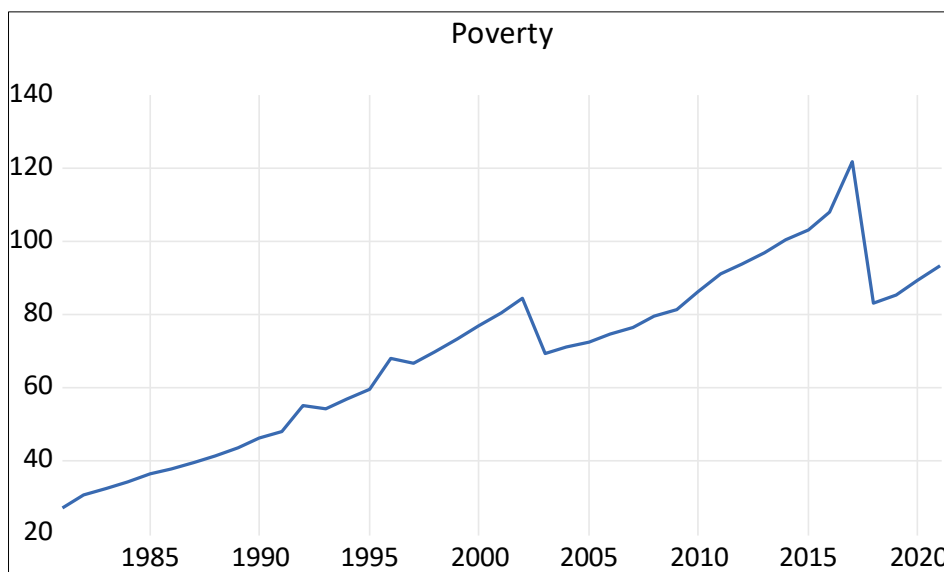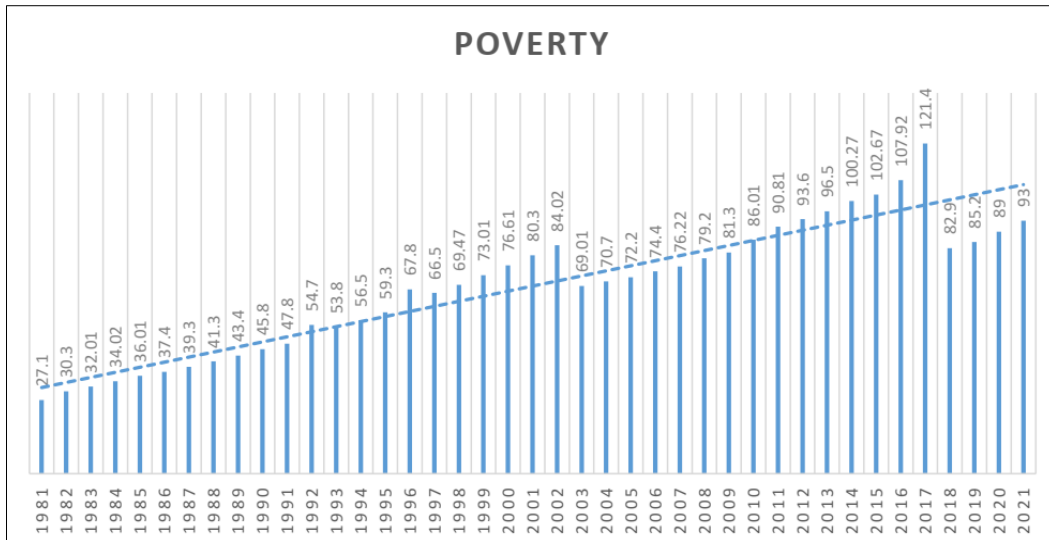

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

imports

Fig. 7

IMPORTS

