EFFECT OF TRADE OPENNESS ON POVERTY REDUCTION IN NIGERIA

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ABSTRACT
This study looked at how trade openness affected the lowering of poverty in Nigeria from 1986 to 2020. The Central Bank of Nigeria Statistical Bulletin and the World Bank's Development Indicators were used to get data for the study. For the basic test, the study uses the Augmented Dickey Fuller unit root test. For the analysis, the study uses the Johansen Cointegration test and the Ordinary Least Square (OLS) method. The facts show that trade openness has had a big effect on the reduction of poverty in Nigeria and that this effect is currently bad. This study comes to the conclusion that making trade more open over time has not made people more productive. The study suggests, among other things, that the government should start important trade reforms which can boost domestic production, especially in agriculture, where we have a comparative advantage. This can be done by giving subsidies and tax breaks to industries and farmers who make goods that are being imported, so they can increase their production capacity to meet rising demand in the economy and export surplus.

KEYWORDS: Trade openness, poverty reduction, government expenditure, GDP per capita, foreign direct investment

1. INTRODUCTION
One of the most important problems in international economics (Okwori & Abu, 2016; Romer, 1986; Schultz, 1980; Harris & Todaro, 1970; Easterly & Levine, 1997; Barro, 2004) has been how economies around the world are becoming more and more connected. (Huczynski & Buchanan, 2007) Economic globalization has led to rapid changes in macroeconomic variables like trade openness, stable exchange rate, foreign direct investment, foreign help, improvement in technology, and investment in human capital, among others. Quartey, Aidam, and Obeng (2007) define trade openness as the degree to which foreigners and people who live in a country can trade without artificial barriers, such as costs placed by the government because of delays and uncertainty. Jhingan (2005) says that opening up the economy to foreign trade is a good way to deal with poverty because it brings in more money. Trade openness will affect a country's economic growth because all countries will have to fight on the international market (Todaro & Smith, 2006). Studies by Alan et al. (2004), Afaha and Njogo (2012), Christiaensen, Demery, and Paternostro (2003), Kis-Katos and
Sparrow (2015), and Sakr (2012), among others, found evidence that trade openness through a number of reforms has a long-term effect on reducing poverty.

Nigeria's government has worked on economic changes, new policies, and trade partnerships. This includes the National Economic Empowerment and Development Strategy (NEEDS), membership in the World Trade Organization (WTO), membership in the Economic Community of West African States (ECOWAS), the ECOWAS Common Trade Tariff, the African Growth and Opportunity Act (AGOA), and the Continental Free Trade Area (CFTA) under the African Union in 2017. Nigeria has also set up industrial and trade zones all over the country. However, even though concessions, waivers, and tax holidays have been given, the good effects of these zones have not yet increased the productivity of social and economic activities.

The main goal of these is to make the business as a whole more efficient, up-to-date with technology, and competitive. Reforms were put in place with the hope that increasing efficiency, improving technology, and making the economy more competitive will help the Nigerian economy grow quickly. Because trade liberalization has made the Nigerian economy more open, it is believed that the private sector will be able to use this to its advantage and increase production capacity with less government oversight. Literature on trade openness (Nwakanma and Ibe, 2014; Kis-Katos and Sparrow, 2015) says that trade policy changes have helped the economy do much better. Other scholars also pointed out that foreign dominance makes trade openness bad for future growth and economic success (Ogunniyi & Igberi, 2014).

Based on Atlas rankings (Agbonika, 2015), statistics about Nigeria's trading sector show that crude oil exports still make up most of the country's exports (72%), followed by petroleum gas (14%), and then other goods (14%). Based on these numbers, one could say that Nigeria's reforms in the trading industry have not paid off. WTO (2017) backs up this trend and says that Nigeria's trade made up as little as 18% of its GDP in 2018. This is because Nigeria's manufacturing sector isn't very well developed, mostly because it has poor infrastructure and can't afford to buy capital inputs (Elijah & Sule, 2020). On the other hand, non-oil products made up 72.58 percent of all imports in 1999, and that number has kept going up, hitting a high of 75.46 percent in 2018 (CBN, 2018). During the same time period, non-oil exports went from 1.64 percent of all exports to 7.44 percent. This shows that Nigeria's trade openness, financial flows, and foreign direct investment are skewed toward crude oil production. This could be due to a high concentration in the oil sector, which is not good for growth.

