
**THE IMPACT OF INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT (IFAD)
ON ECONOMIC DEVELOPMENT IN NIGERIA: 1985-2015**

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ABSTRACT: *IFAD intervention programmes are tailored towards the seeming problems of poverty through increased domestic savings and investments. There is no gainsaying the fact that the literature is complete on various policy mix that could usher in the much desired economic development especially in developing economies. Since the mid 80's, IFAD has been involved directly in development programmes of LDCs, but to what extent have these programmes impacted on some of the major or key indicators of economic development such as literacy level, income generation, life expectancy, infant mortality amongst others, hence the need to examine the impact of IFAD programmes on these variables. Secondary data were sourced and analyzed using the Ordinary Least Squares (OLS). The major findings of the study showed that the long-run determinants of economic development; measured by per capita income, are largely from IFAD funded project inputs in Nigeria (IFPN) and life expectancy in Nigeria (LERN). Literacy rate proxied by total enrolment in primary education regardless of age and expressed as a percentage of the population of official primary education age have negative coefficient and results in -0.382% change in economic development in the long run. Similarly, the coefficient of infant mortality rate in Nigeria measured by 1000 live births is indirectly related to economic development. It is against this background, that the study recommended increase funding of agricultural activities and rural savings mobilization, and by extension promotes development through increasing the volume and productivity of human capital as result improvement in life expectancy.*

ABSTRACT: International Fund, Agricultural Development, Economic Development, IFPN, Nigeria

INTRODUCTION

According to Sachs (2005), poverty as a concept and the causes; including its alleviation, has attracted much attention. He argues that 1800s constituted a unique era in the economic history of the world. According to him, for several decades, there had been virtually no sustained economic growth in the world and that poverty, low per capita income, malnutrition, illiteracy, unemployment, etc exist

everywhere with minimal increase in the human population. He argues further that as at 1820, the biggest gap between the rich and poor countries, especially, between the world's leading economies of the day; then United Kingdom, and the world poorest region; Africa, was a ratio of four to one (4:1) in per capita income after adjusting for differences in purchasing power, and that 1998, the gap between the richest economies; the United State of America, and the poorest region; Africa, had widened to a ratio of twenty to one (20:1). Rodrik, Arvind and Francesco (2004) cited in Seligson and Passe-Smith (2008) supported the above assertion by arguing that, as at 2004, the average income levels in the world's richest and poorest nations differ by a factor of more than 100; Sierra Leone, an African country with the poorest economy of per capita GDP of \$490 when compared to Luxembourg's \$50,061 in Europe. There were crucial puzzles as to what have been responsible for this level of disparities in income and development between regions and nations, and what can be done to reduce them.

Many development theories were motivated by the need to explain the causes of the income disparity and mass poverty between these regions and how to promote, create economic growth and prosperities in the regions where one-sixth of humanity is still stuck to extreme poverty. Some of the development theories postulated included the Harrod-Domar growth model and the two-gap theory of savings-investment of the 1940s. These theories argued that, economic stagnation and unemployment in these regions were due to short supplies of savings and investments to create necessary economic growth in the poor regions (Todaro & Smith, 2011). Other theories are, the Lewis two-sector model postulated in 1955; the Rostow's theory of stages-of-growth model of development postulated in the 1940s; and the Schumpeter's theory of economic development postulated in the 1934, etc.

Lewis (1955), argued that the low economic development of the poor regions were due to poor structural transformation, and according to Rostow (2008) cited in Seligson and Passe-Smith (2008) and Jhingan (2004), argued that the transition from underdevelopment to development involves series of stages which all countries must pass through at one time or the other; that it was possible to identify all societies in their economic dimensions as lying within one of the five categories, the traditional society, the preconditions for take-off, the take off, drive to maturity, and the stages of high mass consumption. Schumpeter (1934) argued that LDCs are characterized with stationary equilibrium. He asserted that development is the *“spontaneous and discontinuous change in the channels of the circular flow disturbance of equilibrium, which forever alters and displaces the equilibrium state previously existing”*. These spontaneous and discontinuous' changes in economic life are not forced upon it, however, arise by its own initiative from within the economy and appear in the sphere of industrial and commercial life.