Fig. 8

GDP

Fig. 9

GDP

Fig. 10

FDI

Fig. 11

FDI
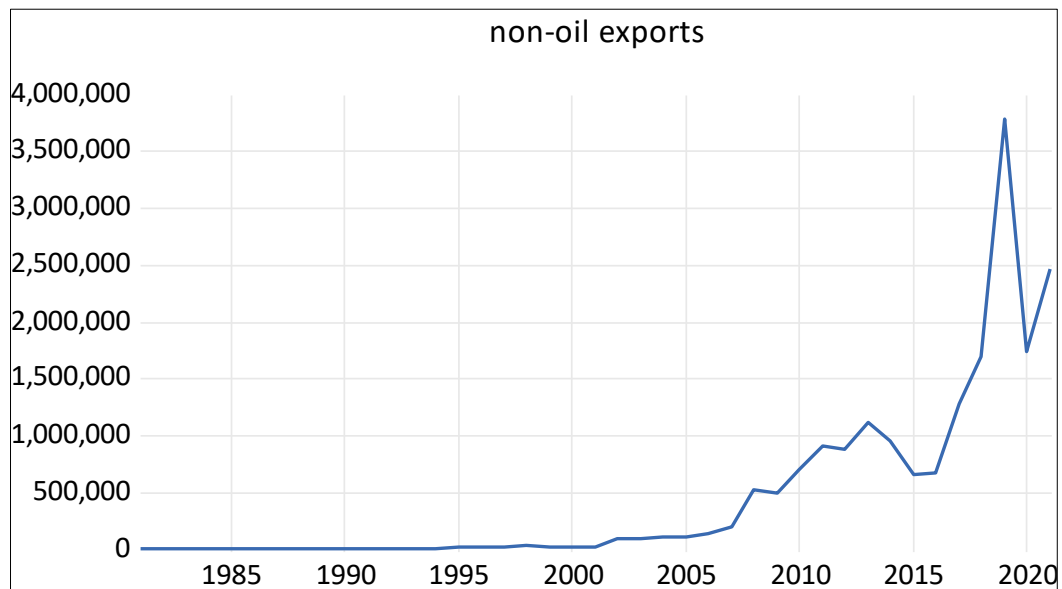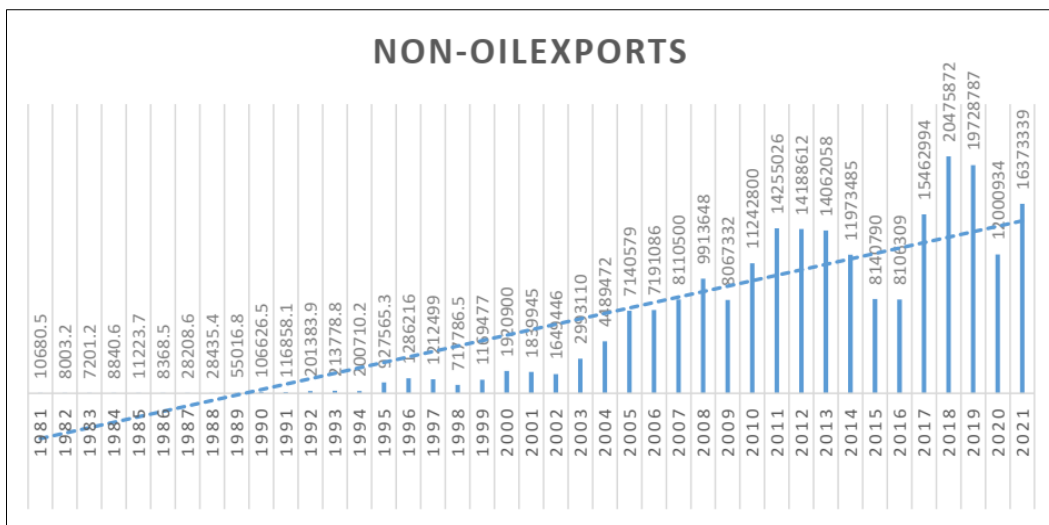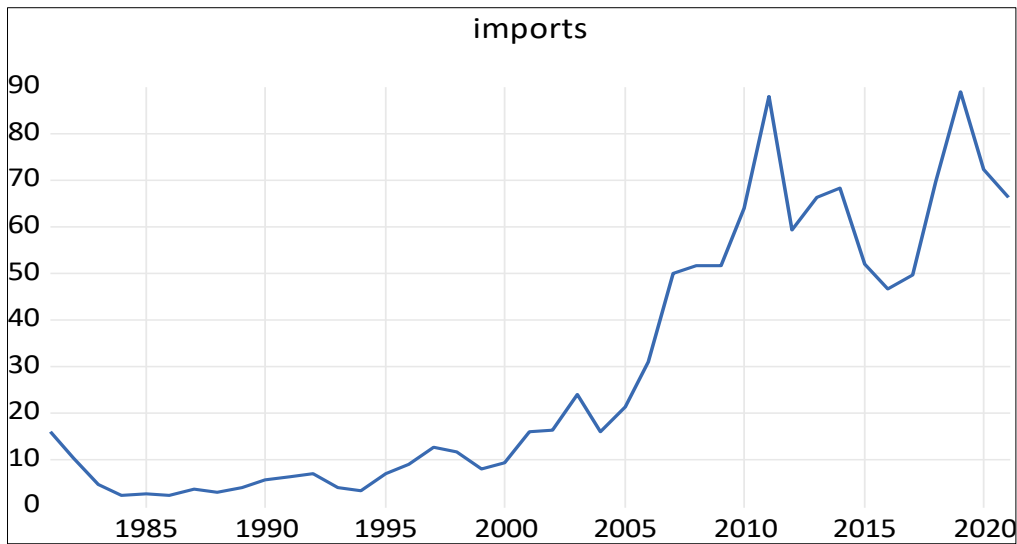