Foreign Direct Investment and Poverty Reduction in Nigeria

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ABSTRACT: Despite the unique role of FDI flows in enhancing an economy, Nigeria poverty incidence still soars. Against this backdrop, this study investigated the effect of foreign direction investment on poverty reduction in Nigeria using an econometric model of the Ordinary Least Square (OLS). Findings revealed that foreign direct investment, trade openness, market size, foreign aids, exchange rate, external debt and technology are statistically significant in explaining poverty reduction in Nigeria. The study recommends among others that government should provide adequate infrastructure and policy framework that will be conducive for doing business in Nigeria in order to attract the inflow of FDI.
Keywords: Ordinary Least Square (OLS), Foreign Direct Investment (FDI), poverty

I. INTRODUCTION

Poverty has been described as a multifaceted global phenomenon that affects every nation in the world in one or more dimensions and with different levels of severity. Presently, poverty has been touted as the world's current greatest threat to peace and stability even more than terrorism and other highly publicized struggles (Oloyede, 2014; Omoniyi, 2013). According to Sachs (2009) in Omoniyi (2013), more than eight million people around the world die each year because they are too poor to stay alive. As at the year 2010, the United Nation Development Project (UNDP) estimated that roughly 1.4 billion people were living in extreme poverty and of this number, about 93% live in three regions; East Asia, South Asia and Sub-Saharan Africa. Poverty report on Nigeria shows that the country is still in the league of poverty stricken countries. According to Omadjohwoefe (2012), Nigeria poverty profile has been on upward trend over the past decades. For example, poverty level in Nigeria rose from 28.1% in 1980 to 46.3% in 1985.   In 1992 it was 42.7% but it sky rocked to 65.6% in 1996 and later nosed down to 54.4% in 2004. Between 2004 and 2010, with an estimated population of about One Hundred and Sixty Million people (160million), about One Hundred and Twenty Million people were reported to be poor (National Bureau of Statistics [NBS], 2012). This poverty trend has continued to rise despite government's efforts in attacking it.

The Nigerian government, in partnership with other global initiatives, has joined forces in the fight against poverty yet the canker worm has continued to eat deeper into the bones and marrows of every vulnerable Nigerian. The above assertion was echoed by Omoniyi (2013), who stated that despite government's poverty eradications campaigns, national development plans and seasonal papers; poverty is still a major challenge. It is also recognised by all and sundry as a major threat to the very existence of Nigeria as a country. Even when Nigeria's economy was growing with a lot of Foreign Direct Investment (FDI) flows into the country, poverty still soared higher and this remains a paradox. For example the NBS (2014) report rated Nigeria's economy as the largest in Africa and the 26th largest in the world but the monumental increase in the level of poverty has made the socio-economic landscape frail and fragile (Oloyede, 2014; Oni, 2014). Extant literature has however maintained that Foreign Direct Investment (FDI) flows help to enhance an economy and consequently reduce the level of poverty by creating employment and improving the standard of living of the citizenry of the country (Ogunniyi and Igberi, 2014; Oni, 2014; Olusanya, 2013; Macaulay, undated).

According to Ogunniyi and Igberi (2014), the importance of foreign capital, most especially FDI to developing countries cannot be over emphasized. It serves as a supplement to their domestically mobilized savings and it is often accompanied with technology and managerial skills which set the pace for economic development. Ogunniyi and Igberi (2014) further stated that Foreign Direct Investment (FDI) can contribute in various ways to economic development in developing nations, most importantly by breaking the vicious circle of poverty. Incidentally, the Nigeria example remains a paradox that defies these hypotheses. The country has a lot of poor people living in the mist of plenty. In other words, the country has abundant resources -human and material- with a lot of indigent people.

Statement of the Problem
This study was informed by the observed rising poverty incidence in Nigeria despite the enormous Foreign Direct Investment (FDI) flows into the country aimed at improving the economy and consequently reducing poverty (Ogunniyi and Igberi, 2014; Oni, 2014). According to Olise, Anigbogu, Okoli.and Anyanwu (2012), FDI inflows more than quadrupled, increasing from N2.3 million in 1975 to N10.4 million in 1990, and thereafter, FDI inflows have been rosy and increasing at a modest rate. Presently, the country is the most favoured destination of foreign capital in Africa, gulping more than 15% of total FDI flows into the continent (*UNCTAD, 2012*).