Jhingan (2004) argued that, to perform economic function, the entrepreneur requires two conditions: the existence of technical knowledge in order to produce new products or services; and the power of disposal over the factors of production in the form of credit and technologies. Uzoigwe (2007) argued that, the main concern is the significant improvements on the quality of lives of the people living in the less developed countries (LDCs). In spite of these global focus and attention, the problem of rural poverty and food insecurity in the LDCs remain unabated. Cleaver (2012) argues that, there are still about 1.2 billion

extremely poor people in the world of which 870 million are undernourished and about 70% of the world's poor living in rural areas, and largely dependent on agriculture for their livelihood, having no access to improved water-supply systems, no existence of good public facilities like schools and health systems. On this note, Adediran (2011) argues that there are two approaches in analyzing the causes of poverty in a country; microeconomic analysis which focuses on the characteristics of the poor, and macroeconomic analysis which focuses on their conditions. According to Uchem and Erunke (2013), the macroeconomic conditions include fiscal and monetary policies creating a low economic growth rate, low manufacturing leading to high rate of unemployment, foreign debts, natural resource dependence creating *Dutch Disease*, official corruption and poor governance, etc.

Many developed nations and international donor agencies have systemically and deliberately been involved in taking actions in conjunction with the home governments and with some other local development agencies of LDCs to transform their agriculture and rural areas through the systemic human capital development and provision of basic social infrastructures in the poor rural areas. The intent is to catalyze food production and marketing of processed agricultural products.

In pursuit of these objectives, many donor agencies both bilateral and multilateral such as the World Bank Groups, United State Agency for International Development(USAID), Department for International Development (DFID), United Nation Development Programme (UNDP), International Fund for Agricultural Development (IFAD), etc in the LDCs with support from country governments for the past five decades have been providing foreign aid for the improvement of rural areas in terms of food, healthcare facilities and employment with overall objectives of catalyzing economic growth and reduction of extreme poverty.

In the case of Nigeria; with a projected population of over 182 million and high poverty rate of 62% among the rural and urban dwellers growing at 3.2 percent per annum, but with enormous agricultural potential, agricultural productivity is generally low, mostly due to poor access to production-enhancing inputs, dependency on labor intensive practices, low input-output technologies, lack of access to finance, considerable post-harvest losses of farm produce due to inadequate storage facilities and poor infrastructural facilities like roads, water, electricity etc, to facilitate production and marketing (UNDP, 2015). In this light, Eboh (2010) argues that the agricultural sector of Nigeria has the highest incidence of poverty; seven of ten farming households are living below national poverty line, and six of ten poor households are into agriculture. Against this background, it is no wonder that the commitments to poverty reduction and economic development rank high on the agenda of many of the donors including the international fund for agricultural development (IFAD) in Nigeria.

Statement of the Problem

The International Fund for Agricultural Development (IFAD) was established in 1977 under unique circumstances during a period of severe food crisis coupled with the oil crisis. IFAD is an international financial institution and a specialized United Nation (UN) agency dedicated to the reduction of poverty

and hunger in rural areas of LDCs, through the provision of foreign aid in form of low-interest loans and grants to finance innovative agriculture and rural development programmes and projects (IFAD 2016).

IFAD from inception has mobilized over USD 21.9 billion in co-financing and funding from domestic sources for agriculture and rural development around the world. In addition, it has contributed over USD 14.7 billion in loans and grants to these sectors in LDCs (IFAD 2016). Since 1985, IFAD has invested USD 317.6 million in 10 programmes in Nigeria, with a total cost of USD 795.3 million. In 2014, Nigeria had the largest portfolio in West and Central Africa; 12.4 per cent, and the second largest in all of Africa; 2.3 per cent, directly benefiting 3,784,680 households. IFAD has a broad agenda covering microfinance delivery and regulatory reform, agricultural technology, value chains, climate change adaptation, natural resource management, job creation and infrastructural development; covering health, education, water and roads.

