

Non-Oil Export and Sustainable Development in Nigeria

¹Silas Idoko Abu, ²Cletus Usman Idoko & ³Ibrahim Joseph Adama

^{1,2&3}Department of Economics, Prince Abubakar Audu University (PAAU),
Anyigba, Kogi State - Nigeria

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Abstract

The study examined the impact of non-oil export on sustainable development in Nigeria using annual time series data spanning 1990-2023. The study used Human Development Index (HDI) to proxy sustainable development as the dependent variable, while the independent variables were Agricultural Sector's contribution to Exports, Manufacturing sector's contribution to Exports, Exchange rate and Trade Openness. The study adopted the Error Correction Model and the Autoregressive Distributive Lag (ARDL) econometric techniques for data analysis. Findings from the study indicated that agricultural sector's contribution to total exports exerts negative insignificant impact on sustainable development in the longrun. Manufacturing sector's export contribution affects sustainable development positively and significantly in the long run, while the effect is negative and statistically significant for exchange rate's contribution to sustainable development in Nigeria. Trade openness is positively and significantly associated with sustainable development in Nigeria. Hence, this study concludes that the neglect of the nation's agricultural sector explains why its impact is not significant in stimulating sustainable development in the Nigerian economy. More so, the nation's manufacturing sector, exchange rate of the Naira as well as the level of the nation's trade openness are crucial economic variables or issues that should not be jeopardized if the goal of sustainable development is paramount to the nation. Based on this finding, the study recommends that the government should revamp, encourage and financially support the nation's agricultural sector in order to make it attractive to both small scale and large-scale investors.

Keywords: *Oil export, Agricultural and Sustainable development*

Corresponding Author: **Silas Idoko Abu**

Background to the Study

Export is referred to as goods and services that are produced in one country and sold to buyers in another country. Exports along with imports makes up international trade. Instead of confining themselves within their geographical borders, countries often seek external markets around the world for commerce, achieving greater revenue and transactional opportunities. Exports have been described as a substance for overall development and increase the earnings of the nations of the world thereby creating an avenue for growth by raising the national income of the countries (Idoko and Wada, 2017). Non-oil exports are products which are produced within the country in the agricultural, mining, quarry and industrial sectors that are sent outside the country in order to generate revenue for the growth of the economy without considering oil products. These non-oil export products are coal, cotton, timber groundnut, coca, beans, etc.

Preceding to the oil boom of the 1970's, Nigeria's export trade was largely focused on non-oil products such as groundnuts, palm kernel, palm oil, cocoa, rubber, cotton, and coffee amongst others. Other non-oil exports so significant then were; tin ore, columbine, skin and cattle. Over 66% of total exports on the average were accounted for by these commodities, and this continued into the early 1970s. Agriculture through export of non-oil products had a high record of contribution up to 80% to the Gross Domestic Product (GDP) and providing employment for over 70% of the working population (Idoko and Wada, 2017). Hence, from the period the Structural Adjustment programme was introduced in Nigeria, concerted efforts had been made to diversify Nigerian export sector by promoting non-oil exports.

Successive Nigerian governments on its part have shown efforts over the years to grow the non-oil export trade by establishing supportive policies. Some of these policies with varying degrees of successes include but not restricted to: protectionism policy in the mode of import substitution policy of industrialization in the 1960s; trade liberalization policy (this took the form of Structural Adjustment Programme) of the mid 1980s and export promotion policy of 1990s which was executed through intensified policy support to Small and Medium Scale Enterprises (SMEs) to enhance productivity and subsequently, export of local products (Onodugo, Ikpe and Anowor, 2013).

UN (1987) conceives sustainable development as development which seek economic advancement and progress which takes cognizance of protecting the long-term value and wellbeing of the economy as a whole. This presupposes that the advancement in the way people live their lives previously should not bring about daunting challenges to their overall standard of living and wellbeing. It is an inter-generational equality with the idea that all resources such as economic, environmental or social should be utilized and distributed fairly across generations (OECD, 2008). It is the development that meets the need of the present without compromising the ability of the future generations (OECD, 2008). The overall goal of sustainable development is the long-term stability of the economy and environment achievable through the integration and acknowledgement of economic, environmental and social concerns throughout the decision-making process

(Emas, 2015). The overall goal or focus of sustainable development is the sustained improvement in the wellbeing and standard of living of individuals in the economy.