However, as a missing gap in the literature, which this study intends to fill, an answer has not been given to the poverty -FDI inflows nexus in Nigeria particularly the influence of some selected macroeconomic variables or indicators like Foreign direct investment, External earnings, Trade openness, Market size, Exchange rate, External debt, Foreign aids and Technology on poverty reduction in Nigeria. This literature gap thus warrants an empirical probing to ascertain the influence of these selected macroeconomic indicators on poverty reduction in Nigeria.

Objectives of the Study
The main objective of this study is to investigate the effect of Foreign Direct Investment on poverty reduction in Nigeria from 1980-2014. Specifically, the study intends to:
i.   Ascertain the influence of some selected macroeconomic variables or indicators like Foreign direct investment, External earnings, Trade openness, Market size, Exchange rate, External debt, Foreign aids and Technology on poverty reduction in Nigeria.
ii. Determine the relationship between the selected macroeconomic variables or indicators like Foreign direct investment, External earnings, Trade openness, Market size, Exchange rate, External debt, Foreign aids and Technology on poverty reduction in Nigeria.

II.   LITERATURE REVIEW

Concept of Foreign Direct Investment (FDI)
Foreign Direct Investment (FDI) is an investment that is made to acquire a lasting management interest (usually 10% of voting stock) in an enterprise and is operated in a country other than that of the investors (Macaulay, undated; Jhingan, 1998; World Bank, 1996). According to Macaulay (undated), such investments may take the form of either "Greenfield" investment (also called "mortar and brick" investment) or merger and acquisition (M&A), which entails the acquisition of existing interest rather than new investment. According to Olusanya (2013), Countries and continents (especially developing ones) now see attracting foreign direct investment as an important element in their strategy for economic development. This is most probably because foreign direct investment is seen as an amalgamation of capital, technology, marketing and management. Ogunniyi and Igberi (2014) also stated that FDI can be a tool for poverty reduction because it serves as supplements to domestic savings and it is often accompanied with technology and managerial skills which are indispensable in economic development. Although FDI inflows have been criticized by scholars alleging that FDI by multinational companies tend to locate production in countries or region with low wages, low taxes and weak environmental and social standards (Klein, Aaron, and Hadjimichael, 2001), these criticisms notwithstanding, arguably, the benefits of FDI outweighs the assertions of its critics. In line with this assertion, Olise, et al (2012) stated thus: "given the plausibility of the theoretically potential gains emanating from FDI, world economies, developing economies in particular, have been at logger-heads in trying to attract a significant portion of global FDI flows, hence making the market for FDI highly competitive". Macaulay (undated) also stated that many countries and continents (especially developing countries like Nigeria) now see attracting FDI as an important element in their strategy for economic development. This is most probably because FDI is seen as an amalgamation of capital, technology, marketing and management. Sub-Saharan Africa as a region now has to depend very much on FDI. For a developing country like Nigeria, the inflow of a foreign capital may be significant in not only raising the productivity of a given amount of labour, but also allowing a large labour force to be employed (Macaulay, undated).

Concept of Poverty and Poverty Situation in Nigeria
Poverty is a global malady that affects virtually every nation in one dimension or the other. Oloyede (2014) stated that the issue of poverty is a global phenomenon, which affects continents, nations and people differently. There is no nation that is absolutely free from poverty. The main difference is the intensity and prevalence i.e the highest level of social insecurity, violence, social unrest and generally unacceptable low standard of living. Poverty, being a multifaceted phenomenon has been defined by researchers from different stand point. World Bank Report, (1990) in Oloyede (2014) defined it as a condition in which a person is deprived of, or lacks the

