Acta
Universitatis
Danubius

ŒCONOMICA

Financial Capital Inflows, Food Security, and the Role of Institutional Qualities: The Nigerian Experience in a Case of Multiplicative Interaction Modeling

Georgina Okpoa Asemota[1], Gladday Igweagbara[2]

Abstract: Diverse perspectives on the ability of foreign capital inflows to boost growth exist, and this is steadily provoking policy worries for the agenda of sustainable development in emerging economies. In this study, the mediating role of institutions was investigated in assessing the impact of Financial Capital Inflow (FCI) on Nigerian poverty alleviation. By utilizing Food Security (FDS) as a proxy for poverty, the study diverted from conventional proxies of health, education, or HDI. The institutional regression variables used are Voice and Accountability, Political Stability, Corruption, Rule of Law, and Governance Effectiveness. The principal component of governmental monetary, fiscal, and trade policy is one of the control variables employed in the study. Six multiplicative interaction models were built as part of the study, and data from 1996 through 2021 were used. The sourced data were stationary either at levels or at first difference. The Restricted Error Correction Autoregressive Distributed Lag (RECM-ARDL) was employed as the estimation method. Institutions were found to significantly influence the ability of capital inflows to reduce poverty. The study recommends that Nigerian institutions needs to be strengthened in order to increase the effectiveness of capital inflows as poverty reduction strategy in Nigeria.

Keywords: Food Security; Institutions; Sustainable Development; International Funds Flow; RECM-ARDL

JEL Classification: D73

---

[1] Senior Lecturer, Department of Economics, Banking and Finance, Benson Idahosa University, Nigeria, Address: No. 1 University way, Benin City, Nigeria, Tel.: 234-8057222646, Corresponding author: gasemota@biu.edu.ng.

[2] Bursary Unit, Benson Idahosa University, Nigeria, Address: No 1 University way, Benin City Nigeria, Tel.: 2348037454926, E-mail: gigweagbara@gmail.com.

1. Introduction

The Sustainable Development Goal (SDG) includes eradicating poverty and hunger in emerging nations. The assessment of the SDGs' achievement in 2021, however, reveals that several nations, particularly Nigeria, are still plagued by extreme poverty and rising rates of food insecurity. It is often believed that Nigeria has one of the highest rates of poverty in the world. In Nigeria, 86.9 million people were reportedly living in extreme poverty as of 2018. According to estimates, 113 million people in the country (or roughly 40% of the total population) will be living in poverty in 2022. Additionally, Nigeria is one of the 55 nations with a Low Income Food Deficit (LIFD), and as of 2020, 21.4% of families there were suffering from severe food insecurity (Wudil, Ali, Raza, Mehmood & Sannoh, 2023) Nigeria's National Savings Ratio (NSR) in 2016 was 13.1% compared to Sub-Saharan Africa's average rate of 21% (NBS, 2022; WDI, 2021). The country's inability to generate capital is hampered by the low NSR, which also contributes to the savings-investment gap and the country's inability to experience spontaneous and endogenous growth. These data demonstrate the necessity of outside aid for the country's growth potential and Foreign Capital Inflows (FCIs) in the form of foreign aid, immigrant remittances, and Foreign Direct Investment (FDI) are suggested sources of funding for development initiatives (Sawalha, Elian & Suliman, 2016).

However, several authors have raised skepticism over the ability of FCIs to promote growth. For instance, Moyo (2009) contends that FCIs in the form of transfers feed dependency and the cycle of poverty. On the other hand, FCIs, in the opinion of Easterly (2006), can raise living standards. According to Wilhelms and Witter (1998) and Ridell (2014), FCIs can promote growth when the proper institutions are in place. They emphasized that countries plagued by corruption and poor governance are less likely to benefit from FCI. Studies such as Ozigbu (2020), Fagbemi and Olufolahan (2019), Duru, Okafor, Eze, and Ebenyi (2020), Olowookere, Olowo, Mabinuori, and Aderemi (2020), Aderemi, Olowo, Osisanwo, and Omoyele (2021) concentrate on the effect of FCIs on growth-related concerns. Unfortunately, impact analysis dominates research, with little focus on the interacting impacts of institutional quality. Impact analysis is important, but it's also important to look into how governance and other institutional qualities affect development in order to understand why utilizing FCI as a development strategy typically has less of an impact than it was meant to have (Lewis, Boyd, Walsh-Bailey, and others, 2020). Another issue is that, despite the SDGs' focus on food security and its strong relationship to other socioeconomic challenges like poor health and a high mortality rate, research has not yet focused on these topics

The question that this study seeks to answer is "does institutional quality have significant impact on FCI's ability to fight poverty in Nigeria?" Or "is there any substantial connection between institutional quality and the impact of FCI on poverty

reduction in Nigeria?" The goal of this study then is to determine the interactive impacts of institutional quality on the effectiveness of FCI on poverty reduction. The study adds to the body of knowledge in two different ways. In order to determine whether institutional qualities hinder or promote FCI's usefulness as a tool for poverty reduction, the study first examines the interaction effects of institutional qualities on FCI. Second, it looks at how FCIs affect food security, a crucial aspect of poverty alleviation that is frequently overlooked in current research.

2. Review of Relevant Literature

2.1. Conceptual Review

2.1.1. Poverty

The definition of "poverty" varies depending on the context. Deprivation, being poor, and being destitute are substitute words for poverty. Living below a modest threshold of comfort is referred to as being in a state of poverty. Absolute poverty is defined as not having access to enough of the resources needed to lead a happy and healthy life. The quantitative criteria for categorizing absolute poverty are income earned and spending behaviors. From the perspective of income, poverty is a state in which a household's income from employment is insufficient to cover its essential needs.

The consumption criterion sets a threshold of consumer spending based on the dollar equivalent of the prices of a defined basket of locally consumed household necessities whose value is subject to market prices at the time of valuation. The international poverty threshold (called the Global Poverty Line {GPL}) calculated from the global prices of necessities was $1 in 2008, $1.90 in 2015, and as of 2017, it was $2.15 per day for a family of four. However, the GPL varies from country to country, based on the local needs and the related Purchasing Power Parity (PPP). For the United States, the poverty threshold in 2017 was $ 84 per day. For Nigeria, it was $1.93 for the same year.

On the other hand, relative poverty measures compare income levels across a defined group. A household is regarded as living in poverty when their income is significantly less than the average income of the community or when they fail to reach a certain percentage (usually estimated at 60%) of the society's median income (Sen, 1983; Townsend, 1985; Pantazis, Gordon & Levitas, 2006; Arndt &Tarp, 2017). At macro-levels, a country is poor when there is a prevalence of hunger and malnutrition; ill health; limited access to education and other services; increased morbidity and mortality from illness; homelessness, inadequate housing; unsafe environments, and social discrimination and exclusion among residents.