The near-total neglect of non-oil sector and the more than necessary dependence on the oil sector with less consideration of its volatile nature evident in its fluctuating price across nations of the globe has marred the economy of several nations beyond repair (Ideh, Okolo and Emengini, 2021). Although revenue derived from oil has to a large extent contributed to the growth and development of several economies; yet, such growth and development has been completely unsustainable as it has been an unreliable source of revenue following its unpredictability and the crises that its fluctuations hold for economies across the globe. Attestations of oil price crash was observed in 1973-1974 during the Arab Oil Embargo, in 1980-1981 when the Iran-Iraq war obstructed the supply for oil and hence a shoot up in price; in 1981-1986 when oil production fell consistently and oil price moved downwards; again, in 2001 during the Asian crisis, the supply of oil was also constrained and in 2007-2011, countries around the globe experienced crisis which adversely influenced oil prices at the global level. Similarly, in June 2014 till 2015 during the Middle East political crises, oil price crashed from \$112 per barrel to about \$38 per barrel; and considering the loss of value associated with the economic product, its demand became relatively low and oil supply also fell hence bringing the price of a barrel to \$31.4 in 2014 and exposing economies of several developing countries to misfortune (Mobosi, Okafor, & Asoh, 2017).

From the foregoing, the importance of non-oil exports as a means for revenue diversification and also as a foreign exchange earner that can stimulate sustainable development of the Nigerian economy cannot be over-emphasized. Thus, the need for a change in the policy focus and a shift from oil dependency to the non-oil sector to motivate growth and development is very imperative if the Nigerian economy must return to the path of sustainable development and self sufficiency. This raises the need to re-examine the role of non-oil exports in the sustainable development of Nigeria. Furthermore, there are huge number of studies that investigated the impact of non-oil export on economic growth across different countries and regions of the world. However, this study mainly focused on the relationship between non-oil exports and sustainable development in Nigeria, using modern empirical econometric techniques.

Statement of the Problem

The contributions of non-oil sector to economic development have been discouraging over the years. Non-oil exports constituted 33% of total exports in 2010, while oil exports constituted 67% in the same year as against non-oil export's contribution of 67% and oil export's contribution of 33% in 1970 (CBN, 2010). Non-crude oil exports rose by over 30% in value between 2018 and 2019. The government in Nigeria disclosed that the total value of exports grew by 2.5% to hit ₦14.4 trillion as at the 3rd quarters of 2019 and the major problem currently facing the Nigerian economy is the substantial decreased in price of crude oil in 2020 due to the COVID-19 pandemic and the 2020 Russia-Saudi Arabia oil price war (Magaji et al, 2021). Despite these glaring challenges, Nigeria is still over relying

on petroleum products without considering the enormous potential of non-oil exports, particularly agricultural crops. This is traceable to the decline in non-oil exports and loss of market share in global non-oil trade performance from 40% in 1970 to 5% in 2010 (Abogan, Akinola and Baruwa, 2014). Although, initiatives and strategic programmes have been enacted for the purpose of economic diversification and resurging the fortunes of agriculture for the Nation's sustained development, but the effective implementation of these initiatives and strategies is another major problem confronting the Nigerian economy.

There is no doubt that agriculture, manufacturing and the small and medium scale enterprises sectors have great prospects and capacities for influencing and causing increased sustainable development of the domestic economy in Nigeria. For instance, the contribution of the agricultural sector to GDP maintained 48 percent in 1970 making the sector the second-largest contributor to the economy of Nigeria after oil; more recently, in 2015 the contribution of the sector to GDP fell rapidly to 26.2 percent thus giving the sector limited chance to benefit from the future prospects in the sector as it has been mentioned that availability of finance for farmers in Africa could command a shoot up beyond 300 percent of agricultural output from \$280 to \$880 billion by 2030; this is evidently a potential threat for the growth of the economy of Nigeria (Chukwuma, 2018). Furthermore, the fall in the contribution of agricultural sector to the Nigerian GDP may be the cause for the relatively low investment in the manufacturing sector which explains the state of unemployment in the country. The more than necessary interest derived for the oil sector and its inflows which practically led to total neglect of the manufacturing sector has made the sector to underutilize its capacity. Apparently, the manufacturing industry capacity utilization rate which declined from 70.1 percent in 1980 to 30.4 percent in 1997, increasing afterwards to 56.5 percent in 2003. The industry further experienced a marginal drop to 44 percent during 2004 and 2015 and then a moderate increase to an average of 56.7 percent in 2016 which remained until 2019 and by implication the contribution of the sector to GDP, which dropped from 9.5 percent in 2015 to 8.7 percent in 2016 remained almost unchanged up to 2019 (Onodje & Farayibi, 2020). The consequence of this anomaly and poor performance of this sector is the increased adoption of imported products as the domestic manufacturing industries continue to perform below average; poor performance agricultural-manufacturing related firms which in effect cause the country to insignificantly benefit from export particularly from agricultural exports. Ultimately, numerous manufacturing firms considering the unhealthy manufacturing environment and their consequent poor performance have failed while others may leave the country or transfer them headquarter to countries with relatively good operating environment. This aggravates the unemployment situation in the country and increase capital flight which holds adverse effect on the sustainability of the growth and development of the Nigerian economy. Consequently, this study examined the impact of non-oil exports on sustainable development of the Nigerian economy.