From 1999 to 2019, Nigeria's Gross Domestic Product (GDP) growth rate was mostly up (CBN, 2019). This is proof that the Nigerian economy was growing up until 2015. However, the price of crude oil fell on the international market, which caused the economy to shrink by 1.6% in 2016 (CBN, 2018). It had a good growth rate of 0.7% in 2017, 2.0% in 2018, and 2.27% in 2021. But Nigeria's economy hasn't been doing well. This is because socio-economic data shows a confusing difference despite the fact that most Nigerians aren't getting much better off (Sunday & Musa, 2019). To get
their economies to grow and develop, governments and donor agencies in poor countries like Nigeria are putting a lot of effort into reducing poverty. Nigeria is now one of the 25 poorest countries in the world based on simple social indicators (Akanbi & Du Toit, 2017). According to Akanbi and Du Toit (2017), the GDP of the Nigerian economy has been growing, especially in the last few decades. However, this has not led to more jobs and less poverty among Nigerians, which is needed for lasting development. According to ADB (2010), one reason for the rise in poverty was that the country's per capita income dropped from US $1600 in 1980 to US $1160 in 2008. But the Nigerian economy had a per capita income of US$1643 in 2015, US$1767 in 2016, US$1080 in 2017, and US$1010 in 2018, according to the World Bank (2018). This shows that the economy has been going down lately. In conclusion, statistics show that Nigeria has some worrying macroeconomic factors, such as a rising poverty rate of 63.58%, a rate of unemployment of 26.75%, a growth rate of real gross domestic product of 0.94%, and a rate of income inequality of 50.14% for the year 2019. So, in 18 years, Nigeria's economy went from being one of the 50 richest countries in the world to one of the 30 poorest (Blench, 2018). On the other hand, some studies have said that protectionism is a better way to grow the economy at home because there are times when the domestic economy is better than the foreign economy (Nnadozie, 2003). Still, the overwhelming evidence that trade openness has a positive effect on reducing poverty cannot be stressed enough. In light of this, the goal of this study is to figure out how trade openness affects the reduction of poverty in Nigeria from 1986 to 2020.

CONCEPTUAL REVIEW

Trade Openness

Trade openness is supported by arguments dating back to Adam Smith's study of market specialization: Openness encourages competition in domestic and international markets by promoting efficient resource allocation through comparative advantage (Chang, Kaltani, & Loayza, 2009). Trade flows facilitate the transfer of advanced production techniques and technological knowledge across countries (Coe, Helpman, & Hoffmaister, 1997). Trade Openness is one of the policy measures included in Nigeria's 1986 Structural Adjustment Programme (SAP). Trade liberalization that leads to trade openness has been found to act as a growth engine, particularly through high real productivity export (Obadan, 1993).

Poverty Reduction

Aremu (2004) defines poverty reduction as "a set of measures, both economic and humanitarian, that are intended to lift people out of poverty." These measures are aimed at lifting people out of poverty. It also refers to any and all official actions that are aimed at reducing the rate of poverty as well as its overall prevalence in a country. Reducing global poverty is a primary goal that has been promoted in the Millennium Development Goals, and most recently in the Sustainable Development Goals and currently in the Sustainable Development Goals. These goals were created to guide global efforts to alleviate poverty. According to Nnamani (2003), the term "poverty reduction" refers to a coordinated effort that is undertaken to improve or lessen the amount of poverty or the position of citizens within a specific sector. According to Chinecherem (2002), poverty reduction is a specific arrangement that
is made to transform the status of the poor through the acquisition of new skills, employment, increased literacy, and equitable distribution of resources. According to Ogwudmike (2001), the poverty reduction policies that have been put into place so far in Nigeria place a greater emphasis on economic growth, fundamental requirements, and rural development initiatives. According to Bruno, Michael, and Martin (2005), the solution to the problem of poverty is to enact policies that will considerably increase economic growth. This will allow for the reduction of poverty. They went on to say that programs that work toward eradicating the factors that lead to poverty, such as those that expand access to credit and boost human capital, can have either a short-term or a long-term impact on the problem. They pointed out that lowering the rate of poverty is a necessary condition for achieving sustainable development, which means that it is necessary to put a stop to the rise in the rate of poverty.