The Human Development Index (HDI) was developed as an assessment criterion for measuring relative poverty by the United Nations Development Program (UNDP) as part of their strategy for tackling poverty (Sawalha *et al.,* 2016). Some "deprivation bundles" that impact those living below the poverty line are the measuring indices, and the HDI examines relative poverty guided by these indices. Notable HDI indices include health, education, and general living standards, and more recently, UNDP developed the Human Poverty Index (HPI) as a complementary composite index. HPI includes other components that address deprivations and the inability to function in a "multi-attribute framework" (Chakravarty & Majumder, 2005, p.277).

One of the poverty dimensions contained in the HPI is malnutrition. Chakravarty *et al.* (2005) explained that malnutrition is the most direct consequence of poverty, stressing that nutrition naturally determines the state of health. Poverty metrics such as low birth weight, cognitive retardation, diseases, and deaths are consequences of malnutrition. Nutrition is an important determinant of educational achievement because it plays a key role in determining cognitive abilities, and it comes before education in the hierarchy of needs (Chakravarty *et al.,* 2005; Mohammed, Wassie, & Teferi, 2021; Wudil *et al.,* 2023). The risk of Malnourishment is associated with food insecurity, and many countries, including Nigeria, have made food security a key policy issue on sustainability. Evidence of this is the school feeding programs introduced by these governments as incentives geared at increasing school enrollment, reducing absenteeism, and reducing child malnutrition (World Bank, 2016).

2.1.2. Food Security

Food security is conceived as having safe, nutritious, and sufficient food to maintain good health at all times. It implies access to food required to produce a calorific average of 2251 calories per day for adults while children need lower calories; depending on their age, size, and weight. To maintain food security, this calorific average should always be available and accessible for use. The dynamic, time-dependent reciprocal concept is food insecurity (Peng & Berry, 2019; Alun & Rima, 2023). (Peng *et al* (2019) explained that the famine and hunger occasioned by the global food crisis in the 1970s attracted attention from the international community to the problems of food insecurity and the need for policy intervention. Another area of concern is finding suitable measures of food security (or insecurity). Berry *et al* (2019) suggested that suitable measures should be reliable, repeatable, and available to many countries. To Maxwell, Coates, and Vaitla, (2013), the higher the percentage of income spent on food, the higher the risk of food insecurity. To Alun *et al* (2023), households whose income can cover the cost of the average calories needed in the family at any stated time are regarded as food secured. The estimate made by the household survey for September 2018 to October 2019 revealed that the sum of 82,000nairasa per person per year will be required to sustain the average cost of 2251

calories per day in Nigeria. (Alun *et al*, 2023). Other measures officially recognized by Food and Agriculture Organization (FAO) and USAID include Household Food Insecurity Access Scale (HFIAS), Household Hunger Score (HHS), and Food Insecurity Experience Scale (FIES).

2.1.3. International Funds Flow

An apt description of International Funds (monetary or financial) flow is the movement of funds from one or more source countries to a host country, either in the form of loans, humanitarian aid, investment purposes, or migrant remittances. Traditionally, the flow of these financial resources is from richer industrialized countries to poorer, usually agrarian countries (Bar-Yam, 2018; Adeyeri & Adeniji, 2021). The flows may be monetary transfers in the form of concessional loans or grants, such as export credits, or physical merchandise, skills, technical expertise, professional advice, and training (Todaro & Smith, 2009; Ridell, 2009). The aims of these fund inflows vary. While donors of foreign aid aim to alleviate widespread poverty in recipient countries, migrant remittances target the needs of specific households. The sole aim of Foreign Direct Investment (FDI) is to establish long-lasting cross-border business relationships between business partners (Gupta, Pattillo & Wagh, 2009, Tang & Bundhoo, 2017).

Foreign aid can be beneficial to either the donor agents or the recipients. By offering Aids, a donor country may aim at improving its security, gain diplomatic recognition, promote its exports, and promote its own culture, language, or religion or to obtain the right to set up commercial or military bases in the recipient country. For recipient countries, aside from being potent tools for private and national poverty alleviation, FCI provides an alternative source of capital to augment the gap between desired investment and actual savings, re-distributes income, reinforces economic transformation, and triggers technology spillovers, thereby strengthening the industrial structure for broad-based growth (Easterly, 2006; Tarp, 2006; Bjørnskov, 2014; Fagbemi & Olufolahan, 2019; Umeh, 2019 & Kenton, 2021). However, the extent to which FCI can trigger sustainable growth processes depends on a range of factors. Walsh and Yu (2010) identified domestic market size, level of trade openness, exchange rate volatility, political stability, and institutional quality as some of the major determinants of the growth-enhancing potency of FCI.

2.1.4. Institutions

North (1990) defined institutions as the "rules of the game", which can be incentives or constraints to economic activities. To Ben-Ali and Krammer (2016) and Figuera and Silva-Rego (2020), institutions are key moderating factors between different economic agents. Institutions exist to provide legitimacy to transactions and to determine what type of structures would be appropriate for an economy. Lack of good institutions, therefore, poses a challenge to the welfare of any economy. To Dietsche (2007), the criteria for measuring institutional quality are the Governance

index, corruption perception index, checks and balances, doing business indicators, fragmentation of the political field, level of democracy and autocracy, civil liberties, and index of social division. Ben-Ali *et al* (2016) however pointed out that these measures of institutional qualities do not fully capture the attributes they are associated with because they were originally designed for other purposes. Notwithstanding, these measures have been particularly useful in empirical research.

2.2. Theoretical Literature

Nurkse's poverty trap model provides the basis for linking poverty alleviation to FCI and the model has served as a basis for important policy proposals concerning the economic progress of underdeveloped countries and the need for large-scale foreign aid. The poverty trap theory assumes that poverty persists because of a self-reinforcing mechanism that forms a vicious circle from which it is almost impossible to break apart from external intervention (Payne, 2005). In a poverty-stricken economy, real income level is at par with consumption, thereby resulting in low net savings. The poverty trap consists of a mutually reinforcing low-income-low savings-low investment-low productivity-low-income vicious circle, thereby resulting in poverty begetting poverty. Such countries are therefore not able to build the capital base required to spontaneously grow (Samuelson,) nor is there any inducement to increase productivity because of the low purchasing power of the consumers and its consequent low demand (Nurkse, 1943).