essentials for minimum standard of living. It is also the inability to attain a minimum standard of living. Ijaiya, Ijaiya, Bello and Ajayi (2011) and Encyclopedia Americana (1989) viewed poverty from two different perspectives: (i) "moneylessness" which means both an insufficiency of cash and chronic inadequacy of resources of all types to satisfy basic human needs, such as, nutrition, rest, warmth and body care; and (ii) "powerlessness" in reference to those who lack the opportunities and choices open to them and whose lives seem to them to be governed by forces and persons outside their control, that is, by persons in positions of authority or by perceived "evil forces" or "hard luck". Aku, Ibrahim and Bulus (1997) as cited by Oloyede (2014) saw poverty from five dimensions of deprivation: (i) personal and physical deprivation experienced from health, nutritional, literacy, educational disability and lack of self-confidence; (ii) economic deprivation drawn from lack of access to property, income, assets, factors of production and finance; (iii) social deprivation as a result of denial from full participation in social, political and economic activities; (iv) cultural deprivation in terms of lack of access to values, beliefs, knowledge, information and attitudes which deprive the people the control of their own destinies; and (v) political deprivation in terms of lack of political voice to partake in decision making that affects their lives. According to Omoniyi (2013) and Sachs (2009), poverty can be defined in terms of three distinguishable degrees. These are: Extreme poverty, moderate poverty and relative poverty. Extreme poverty means the household cannot meet basic needs for survival. Such people are perpetually hungry, unable to access health care; they lack amenities of safe drinking water and sanitation. They cannot afford education for their children and cannot shelter their families. Moderate poverty on the other hand generally refers to conditions of life in which basic needs are met, but just barely. Relative poverty is construed as a household income level below a given proportion of average national income. In high income countries, they lack access to cultural goods, entertainment, recreation, quality health care, education and other prerequisites for upward social mobility. According to Omoniyi (2013), the World Bank has been defining poverty in statistical terms of income of one US dollar per person per day, measured at purchasing power parity to determine the number of extreme poor around the world. Going by the World Bank definition of poverty adopted by most researchers whereby poverty measurement is based on income which is used as a baseline for poverty level measured at less than US\$1 per day or US\$1.25 per day (Oni, 2014), we conclude that both the quantitative and qualitative measurements attest to the growing incidence and depth of poverty in the country. According to Oke and Olayemi (2014), this situation however presents a paradox considering the vast human and physical resources that the country is endowed with. It is even more disturbing that despite the huge human and material resources that have been committed to poverty reduction by successive governments in Nigeria, no noticeable success has been achieved in this direction. The Human Development Report (1999) reveals that Nigeria is one of the poorest among the poor countries of the world. Nigeria ranks 54th with respect to the human poverty index (HPI) - making it the 20th poorest country in the world. It is also ranked 30th in gender related development index (GDI) while occupying 40th position from below in its human development index (HDI).

Related Empirical Literature
This section reviews related empirical literature on foreign direct investment and poverty reduction.Ogunniyi and Igberi (2014) investigated the relationship between FDI and poverty reduction using secondary data spanning through the period 1980-2012. The model was estimated using the Ordinary Least Square Estimation Approach. The results showed that FDI has a positive but not significant impact on real per capita income and hence does have the potential of reducing poverty in the country. Olusanya (2013) examined the impact of Foreign Direct Investment inflow and economic growth in a pre and post deregulated Nigerian economy from 1970 - 2010 using a Granger causality test. The result of the causality test showed that there is causality relationship in the pre-deregulation era that is (1970-1986) from economic growth (GDP) to foreign direct investment inflow (FDI) which means GDP causes FDI, but there is no causality relationship in the post-deregulation era that is (1986-2010) between economic growth (GDP) and foreign direct investment inflow (FDI) which means GDP causes FDI. However, between 1970 to 2010 it showed that is causality relationship between economic growth (GDP) and foreign direct investment inflow (FDI) that is economic growth drive foreign direct investment inflow into the country and vice versa. Oke and Olayemi (2014) investigated the relationship between Foreign Private Investment, Capital Formation and Poverty reduction in Nigeria using co-integration and Error correction Mechanism (ECM) and Granger Causality tests with annual time series data covering the period between 1978 and 2008. The various tests demonstrated that the inflow of foreign Private Investment in Nigeria has not significantly contributed to poverty alleviation in Nigeria. The study also showed that government investment on health and education has not helped to reduce poverty in Nigeria. Olise, Anigbogu, Okoli, and Anyanwu (2012) investigated the impact of domestic investment on FDI inflows in Nigeria. Adopting a decomposed, single-linear econometric model estimated by the OLS methodology within four decade 1970-2009, the findings revealed that private and public domestic investments as well as human capital and market size were negatively related to FDI inflows, while trade openness and natural resource were positively linked to FDI. Okpe and Abu (2009) examined the effects of foreign private investment on poverty in