According to the opinions of Ebuara, Ozurumba, and Udida (2006), poverty reduction can be defined as the process of diminishing or eliminating the variables that contribute to poverty. According to this research, a reduction in poverty is defined as the ability to have relative access to the fundamental necessities of life, such as reasonably priced medical care, safe and adequate housing, nutritious food, and other such necessities.

THEORETICAL FRAMEWORK
Trade openness and poverty theories vary. The Adam Smith-led Classical theory and Virtuous Circle Models are examples. Adam Smith founded the idea that commerce improves welfare and growth. In his classic work, and enquiry into nature and causes of the wealth of countries (1776), Smith emphasized the importance of commerce as a vent for surplus production and a way to enlarge the market, improving the division of labor and productivity. Smith's absolute advantage trade theory states that countries should specialize in and export their absolute advantages and import their trading partners' absolute advantages. That is, each country should export those items it produced more efficiently since its absolute labor required per unit was less than its prospective trading partners (Appleyard and Field, 1998).

Smithian trade theory sparked debate in the 19th century. Trade creation gains from customs to trade are withdrawn between members but are permanent. Static gains are expended when tariff barriers are removed and reallocation stops.

Because countries have different resources, the opportunity cost of producing products varies, resulting in static gains from trade. According to the law of comparative advantage, countries benefit if they specialize in producing low-opportunity-cost commodities and exchange them for higher-opportunity-cost goods. That is, the static advantages from trade are assessed by the resource gains acquired by exporting to obtain imports cheaper than producing them oneself. Thus, trade gains are measured by the excess cost of import substitution, or what is saved by not producing imported goods domestically. Resource gains can raise domestic consumption of both items (Thirlwal, 2000).
In our sectoral analysis of trade openness and poverty reduction nexus debate, foreign direct investment, increased external earnings, trade openness, large market size, favorable exchange rate, low external debt, increased foreign aids, and technology reduce poverty. Nigeria's Human Development Report (1999) ranks it among the world's poorest. Nigeria scores 54th on the human poverty index (HPI), making it the 20th poorest nation (Anigbogu, Edoko & Okoli, 2016). It ranks 30th in gender-related development (GDI) and 40th in HDI. Specialization improves production, welfare, and poverty, according to Adam Smith.

Empirical Review

Sunday and Musa (2019) use cointegration, unit root, and error correction models to study the dynamic effect of trade openness on Nigerian economic growth from 1980 to 2016. The findings showed that trade openness hurt economic growth in the short and long term. Onakoya, Johnson, and Ogundajo (2019) used descriptive statistics, the correlation matrix and variance inflator, the pooled OLS approach, and the panel co-integration test to examine trade liberalization and poverty in 21 African nations from 2005 to 2014. Foreign direct investment and inflation rate positively affected the human development index, whereas exchange rates and trade openness negatively affected poverty. Agusalim (2017) uses vector error correction model analysis to examine the dynamic influence of trade openness on poverty in Indonesia from 1978 to 2015. It ultimately reduces poverty. Impulse react function analysis shows that POVR responded positively in the first two years but negatively in the third to every trade openness variable shock. Fifth-year poverty rate drops most. Forecast error variance decomposition study shows that trade openness has a small effect on POVR in the first three years, but it becomes significant in the next seven, peaking in the ninth year. Using the vector error correction model (VECM), Ozcan and Kar (2016) found that trade liberalization reduced poverty in Turkey. Anigbogu, Edoko, and Okoli (2016) used an Ordinary Least Square (OLS) econometric model to examine how foreign direct investment reduces poverty in Nigeria. Foreign direct investment, trade openness, market size, foreign aids, exchange rate, external debt, and technology explain Nigerian poverty alleviation.