The development assistance advanced by IFAD to Nigeria for more than two decades was meant to solve the microeconomic indicators of poverty through improved increase in domestic savings, investment and thereby induced economic growth rate in Nigeria. However, there are much dispute among the economists and policy makers as to whether this development assistance to LDCs and Nigeria in particular has been successful in achieving these objectives. Many scholars like Shuai, Li and Sun (2011) and Shehu, Abdullahi, and Aliero (2012) tried to prove these assertions through different studies to assess the impact of IFAD projects on poverty reduction and economic growth in the 13 Provinces of China and Sokoto State, Nigeria respectively. The results confirmed a positive increase in per capita income, food security and emerged from poverty-trap in these places (Kaya and Gunter 2008, and Sachs 2005).

However, in spite of the Nigeria's vast resources and all of the efforts made by successive governments and non-governmental organizations alike, there has being stagnant levels of socio-economic and environmental development; especially in the rural and semi rural areas. This has led the Nigerian government to devote its attention to implementation of various policies and rural poverty alleviation programmes. These policies; in most case, failed to achieve the desired objectives due to top-down policies in which development programmes are forced on people regardless of their felt need (Ijere, 1992). Also, studies supporting how economic growth has reduced extreme poverty in most places through IFAD projects abound, but available data indicate relatively poor social-economic indicators in Nigeria. Nigeria is currently ranked 114th out of 130 countries on Human Capital Index ranking, 152nd out of 188 countries on Human Development Index ranking, and 3rd in the world; with 7 per cent of the world poor people, on World Poverty Index ranking. An estimated 62% of the population is living below the poverty line, more than twice the rate in 1980, with infant mortality rate currently at 69 per 1000 live births; maternal mortality rate at 814 per 100,000; the GDI is 0.456 or 139th out of 157 countries; adult literacy rate stands at 59.57%; income disparity is high with a Gini Coefficient of 0.43 and HDI is 0.527 (UNDP 2016).

There is a dearth of studies on the effect of IFAD intervention programmes in Nigeria. At the time of carrying out this study and to the best of our knowledge there have been no documented study carried out to empirically assess and evaluate the impact of IFAD development assistance programmes on economic development in Nigeria. However, there exist a couple of studies that explore aspect of IFAD intervention programmes. Such studies include Adeolu, Ayanwale and Taiwo (2004), Shuai and Sun (2011) and Shehu, Abdullahi and Aliero (2012). For example, Shehu, Abdullahi and Aliero (2012) investigated the impact of IFAD poverty intervention programme on rural poverty reduction in selected Local Governments Areas (LGAs) of Sokoto State. The authors relied on structured questionnaire obtained from 210 respondents randomly drawn from the IFAD beneficiary LGAs. The study used both descriptive and Logit regression approach for the purpose of analysis. It was found that education has significant negative relationship with rural poverty while gender, age and household size have significant positive relationship with rural poverty. It was also found that IFAD poverty intervention programme has positively impacted on the rural poverty reduction in the selected LGAs. The study recommended that IFAD should focus more on educating the rural communities as well as the provision of infrastructural facilities in order to ensure more effective poverty.

In terms of methodology, unlike previous studies such as Adeolu, Ayanwale and Taiwo (2004), Masud and Yontcheva (2005), Shuai and Sun (2011) and Shehu, Abdullahi and Aliero (2012) ignored the unit root characteristic of the underlying time data series. Against of this background, this study relied on two traditional unit root tests of Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) and one modern unit roots tests in order to ascertain the order of integration of the underlying series. The two tests were used to test for consistency and where conflicts exist, to decide on the most appropriate option (see Hamilton, 1994). In addition, the study contributed significantly to existing literature by providing new and sturdy evidence on impact of IFAD development assistance programmes on economic development in Nigeria. In the present study, the Ordinary Least Squares (OLS) estimator was employed. These methodologies to the best of our knowledge go clearly beyond the existing literature on the subject in Nigeria as previous studies mainly depended on descriptive statistics. Thus, this study add to the literature by varying on the period covered, methodology adopted, variables used, and frequency of data among other factors to empirically assess and evaluate the impact of IFAD development assistance programmes on economic development in Nigeria. This helps to validate past findings or bring forth new issues on the subject for further research.