Research Questions

The following research questions guided the study:

1. What is the impact of agricultural exports on sustainable development in Nigeria?
2. What is the impact of manufacturing exports on sustainable development in Nigeria?

Objectives of the Study

The broad objective of the study is to examine the impact of non-oil exports on sustainable development in Nigeria. However, specifically the study sought to:

1. Examine the impact of agricultural exports on sustainable development in Nigeria
2. Determine the impact of manufacturing exports on sustainable development in Nigeria

Statement of the Research Hypothesis

The following hypotheses guided this study:

H₀: There is no relationship between non-oil export and sustainable development in Nigeria

H₁: There is a relationship between non-oil export and sustainable development in Nigeria

Scope of the Study

This study examined the impact of non-oil exports on sustainable development in Nigeria within the period spanning 1990 - 2023. The reason for the choice of the base year of 1990 and the terminal year of 2023 is due to data availability, thus giving a study duration of 34 years which is relatively recent and long enough to generate a significant statistical result or outcome. The study is centred on only two components of non-oil exports and these are agricultural exports and manufacturing exports. The study explores regression analysis (using an advanced technique) to achieve the objectives. The data used in the study were time series secondary data sourced from the Central Bank of Nigeria Statistical Bulletin for 2023 and the 2023 publication of the National Bureau of Statistics (NBS).

Literature Review

Exports

Exports can be defined as goods and services that are produced in one country and sold to buyers in another country (Idoko and Wada, 2017). Export earnings shoulder vital significance not only for developing, but also for developed countries. Developed countries mainly export capital and final goods, while the main part of export of developing countries consists of the mining industry goods especially natural resources (Idoko and Wada, 2017). It has been rightly established that export trade is an engine of growth as it enhances employment generation through the development of export-oriented industries, increase foreign exchange earnings and improves balance of payment position of a given economy.

Non-Oil Exports

Non-oil exports are those commodities excluding crude oil (petroleum products), which are sold in the international market for the purpose of revenue generation. The Nigeria's non-oil exports sector is structured into four broad constituents which are the agricultural exports, manufactured exports, and solid mineral exports and services exports (Akeem, 2011). The non-oil export products are unlimited as they include agricultural crops, manufacturing goods, solid minerals, entertainment and tourism services etc (Abogan, Akinola, & Baruwa, 2014). Akeem (2011) defined the non-oil sector of the Nigerian economy as the whole of the economy less oil and gas sub-sector. It covers agriculture, industry, solid minerals and the services sub-sector, including transport, communication, distributive trade, financial services, insurance, government, etc.

Onayemi and Ishola (2009) revealed that Nigeria's non-oil exports have performed below expectation under several export promotion policies. Onwualu (2009) identified key impediments to the growth of the non-oil sector as follows: Weak Infrastructure as a national challenge; Supply side constraints due to low level of technology; Low level of human capital development in general; Weak Institutional framework in general and Poor Access to finance. Consequently, efforts have been made over the years by Nigerian governments to grow the non-oil sector of the economy by initiating supportive policies and incentives to encourage the diversification of the economy.

Sustainable Economic Development

Economic Development is a policy intervention effort designed to achieve economic and social well-being of the people (Akwe, 2014). Economic development is concerned with an improvement in the quality of life of people through the introduction of new goods and services using modern technology, infrastructural development, reduction of risk and dynamics of innovation and entrepreneurship (Arnold, 2011). The core objective of economic development is to create an enabling environment for local communities and regions to develop new ways of producing goods in such quantities that may lead to exportation to other countries as well as creating an enabling environment for businesses to thrive. The concept of sustainable development was introduced by the Brundland Commission of the United Nations in 1983 and was referred to as "development that meets the needs of the present without compromising the ability of future generation to meet their own needs". Therefore, sustainable economic development is an economic development that has sound foundation for the future in addition to the maximized welfare at the present (Usman, 2012). Therefore, the sustainability of development in an economy depends on the ability of a country to maintain growth in its gross domestic product and improve the standard of living of people in the country on a continuous basis.