Kelbore (2015) trade openness, structural transformation, and poverty reduction in Africa using 1981–2010 panel data. System generalization moments reveal that trade openness initially worsens poverty and thereafter reduces it. However, structural transformation reduced poverty two periods later. The results also demonstrate that infrastructure development and private sector participation reduce poverty on the continent. The study showed that trade openness and poverty reduction are bi-causal. Pradhan and Mahesh (2014), who examined 25 emerging nations, found the opposite. Poverty negatively affects total trade, imports, exports, and merchandise trade. It found that inward-oriented trade policies hurt growth and poverty. Oginniyi and Igberi (2014) used 1980–2012 secondary data to examine FDI and poverty reduction. Ordinary Least Square Estimation calculated the model. FDI has a small but beneficial effect on real per capita income, which could reduce poverty in the country. Oke and Olayemi (2014) used co-integration, ECM, and Granger Causality tests on annual time series data from 1978 to 2008 to examine the relationship between foreign private investment, capital
formation, and poverty alleviation in Nigeria. The tests showed that foreign private investment in Nigeria had not reduced poverty. The study also found that government health and education spending had not reduced Nigerian poverty. Chaudhry and Imran (2013) used time series regression analysis to find that trade liberalization reduced poverty in Pakistan, but not statistically. Trade liberalization reduced poverty over time. Yusuf, Malarvizhi, and Khin (2013) use Pesaran, et al.’s (2001) ARDL technique to assess trade liberalization’s effects on Nigeria’s economy and poverty. Trade liberalization does not reduce poverty in Nigeria, suggesting that the poor do not profit.

Haddad, Lim, Pancaro, and Saborowski (2013) found that trade openness reduces growth volatility, especially when trading partners are diverse. A 1976–2005 unbalanced panel of 77 industrialized and emerging economies yielded this result. In 2012, Sakr reported that trade liberalization measures had reduced poverty in Egypt. Santos-Paulino (2012) trade, income distribution, and poverty in developing nations using content analysis. Globalization has had a mixed effect on poverty reduction, but modelling choices affect the results. Trade liberalization boosts aggregate welfare but unevenly. Infrastructure, skills, inadequate markets, and policy confine poverty, according to research. Given several trade reforms/policy initiations that can reduce poverty, trade openness and poverty reduction studies in Nigeria and abroad are scarce. Sunday and Musa (2019) examined trade openness and economic growth from 1980 to 2016. GDP per capita, government expenditure, and foreign direct investment, which can reduce poverty with trade openness, are missing from the research. This analysis is especially unusual since between 1986 and 2020, various reforms/policy and trade partnerships with other organizations and advanced economies occurred.

MATERIALS AND METHOD
For data analysis, this work used the Johansen Co integration test and the Ordinary Least Square method. Under the framework of the regression model, the OLS is used to measure how trade freedom affects poverty reduction in the Nigerian economy. The model is based on the work of Sunday and Musa (2019), who used the cointegration test, the unit root test, and the error correction model to look at how trade openness changed the growth of the Nigerian economy from 1980 to 2016. As additions to analysis, the Unit Root test and Granger correlation are also used. Here are the details of the new model:

\[ POVR = \alpha_0 + \alpha_1 TOP + \alpha_2 GDPPC + \alpha_3 GOVE + \alpha_4 FDI + \alpha_5 EXR + \mu_t \]