Bass (2009) and Meier and Baldwin (2011) posited that market imperfection is the main reason these countries are unable to build their capital base. These imperfections create the mutually enforcing impetus observed in the vicious circle and reduce the ability of endogenous fiscal and monetary policies adopted to achieve targeted leaps out of poverty to achieve their targets. These countries, therefore, require an externally induced "big push" out of the vicious circle of poverty. The big-push theory posited by Rosenstein-Rodan (1943) can therefore be viewed as a theory that complements the vicious circle model. The big-push theory posits that FCI helps to fill the "financing gap" between what a country needs to invest in, and the investment funds it can generate on its own.

FCI is a sustainable solution to poverty when it provides sufficient capital to lift an economy out of poverty (Easterly, 2006; Rosenstein-Rodan, 1943 as stated in Kartika, 2014). Easterly (2006) further posits that where FCI failed to contribute to economic growth, FCI would at least improve living standards by improving the health and education infrastructures in recipient countries. However, the extent to which FCI can accelerate growth depends on several interactive factors. An attestation that this theory is not entirely new can be found in Smith (1776) who mentioned the role of institutions as significant determinants of market trends. However, because of their unquantifiable nature, which makes it difficult to source

for, and empirically analyze these data, institutional factors were thence viewed as systematic imperfections which can be ignored (Levacic & Rebman, 1982; Morgan & Hauptmeier, 2014). The resurgence of the New Institutional Economics (NIE) led to the rebirth of the role of institutional quality as a significant determinant of macroeconomic responses (North 1990; Acemoglu & Johnson, 2005). Researchers and policymakers rarely contend that among other driving factors, institutions not only create the choice or pattern of economic activities, but they also play key roles in determining the efficient use of resources in all sectors of an economy (Temple, 2000; Rodrick, 2007; Elouidani & Zoubir, 2015).

2.3. Empirical Review

Myriads of FCI-related research are readily available. One of the panel studies is Azam, Haseb, and Samsudin (2016) who examined the impact of foreign remittances, foreign aid, and debt on poverty alleviation in 39 countries. The study sourced data covering the period of 1990-2014 and employed the Panel fully modified OLS (FMOLS). The result revealed that foreign remittances have a positive impact on poverty alleviation. However, the universality of the result is not established given the contrary and conflicting country-wise results that abound in literature. For example, Hung (2005) used panel data from 12 Vietnamese provinces to find the impact of FDI on poverty reduction. The dependent variable was the incidence of people living under the poverty line and the period covered was 1992-2002. The result showed that the inflows of FDI have a positive and significant impact on poverty reduction in a province.

However, contrary results for Vietnam were found in Musakwa, Odhiambo, and Nyasha (2021) who investigated the impact of foreign capital inflows on poverty, using annual time series data from 1990 to 2018. Infant mortality rate, Human Development Index (HDI), and household consumption expenditure were used as poverty proxies. Using the autoregressive distributed lag (ARDL) approach, the study found FDI to worsen poverty in the short run. The contradicting results for the same country raise the suspicion that the findings may be time-inconsistent or time-varying.

For Nigeria, some studies exist. Some of the more recent results include Ugbaka, Awujola, and Shcherbyna (2019) aimed at finding the nexus between economic development, foreign aid, and poverty reduction in Nigeria. The study established a positive relationship. Ozigbui (2020) explored the effect of cross-border capital flows on poverty incidence. Poverty headcount was used as the dependent variable. By employing the ARDL technique, the study also found that migrant remittances and bilateral debt are negatively linked to poverty headcount in the short run. Monogbe, Okereke, and Ifionu (2020) examined the extent to which Foreign Capital inflow promotes Economic Development in Nigeria. The scope covered 1980 to

2019. Misery Index is used as a proxy for economic development. Using the Auto Regressive Distributed Lag (ARDL) technique, findings were that Foreign Direct Investment negatively influences economic development in Nigeria.

Aderemi, Olowo, Osisanwo, and Omoyele (2021) examined the relationship between FDI inflows and poverty reduction in Nigeria. The dependent variable was HDI. Using the ARDL approach, the finding was that FDI net inflows had a negative impact on welfare and literacy rate but has a positive effect on health. Ubi and Ebi (2021) examined the link between foreign aid and the development process in Nigeria by comparing a 5-year average growth rate in foreign aid to that of some selected development indicators. Poverty indicators used are infant mortality rate, gross primary school enrollment ratio, and real household final consumption expenditure for the period of 1975 to 2010. The study revealed that foreign aid significantly impacts poverty by lowering the infant mortality rate and raising household consumption expenditure. The result further revealed the fact that foreign aid has a negative significant impact on poverty when poverty is measured by gross primary enrollment ratio but positive when supplemented with the macroeconomic policy index while inferior quality of governance aggravates poverty.

The inclusion of governance quality in Ubi *et al* (2021) is in line with the increasing trend of examining the interactive effects of institutions on policy outcomes and some institution-based FCI-related studies are readily available. For example, in their study on the effect of foreign aid on economic growth, Duru, Okafor, Eze, and Ebenyi (2020) employed institutional variables such as ethnolinguistics, institutional quality and interacted macroeconomic policy index with foreign aid. The result showed that the contribution of foreign aid to the economic growth of Nigeria is significantly dependent on the quality of the macroeconomic policy environment.

2.4. Research Gaps

Research interest in joint effects and institutions is increasing. It is also evident from Duru *et al* (2020) that some of them are FCI-related. However, like Duru *et al* (2020), most of the existing studies on Nigeria are directed at economic growth. To the best of our knowledge and based on the non-availability of them in readily available literature, interactional studies on poverty are either yet to be conducted or are very scanty, if they exist. Again, despite the emphasis on food insecurity as contained in the SDG document, none of these studies were concerned about food insecurity. It is apt, therefore, to address these issues by introducing the interactive effects of institutions on FCIs as poverty alleviation strategies and to use food insecurity as the proxy for poverty.

3. Materials, Methods and Results

3.1. Data Collection and Procedures for Model Selection

The study employed multiplicative interaction models. The proxy used for poverty is food security. The general model used in this study is given as:

FDS= α + β(FCI, POL, VOA, STB, COR, LAW, GOV) + γ(FCI*POL, FCI*VOA, FCI*STB, FCI*COR, FCI*LAW, FCI*GOV)　　　　　　　　(1)

It is conventional in multiplicative interaction models to apply one interactive variable per model. Applying this convention, 1 is further specified as:

Model 1: FDS= α+β(FCI, POL, VOA, STB, COR, LAW, GOV)+γ(FCI*POL)　(2)

Model 2: FDS= α+β(FCI, POL, VOA, STB, COR, LAW, GOV)+γ(FCI*VOA)　(3)

Model 3: FDS= α+β(FCI, POL, VOA, STB, COR, LAW, GOV) + γ(FCI*STB) (4)

Model 4: FDS= α+β(FCI, POL, VOA, STB, COR, LAW, GOV) + γ(FCI*COR) (5)