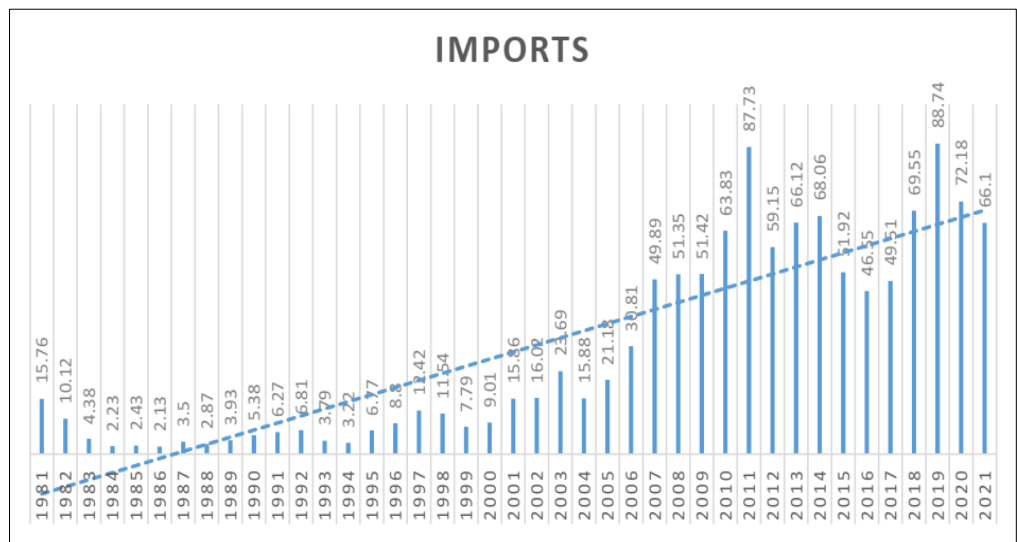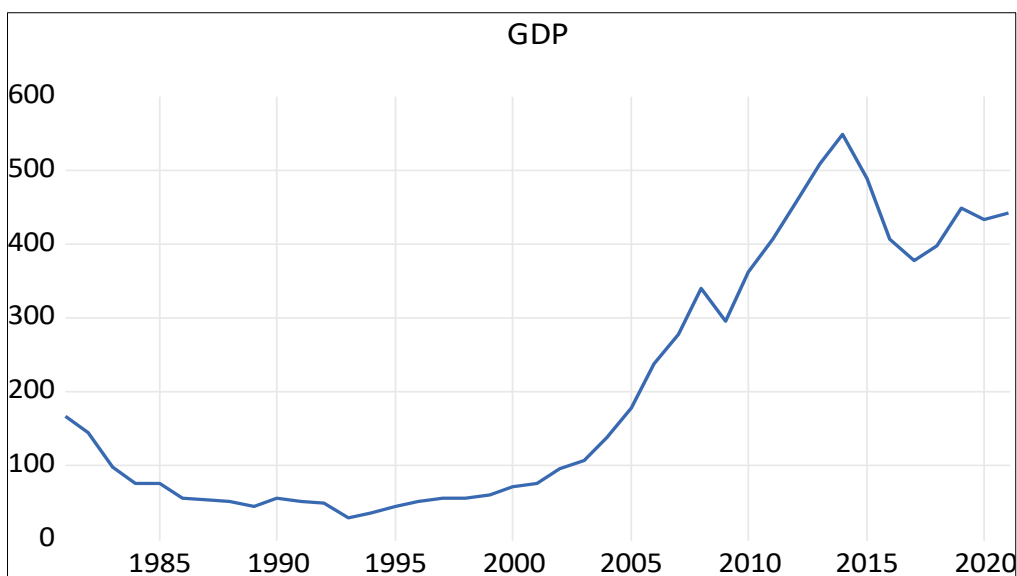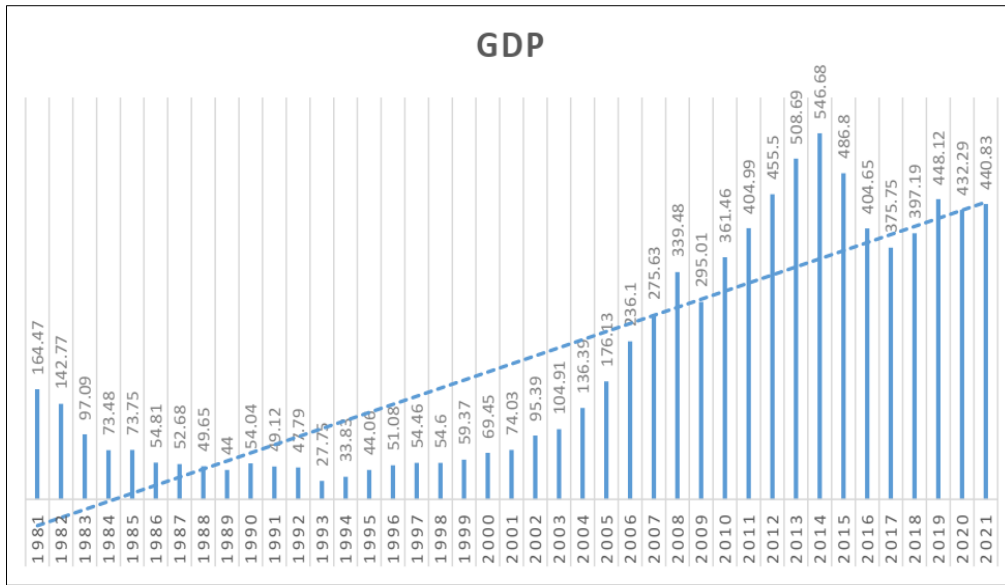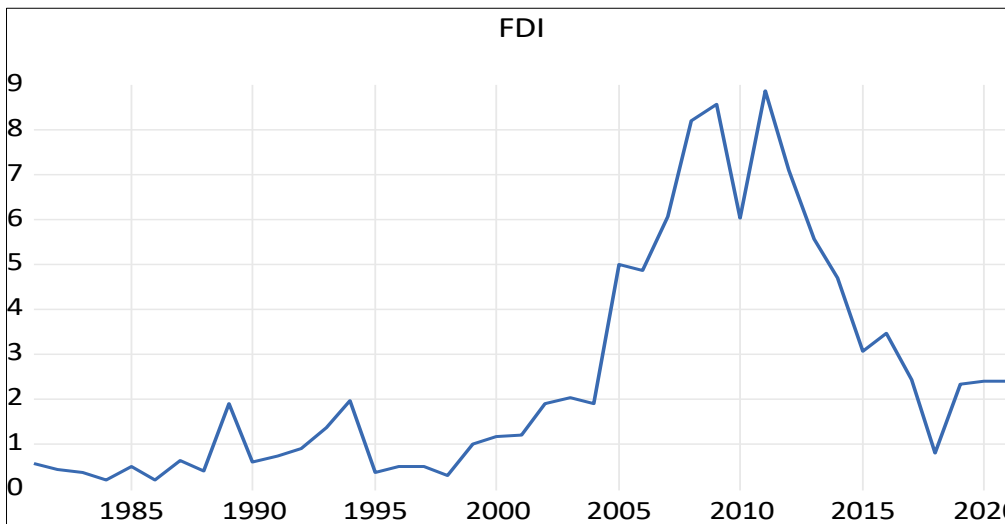