Objectives of the Study

The broad objective of this study is to assess and evaluate the impact of IFAD development assistance programmes on economic development between 1985 and 2015 in Nigeria. The specific objectives are to:

- i. Examine the impact of IFAD intervention programmes on incremental net income;
- ii. Examine the effect of IFAD intervention programmes on literacy rate;

- iii. Assess the effect of IFAD intervention programmes on life expectancy; and
- iv. Assess the effect of IFAD intervention programmes on infant mortality.

LITERATURE REVIEW

Conceptual Clarification

Haq (1995) presented in his seminal book *Reflection on Human Development* four essential components of human development paradigm. These are equity, sustainability, productivity, and empowerment. Stanton (2007), Amartya Sen and Martha Nussbaum were together credited with the origination of the capabilities approach to human well-being based on Rawlsian philosophy. Like Aristotle, Sen and Nussbaum focused attention on what human beings can do, instead of on what they have. Sen (1999) regards capabilities as the abilities to do certain things or to achieve desired states of being. This approach to human well-being emphasizes the importance of freedom of choice, individual heterogeneity and the multi-dimensional nature of welfare. Also, Sen argues that when evaluating well-being, the most important thing to consider is what people are actually able to be and do. It should be recognized that capability approach focuses directly on the quality of life that individuals are actually able to achieve. This quality is also analyzed in terms of functioning, capability and agency.

Alkire (2005) argues that a key difference exists between “the agency aspect” and “the well-being aspect” of a person. Furthermore, concern for agency stresses that participation, public debate in the public sphere, democratic practice, and empowerment, should be fostered alongside well being. Another point, raised by Deneulin and Shalani (2009), was that agency and the expansion of valuable freedoms go hand in hand. Nussbaum (2011) defines capability approach as a comparative quality of life assessment and theorizing about basic social justice. According to her, it holds that the key question to ask, when comparing societies and assessing them for their basic decency or justice, is, “what is each person able to do and to be”? From the foregoing, Gilbert, Levin and Joel (1975) observed that, social intervention may have more than one goal, which may affect the choice of criteria in assessing impact.

Dreze, Jean and Sen (1995) argued that since the origin of the field of development economics shortly after World War II, economists have been pre-occupied with the growth of real income per capita, while Stanton (2007) pointed that the use of national income accounts to measure well-being is the conflation of economic growth as measured by the change in GDP with development or progress. Streeten (1979) cited in Stanton (2007) pointed out two common assumptions made by the proponents of this measure: first, economic growth will automatically “trickle-down” and spreads its benefits across society; and second, when economic growth fails to trickle-down and instead causes income disparities, governments would step in to remedy the situation. By one or both routes, growth in per capita national income will reduce poverty. As Streeten (1979) argues, such assumption had not been proven true, “highly concentrated and unequal growth was observed in some countries for prolonged periods, so that there was no universal tendency for growth to spread, nor did governments always show signs of correcting gross inequalities”.

Drawing heavily on the capabilities approach to human welfare, Mahbub ul Haq who worked for UNDP at time was able to define a new conceptualization of well-being and to make available measures of well-being based on that new idea. The first *Human Development Report* (UNDP 1990) declared that the meanings of development have obscured its ends because of two primary factors, “*first, national income figures useful though, but for many purposes, do not reveal the composition of income or the real beneficiaries. Second, people often value achievements that do not show up at all, or not immediately, in higher measured income or growth figures: better nutrition and health services, greater access to knowledge, more secure livelihoods, better working conditions security against crime and physical violence, satisfying leisure hours, and a sense of participating in the economic, cultural and political activities of their communities. Of course, people also want higher incomes as one of their options, but income is not the sum total of human life*”.

In the words of Streeten (1979), “human development puts people back at centre stage; ultimate purpose of the exercise, to treat men and women as ends, to improve the human condition, to enlarge people’s choices”. Sen (2000) describes human development as, “an illuminating concept that serves to integrate a variety of concerns about the lives of people and their well-being and freedom,” and affirmed that the Human Development Report (HDR) has served the increasing demands for pluralistic measures of development from both scholars and activists.