Theoretical Literatures

The Unbalanced Growth Theory

The custodians of the unbalanced growth theory include scholars like, Hirschman, Streeten, Fleming and Singer (1968). They promulgated the theory of unbalanced growth as a plan for development and growth to be used by underdeveloped countries. The

theory emphasizes the need for investment in key strategic sectors of the economy rather than all the sectors simultaneously, for instance, investing into agricultural exports. According to this theory, the other sectors would genuinely develop themselves via what is called “Linkages effect”. The theory contends that an intentional unbalancing of the economy in agreement with predetermined plans by researchers and scholars, is the best means to attain economic growth of a nation. In this regard, Dodaro (1991) observed that development has proceeded in this way with growth being transmitted from the key leading sectors such as agriculture or industry of the economy to other sub-sectors.

Export-Led Growth (ELG) Hypothesis

This study is theoretically underpinned by the export-led growth (ELG) hypothesis. The Export-Led Growth (ELG) hypothesis is at least as old as the classical school, as both Adam Smith and David Ricardo supported it. Among modern economists, Beckerman (1965) attributed exports' favourable impact mainly to the production efficiency gains stemming from improved resources allocation, while Haberlar (1959) stressed the relevance of dynamics benefits, such as the improved availability of foreign capital and technology through the release of the balance of payments constraint. Vernon (1966) focused on the opposite causality channel, in which the self-propelled growth of the domestic economy leads to improved competitiveness and eventually to the expansion of exports. More recent “endogenous growth” theories emphasise the benefits stemming from a dynamic export sector, in a framework characterised by increasing returns to scale and by virtuous technological and managerial spill-over effects towards other sectors (Fedor, 1992). Helpman and Krugman (1985) developed some of Beckerman's and Vernon's ideas, arguing that the initial growth expansion favoured by export expansion through the efficiency and allocation effects reverberates in enhanced international competitiveness, fostering a new round of export expansion and paving the way for a virtuous development path.

Empirical Literature

Idoko and Wada (2017) examined the contributions of Oil and Non-Oil Sectors to the Performance of Nigeria Economy for the period spanning 1981 - 2016. Time series data on Real Gross Domestic Product was used as a proxy for the performance of the Nigerian economy which is the dependent variable; while the independent variables were oil export, non-oil export, oil import and non-oil import. The technique of estimation employed in the study was Ordinary Least Square (OLS) regression analysis and the results showed that oil and non-oil export have significant positive impact on the performance of the Nigerian economy. On the other hand, oil and non-oil import showed that there is a significant negative impact as well as decline in service sector contributions to the performance of the Nigerian economy.

Ajayi and Olasehinde (2020) examined Non-Oil Exports and Economic Growth in Nigeria from 1981-2018 using variables such as non-oil output, trade openness, exchange rate, inflation and interest rates. Autoregressive Distributed Lag (ARDL) cointegration bound test technique, error correction regression and Granger causality were used to achieve the

objectives of the study. The result showed that there existed a positive significant long-run relationship between non-oil exports and economic growth. Non-oil exports exhibited a positive significant short-run impact on GDP, and a uni-causality was established between non-oil exports and economic growth which ran from non-oil exports to economic growth. Ajayi and Omotunde (2022) examined the Effects of Non-Oil Dependency on Economic Sustainability in Nigeria using secondary time series data spanning thirty-one years (1986-2020). Data gathered in the study was estimated using descriptive statistics, unit root analysis, Autoregressive Distributed Lag (ARDL) analysis, parsimonious error correction model and other post estimation tests. Findings from the study established that agricultural sector revenue contribution exerts negative insignificant and significant impact on economic sustainability in the long and short run respectively; manufacturing sector revenue contribution affects economic sustainability positively and significantly in the long run and in the short run, the effect is negative and significant and small and medium enterprise (SME) contribution affects economic sustainability of Nigeria negatively and significantly in the long run and in the short run, the effect is positive and insignificant.

Usoro, Yusuf and Okafor (2020) examined the nexus between non-oil sectoral contribution and economic growth in Nigeria from 1981-2018. The study employed Autoregressive Distributed Lag (ARDL) model and Vector Error Correction Model (VECM). The results confirmed the short-run relationship between the variables where non-oil revenue immediately impact the GDP growth of Nigeria by 8.49%. The study then conclude that the non-oil sector is crucial to the economic growth of Nigeria and therefore suggested increased government investment in the non-oil sector as well as strengthening of institutions. Naanzem, Uwondo, Madaki and Ndam (2023) examined the effects of Non-oil exports on economic growth in Nigeria. Specifically, the study focused on the exports from the agricultural, manufacturing, and services sectors for the period 1986 – 2021. The ARDL technique of estimation was used to determine the effect of Non-oil exports on economic growth. The findings of the study showed that agricultural and services exports have a positive and statistically significant impact on economic growth in the short and long run. It was found that a 1% increase in agricultural exports would increase economic growth by 0.0181% and 0.1270% in the short and long run, respectively while a 1% increase in services export will raise economic growth by 0.0370% and 0.2043%, respectively in the short and long run. Similarly, the findings revealed that manufacturing exports have a positive impact on economic growth in the short-run.