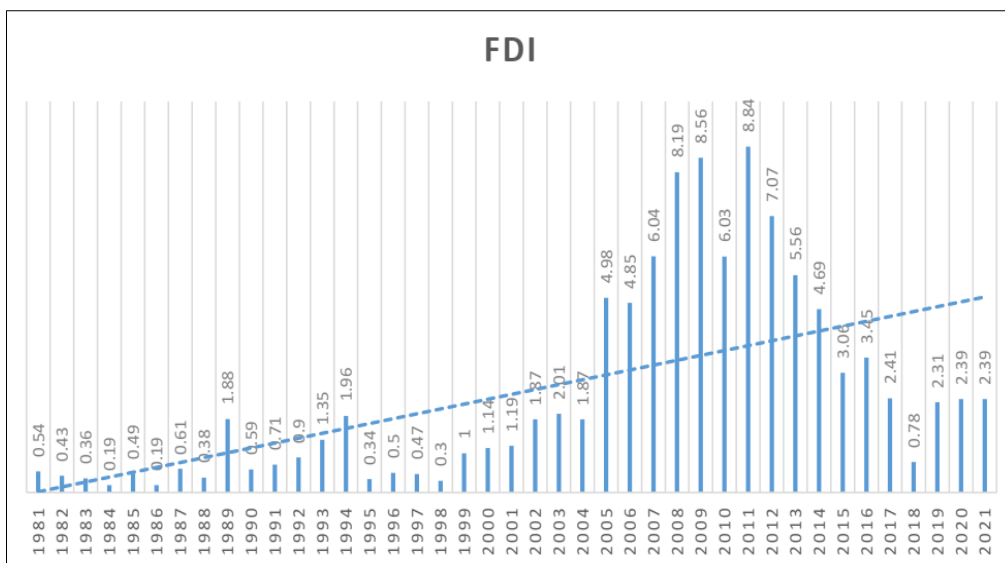
Fig. 12
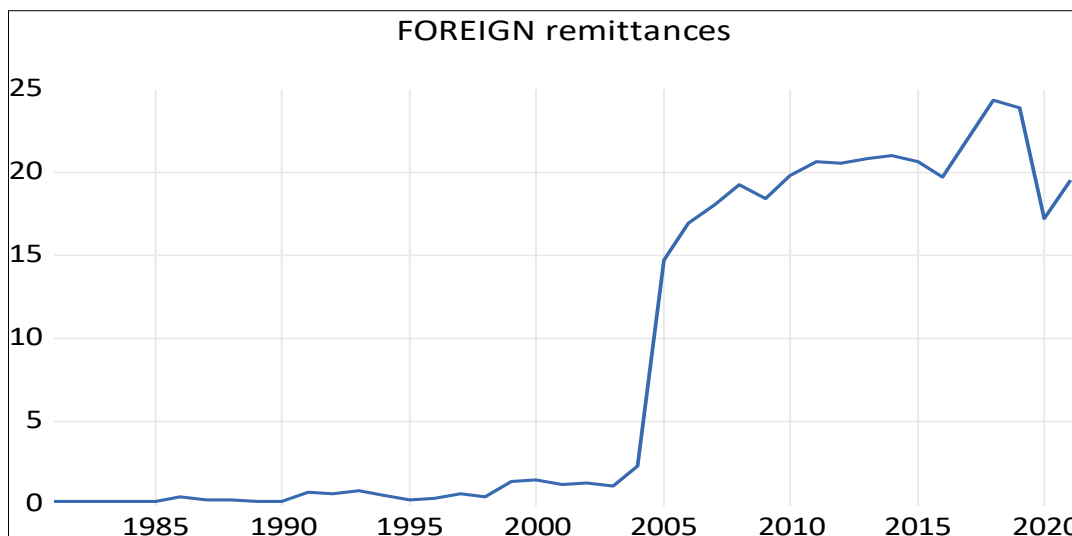
Fig. 13
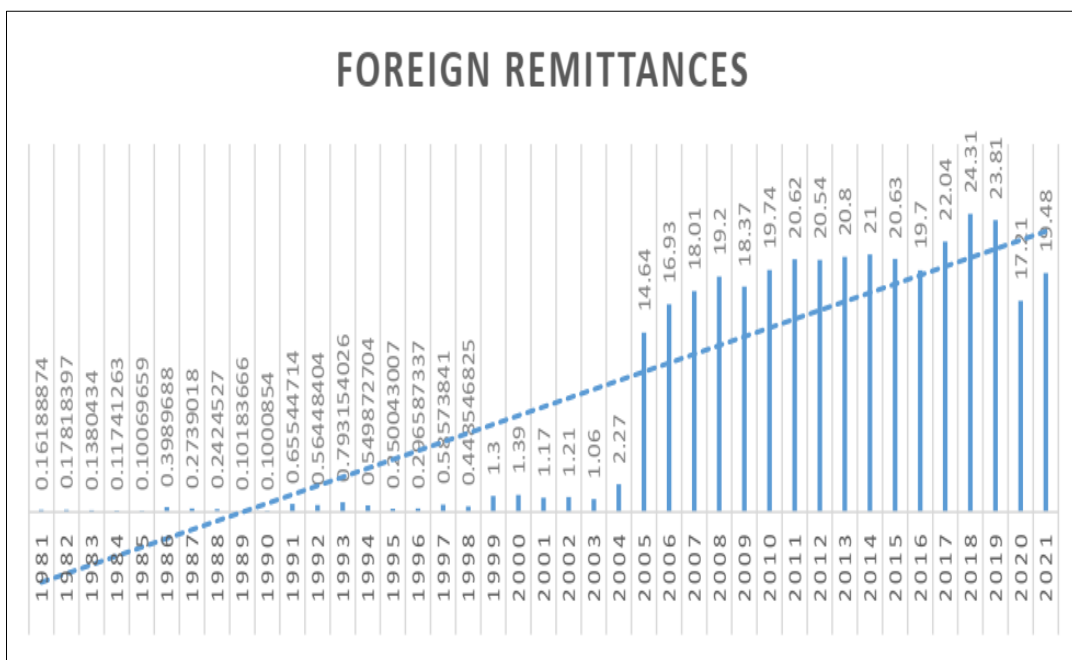
Fig. 14