Where:
POVR= Poverty Rate (%), TOP = Index of Trade Openness (%), GDPPC= Gross Domestic Product Per Capita (constant 2010 US$), GOVE= Government Expenditure (₦ Billion), FDI= Foreign Direct Investment (BoP, current US$), EXR = Nominal Effective Exchange Rate (trade weighted), \(\alpha_0 \ldots \alpha_5\)=Parameters to be Estimated and \(\mu\)=Error Term.
RESULTS AND DISCUSSION

Table 1 Stationarity Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF Test Statistic</th>
<th>1% Critical Value</th>
<th>5% Critical Value</th>
<th>10% Critical Value</th>
<th>Prob.</th>
<th>Order Of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>POVR</td>
<td>-4.77</td>
<td>-3.72</td>
<td>-2.99</td>
<td>-2.63</td>
<td>0.0000</td>
<td>I(0)</td>
</tr>
<tr>
<td>TOP</td>
<td>-4.73</td>
<td>-3.71</td>
<td>-2.98</td>
<td>-2.63</td>
<td>0.0009</td>
<td>I(1)</td>
</tr>
<tr>
<td>GDPPC</td>
<td>-5.29</td>
<td>-3.71</td>
<td>-2.98</td>
<td>-2.63</td>
<td>0.0009</td>
<td>I(1)</td>
</tr>
<tr>
<td>GOVE</td>
<td>-4.42</td>
<td>-3.75</td>
<td>-3.00</td>
<td>-2.64</td>
<td>0.0022</td>
<td>I(1)</td>
</tr>
<tr>
<td>FDI</td>
<td>-6.82</td>
<td>-3.71</td>
<td>-2.98</td>
<td>-2.63</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>EXR</td>
<td>-6.08</td>
<td>-3.71</td>
<td>-2.98</td>
<td>-2.63</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Source: Researchers’ Computation from E-views 10

Unit root testing confirms all variables are stationary. POVR, TOP, GDPPC, GOVE, FDI, and EXR are stationary at 1st difference. ADF test statistic is below critical values at all significant levels. Low probabilities support this. Engle and Granger (1987) noted that a linear combination of non-stationary time series can be stationary. Cointegrated non-stationary time series have a stationary linear combination. The stationary linear combination represents long-term equilibrium between variables. The Johansen system framework tests for non-stationary variable cointegration. The result is presented below:

Table 2 Co integration Test

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Null Hypothesis</th>
<th>Max-Eigen</th>
<th>0.05 Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>r=0*</td>
<td>158.7266</td>
<td>15.75366</td>
<td>r=0*</td>
<td>51.40642</td>
<td>30.07757</td>
</tr>
<tr>
<td>r≤1*</td>
<td>77.32017</td>
<td>59.81889</td>
<td>r≤1*</td>
<td>35.77436</td>
<td>33.87687</td>
</tr>
<tr>
<td>r≤2</td>
<td>31.54581</td>
<td>37.85613</td>
<td>r≤2</td>
<td>11.50809</td>
<td>17.58434</td>
</tr>
<tr>
<td>r≤3</td>
<td>10.03772</td>
<td>19.79707</td>
<td>r≤3</td>
<td>9.72654</td>
<td>11.13162</td>
</tr>
<tr>
<td>r≤4</td>
<td>8.311177</td>
<td>14.49471</td>
<td>r≤4</td>
<td>6.799519</td>
<td>13.26460</td>
</tr>
<tr>
<td>r≤5</td>
<td>1.511658</td>
<td>2.841466</td>
<td>r≤5</td>
<td>1.511658</td>
<td>2.841466</td>
</tr>
</tbody>
</table>

Source: Extract from results

Note: r represents number of co integrating vectors. Trace and Max-Eigen statistics show two co-integrating equations each. * Indicates 0.05 hypothesis rejection. The Trace and Max-Eigen value test in Table 2 shows a long-term association between variables since their statistical value is bigger than their respective critical values for the co integrating equations at 5% significance level. This implies a stationary linear combination; therefore, non-stationary time series are cointegrated. Thus, OLS yields
informative, non-spurious, and reliable results. The Ordinary Least Square approach examines trade openness and poverty reduction using the stationary linear combination.