Today, it is widely accepted that the real purpose of development is to enlarge choices in all fields; economic, political and cultural. Seeking to increase income is one of the many choices people make, but it is not the only one (Stanton 2007). Thus, the HDI was born to fill the gaps created by output-based or resource-based measures since GDP and GNP are inadequate to determine well-being and quality of the life of people. The key components of HDI include life expectancy, educational literacy, standard of living, human poverty index, gender-related development index, and gender empowerment measure.

Theoretical Literature

This section states the theoretical framework of this study. There are various schools of thought that argued the relevance of economic growth, relationship between growth and development, foreign aid to rural development of LDCs and human development and its measurement. They include: the Harrod-Domar Model, the Lewis Two Sector Theory, Theory of Big Push Model, Theory of Balance Growth and the Theory of Unbalanced Growth etc.

Empirical Literature Review

The development economists like Kuznets, Shultz, Todaro, Timbergen, Fogel, Smith, Jhingan, etc, had argued that development is traditionally meant to achieve sustained rates of growth of income per capita to enable a nation to expand its output at a rate faster than the growth of its population. It was further seen in terms of the planned alteration of structure of production and employment so that agriculture’s share of both declines and manufacturing and services industries increases. So the development strategies were to focus on rapid industrialization at the expense of agriculture and rural development; indeed the emphasis was on the gross domestic product (GDP).

However, there was phenomena increase in GDP which led to increase in per capita GNI growth, but there were still the problems of poverty, unemployment, gender inequalities, discrimination, environmental pollution and income distribution (Todaro and Smith 2011). The main focus in this debate has been the effectiveness of aid concerning economic growth, but there have also been discussions on the effect of aid on social indicators such as child and infant mortality. What we are interested in looking at is whether aid helps to increase HDI in LDCs (Hammarstrand and Sundsmyr 2013).

Sachs (2005) argues that there is the existence of “poverty traps” in the LDCs. These are cyclical chains of events that keep these countries in poverty. He asserts that, it is essential for these chains of perpetual poverty to be broken so that the countries would rid themselves of poverty. He suggests that this would be done only by intensifying aid. To break these poverty traps, he prescribes what he calls the “big push” where the cyclicity of the trap is discontinued by one generation lifted out of poverty. Hence, the next generation would not grow up and experience extreme poverty (Hammarstrand and Sundsmyr 2013).

Furthermore, Sachs argues that extreme poverty; that is, living less than one dollar per day, could be overcome by the year 2025. The concrete solutions he offers were to increase the use of malaria bed-nets, debt forgiveness and a twofold increase of the total developmental aid provided between the years 2002 and 2015. He stresses the importance of achieving the MDGs, especially the estimation that the countries in the developed world need to commit 0.7% of their GNP to alleviating the ailments of the poor through the channel of developmental aid.

Several studies support his claims of the effectiveness of aimed developmental aid in constraining the spread of diseases such as malaria. He goes on to point out that the funding needed to provide sufficient anti-malaria bed nets to last five years in sub-Saharan Africa is exceeded by the daily spending of many developed nations on defence. He argued for an ethical responsibility of the developed world to shift their priorities to reach the MDGs through focus on results-based aid. He went further to opine that developmental aid reduced the mortality rate of children through endemic measles to 91% since the year 2000 across sub-Saharan Africa. He thinks that, the focus of aid should lie on agriculture, education and infrastructure and not on handouts (Hammerstrand and Sundsmyr 2013).

Collier (2005) in his book, “*The Bottom Billion*”, explains that the poorest of the poor that live in LDCs have stagnated in growth and are now stuck at that level; that is, extreme poverty. He compared them to the majority of the world who is moving forward, and said that these countries have declining numbers when it comes to growth. He argues that the developed world, the development agencies and governments around the world must re-think and build a new unity of purpose for helping these countries that are stuck. If we do not act, he asserts that the whole issue will become a security nightmare for future generations and thus affect the whole world at a much larger scale. Collier likens the conditions among the poorest of the poor in LDCs to be as conditions of people living in the fourteenth-century: civil wars, fatal diseases, high ignorance and more. The biggest problem being that they are developing in an opposite direction from the rest of the world.