Unit Root Test

Macroeconomic indices are volatile and trendy by nature as such the variables are largely non-stable. Thus, it is consequential that we subject the variables into stationary analysis to guide against the estimation of regression that the results would perhaps be erroneous, biased and spurious.

Table 1: Results of ADF- Unit Root Test.

Variable	Level ADF T-stats	Critical Value	Prob 5%	ADF first Difference T-stats	Critical value	Prob 5%	Order of Integration
LPOV	-2.811008	-2.936942	0.0657	-6.828172	-2.938987	0.0000	I(1)
LNOE	-1.392069	-2.936942	0.5677	-6.455170	-2.938987	0.0000	I(1)
LOLE	-0.879102	-2.936942	0.7846	-7.807353	-2.938987	0.0000	I(1)
LIMP	-0.520405	-2.936942	0.8765	-5.056148	-2.938987	0.0002	I(1)
LGDP	0.014128	-2.936942	0.9543	-4.387373	-2.938987	0.0012	I(1)
LFDI	-1.995405	-2.936942	0.2876	-10.15770	-2.938987	0.0000	I(1)
LFOR	-0.941851	-2.936942	0.7643	-6.153157	-2.938987	0.0000	I(1)

Author's Compilation from E-view 12

Table 2: Results of Philip Peron Unit Root Test

Variable	Peron Level Stat.	Critical Value	Prob 5%	Peron Test at first Difference	Critical Value	Prob 5%	Order of Integration
LPOV	-3. 869545	-2.936942	0.0050	- - -	- - -	- - -	I(0)
LNOE	-1.198829	-2.936942	0.6650	-9.708903	-2.938987	0.0000	I(1)
LOLE	-1.547673	-2.936942	0.4995	-6.557544	-2.938987	0.0000	I(1)
LIMP	-0.681123	-2.936942	0.8375	-5.020614	-2.938987	0.0002	I(1)
LGDP	-0.369480	-2.936942	0.9048	-4.307133	-2.938987	0.0015	I(1)
LFDI	-1.702266	-2.936942	0.4225	-10.17347	-2.938987	0.0000	I(1)
LFOR	-2.309549	-2.936942	0.8065	-6.742631	-2.938987	0.0000	I(1)

Author's Compilation from E-view 12

Evidence from the unit root test results from both ADF and Philip Peron tests as shown in Table 1 and 2 reveals the variables order of integration.

While, ADF unit root test results prove that all the variables were not stationary at level, nevertheless, the model variables all attained stationary after first differencing. However, a similar test conducted using the Philip Peron framework revealed that only the Log of poverty (Lpov) is stationary at level I (0). But, other variables failed the level test and regained stationary after first differencing I (1). Therefore, following the unit root test results above, the study is more adaptable to the Autoregressive Distributed Lag ARDL techniques of data analysis because the method is flexible and applicable in a mixed order of integration. Hence, the need to calibrate the long run association of the model variables using the ARDL Bounds test techniques.

ARDL Bounds Test

Table 3: Result of ARDL Cointegration

Test – Statistics	Value	Significance	Lower bound I(0)	Upper bound I(1)
F-statistics	6.644582	5% Level	2.45	3.61
K	6			

Author's compilation from E-view 12

The F-Bounds test result as presented in table 3 indicates that the Null hypothesis which states that there is no long-run association among the model variables is invalid or rejected. Evidence by the fact that the F-statistics value of 6.644582 which is greater than the upper F-bound value of 3.61 meaning that the variables are cointegrated. In other words, there is an existential long-run relationship among the variables. However, characteristically on the nature of the long-run relationship existing between the regressands and each of the regressors, table 4 below clearly alludes to the nature of this relationship.

Table 4: Long-run Relationships Test Result

Variable	Coefficient	Std. Error	T-stat	Prob
LNOE	0.214224	0.067139	3.544404	0.2440
LOLE	0.083118	0.060440	1.237995	0.053
LIMP	-0.261577	0.103750	-2.521228	0.0303
LGDP	0.040811	0.089833	0.454296	0.6593
LFOR	-0.178959	0.057419	-3.116721	0.0109
LFDI	0.129106	0.038833	3.324666	0.0077

Author's compilation from E-View12

Table 4 above is an extract of the result of the long-run relationship between the dependent variable on the one hand and each independent variables on the other hand, while the long-run relationship between LOLE, LFDI and LPOV is positively significant, that of LNOE and LGDP is positively insignificant. However, the long-run relationship between LFOR and LIMP are negatively significant at 5% level.

Table 5: ARDL Short-Run and ECM Test Result

Variable	Coefficient	Std. Error	t-Stat	Prob
D(LNOE)	-0.036931	0.030490	-1.178456	0.2615
D(LNOE(-1))	-0.091696	0.026600	-3.447245	0.0048*
D(LOLE)	0.132861	0.028715	4.626843	0.0006*
D(LOLE(-1))	-0.141648	0.027978	-5.062820	0.0003*
D(LIMP)	-0.063592	0.044681	-1.423258	0.1801

Variable	Coefficient	Std. Error	t-Stat	Prob
D(LGDP)	-0.172254	0.059560	-2.892126	0.0493*
D(LFDI)	0.037455	0.015098	2.480819	0.0289*
D(LFDI(-1))	-0.060475	0.017278	-3.500207	0.0044*
Ecm= -0.841537 Prob= 0.000*	R^2= 0.861965	R^{-2}= 0.723930	F-stat= 6.244528 Prob= 0.000154 *	D.W=2.6

*indicate 5% significanceAuthor's extract from
E-View 12

Table 5 is a presentation of the results of the estimated parameters of the short-run model. Consequently, an R^2 of 0.841537 which defines the model explanatory capacity reveals that the model explanatory variables collectively account for over 84% of the overall variations in poverty in Nigeria. And the remaining 16% is ascribed to variables not integrated into the model but have been captured by the error term. F-stat value of 6.244538 and its probability of 0.000154 depict that the model is adequately robust and statistically significant. Most importantly, the coefficient of the ECM (Error term) is statistically significant and has a negative sign as theoretically required. Which implies that the short-run shocks, breaks or disequilibrium in the model is corrected in the long-term by an annual adjustment speed of -0.84, this denotes that the short-term divergence in model is rectified and creates a long-term convergence by 84% speed of adjustment annually.

The coefficients of estimated parameters of the ECM short-run model reveals the degree of elasticity between the explained and the explanatory variables. The coefficient of the difference log of non-oil exports is negative, implying that there is an inverse relationship between non-oil exports and poverty reduction in Nigeria, although not statistically significant at 5% level. The NOE coefficient of -0.036 indicates that a unit change in the NOE would lead to about a 4% fall in poverty rate in Nigeria. More so, the coefficient of GDP of -0.172254 and its significant probability value of 0.0493 indicates that 1% change in GDP would result in an over 17% decline in poverty in Nigeria. Conversely, the coefficients of Oil export and FDI were not theoretically plausible, though statistically significant. The coefficients of Oil exports and FDI revealed that there exists a positive relationship between these two independent variables and poverty. Meaning that a unit increase in each of the variables would lead to an increase in poverty in Nigeria vice-versa all things being equal. For example, the result proves that the coefficient of oil exports of 0.132861 depicts that a unit change in oil exports would lead to 13% increase in poverty rate, which shows that oil exports in the short-term has not led to poverty reduction in Nigeria.