Magaji, Tahir and Usman (2021) investigated population growth, non-oil export and sustainable economic development in Nigeria using autoregressive and distributed lag (ARDL) model techniques. Results indicates that population growth retards sustainable economic development in Nigeria in the long run. While significant positive relationship exists between non-oil export, exchange rate and sustainable economic development in both the long run and short run. The study therefore recommends government concerted effort towards control of the rising population and ensuring that the existing one becomes more productive. Khayat (2024) examined the Impact of Non-Oil Exports on the

Economic Growth in Saudi Arabia during the period 2000-2022. This study used multivariate time series analysis, including Johansen-Juselius co-integration and Vector Error Correction Model to determine the long-run relationship between them. The findings of the study revealed that non-oil exports have a statistically significant impact on economic growth in the long run. However, oil exports have a negative relationship with economic growth in the long run. Moreover, it also observed that a real effective exchange rate negatively affects economic growth while gross capital formation has a positive impact on economic growth in the long run.

Ogunsanwo, Obisesan and Olowo (2020) on the short-run and long-run effects of non-oil trade export on economic growth in Nigeria used time series data on non-oil export (proxied by non-oil total trade, balance of trade, exchange rate and inflation rate); and economic growth (proxied by growth rate of Real Gross Domestic Product) that were sourced and obtained from the Central Bank of Nigeria Statistical Bulletin and Nigerian Bureau of Statistics over a period of thirty (33) years (1986–2018). The study showed that non-oil total trade, balance of trade and exchange rate have positive and significant effects on economic growth in Nigeria while inflation rate has no significant effect on economic growth in Nigeria. Based on the finding of the study, it was concluded that non-oil trade export has positive and significant effects in the short run and long run on economic growth in Nigeria.

Ideh, Okolo and Emengini (2021) studied Non-Oil Sector and Economic Growth in Nigeria: The National Accounts Perspective using data sourced from the Central bank of Nigeria (CBN) statistical bulletin covering the periods of 2000 – 2019. An economic growth model was formulated using the study variables and the model was estimated using vector auto-regression (VAR) techniques, other diagnostic tests such as Roots of Characteristic Polynomial for VAR model stability, Augmented Dickey-Fuller test for time series stationarity, and granger causality tests were conducted to ensure the reliability of the model estimates. The analysis revealed that the estimated model is stable while the VAR and variance decomposition results shows that real gross domestic product is strongly endogenous in the short run but weakly endogenous in the long run. Further findings suggest that in the long run non-oil sector is strongly endogenous to real gross domestic product (92% contribution).

With adequate idea of the grave implications of the overly dependence on oil for economic sustainability in Nigeria, several studies have been carried out to bring this idea to fore; although most studies have focused on the revenues from non-oil sectors instead of their contributions to the total export trade or volume of the country which is the ultimate metric to evaluate the performance of these sectors and their ability to direct sustainable change in the economy of Nigeria. More importantly, it is observed that the role and significance of exchange rate to the growth of export trade in general and non-oil exports in particular to the economy of Nigeria have been totally ignored in previous related literatures. Furthermore, this study inculcates trade openness as a major explanatory variable in analysing the impact of non-oil exports on sustainable development. This has

not been experimented in previous studies on the relevance of non-oil exports to growth in the country.

Methodology

The data explored in the study were obtained from the Statistical Bulletin of the Central bank of Nigeria and the Nigeria Bureau of Statistics for the period (1990 - 2023) covered in the study. Data obtained in the study would be estimated using Augmented Dickey Fuller (ADF) test of unit root, ARDL modelling approach to co-integration analysis and the error correction mechanism (ECT) test.

Model Specification

This study adopted the model of Ajayi and Omotunde (2022) that considered the effects of the manufacturing sector, agricultural sector and small and medium scale enterprises to the growth of the economy as measures of potentials that can be harnessed in the non-oil sector towards changing the precarious dependence on oil sector in Nigerian economy. Following from the above, their study captured economic sustainability with human development index and hence presented the model as:

$$HDI = f(MSRC, ASRC, SMERC, GFCF) \text{-----} 1$$

The linear form was presented as:

$$HDI = \alpha_0 + \alpha_1 MSRC + \alpha_2 ASRC + \alpha_3 SMERC + \alpha_4 GFCF + U_t \text{-----} 2$$

Where HDI is Human Development Index, MSRC is Manufacturing Sector Revenue Contribution, ASRC is Agricultural Sector Revenue Contribution, SMERC is Small and Medium Scale Enterprise Contribution and GFCF is Gross Fixed Capital Formation.