Model 5: FDS= α+β(FCI, POL, VOA, STB, COR, LAW, GOV) + γ(FCI*LAW (6)

Model 6: FDS= α+β(FCI, POL, VOA, STB, COR, LAW, GOV) + γ(FCI*GOV)(7)

The description of the variables, sources of data and the *a priori* parameter sign expectations for the variables are given in Table 1

Table1. Description of Variables Used

| Indicator	Variables	Acronym used	Description	Source	Sign expectations
Dependent variable	Poverty, using food insecurity as proxy	FDS	Ratio of food production index/ population index (2016=100)	WDI	
Explanatory variable	Foreign capital inflow	FCI	Log of the sum of official development aid, Workers' remittances, and Foreign direct investment (current US$)	WDI	+
Control Variable	Government macroeconomic policies	POL	Principal component of on monetary, fiscal and trade policy variables	CBN	+

Regressors	Voice and accountability	VOA	Participation in government	WGI	+
Regressors	Political Stability	STB	Political Stability and Absence of Violence/Terrorism	WGI	+
Regressors	Government Effectiveness	GOV	quality of public service, civil service, and the degree of its independence from political pressures	WGI	+
Regressors	Corruption	COR	Control of corruption	WGI	+
Regressors	Rule of Law	LAW	Quality of contract enforcement, property rights, the police, and the courts.	Author's computation	+
Interaction Variables	Interaction between respective Institutional variables and FCIs	FCI*COR FCI*POL FCL*LAW FCI*STB FCI*GOV	Multiplicative effect of various indicators and FCIs	Author's computation	+

Source: Authors' compilation

The data were sourced from World Bank databases (World Development Index {WDI} and World Governance Index {WGI}) and the Central Bank of Nigeria (CBN) statistical bulletin. The WDI and WGI data are published as annual data and the data for periods earlier than 1996 were not published in WGI. Based on these constraints, the period studied in this work spans from 1996 to 2021 for all the variables. As its method of achieving a good degree of freedom, these low-frequency annual data were transformed to higher-frequency quarterly data using the converter provided in e-views 10. Using this means, the number of per-variable observations increased from 26 to 104. Monetary policy variables used for macroeconomic policies were lending rates and the log of money supply while net government expenditure was used for fiscal policy. For trade policy, the degree of openness, measured by dividing the sum of both imports and exports by the real GDP, was used. For FCI, the log values of the sum of Official Development Aid (ODA), Migrant Remittances (REM), and Foreign Direct Investment (FDI) were computed

and used. To aid a better understanding of the nature of the various data used, Table 2 gives the graphical representations of the respective series.

Table 2. Dynamic Trends of the Various Series
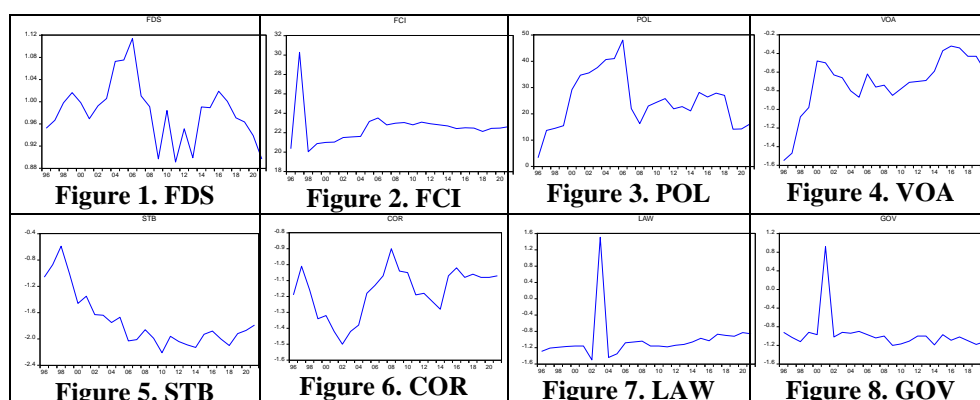
Source: Author's Compilation

The dynamic trends of the various series used in this study are given in Table 2. The levels of food security (FDS), using per-head food production (food production/population) as its proxy; range between 1.114 (in 2006) and 0.891(2011). Higher values represent better food security. The chart clearly shows a stochastically declining trend in food security in Nigeria. For government policies (POL), the principal component of money supply, net government expenditure, and trade openness was used as a proxy. Higher values represent expansionary measures or less restrictive policies. For the other institution variables, the World Governance Index (WGI)'s ratings lie between +2.50 to -2.50, where +2.50 represents excellent institutional conditions while -2.50 is the worst value. The positive sign expectations attached to these variables in Table 1 indicate that positive values to institutional ills such as corruption indicate better conditions and not the reverse. The recorded statistics for these institutional variables (COR, VOA, STB, GOV, LAW), were less than 0 for the period studied. For convenience, the range of values used in the graph was limited to 0 to -2.5. It can be observed that the peak periods for the various data vary significantly, despite similar trends observed in some of them. The estimation procedures and results are presented in subsequent sub-sections

Where FDS is Food security and FCI is foreign capital inflows. It is widely acknowledged in economics that time is critical in deciding outcomes and that for reasons ranging from psychological inertia, technology, and institutions, the responses of dependent variables to stimuli from explanatory variables are rarely instantaneous. Effects are delayed or may persist over time (Koutsoyiannis, 1977). However, it is difficult to know *a priori* the exact lag periods that are significant (Buteikis, 2019). The study therefore employed the Restricted Error-Correction

Model (RECM) conditional to an ARDL (p, q1, q2, q3, …qk) given in Pesaran, Shin, and Smith (2001) as stated by Natsiopoulos (nd) given as:

Model 1: FCI*POL:

$$\Delta FDS_t = \beta_0 + \sum_{i=1}^{\tau} \beta_1 \Delta FDS_{t-i} + \sum_{I=1}^{a} \beta_2 \Delta FCI_{t-i} + \sum_{I=1}^{b} \beta_3 \Delta POL_{t-i} +$$
$$\sum_{i=1}^{c} \beta_4 \Delta VOA_{t-i} + \sum_{i=1}^{d} \beta_5 STB_{t-i} + \sum_{i=1}^{e} \beta_6 \Delta LAW_{t-i} + \sum_{i=1}^{f} \beta_7 GOV_{t-i} +$$
$$\sum_{i=1}^{g} \beta_8 \Delta FCI * POL_{t-i} + \mu_t \qquad (8)$$