Lastly, the coefficient of Nigeria's imports appears with a negative sign which negates the a-priori condition, though not significant statistically. The imports coefficient of -0.0635 indicates that a unit change in imports would result in roughly 6% fall in poverty in Nigeria.

Diagnostic Tests Analysis
Normality Test

Series: Residuals	
Sample 1985 2021	
Observations 37	
Mean	8.76e-16
Median	0.001044
Maximum	0.089175
Minimum	-0.056704
Std. Dev.	0.031679
Skewness	0.366010
Kurtosis	3.488209
Jarque-Bera	1.193562
Probability	0.550581

Fig. 15

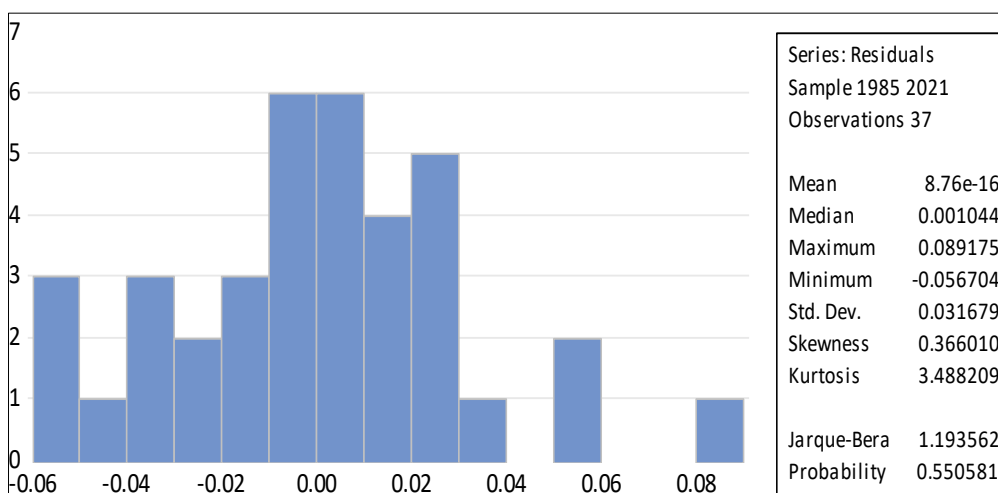The normality test conducted indicates that the residual is normally distributed given the Jarque-bera statistics of 1.193562 and the corresponding probability value of 0.550581. This implies that the model is normally fitted.

Autocorrelation Correlogram Q-test Result
The serial correlation test carried out using the correlogram Q-test to evaluate if the error term is correlated overtime is presented in the table below.
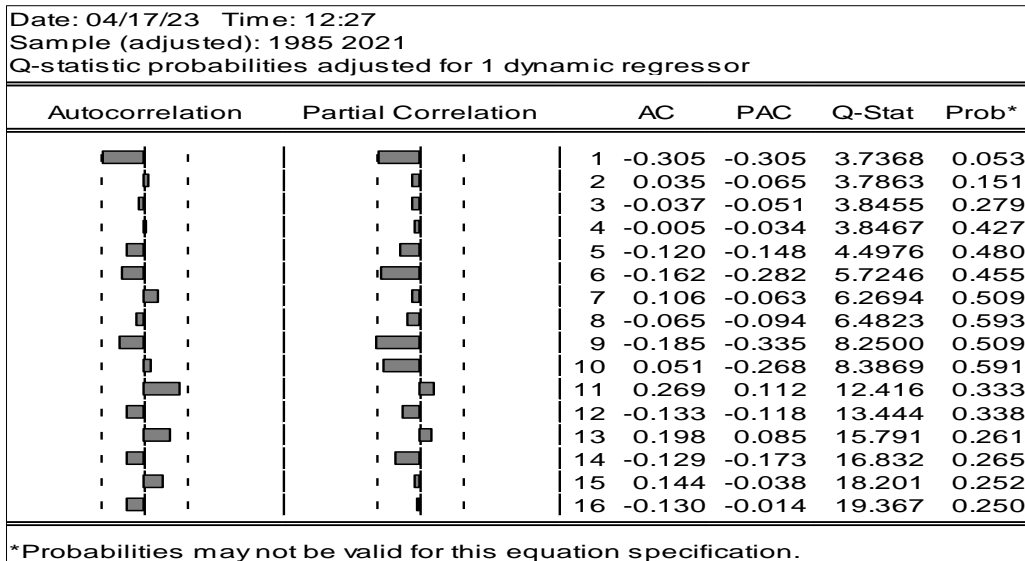
```
Date: 04/17/23  Time: 12:27
Sample (adjusted): 1985 2021
Q-statistic probabilities adjusted for 1 dynamic regressor
```

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
		1	-0.305	-0.305	3.7368	0.053
		2	0.035	-0.065	3.7863	0.151
		3	-0.037	-0.051	3.8455	0.279
		4	-0.005	-0.034	3.8467	0.427
		5	-0.120	-0.148	4.4976	0.480
		6	-0.162	-0.282	5.7246	0.455
		7	0.106	-0.063	6.2694	0.509
		8	-0.065	-0.094	6.4823	0.593
		9	-0.185	-0.335	8.2500	0.509
		10	0.051	-0.268	8.3869	0.591
		11	0.269	0.112	12.416	0.333
		12	-0.133	-0.118	13.444	0.338
		13	0.198	0.085	15.791	0.261
		14	-0.129	-0.173	16.832	0.265
		15	0.144	-0.038	18.201	0.252
		16	-0.130	-0.014	19.367	0.250

*Probabilities may not be valid for this equation specification.

Fig. 16

The result of the correlogram Q-test probability values in all the 20 lags periods is greater than the 5% significance level implying that the error term is non-correlated.

Heteroskedasticity Test Result

Breusch-Pagan-Godfrey test of heteroskedasticity was deployed to explore the nature of the error term or the residual with respect to its constant variance property.