Considering that this present study is centred on non-oil export, the above model is however modified and presented as:

$$HDI = f(ASCE, MSCE, EXC, TOP) \text{-----} 3$$

The linear form is presented as:

$$HDI = \beta_0 + \beta_1 ASCE + \beta_2 MSCE + \beta_3 EXC + \beta_4 TOP + U_t \text{-----} 4$$

Where HDI is Human Development Index, ASCE is Agricultural Sector Contribution in Total Export, MSCE is Manufacturing Sector Contribution in Total Export, EXC is Exchange Rate, TOP is Trade Openness

Results and Discussions

Table 1: Correlation Analysis

	HDI	ASCE	MSCE	EXC	TOP
HDI	1.0000				
ASCE	0.8793	1.0000			
MSCE	0.7065	0.9955	1.0000		
EXC	-0.6741	0.8400	0.9861	1.0000	
TOP	0.9639	-0.9104	0.8738	-0.7774	1.0000

Source: Author's Computation, 2024

Results of correlation estimation showed in table 1 demonstrate the existence of positive correlation between human development index and agricultural sector revenue contribution, human development index and manufacturing sector revenue contribution, human development index and trade openness and negative correlation between human development index and the exchange rate in the Nigerian economy. Indications from the result revealed that contribution of revenues from non-oil exports move mostly in the same direction with sustainable development proxied with human development index. Specifically, correlation estimates stood at 0.8793 for HDI and ASCE, 0.7065 for HDI and MSCE, -0.6741 for HDI and EXC and 0.9639 for HDI and TOP respectively.

Table 2: Unit Root Test Result

Variable	At Level			At First Difference			Order
	ADF Stat	@ 1%	@ 5%	ADF Stat	@ 1%	@ 5%	
HDI	-1.4525	-3.6407	-2.9525	-6.4559	-3.6342	-2.9021	I(1)
ASCE	1.4481	-3.6407	-2.9525	-5.0463	-3.6342	-2.9021	I(1)
MSCE	4.0494	-3.6342	-2.9021	-3.2439	-3.6342	-2.9021	I(0)
EXC	0.8740	-3.6307	-2.9525	-4.2585	-3.6342	-2.9021	I(1)
TOP	-1.2447	-3.6307	-2.9525	-6.7438	-3.6342	-2.9021	I(1)

Source: Author's Computation, 2024

From table 2, the reported order of integration of the variables reflects how long the variables retained innovative shocks exerted on them. Observably, the result showed that all the variables used in the study only retain innovative shock exerted on them for a short period of time, after which they let go. Following the confirmation of the variables being integrated at level I(0) and at order one I(1), it stands that there is no equilibrium relationship among the variables in the short run with the presence of unit root. Although, there is likelihood of long run equilibrium relationship among the variable on the condition that they are co-integrated.

Table 3: ARDL Bound Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	7.8820	10%	1.85	2.85
K	6	5%	2.01	3.25
		2.5%	2.03	2.42
		1%	2.12	2.77

Source: Author's Extraction from Eviews 10, 2024

The Autoregressive Distributed Lag (ARDL) Bound Test of co-integration for the study is presented on table 3. The null hypothesis indicates that, there is no long-run relationship between the dependent and independent variables. The decision rule is to reject the null hypothesis when F-statistics of the test is greater than the critical value of the lower bound and upper bound at a chosen level of significance i.e. (5% for this study). On the other hand, the null hypothesis is accepted when the F-statistics is less than that of the critical value of the lower bound. However, the result of the test indicates that the F-statistics of the variables is 7.8820 with 5% Critical Values of the Lower Bound as 2.01 and the Upper bound as 3.25 respectively. This shows that the F-statistics of 7.8820 is greater than the Critical Values of the lower and upper bounds in the model. This implies the rejection of the null hypothesis, while the alternative hypothesis is accepted. Hence, the test outcome reveals that there is co-integration (long-run relationship) between the rate of sustainable development and non-oil exports in Nigeria within the study period. Importantly, this implies that there is co-integration (longrun relationship) between the dependent and independent variables in the study. However, with the presence of co-integration among the series being established, the ARDL model will hence be estimated for the short-run and long-run respectively. The existence of a long run relationship between the dependent and independent variables implies that the variables will continue to impact or influence one another over a relatively long period of time.