Nigeria using regression analysis for the period 1975 to 2003. The test demonstrated that the inflow of foreign private investment and foreign loan into Nigeria significantly alleviates poverty. The paper maintained that government expenditure and the continuous increase in petroleum profit tax would aggravate the poverty level in Nigeria. Odozi (1995) examined the factors affecting Foreign Direct Investment (FDI) flow into Nigeria in both the pre and post structural adjustment programme (SAP) eras and found that the macro policies in place before the SAP were discouraging foreign investors. This policy environment led to the proliferation and growth of parallel markets and sustained capital flight. Oseghale and Amonkhienam (1987) found that Foreign Direct Investment (FDI) was positively associated with Gross Domestic Product (GDP) and concluded that greater inflow of Foreign Direct Investment (FDI) will spell a better economic performance for the country. Examining the contributions of foreign capital to the prosperity or poverty of LDCs, Oyinola (1995) conceptualized foreign capital to include foreign loans, direct foreign investments and export earnings. Using Chenery and stout's two-gap model (Chenery and Stout, 1966) cited in Adeolu (2007) he concluded that Foreign Direct Investment (FDI) had a negative effect on economic development in Nigeria. Adelegan (2000) employed the seemingly unrelated regression model to examine the impact of Foreign Direct Investment (FDI) on economic growth in Nigeria and discovered that Foreign Direct Investment (FDI) was pro-consumption and pro-import and was negatively related to gross domestic investment. Ayanwale and Bamire (2001) assess the influence of Foreign Direct Investment (FDI) and firm level productivity in Nigeria and report a positive spill over of foreign firms on domestic firm's productivity. Much of the other empirical work on Foreign Direct Investment (FDI) in Nigeria centered on examination of its nature, determinants and potentials. Jerome and Ogunkola (2004) assessed the magnitude, direction and prospects of Foreign Direct Investment (FDI) in Nigeria. They noted that while the Foreign Direct Investment (FDI) regime in Nigeria was generally improving, some serious deficiencies remain. These deficiencies are mainly in the area of the corporate environment (such as corporate law, bankruptcy, labour law etc). and institutional uncertainly, as well as the rule of law. The establishment and the activities of the economic and financial crimes commission (EFCC), the independent corrupt practices commission, and the Nigerian investment promotion commission are efforts to improve the corporate environment and uphold the rule of law. Has there been any discernible change in the relationship between Foreign Direct Investment (FDI) and economic growth in Nigeria in spite of these policy interventions? Akinlo (2004) investigates the impact of Foreign Direct Investment (FDI) on economic growth in Nigeria using data for the period 1970 to 2001. His error correlation model (ECM) results show that both private capital and lagged foreign capital have small and insignificant impact on economic growth. The study however established the positive and significant impact of export on growth. Financial development has significant negative impact on growth. This he attributed to capital flight. In another manner, labour force and human capital were found to have significant positive effect on growth.

From the literature reviewed, most of the related literatures reviewed focused mainly on foreign direct investment and economic growth. A few studies that focused on foreign direct investment and poverty reduction were carried out using data spanning through 1980-2010. A more recent one that spanned through 1980-2012 did not give accentuation to FDI-inducing variables included in the model of this study. However, as a missing gap in the literature which this study intends to fill, this study gives credence to examining the influence of some selected macroeconomic variables or indicators like Foreign direct investment, External earnings, Trade openness, Market size, Exchange rate, External debt, Foreign aids and Technology on poverty reduction in Nigeria from 1980-2014.

Theoretical Framework
The theoretical literature explaining root causes and factors perpetuating poverty has been widely reviewed (Bradshaw, 2006), and this has been integrated within the broader framework of theories put forward to explain root causes and factors perpetuating poverty. This view recognizes the inherent characteristics of the contextual ecological structure of various societies in addition to the varying individuals' (or groups) capacities to cope within their environment. Such research perspective lend support to the policy implication it engenders, which is of the view that in addressing the problem of poverty among individuals, cognizance should first be given to factors perpetuating it.