Model 2: FCI*VOA

$$\Delta FDS_t = \beta_0 + \sum_{i=1}^{\tau} \beta_1 \Delta FDS_{t-i} + \sum_{I=1}^{a} \beta_2 \Delta FCI_{t-i} + \sum_{I=1}^{b} \beta_3 \Delta POL_{t-i} +$$
$$\sum_{i=1}^{c} \beta_4 \Delta VOA_{t-i} + \sum_{i=1}^{d} \beta_5 STB_{t-i} + \sum_{i=1}^{e} \beta_6 \Delta LAW_{t-i} + \sum_{i=1}^{f} \beta_7 GOV_{t-i} +$$
$$\sum_{i=1}^{g} \beta_8 \Delta FCI * VOA_{t-i} + \mu_t \qquad (9)$$

Model 3: FCI*STB

$$\Delta FDS_t = \beta_0 + \sum_{i=1}^{\tau} \beta_1 \Delta FDS_{t-i} + \sum_{I=1}^{a} \beta_2 \Delta FCI_{t-i} + \sum_{I=1}^{b} \beta_3 \Delta POL_{t-i} +$$
$$\sum_{i=1}^{c} \beta_4 \Delta VOA_{t-i} + \sum_{i=1}^{d} \beta_5 STB_{t-i} + \sum_{i=1}^{e} \beta_6 \Delta LAW_{t-i} + \sum_{i=1}^{f} \beta_7 GOV_{t-i} +$$
$$\sum_{i=1}^{g} \beta_8 \Delta FCI * STB_{t-i} + \mu_t \qquad (10)$$

Model 4: FCI*COR:

$$\Delta FDS_t = \beta_0 + \sum_{i=1}^{\tau} \beta_1 \Delta FDS_{t-i} + \sum_{I=1}^{a} \beta_2 \Delta FCI_{t-i} + \sum_{I=1}^{b} \beta_3 \Delta POL_{t-i} +$$
$$\sum_{i=1}^{c} \beta_4 \Delta VOA_{t-i} + \sum_{i=1}^{d} \beta_5 STB_{t-i} + \sum_{i=1}^{e} \beta_6 \Delta LAW_{t-i} + \sum_{i=1}^{f} \beta_7 GOV_{t-i} +$$
$$\sum_{i=1}^{g} \beta_8 \Delta FCI * COR_{t-i} + \mu_t \qquad (11)$$

Model 5: FCI*LAW:

$$\Delta FDS_t = \beta_0 + \sum_{i=1}^{\tau} \beta_1 \Delta FDS_{t-i} + \sum_{I=1}^{a} \beta_2 \Delta FCI_{t-i} + \sum_{I=1}^{b} \beta_3 \Delta POL_{t-i} +$$
$$\sum_{i=1}^{c} \beta_4 \Delta VOA_{t-i} + \sum_{i=1}^{d} \beta_5 STB_{t-i} + \sum_{i=1}^{e} \beta_6 \Delta LAW_{t-i} + \sum_{i=1}^{f} \beta_7 GOV_{t-i} +$$
$$\sum_{i=1}^{g} \beta_8 \Delta FCI * LAW_{t-i} + \mu_t \qquad (12)$$

Model 6: FCI*GOV:

$$\Delta FDS_t = \beta_0 + \sum_{i=1}^{\tau} \beta_1 \Delta FDS_{t-i} + \sum_{I=1}^{a} \beta_2 \Delta FCI_{t-i} + \sum_{I=1}^{b} \beta_3 \Delta POL_{t-i} +$$
$$\sum_{i=1}^{c} \beta_4 \Delta VOA_{t-i} + \sum_{i=1}^{d} \beta_5 STB_{t-i} + \sum_{i=1}^{e} \beta_6 \Delta LAW_{t-i} + \sum_{i=1}^{f} \beta_7 GOV_{t-i} +$$
$$\sum_{i=1}^{g} \beta_8 \Delta FCI * GOV_{t-i} + \mu_t \qquad (13)$$

$\tau, a, b, c, d, e, f, and\ g$ are the lag lengths of the respective regressors as determined by the Akaike Lag Selection Criteria. The estimations of the models and their results are given in subsequent sections

3.2. Estimation and Results

The study commenced by conducting investigations into the nature of the data employed. These investigations were the data distribution test and the unit root test. The results of the preliminary investigations are presented in Table 3

Table 3. Descriptive Statistics and Unit Root Tests Results

	FDS	FCI	COR	GOV	LAW	POL	STB	VOA	FCICOR	FCIGOV	FCIPOL	FCISTB	FCIVOA
Mean	0.983	22.50	-1.17	-0.96	-1.02	24.81	-1.73	-0.71	-26.24	-21.75	557.1	-38.85	-16.22
Median	0.990	22.49	-1.15	-1.01	-1.13	23.70	-1.88	-0.68	-25.48	-22.87	543.3	-42.52	-15.16
Std. Dev.	0.054	1.805	0.148	0.388	0.537	10.18	0.418	0.297	2.904	8.734	227.0	9.775	7.699
Skewness	0.281	-2.872	0.566	4.394	4.009	0.306	1.268	-1.29	-0.288	3.977	0.402	1.171	-2.023
Kurtosis	3.228	13.779	2.472	21.61	19.39	2.771	3.642	4.631	2.117	19.30	3.320	3.514	8.043
Jarque-Bera	1.595	646.4	6.609	1836	1442	1.851	29.64	40.24	4.810	1426	3.242	24.93	181.1
Probability	0.450	0.000	0.025	0.003	0.000	0.396	0.000	0.036	0.683	0.000	0.197	0.000	0.000
Unit Root	I(1)**	I(0)*	I(1)*	I(1)*	I(0)*	I(1)*	I(1)*	I(0)**	I(1)*	I(1)*	I(1)*	I(1)*	I(1)*

Source: Author's computation.   Significant levels: *=1%; **=5%

The mean, median, and standard deviation values presented in Table 3 show that data sourced conform to first and second moment conditions for normality, suggesting a good cluster around mean values. The skewness, kurtosis, and Jacque-Bera statistics however show obvious signs of fat tails and excess kurtosis for FCI, GOV, and LAW data while the other data significantly conform to normal distribution at various degrees. The Augmented Dickey-Fuller (ADF) unit root tests show mixed levels of stationarity among the data. This necessitates testing for co-integration and long-run relationships. The study employed the bounds test based on the null hypothesis: $\beta(2) = \beta(3) = \beta(4) = \beta(5) = \beta(6) = \beta(7) = 0$. The result is presented in Table 4.

Table 4. Co-Integration Results

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Bounds Tests: F-Statistics	26.91	24.93	23.61	16.85	26.41	19.87
Remarks	Reject null hypothesis	Reject null hypothesis	Reject null hypothesis	Reject null hypothesis	Reject null hypothesis	Reject null hypothesis

Source: Author's computation. k=8; Critical values @5% level: Lower = 2.17; Upper: =3.21

The tests for co-integration of the variables used in the various models produced the results stated in Table 4. The results confirm long-run relationships existing among the variables used in all the respective models. The results of these preliminary investigations support the use of error-correction techniques and based on our intention of finding the lag effects, the Auto-Regressive Distributed Lag Error Correction (ARDL-ECM) estimation technique is favored for the models. Parsimonious versions of the ARDL-ECM results for the 6 estimated models are presented in Table 5.