ARDL Equation

The ARDL equation for this study is shown below as:

$$\Delta HDI_t = \beta_0 + \beta_1 HDI_{t-1} + \beta_2 \ln ASCE_{t-1} + \beta_3 \ln MSCE_{t-1} + \beta_4 \ln EXC_{t-1} + \beta_5 TOP_{t-1} + \sum_{i=1}^p \varphi_1 \Delta HDI_{t-1} + \sum_{i=1}^q \varphi_2 \Delta \ln ASCE_{t-1} + \sum_{i=1}^q \varphi_3 \Delta \ln MSCE_{t-1} + \sum_{i=1}^q \varphi_4 \Delta \ln EXC_{t-1} + \sum_{i=1}^q \varphi_5 \Delta TOP_{t-1} + \mu_{1t}$$

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Error Correction Model (ECM)

The ECM equation of the study is specified as:

$$\Delta HDI_t = \beta_0 + \sum_{i=0}^p \beta_1 \Delta HDI_{t-1} + \sum_{i=0}^q \beta_2 \Delta \ln ASCE_{t-1} + \sum_{i=0}^q \beta_3 \Delta \ln MSCE_{t-1} + \sum_{i=0}^q \beta_4 \Delta \ln EXC_{t-1} + \sum_{i=0}^q \beta_5 \Delta TOP_{t-1} + \sum_{i=0}^q \beta_6 ET_{t-1} + \mu_t$$

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Table 4: Short -run ARDL Result

Variables	Coefficient	Prob
ASCE	0.0181	0.0002
MSCE	0.0058	0.0701
EXC	-0.0370	0.0011
TOP	0.0522	0.0208
ECT	-0.1811	0.0253
R ²	0.8982	
Adjusted R ²	0.8976	

Source: Author's Extraction from Eviews 10, 2024

Sustainable development and the model's regressors have a long-term link, according to estimates from the short run ARDL model presented in Table 4. At 5% level of significance, the Error Correction Term (ECT) which is -0.1811, is statistically significant. It means that until the equilibrium is restored, 18.11% of a shock or shocks to sustainable development from the previous year are adjusted this year.

Table 5: Longrun ARDL Result

Variables	Coefficient	Prob
C	0.5546	0.0001
ASCE	-1.3706	0.0862
MSCE	7.7305	0.0101
EXC	-0.0044	0.0112
TOP	0.0067	0.0063
R ²	0.8627	
Adjusted R ²	0.8444	
Durbin-Watson	1.2545	

Source: Author's Extraction from Eviews 10, 2024

Estimation result presented in table 5 revealed that the agricultural sector's contribution to total exports exerts negative insignificant long run impact on human development index with coefficient estimate of -1.3706 (p = 0.0862 > 0.05). The result showed that in the long run, manufacturing sector's contribution to export exerts significant positive impact on economic sustainability captured with human development index with coefficient

estimate of 7.7305 ($p = 0.0101 < 0.05$). Exchange rate exerts a negative significant long run impact on human development index in Nigeria with coefficient estimate of -0.0044 ($p = 0.0112 < 0.05$). Finally, trade openness exerts positive significant impact on human development index in the long run with coefficient estimate of 0.0067 ($p = 0.0063 < 0.05$). Reported R-square statistics stood at 0.86 which suggests that in the long run, agricultural sector's contribution to export, manufacturing sector's contribution to export, exchange rate and trade openness can jointly explain about 86% of the systematic variation in sustainable development, other things held constant.

Discussion and Implication of Findings

The estimation carried out in this study showed that agricultural sector's contribution to total exports exerts negative insignificant impact on sustainable development in the long and short run respectively. This finding suggests that as sustainable development improves, agricultural sector revenue contribution declines; the agricultural sector has practically suffered neglect despite its potentials and consequently its contribution to the growth of the economy has not been sustained over time. Although the sector has not experienced total neglect but relatively, it has not attained the height that other sectors maintain due to the level of interest and consequent resources deployed by both the private sector and government to other sectors. Hence, the implication of the neglect of a gold mine like the agricultural sector is the creeping speed and unsustainable development of the Nigerian economy. This finding aligns with the opinion established by Usoro, Yusuf and Okafor (2020) which affirmed that agricultural sector revenue affects economic growth of Nigeria noticeably.

More so, this study ascertained that manufacturing sector's contribution affects sustainable development positively and significantly in the long run. The implication of this finding is that in the long run, as manufacturing sector's contribution increases, sustainable development increases. The manufacturing sector no doubt drives the growth of the economy of Nigeria very significantly even though the performance and output of the sector have declined consistently which explains the volatile nature of economic growth. Similarly, the cause for the variation in the effect is the adverse macroeconomic uncertainty which has further constrained the performance of the manufacturing sector and in effect hampered the output of the sector and its ultimate contribution to the economy of Nigeria. Hence, the sector despite being the largest in Nigeria have had its prospects reduced; this which has spelt doom for most manufacturing firm also occasioned capital flight as well as discouraged and significantly reduced investment in the sector which has impeded the sustainable development of the economy of Nigeria; this finding is in consonance with the position of Naanzem et al (2023).