Recent literature on poverty uniformly acknowledges different theories of poverty, but the literature has classified these theories in multiple ways (Blank, 2003; Goldsmith and Blakely, 1992; Jennings and Kushnick, 1999; Rodgers, 2000; Schiller, 1989; Shaw, 1996). Remarkably, these authors distinguished between theories that root the cause of poverty which inadvertently explains why people are poor. Being a strict observant of the literature, these theories could be disaggregated into four perspectives, ranging from individual deficiencies theory; cultural belief systems theory that support sub cultures of poverty; economic, political, and social distortions or discriminations theory; and geographical disparities theory.

Of keen interest to us among these views in explaining the root causes and factors perpetuating poverty is the geographical disparities theory. The Geographical disparity view has been an old literature explaining not just root causes and factors perpetuating poverty but also the dichotomy of world economy into developed and less developed economies. The theory was proposed by Shaw (1996) and it drew attention to the fact that people, institutions, and cultures in certain areas lacked the objective resources needed to generate well-being and income, and that they lacked the power to claim redistribution. As Shaw (1996) pointed out, "Space is not a backdrop for capitalism, but rather is restructured by it and contributes to the system's survival". Thus, the geography of poverty is a spatial expression of the capitalist system (Bradshaw, 2006). That poverty is most intense in certain areas is an old observation and explanations abound in the development literature about why regions lack the economic base to compete. Recent explanations include disinvestment, proximity to natural resources, density, diffusion of innovation, and other factors (Morrill and Wohlenberg, 1971).

Geography concerns not only the physical and climatic features of a place or region but also boarders on proximity to important economic institutions, say for instance, the market. Theories have been in congruity in asserting that a resource-based region that is effectively linked with international market has a higher per capita income than a resource less landlocked region. Integrating this perception to our sectorial analysis of poverty - FDI inflows nexus debate, the inflows of foreign direct investment, increased eexternal earnings, Trade openness, large market size, favorable exchange rate, low external debt, increased foreign aids and Technology will significantly reduce poverty in a country. On the contrary, the absence of these economic indicators will attract severe poverty in the country. Perceptibly, this explains the geographical distribution in the severity of poverty across the countries of the world.

III. MODEL SPECIFICATION

The essence of economic modeling is to represent the phenomenon under investigation in such a way as to enable the researcher to attribute numerical values to the concept.

Using the knowledge gained from the literature, the study examined the impact of Foreign Direct Investment (FDI) on poverty reduction in Nigeria by adopting growth model and modified it to incorporate foreign direct investment, external earning, trade openness, market size, exchange rate, external debt and technology as the explanatory variables, while poverty proxied by absolute number of poor people living under poverty line was used as the dependent variable. Thus, our model is specified as:

The structural form of the model is:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8) \qquad .. \qquad .. \qquad .. \qquad .. \qquad .. \qquad (1)$$

The mathematical form of the model is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 \qquad .. \qquad (2)$$

The econometric form of the model is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \mu_i \quad .. \qquad (3)$$

Where Y = Poverty reduction (POVT) proxied by absolute number of poor people living under poverty line

X_1 = Foreign Direct Investment (FDI)

X_2 = External Earnings (EXE)

X_3 = Trade Openness (TOP)

X_4 = Market Size (MKZ) measured by Market growth rate

X_5 = Exchange Rate (ERT)

X_6 = External Debt (XDT)

X_7 = Foreign Aids (FAD)

X_8 = Technology (TEC)

β_0 = Intercept of the model

$\beta_1 - \beta_8$ = Parameters of the regression coefficients

μ_i = Stochastic error term

Method of Data Analysis

The econometric technique employed in the study is the ordinary least square (OLS). The Economic views (E-views) software was used to carry out the regression and other analyses for this study .