**Effect of Trade Openness on Poverty Reduction in Nigeria**

Since the stationarity test validated our results, allowing us to employ the OLS, we proceed to investigate the impact of trade openness on poverty reduction in Nigeria. The model is shown below:

![Table 3](image)

The TOP model contradicts prior expectations, while the control variables GDPPC and FDI have a negative influence on poverty alleviation in Nigeria. In Nigeria, the adjusted R squared demonstrates a robust and positive link between trade openness and poverty reduction. A coefficient of 0.79 indicates that TOP, GDPPC, GOVE, FDI, and EXR account for 79% of the variation in POVR; the remaining 21% is unaccounted for by the regression equation. The updated R squared demonstrates that the extra explanatory factors have theoretical relevance to the data series. The F statistics bolsters the finding by emphasizing the model's goodness of fit, implying that the explanatory factors have a joint impact on the dependent variable. The amount of the cointegration term suggests that if there is any deviation, the long run equilibrium is moderately altered, with around 54% of the disequilibrium erased in each period. This demonstrates that the rate of adjustment to where POVR will equilibrate even when there is initial disequilibrium is 54%. This work is consistent with studies undertaken in Nigeria and other African countries by Sunday and Musa (2019), Onakoya, Johnson, and Ogundajo (2019), and Kelbore (2015), while Agusalim (2017), Ozcan & Kar (2016) conducted in Indonesia and Turkey are contradictory or incongruent with the findings.

Our empirical research demonstrates that the variables TOP, GDPPC, and EXR are not as expected, but GOVE and FDI are appropriately signed. Only TOP, GDPPC, and GOVE are statistically significant. This means that the economy's degree of openness remains insignificant, with the GDPPC and GOVE ranking in the same order. Its inverse relationship indicates that its current state is harmful to poverty in the Nigerian economy. This negative score can be explained by the unfavorable GDPPC, which impedes welfare enhancement.
The modified R2 demonstrates a substantial link between the dependent and independent variables, accounting for 79% of the variability. This suggests that TOP, GDPPC, GOVE, FDI, and EXR may explain 60% of changes in POVR in the Nigerian economy, implying that there are few other macroeconomic variables that are key stimulants to poverty reduction. The F statistic emphasizes the predictive power of explanatory variables in forecasting poverty reduction outcomes. It demonstrates that the variables chosen are appropriate for the research, and so the extra explanatory variables GDPPC, GOVE, FDI, and EXR have theoretical relevance to the data series. The stationarity test backs up the preceding conclusions by demonstrating the validity of each variable in the model. Nigeria and other countries throughout the world, particularly developing countries, should increase their consumption of locally created items to avoid overdependence on imported commodities, as research shows that trade openness does not relieve poverty but rather increases it.

CONCLUSION AND RECOMMENDATIONS
Trade openness allows poorer nations to benefit from commerce. However, countries with low trade openness have rigid economies. This study found that trade openness did not reduce poverty in Nigeria throughout the study period, contrary to empirical data. Sunday and Musa (2019), Onakoya, Johnson, and Ogundajo (2019), and Kelbore (2015) in Nigeria and other African countries support this research, contrary to Agusalim (2017) and Ozcan and Kar (2016) in Indonesia and Turkey. Trade changes in Nigeria have had little impact. The inadequate government investment expenditure and foreign direct investment, volatility of the naira, and low exchange rate make our products cheap in the international market, resulting in an unfavorable balance of payments due to relatively more expensive imports. Thus, the lack of consensus on positive, negative, or no impact is understandable because countries integrate at different rates, explaining the negligible effect.

Based on the above, this study recommends impactful trade reforms and policy initiation to encourage domestic production, especially in agriculture where we have comparative advantage, by granting subsidies and tax waivers to industries and farmers producing imported commodities so they can expand their production capacity to meet rising demand. Productivity increases welfare and reduces poverty. To attract domestic and foreign investors, the government needs good fiscal and monetary policies to stabilize macroeconomic variables.

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