Furthermore, findings from the study evidenced that exchange rate affects sustainable development of Nigeria negatively and significantly in the long run. This suggests that in the long run as sustainable development increases, exchange rate's impact on human development index falls noticeably. This relationship conforms to economic theory and apriori expectation because a fall in exchange rate (which implies an increase in the value

of the domestic currency) is an incentive to sustainable development due to the fact that the domestic currency becomes stronger, thereby ensuring that the real disposable income of individuals remains intact and will command a much higher economic value. Consequently, more goods and services can be accessed by such income, and this further leads to an increase in the overall wellbeing and standard of living in the economy. Sustaining this scenario in the long-run will set the foundation for sustainable development to thrive in the Nigerian economy.

Finally, trade openness had a positive significant relationship with sustainable development in the long run estimates of the study's findings. This implies that sustainable development will thrive and increase when the level of trade openness increases. This finding is in consonance with economic theory as justified by the postulations and arguments of the export-led hypothesis or theory. This is because an increase in trade openness will create the opportunities and chances of actively engaging in international trade. Active participation in export trade will increase foreign exchange earnings, create employment opportunities, stimulate globalisation and above all expand aggregate demand and supply by increasing access to diverse/varieties of goods and services. All these sets the stage for sustainable development thrive in the economy, thereby justifying the positive significant relationship between trade openness and sustainable development.

Table 6: Post Estimation Tests

	t-statistics	p-value
Normality using Jarque-Bera Test	0.4806	0.7943
Heteroskedasticity using Breusch-Pagan-Godfrey Test	1.3527	0.2611
Serial Correlation using Breusch -Godfrey Serial Correlation LM Test	0.4652	0.6338
Functional Form using Ramey RESET Test	1.4454	0.1613

Source: Author's Extraction from Eviews 10, 2024

The validity of the ARDL model estimates was investigated in this study using four post-estimation tests. These tests were performed using the Jarque-Bera, Breusch-Godfrey Serial Correlation LM, and Breusch-Pagan-Godfrey tests, respectively. They include normalcy, serial correlation, heteroskedasticity, and functional form tests. Table 6 reports the results of these tests. The results of the post-estimation tests show that none of the test statistics' p-values are statistically significant at any level of significance. As a result, none of the tests' null hypotheses were refuted by the study. As a result, the study concludes that the model is accurately stated and that the model's residuals are normally distributed, serially independent, and has homoskedastic variance. This suggests that the estimates from the ARDL model are accurate.

Conclusion and Recommendations

Premise on the analytical results obtained from this study, it is evident that there exists an association between non-oil exports and sustainable development in Nigeria. This study

specifically determined that agricultural sector's contribution to total exports exerts negative insignificant impact on sustainable development in the long. Manufacturing sector's export contribution affects sustainable development positively and significantly in the long run, the effect is negative and statistically significant for exchange rate's contribution to sustainable development in Nigeria while trade openness is positively and significantly associated with sustainable development in Nigeria. Hence, this study concludes that the overly long neglect of the nation's agricultural sector explains why its impact is not significant in stimulating sustainable development in the Nigerian economy. The nation's manufacturing sector, exchange rate of the Naira as well as the level of the nation's trade openness are crucial economic variables or issues that should not be jeopardized if the goal of sustainable development is paramount to the economy of Nigeria.

Based on the findings ascertained in the study, the following policy recommendations were made:

- i. Since the agricultural sector's contribution to export was statistically insignificant, government should revamp, encourage and give financial support to the nation's agricultural sector in order to make it attractive to both small scale and large-scale investors.
- ii. Premised on the fact that manufacturing sector's contribution to export was significant in influencing sustainable development, government should create more enabling environment for the manufacturing sector towards improving productivity. This could be achieved via interest rate concessions and tax holidays to domestic manufacturers engaged in export trade. This will stimulate productivity and overall export volume in this sector; increase their contribution to the growth and sustainability of the economy.
- iii. Government should manage the domestic exchange rate appropriately and accordingly to ensure that its value is not weakened overtime. This is pertinent and justified judging from the fact that exchange rate had a significant negative influence on sustainable development.
- iv. The study revealed that the nation's openness to international trade had a positive and significant influence on sustainable development. Thus, trade openness should be encouraged in order to maximise the gains from export trade and increased globalisation. This can be achieved by putting in place several export promotion strategies and initiatives as well as domestic protection and concessions to indigenous businesses involved in export trade.

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