IV. PRESENTATION OF EMPIRICAL FINDINGS

Table 1: Summary of regression results

Dependent Variable: POVT				
Method: Least Squares				
Sample: 1980 - 2014				
Included observations: 35				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-40.92588	8.939362	-4.578165	0.0001
FDI	-0.048359	0.018337	-2.637170	0.0139
EXE	-1.72E-05	1.47E-05	-1.167456	0.2536
TOP	-0.005947	0.046957	-3.126658	0.0002
MKZ	-4.460176	0.871376	-5.118543	0.0000
ERT	0.033577	0.036319	2.924481	0.0137
XDT	0.003561	0.000595	5.984841	0.0000
FAD	-0.059858	0.005168	-11.58291	0.0000
TEC	-0.600752	0.076824	-7.819838	0.0000
R-squared	0.991643	F-statistic		385.6301
Adjusted R-squared	0.989071	Prob(F-statistic)		0.000000
S.E. of regression	3.902498	Durbin-Watson stat		1.909548

Source: Researchers computation

To discuss the regression results as presented in table 1, we employ economic a priori criteria, statistical criteria and econometric criteria.

Evaluation based on economic a priori criteria
This subsection is concerned with evaluating the regression results based on a priori (i.e., theoretical) expectation. The sign and magnitude of each variable coefficient is evaluated against theoretical expectation.

From table 1, it is observed that the regression line has a negative intercept as presented by the constant (c) = -40.92588. This means that if all the variables are held constant or fixed (zero), poverty will be devalued at -40.92588. Thus, the a-priori expectation is that the intercept could be positive or negative, so it conforms to the theoretical expectation.

It is observed in table 1 that foreign direct investment, external earnings, trade openness, market size, foreign aids and technology have negative impact on poverty reduction in Nigeria. This means that as foreign direct investment, external earnings, trade openness, market size, foreign aids and technology are increasing, this will bring about a decline in poverty.

On the other hand, exchange rate and external debt have a positive relationship with poverty in Nigeria. This means that as exchange rate and external debt are increasing, the rate of people living under the poverty line will be increasing and vice versa, although, exchange rate is expected to have either a positive or negative impact on poverty reduction in Nigeria.

From the regression analysis, it is observed that all the variables conform to the a priori expectation of the study. Thus, table 2 summarises the a priori test of this study as:

Table 2: Summary of economic a priori test

Parameters	Variables		Expected Relationships	Observed Relationships	Conclusion
	Regressand	**Regressor**			
β_0	POVT	Intercept	+/-	-	Conform
β_1	POVT	FDI	-	-	Conform
β_2	POVT	EXE	-	-	Conform
β_3	POVT	TOP	-	-	Conform
β_4	POVT	MKZ	-	-	Conform
β_5	POVT	ERT	+/-	+	Conform
β_6	POVT	XDT	+	+	Conform
β_7	POVT	FAD	-	-	Conform
β_8	POVT	TEC	-	-	Conform

Source: Researchers compilation

Evaluation based on statistical criteria
This subsection applies the R^2, adjusted R^2, the S.E and the f–test to determine the statistical reliability of the estimated parameters. These tests are performed as follows:

From our regression result, the **coefficient of determination (R^2)** is given as 0.991643, which shows that the explanatory power of the variables is extremely high and/or strong. This implies that 99% of the variations noticed in poverty reduction are being accounted for or explained by the variations in foreign direct investment, external earnings, trade openness, market size, exchange rate, external debt, foreign aids and technology in Nigeria, while other determinants of poverty reduction not captured in the model explain just 1% of the variation in poverty alleviation in Nigeria.

The **adjusted R^2** supports the claim of the R^2 with a value of 0.989071 indicating that 99% of the total variation in the dependent variable (poverty reduction) is explained by the independent variables (the regressors)). Thus, this supports the statement that the explanatory power of the variables is extremely high and/or strong.

The **F-statistic:** The F-test is applied to check the overall significance of the model. The F-statistic is instrumental in verifying the overall significance of an estimated model. The hypothesis tested is:

H_0: The model has no goodness of fit
H_1: The model has a goodness of fit
Decision rule: Reject H_0 if $F_{cal} > F_\alpha$ (k-1, n-k) at $\alpha = 5\%$, accept if otherwise.
Where: V_1 / V_2 Degree of freedom (df)
$V_1 = n-k$, $V_2 = k-1$:
Where; n (number of observation); k (number of parameters)
Where k-1 = 9-1= 8
Thus, n-k = 35-9 = 26
Therefore, $F_{0.05(8,26)} = 1.94$ (From the F table) … F-table
F-statistic = 385.6301 (From regression result) … F-calculated

Since the F-calculated > F-table, we reject H_0 and accept H_1 that the model has goodness of fit and is statistically different from zero. In other words, there is a significant impact between the dependent variable (poverty reduction) and independent variables (foreign direct investment, external earnings, trade openness, market size, exchange rate, external debt, foreign aids and technology) in the model.