F-Stat: 0.977523. Prob: 0.4356
Observed R^2: 4.043643 Prob: 0.4001

The above F-stat and observed R^2 probability value at a 5% significance level indicate that we cannot reject the Null hypothesis which states that the error term is homoscedastic. Hence, the residual variance over time is constant.

Result of Ramsey Reset Test

Ramsey reset test was employed to evaluate if the model of the study is linear and mathematically adequately constructed, the result of the test shows that the probability values of T-stat (0.8985) and F-stat (0.8985) are higher than 5% significance level. This implies that we cannot reject the Null hypothesis, meaning that the model is linear and mathematically well-specified.
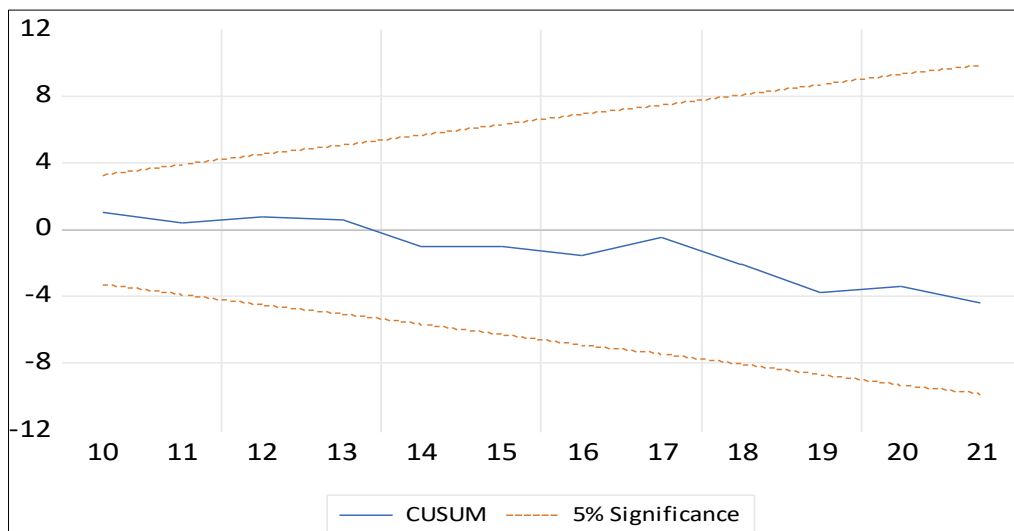
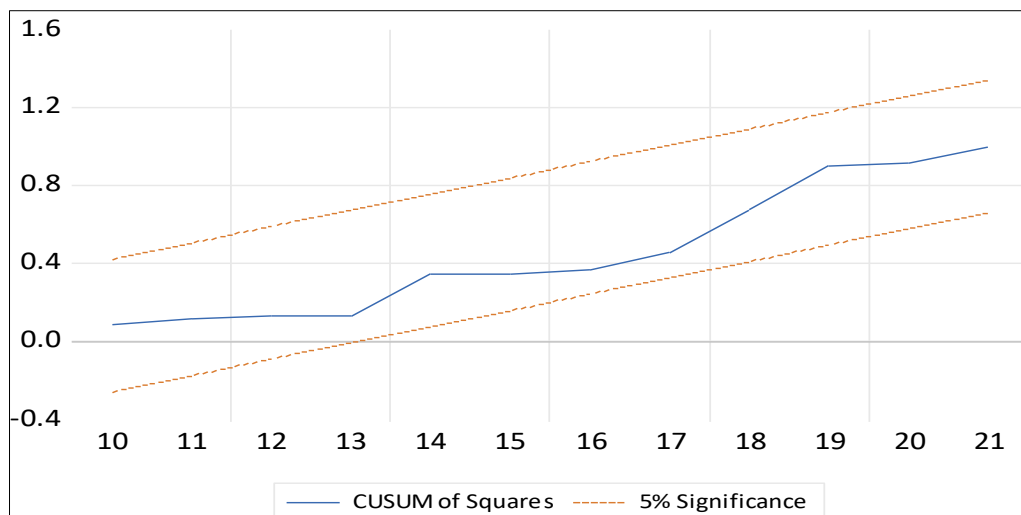**Results of Model Stability Test**

Fig. 17

Fig. 18

Both Cusum and Cusum square test results presented above reveal that the model is stable because the model line falls between the two critical lines.

5.0 CONCLUSION

Summarily, the work is propelled by the alarming rate at which poverty has continued to increase, thereby aiding socio-economic challenges in Nigeria. Consequently, the work through the application of the ARDL framework for data analysis calibrated the impact of the various components of international trade on poverty reduction in Nigeria. The result of the study has proven that the relationship between the nation's non-oil export and poverty is negative, although not significant. This further illustrates that the non-oil oil exports of the Nigerian economy could be made to be statistically significant if and only if government at all levels provide the requisite infrastructural support and subsidies to the agricultural, manufacturing and the service sectors, so as to increase the productivity of these sectors and by so doing provide the avenue for job creation that would eventually deescalate the alarming rate of poverty in Nigeria.

Conversely, evidence from the study alludes that the country's export of crude oil overtime has not had any meaningful effect of reducing poverty in Nigeria, rather the rate of poverty has continued to rise with the increase in oil exports. Thus, this inference with respect to the Nigeria context is certainly plausible, given that the oil sector is highly capital intensive and employs mostly skilled workers as against the Nigerian poor masses that are relatively largely unskilled. Hence, to overturn this positive trend between oil exports and poverty rate, the Nigerian government needs to train and equip the unskilled poor Nigerian with requisite skills and knowledge that would make them gainfully employed in the oil industry.

Empirical evidence from the study further revealed that Nigeria's imports within the scope of the work has had a significant negative relationship with poverty, which negates the theoretical condition of their expected relationship. This is explainable as continuous importation implies crowding out of the indigenous producers and depriving them of their income. Hence we recommend that government should minimize importation by restricting it to only commodities that cannot be produced locally. This way there will be demand for the locally made ones and producers can remain in business and earn some income.