Table 5. ARDL-ECM Results

	Model 1: X*Y=FCI*POL	Model 2: X*Y=FCI*VOA	Model 3: X*Y=FCI*STB	Model 4: X*Y=FCI*COR	Model 5: X*Y=FCI*LAW	Model 6: X*Y=FCI*GOV
ARDL Model Selected	4,0,4,0,4,4, 4,0,0	4,0,4,0,4,4,0, 4,0	4,0,4,0,0,4,4, 4,4	4,4,4,0,4,4,0, 4,4	4,4,4,4,0,4,4, 4,4	4,0,4,0,4,0,0, 4,0
D(FDS)	(-4)= 0.429*	-(-4)=-0.513*	(-4)=-0.424*	(-4)= -0.582*	(-4)= -0.644*	(-4)= -0.566*
D(FCI)	(-1)= 0.043*	-(0)=0.065*	(0)=-0.052*	(-4)=-0.138*	(0)= 0.025* (-4)= -0.129*	-
D(POL)	(0)= 0.070* (-4)= 0.003*	-(0)=0.001* (-2)=0.001** (-3)=0.001** (-4)=0.004*	(-4)= 0.004*	(-4)= 0.004*	(0)= 0.003* (-4)= 0.004*	(-4)= 0.004*
D(VOA)	(0)= 0.119*	(0)=-0.938*	(0)=0.097*	(0)= 0.099*	(0)= -0.060* (-4)= 0.159*	(0)= 0.100*
D(STB)	(-4)=0.084*	(-4)= 0.095*	(0)=1.28*	(-4)= 0.076*	(-0)= 0.076*	(-4)= 0.097*
D(COR)	(0)= 0.201* (-4)=-200*	(0)= 0.120* (-4)=-0.144*	(0)=0.210* (-4)=-0.194*	(-4)= 2.766*	(0)= -0.012*	(0)= 0.122*
D(LAW)	(0)=0.10** (-4)=0.040*	(0)=-0.024*	(-4)=0.021*	(0)= -0.021*	(0)= -4.683* (-4)= 2.199*	(0)= -0.022*
D(GOV)	-	(0)= -0.027* (-4)= -0.050*	(0)=-0.017** (-4)=-0.029*	(0)=-0.041* (-4)= -0.037*	(-0)= -.0.090* (-4)= -0.097*	(-4)= -0.051*
D(X*Y)	(0)=0.003*	(0)=0.046*	(0)= -0.058* (4)= -0.005*	(-4)=- 0.0128*	(0)= 0.215* (-4)= -0.103*	(0)= -0.032***

ECM(-1)	0.005***	0.204***	-0.034***	-0.031***	-0.087***	0.094***
R²(AdJ R²)	0.804(0.721)	0.838(0.769)	0.910(0.870)	0.778(0.641)	0.874(0.782)	0.721(0.624)
S.E.of Reg	0.013660	0.012419	0.019654	0.015489	0.012076	0.015861
Variance	0.000153	0.000106	0.000504	0.000121	0.000019	0.000151
SSR	0.012689	0.010488	0.026268	0.014395	0.008166	0.018114

Source: Author's Computation. *= significant at 1% **=significant at 5% ***=not significant

The appropriate lags selected for the respective models using the Akaike lag selection criteria are presented in the first row in Table 5. The models employed confirm that institutional variables are significant determinants of FDS. By comparing the values of the associated coefficients, the study reveals that corruption (COR) has the strongest effect and these effects are observed both instantaneous and in the 4th lag. The results reveal coefficient signs that were contrary to expectations for government efficiency (GOV) which ironically implies that government inefficiency creates a boost for food security. For COR, the signs associated with its coefficient in the current period are positive while its Lag is negative. Other results for institutional quality conform to their *a priori* expectations given in Table 2.

The results show that in all cases studied, the autoregressive impact of food security (FDS) is strong and significant in the 4th lag period even at the 1% level. The result indicates that a unit change in the 4th lag value accounts for up to 0.6-unit change in the current level of food security. However, the signs are contrary to expectations as variables are expected to move systematically in the same direction when there are no abrupt disturbances in a system. The ironies presented by the results of government efficiency and the lag of FDS open areas of research concerns.

The FCI results are interesting. While 5 of the models' results reveal that FCI is a significant determinant of FDS even at the 1% level, the FCI*GOV model refutes its significance. Four of the five supporting models confirm instantaneous impact while FCI*COR confirms its significance in the 4th lag period only. In addition to instantaneous impact, FCI*LAW also confirmed a significant impact in the 4th lag period. Secondly, the models presented contrary views on the nature of the impact. FCI*POL, FCI*STB, and the 4th lag result of FCI*COR show a negative relationship thereby aligning with Moyo (2009) while FCI*VOA shows a positive relationship thereby supporting the results obtained in Ubi and Ebi (2021). In FCI*LAW, the result in the first lag was positive while the 4th lag result indicates a negative effect. The logical inference of this is that in the short run, FCI has a positive impact on food security. However, eventually, the impact tends to be negative.

The variations in the relative coefficients of the regressors in the different models as we switch the multiplicative interaction terms provide further plainly evident

evidence of the significant roles institutions play in shaping FDS. The results of the interaction effects show that except for FCI*GOV, the results of other models were significant at the 1% level. The results show instantaneous positive interaction effects for FCI*POL, FCI*VOA, FCI*COR, and FCI*LAW. This indicates that the respective interactions of these institutional variables with FCI have a positive impact on FDS. This result supports the findings of Duru *et al* (2020) who showed that the contribution of foreign aid to the economic growth of Nigeria is significantly dependent on the quality of the macroeconomic policy environment. The reverse is the case for FCI*STB in both the current period and the 4th lag period. Interestingly, all the 4th lag interaction effect results were negative, indicating that eventually, these institutional variables- STB, COR, and LAW- have negative interaction effects on FCI.

The coefficient of determination (R^2) and its adjusted value (Adj R^2) show that FCI*STB is the best fit among the models. The results also show that the error correction terms are insignificant in all the models. This suggests the presence or absence of convergence to long-run equilibrium in the event of disturbance is insignificant.