Evaluation based on econometric criteria
In this subsection, the following econometric tests are used to evaluate the result obtained from our model: autocorrelation, heteroscedasticity and multicolinearity.

Test for Autocorrelation
Using Durbin-Watson (DW) statistics which we obtained from our regression results in table 4.3, it is observed that DW statistic is 1.909548 or approximately 2. This implies that there is no autocorrelation since d* is approximately equal to two. 1.909548 tends towards two more than it tends towards zero. Therefore, the variables in the model are not autocorrelated and that the model is reliable for predications.

Test for Heteroscedasticity
This test is conducted using the white's general heteroscedascity test. The hypothesis testing is thus:

H_0: There is a heteroscedasticity in the residuals
H_1: There is no heteroscedasticity in the residuals

Decision rule: Reject H_0 if the computed f-statistics is significant. Otherwise, accept at 5% level of significance. Hence, since the F-calculated is significant, we reject H_0 and accept H_1 that the model has no heteroscedasticity in the residuals and therefore, the data is reliable for predication.

Test for Multicolinearity
This means the existence of an exact linear relationship among the explanatory variable of a regression model. This will be used to check if colinearity exists among the explanatory variables. The basis for this test is the correlation matrix obtained using the series. The result is summarized in table 3 below.

Table 3: Summary of Multicollinearity test

Variables	Correlation Coefficients	Conclusion
POVT and FDI	0.712275	No multicollinearity
POVT and EXE	0.121930	No multicollinearity
POVT and TOP	0.170066	No multicollinearity
POVT and MKZ	0.740915	No multicollinearity
POVT and ERT	0.726221	No multicollinearity
POVT and XDT	0.799734	No multicollinearity
POVT and FAD	0.631516	No multicollinearity
POVT and TEC	0.731429	No multicollinearity
FDI and EXE	0.048231	No multicollinearity
FDI and TOP	0.045412	No multicollinearity
FDI and MKZ	0.768374	No multicollinearity
FDI and ERT	0.798854	No multicollinearity
FDI and XDT	0.716064	No multicollinearity
FDI and FAD	0.739334	No multicollinearity
FDI and TEC	0.726117	No multicollinearity
EXE and TOP	-0.090114	No multicollinearity
EXE and MKZ	0.160873	No multicollinearity
EXE and ERT	0.178529	No multicollinearity
EXE and XDT	-0.006163	No multicollinearity
EXE and FAD	0.005064	No multicollinearity
EXE and TEC	0.190211	No multicollinearity
TOP and MKZ	0.199546	No multicollinearity
TOP and ERT	0.097086	No multicollinearity
TOP and XDT	0.047517	No multicollinearity
TOP and FAD	0.003347	No multicollinearity
TOP and TEC	0.190515	No multicollinearity
MKZ and ERT	0.763301	No multicollinearity
MKZ and XDT	0.531713	No multicollinearity
MKZ and FAD	0.690751	No multicollinearity
MKZ and TEC	0.798549	No multicollinearity
ERT and XDT	0.721333	No multicollinearity
ERT and FAD	0.713815	No multicollinearity
ERT and TEC	0.719359	No multicollinearity
XDT and FAD	0.756145	No multicollinearity
XDT and TEC	0.629081	No multicollinearity
FAD and TEC	0.656504	No multicollinearity

Source: Researchers computation

Decision Rule: From the rule of Thumb, if correlation coefficient is greater than 0.8, we conclude that there is multicolinearity but if the coefficient is less than 0.8 there is no multicolinearity. We therefore, conclude that the explanatory variables are not perfectly linearly correlated.

Test of Research Hypotheses

The t-test is used to know the statistical significance of the individual parameters. Two-tailed tests at 5% significance level are conducted. The Result is shown on table 4 below. Here, we compare the estimated or calculated t-statistic with the tabulated t-statistic at $t_{\alpha/2} = t_{0.05} = t_{0.025}$ (two-tailed test).