Lastly, evidence from the work indicates that both GDP and foreign remittances were statistically significant and made the a-priori expectations, which explain that the impact of GDP and foreign remittances on poverty reduction in Nigeria is negative. Therefore, government needs to propagates friendly economic policies and infrastructures required to propel economic growth, in addition to taken up the responsibility of training her human capital for both internal usage and human capital export.

REFERENCES
- Adeoti, A. I. (2014). Trend and determinants of multidimensional poverty in rural Nigeria. *Journal of Development and Agricultural Economics*, *6*(5), 220−231. DOI:10.5897/JDAE2013.0535.
- Aigheyisi, O. S. (2013). Economic Growth and Human Development Effect of Globalization in the Nigerian Economy. Evidence in the Democratic Era. *Journal of Economic and Sustainable Development, 4*(*12*), 24-33.
- Anang, H., Linlin, H., & Zhixigia, I. (2003). China's Economic Growth and Poverty Reduction 1978-2002. Economic Quarterly. China Centre for Economic Research, Perking University Press.

- Anigbogu, T. U., Edoko, T. D. & Okoli, I. M. (2016). Foreign Direct Investment and Poverty Reduction in Nigeria. *International Journal of Business and Management Invention*, *5*(*6*) 19-28.
- Candy, L., & Gertz, G. (2011). Poverty in numbers: The changing State of Global poverty from 2005-2015. The Brookings Institute Washington, DC.
- Central Bank of Nigeria (CBN, 2018). *Central Bank of Nigeria Statistical Bulletin,* CBN Abuja, Nigeria
- Ewubare, D. B., & Okpani, A. O. (2018). Poverty and Income Inequality in Nigeria 1980-2017. *International Journal of Advanced Studies in Ecology, Development and Sustainability*, *5*(1), 138 – 151.
- Gbanador, C. A (2005). Devaluation and balance of payments stability in an oil producing economy. *Nigeria Journal of Monetary Economics*, *l5*(4), 4-13.
- Gbosi, A. N. (2001). Contemporary Macroeconomic Problem and Stabilization Policies. Antamic Ventures Nigeria.
- Ghosh, J. (2010). Poverty Reduction in China and India. Policy Implications of Recent Trends. United Nations Department of Economic and Social Affairs (UNDESA) Working Paper No. 92.
- Hailu, D., & Shiferaw, A. (2018). *Manufacturing challenges in resource-rich countries*. Retrieved from https://www.africa.undp.org/content/rba/en/home/blog/2018/manufacturingchallenges-in-resource-rich-countries.html.IMF (2018). The Regional Economic Outlook; Sub-Saharan Africa. Washington, D.C.
- International Monetary Fund. (2018). *the regional economic outlook: Sub-Saharan Africa*. Washington D.C., United States: IMF.
- Kaiser, H. (2020). The bottom billion in Africa: Poverty Trends and Forecasts. K4D Report 922 Institute of Development Studies, Brighton UK.
- Kharas, H., Homel, K., & Hofe, M. (2018). Rethinking Global Poverty Reduction 2019. The Brookings Institute.
- Komal, C., & Madan, L. (2020). The Role of International Trade in Poverty Reduction: A case study of India; *Journal of Commerce &Accounting Research*, *9*(2), 27-40.
- Moses, G., & Ichida, T. (2001). Economic Growth and Poverty Reduction in Sub-Saharan Africa. IMF Working Paper No. 01/112.
- Muhammad, Y., Malarvizhi, C. A., & Aye-Aye, K. (2013). Trade Liberalization, Economic Growth and Poverty Reduction in Nigeria; *International Journal of Business and Management*; *8*(12), 42-56.
- National Bureau of Statistics 2020). Retrieved from htt//nigerianstat.gov.ng/elibrary.
- NBS (2017). Nigeria Poverty Profile 2010. NBS Publication.
- NBS (2020) 2019 Poverty and Inequality in Nigeria: NBS Executive Summary.
- Nwosi, P. I., & Fasina, I. T. (2020). Trade Policy and Export Diversification in Nigeria in the year 1970-2017: A sectoral Analysis. *Entrepreneurial Business and Economic Review*, *8*(1), 127-142.
- Onyeiwu, S. (2021). Nigeria's Poverty Profile is Grim, it's time to move beyond Headcounts. The Conversation Africa Inc.
- Ozughalu, U. M., & Ogwumike, F. O. (2018). Extreme Energy Poverty Incidence and Determinants of in Nigeria: A multidimensional Approach. *Social Indicators Research*. DOI 10.1007/S/1205-018-1954-8.
- Ravillion, M. (2009). A Comparative Perspective on Poverty Reduction in Brazil, China and India. Policy Research Working Paper 5680. The World Bank Group.
- Ravillion, M. (2021). Poverty in China since 1950: A Counterfactual Perspective; National Bureau of Economic Research working paper No. 28370.
- Sheereen, F. (2020). Investigating the Impact of Trade on Poverty Reduction in a Small Island Economy: *International Journal of Economics and Financial Management*; *5*(2), 20-31.
- Slater, J. (2018). India is no longer home to the largest number of poor people in the World. Nigeria is. The Washington Post.
- Sulaimon, M. D. (2020). Multidimensional Poverty and its Determinants; Empirical Evidence from Nigeria. MPRA Paper No. 101842.
- Thelle, M. H., Jeppesen, T., Gjodesen-Lund, C., & Biesebroeck, J. V. (2015). Export Performance Poverty Reduction. *European Commission*. Vol. II.
- UNCTAD (2012). Trade, income distribution and Poverty in Developing Countries: UNCTAD NO. 207.
- UNCTAD (2021). Trade Statistics: Retrieved from: https://unctad.org/statistics.
- UNDP (2019). Multidimensional Index; Developing Countries. UNDP.
- World Bank Group (2020). Nigeria Releases New Report on Poverty and Inequality in Country. World Bank Group.
- World Bank Group (2020). Reversal of Fortune. Poverty and Shared Prosperity 2020. The World Bank Group.
- World Bank Group and World Trade Organisation (2015). The Role of Trade in Ending Poverty. Joint publication by WBG & WTO. Geneva.
- World Bank Group Group (2020). Poverty and Inequality Note: How much will Poverty rise in Sub-Saharan Africa in 2020. WBG No. 20.