4. Conclusion and Policy Implication

The objective of the study is to examine the impact of institutional quality on poverty and the role of these institutions in determining the effectiveness of Financial Capital Inflow (FCI) on Poverty alleviation. The study deviated from the norm of using health, education, or HDI as a proxy for poverty by using Food Security (FDS) instead. The institutional regressors used are Voice and accountability (VOA), Political Stability (STB), Corruption (COR), Rule of Law (LAW), and Governance efficiency (GOV) while the control variable used is government Policies; measured as the principal component of money supply, lending rates (Monetary policy variables), Government expenditure (Fiscal policy variable) and trade openness (Trade policy variable). The graphical presentations of the various institutional quality presented in Table 2 show that a descending scale of +2.5 to -2.5 reveals that Nigeria is be-devilled by weak institutions.

The results show that the impact of FCI on Poverty Alleviation significantly depends on its interaction with government policies and the quality of institutions. For example, the positive interaction coefficient of FCI*VOA (0.046) which is high corresponds to a positive impact of FCI on FDS (0.065). The same correlation is observed between the negative but strong coefficient of FCI*STB and the corresponding impact of FCI on FDS. Again, weak interactions do not significantly influence the outcomes of FCI on FDS as shown by the different signs between

FCI*POL (0.003) and the associated impact of FCI on FDS (-0.043). The results in FCI*LAW confirm these findings.

Government policies had a positive but weak impact on FDS in all the models. Meanwhile, government efficiency had a negative but stronger impact on FDS. One may infer a pull-down syndrome flowing from negative efficiency is responsible for the dampening impact of policies of food security or poverty alleviation. The impact of corruption on FDS having the highest coefficient in most of the models except in FCI*LAW indicate the need to check corrupt practices in Nigeria. Lower levels of corruption will increase the levels of food security. The rule of law which is an indication of property rights as well as political stability also clearly draws government attention to the need to strengthen institutions related to the judiciary system and political transparency, religious and tribal unrest as well as other sources of violence and insecurity.

The negative results of the impact of the regressors in the 4th lag period call for further research on the effects of FCI on FDS. We suggest a revalidation of this result by researchers within and outside Nigeria using country-wise and panel studies. In conclusion, given the right institutions, FCIs can be growth-enhancing. Nigeria can benefit more from FCI when institutional weaknesses such as corruption and bad governance are reduced.

References

Acemoglu, D., & Johnson, S. (2005). Unbundling Institutions. *Journal of Political Economy*, *113*(5), pp. 949-995. https://doi.org/10.1086/432166.

Aderemi, T. A.; Olowo, S. O.; Osisanwo, B. G. & Omoyele, O. S. (2021) Reinvestigating Foreign Direct Investment and Poverty Nexus: any Difference with the Nigerian Human Development? *Economic Insights – Trends and Challenges.* 10(73), pp. 13-26.

Adeyeri, J. O. & Adeniji, A. S. (2021). Decolonization, Foreign Aid and Post-Independence Nigerian Underdevelopment. *International Journal of Academic Research in Business and Social Sciences*, 11(4), pp. 884–891.

Alun, T. & Rima, T. (2023). Food Insecurity in Nigeria: Food Supply Matters. *IMF Selected Issues Paper*.

Arndt & Tarp (2017). *Measuring Poverty and Wellbeing in Developing Countries*. United Nations University World Institute for Development Economics Research (UNU-WIDER) Oxford University Press United Kingdom

Azam, M.; Haseeb, M. & Samsudin, S. (2016). The Impact of Foreign Remittances on Poverty Alleviation: Global Evidence. *Economics and Sociology*, 9(1), pp. 264-281.

Bar-Yam,Y. (2018). The dynamics of financial flows and their significance for development. *New England Complex Systems Institute*.

Bass, H. H. (2009). *Ragnar Nurkse (1907-2007): Classical Development Economics and its Relevance for Today*.

Ben Ali, M. S. & Krammer, S. M. (2016). The role of institutions in economic development. *Economic Development in the Middle East and North Africa: Challenges and Prospects*, pp. 1-25.

Bjørnskov, C. (2014). *Types of Foreign Aid*. Available at SSRN: https://ssrn.com/2134772.

Chakravarty, S. R. & Majumder, A. (2005). Measuring Human Poverty: A Generalized Index and an Application Using Basic Dimensions of Life and Some Anthropometric Indicators. *Journal of Human Development*. 6(3), pp. 276-299.

Dietsche, E. (2007). *The quality of institutions: a cure for the 'resource curse'?* July, Centre for Energy, Petroleum and Mineral Law and Policy, University of Dundee, Oxford Policy Institute.

Duru, I. U.; Okafor, B. O. N, Eze, M. A & Ebenyi, G. O. 2020. Foreign Aid and Economic Growth: Empirical Evidence from Nigeria. *Growth, Asian Online Journal Publishing Group*. 7(1), pp. 35-50.

Easterly, W. (2006). The Big Push Déjà Vu: A Review of Jeffrey Sachs's The End of Poverty: Economic Possibilities for Our Time. *Journal of Economic Literature* 44, pp. 96–105

Elouidani, A. & Zoubir, F. (2015). Corporate social responsibility and financial performance. *African Journal of Accounting Auditing and Finance* 4(1), p. 74.

Fagbemi, F. & Olufolahan, T. J. (2019). Capital Inflows, Financial Development and Poverty Reduction in Nigeria. *American Journal of Research,* pp. 53-78.

Figuera, A.R. & Silva-Rego, B. (2020). Institutional Theory and Outward Foreign Direct Investment: A Review And Future Directions. https://www.researchgate.net/publication/338542397_ [accessed Feb 23 2023].

Gupta, S.; Pattillo, C. & Wagh, S. (2009). Impact of Remittances on Poverty and Financial Development in Sub-Saharan Africa. *World Development*. 31 (1), pp. 104–150.

Hung, T.T. (2005). Impacts of Foreign Direct Investment on Poverty Reduction in Vietnam, IDS Program. *GRIPS*, pp. 1-24. Retrieved from http://www.grips.ac.jp/vietnam/VDFTokyo/Doc/18TTHungPaper.pdf.

Kartika, D. M. (2014). *The Big Push: Early Development Economics (1945-1975)*.

Kenton, W. (2021). *What Is Foreign Aid? Forms of Aid, Statistics, and Examples Concern Worldwide U.S. Foreign Aid by Country*.

Korinek, A. (2020). Managing Capital Flows: Theoretical Advances and IMF Policy Frameworks. Independent Evaluation Office of the International Monetary Fund. *Background paper, International Monetary Funds.*

Levačić, R. & Rebmann, A. (1982). *Macroeconomics: An introduction to Keynesian-neoclassical controversies*.

Lewis, C.C.; Boyd, M.R.; Walsh-Bailey, C. *et. al.* (2020). A systematic review of empirical studies examining mechanisms of implementation in health. *Implementation Sci* 15(21) https://doi.org/10.1186/s13012-020-00983-3.