Degree of freedom (df) = n-k = 35-9 = 26

So, we have:

$T_{0.025(26)} = 2.056$ …   Tabulated t-statistic

In testing the working hypotheses, which partly satisfies the objectives of this study, we employ a 0.05 level of significance. In so doing, we are to reject the null hypothesis if the t-value is significant at the chosen level of significance; otherwise, the null hypothesis will be accepted. This is summarized in table 4 below.

Table 4: Summary of t-statistic

Variable	t-tabulated ($t_{\square/2}$)	t-calculated (t_{cal})	Conclusion
Constant	±2.056	-4.578165	Statistically Significance
FDI	±2.056	-2.637170	Statistically Significance
EXE	±2.056	-1.167456	Statistically Insignificance
TOP	±2.056	-3.126658	Statistically Significance
MKZ	±2.056	-5.118543	Statistically Significance
ERT	±2.056	2.924481	Statistically Significance
XDT	±2.056	5.984841	Statistically Significance
FAD	±2.056	-11.58291	Statistically Significance
TEC	±2.056	-7.819838	Statistically Significance

Source: Researchers computation

We begin by bringing our working hypothesis to focus in considering the individual hypothesis. From table 4 the t-test result is interpreted below;

For FDI, $t_{\alpha/2} < t_{cal}$, therefore we reject the null hypothesis and accept the alternative hypothesis. This means that FDI has a significant impact on poverty reduction.

For EXE, $t_{\alpha/2} > t_{cal}$, therefore we accept the null hypothesis and reject the alternative hypothesis. Thus, EXE has no significant impact on poverty reduction.

For TOP, $t_{\alpha/2} < t_{cal}$, therefore we reject the null hypothesis and accept the alternative hypothesis. Thus, TOP has a significant impact on poverty alleviation.

For MKZ, $t_{\alpha/2} < t_{cal}$, therefore we reject the null hypothesis and accept the alternative hypothesis. This means that MKZ has a significant effect on POVT.

For ERT, $t_{\alpha/2} < t_{cal}$, therefore we reject the null hypothesis and accept the alternative hypothesis. This means that ERT has a significant impact on POVT.

For XDT, $t_{\alpha/2} < t_{cal}$, therefore we reject the null hypothesis and accept the alternative hypothesis. Thus, XDT has a significant impact on poverty alleviation.

For FAD, $t_{\alpha/2} < t_{cal}$, therefore we reject the null hypothesis and accept the alternative hypothesis. This means that FAD has a significant effect on POVT.

For TEC, $t_{\alpha/2} < t_{cal}$, therefore we reject the null hypothesis and accept the alternative hypothesis. This means that TEC has an impact on poverty reduction.

V. CONCLUSION AND RECOMMENDATIONS

From this study foreign direct investment during the period under review has been effective in the reduction of poverty rate in the country. There is evidence that our multiple regression analysis result revealed that foreign direct investment has significant effect on poverty reduction in Nigeria.

This study concludes also that the inflow of foreign private investment, foreign loan, trade openness, market size, foreign aids and technology are statistically significant in explaining poverty reduction in Nigeria. Hence, direct foreign investment can contribute better in the developmental aspirations of their host country if they can sacrifice some level of their profits for projects that can enhance the standard of living of their host countries.

Therefore, following from the findings stated above, this study concludes that for a nation, irrespective of its economic ideology, to achieve meaningful and sustainable development, adequate attention must be given to a wide spread of economic activities through various means with its foreign sector activities given a priority consideration.

Based on the findings made in the course of this study, particularly the results of the regression models, it is clear that the development of the Nigerian economy is highly dependent on the provision of the right environment for investment, which will in no doubt encourage economic growth and development. The study therefore recommends thus: to ensure the inflow and sustenance of FDI in Nigeria, the government should leverage on the market size of the economy and imbibe trade openness. This will attract more inflow of FDI in the economy. The government should ensure proper channelling of foreign aids, stabilize its exchange rate, reduce external debt and develop her technology. This is because these variable have been found to be statistically significant in reducing poverty in the country.

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