Maxwell, D.; Coates, J. & Vaitla, B. (2013). How Do Different Indicators of Household Food Security Compare? Empirical Evidence from Tigray. *Feinstein International Center*, Tufts University, MA, USA. Available from: https://www.researchgate.net/publication/326524423.

Meier, G. & Baldwin, R. E. (1958). *Economic Development: Theory, History, Policy.* New York: John Wiley and Sons, xix, 588. Tables, Charts, Bibliography, Index. *The Journal of Asian Studies, 17*(3), pp. 455-457. doi:10.2307/2941432.

Mohammed, A.; Wassie, S. B. & Teferi, E. T. (2021). Determinants of small holders' food security status in kalu district, northern Ethiopia. *Challenges 12*, 17.doi: 10.3390/challe12020017 [accessed May 27 2023].

Monogbe, G. T.; Okereke, J. E. & Ifionu, P. E. (2020). An Empirical Investigation on Foreign Capital Inflows and Economic Development in Nigeria. *Asian Journal of Economics, Business and Accounting* 14(2): pp. 63-76.

Morgan G., & Hauptmeier, M. (2014). *Varieties of institutional theory in comparative employment relations*. In A. Wilkinson, G. Wood, & R. Deeg(Eds.). The Oxford handbook of employment relations: Comparative employment systems, (pp. 190–221). Oxford: Oxford University Press

Moyo, D., (2010). Dead Aid: *Why Aid is Not Working and How There is Another Way for Africa*. Penguin Books: Suffolk.

Musakwa M. T.; Odhiambo, N. M. & Nyasha, S. (2021). The impact of foreign capital inflows on poverty in Vietnam: An empirical investigation. *Croatian Review of Economic, Business and Social Statistics, Sciendo*, 7(2), pp. 31-49. Natsiopoulos, K. (nd). Restricted ECM regression. https://search.r-project.org/CRAN/refmans/ARDL/html/recm.html.

National Bureau of Statistics (2022). *Nigeria's Multi-Dimensional Poverty index.*

North, D. C. (1990) *Institutions, institutional change, and economic performance*. Cambridge University Press, Cambridge

Nurkse, R. (1953). *Letter to François Perroux*. Public Policy Papers, Department of Rare Books and Special Collections, Princeton University Library.

Olowookere, J. K.; Olowe, S. O.; Mabinuori, O. T. & Aderemi, T. A. (2020). Foreign Capital Inflows and Poverty Reduction in Nigeria: Implication for Sustainable Development. *EuroEconomica,* Danubius University of Galati, issue 1(40), pp. 33-41.

Ozigbu, J. (2020) Cross-Border Capital Flows and Poverty Incidence In Nigeria. *International Journal of economics, Commerce and Management*. 8(5), pp. 157-171.

Pantazis, C.; Gordon, D. & Levitas, R. (2006). *Poverty and Social Exclusion in Britain,* Bristol, The Policy Press.

Payne, R. (2005). *A framework for understanding poverty* (4th edition). Highland, TX: aha! Process, Inc

Peng, W. & Berry, E.M., (2019). The Concept of Food Security. In: Ferranti, P., Berry, E. M., Anderson, J.R. (Eds.). *Encyclopedia of Food Security and Sustainability*, vol. 2, pp. 1–7. Elsevier. ISBN: 9780128126875.

Pesaran, M. H.; Shin, Y. & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), pp. 289-326

Ridell, R. C. (2009). Review of Does foreign aid really work? *Journal of Economics*, *97*(3), pp. 273–275. http://www.jstor.org/stable/41795633.

Rodrik, D. (2007). *One Economics, Many Recipes: Globalization, Institutions, and Economic Growth.* Princeton University Press

Rosenstein-Rodan, P. N. (1943) Problems of Industrialization of Eastern and South-Eastern Europe. *Economic Journal*. 53(June-September), pp. 202-211.

Sawalha, N. N.; Elian, M. I. & Suliman, A. H. (2016). Foreign Capital Inflows and Economic Growth in Developed and Emerging Economies: A Comparative Analysis. *The Journal of Developing Areas*, *50*(1), pp. 237-256. https://doi.org/10.2307/24737346.

Sen, A.K. (1983). 'Poor, relatively speaking. *Oxford Economic Papers*. 35, pp. 135-169.

Tang, K. B. & Bundhoo, D. (2017). Foreign Aid and Economic Growth in Developing Countries: Evidence from Sub-Saharan Africa. *Theoretical Economics Letters* 7, pp. 1473.

Tarp, F. (2006). Aid and development. *Swedish Economic Policy Review*, 13(2), pp. 9–61.

Temple, J. (2000), Growth Regressions and What the Textbooks Don't Tell You, *Bulletin of Economic Research*. 52(3), pp. 181-205.

Todaro, M.P. & Smith, S.C. (2009). *Economic Development.* 10th Edition, Pearson Education Limited, London.

Townsend, P. (1985). A sociological approach to the measurement of poverty: a rejoinder to Professor Amartya Sen. *Oxford Economic Papers*. 37, pp. 659-68.

Ubi, P. S. & Ebi, B. O. (2021). Foreign Aid and the Development Process: Some Reflections on the Nigerian Experience. *European Journal of Scientific Research* 159(2), pp. 57-59.

Ugbaka, M.; Awujola, A. & Shcherbyna, T. (2019). Economic Development, Foreign Aid and Poverty Reduction: Paradigm in Nigeria. *Socio-Economic Challenges*.

Umeh, L. C. (2019). Foreign Aid and its Effects on Nigerian Economic Growth and Development. *Hofa: African Journal of Multidisciplinary Research*, 4(1).

Walsh, J.P. & Yu, J. (2010). Determinants of Foreign Direct Investment: A Sectorial and Institutional Approach'. *IMF Working Paper* WP/10/187 Asian Pacific Department.

WDI (2021). *World Development Indicators database*.

Wilhelms, S. K. & Witter, M. S. D. (1998) Foreign Direct Investment and Its Determinants in Emerging Economies. *United States Agency for International Development, Bureau for Africa, Office of Sustainable Development*.

World Bank (1993). *Poverty Reduction handbook*. Washington D.C, USA: World Bank

World Bank (1996). *Nigeria, poverty in the midst of plenty: the challenge of growth with inclusion.* Washington, D.C., USA: World Bank.

Wudil, A. H.; Ali, A.; Raza, H. A.; Mehmood, H. Z. & Sannoh, A. B. (2023). Determinants of food security in Nigeria: Empirical evidence from beneficiaries and non-beneficiaries rice farmers of the Kano River Irrigation Project. *Frontiers in Sustainable Food Systems*, *7*. https://doi.org.