Furthermore, Collier introduces developmental traps of most of the LDCs, and these are: conflict trap, civil wars, coups and corruption incur large economic costs to a country. Additionally, in the time period immediately following a major conflict, relapse is highly likely. Collier also argues that the longer a country stays in a state of conflict, the more players become established that profit from the state of tumult, making the situation increasingly intractable. Countries that are rich in natural resources are paradoxically usually worse off than countries that are not. Collier attributes this to a variety of causes like, resources make conflicts more likely, and natural resources mean that a government does not have to tax its citizens.

Consequently, the citizenry are less likely to demand financial accountability from the government, the exploitation of valuable natural resources can result in *Dutch disease*, where a country's other industries become less competitive as a result of currency valuation due to the revenue raised from the resource. Also, landlocked countries with poor neighbours find it almost impossible to tap into world economic growth. Collier explains that countries with coastline trade with the world, while landlocked countries only trade with their neighbors. Landlocked countries with poor infrastructure connections to their neighbors therefore necessarily have a limited market for their goods, and bad governance in a small country can destroy the economy with alarming speed. The reason small countries are at a disadvantage is that, though they may have a low cost-of-living, and therefore be ideal for labour-intensive work, their smallness discourages potential investors, who are unfamiliar with the local conditions and risks, who instead opt for better known countries like China and India (Collier 2005).

When discussing how aid could be an instrument to increase development and help countries out of these traps, Collier (2005) suggests solutions to the four traps: aid agencies should increasingly be concentrated in the most difficult environments, and accept more risks; ordinary citizens should not support poorly informed vociferous lobbies whose efforts are counterproductive and severely constrain what the aid agencies can do; appropriate military interventions should be encouraged, especially to guarantee democratic governments against coups; international charters are needed to encourage good governance and provide prototypes; and trade policy needs to encourage free trade and give preferential access to Bottom Billion Exports.

Masud and Yontcheva (2005) examined the impact of aid on changes in the basic indicators of human development such as infant mortality, primary schooling ratios, and life expectancy that is, to test the impact of aid on these indicators. They were also curious about other variables that could be determinants of infant mortality and illiteracy. For infant mortality using aid; bilateral and NGO aid, per capita GDP, the poverty headcount, the level of rural development, as indicated by per worker agricultural value added, and female illiteracy. They further assess the impact of government efforts in reducing infant mortality represented by the per capita health expenditure, the impact of institutional variables, such as a governance index represented by the freedom house policy indicator and the degree of urbanization.

When comparing the average female illiteracy rate in the ten countries of their studies that have the highest infant mortality rate with the average female illiteracy rate in their entire sample suggests that,

higher rates of female illiteracy are associated with higher levels of infant mortality. For the ten countries of their studies with the lowest levels of infant mortality, they found out that the average rate of female illiteracy is far below the average for the 87 countries, suggesting that low levels of infant mortality are associated with low levels of female illiteracy. It further implied that countries with high infant mortality rates also seem to be less urbanized on average, whereas those with low infant mortality rates have a higher than average level of urbanization. Infant mortality rates appear to be negatively associated with rural development as measured by agricultural value added. The poverty headcount is higher than average in countries with a higher mortality rate and lower in countries with a lower mortality rate.

In addition, Masud and Yontcheva (2005) discovered that NGO aid flow to countries with higher rates of infant mortality is higher than average but differently in the case of bilateral aid flows. In the studies, they further argued that, bilateral aid per capita was lower than average in countries with high infant mortality rates and higher on average for countries with low infant mortality rates. Furthermore, they equally found out that government effort in the area of health, as measured by public health expenditure per capita, was far higher than average in countries with low levels of infant mortality and much lower than average in countries with high levels of infant mortality.

Masud and Yontcheva (2005) further discovered that higher illiteracy rates associated positively with higher poverty levels and negatively with the level of urbanization and rural development. NGO aid per capita was higher than average in countries with high levels of illiteracy and lower than average in countries with lower levels of illiteracy. That bilateral aid, on the other hand, according to the studies, was lower than average in countries with high illiteracy rates and higher in countries with high levels of illiteracy. The studies revealed that government effort as measured by education expenditure per capita appeared far lower than average in countries with the highest levels of illiteracy and much higher than average in countries with high levels of illiteracy.

In conclusion, the studies discovered that, increase in health expenditure per capita reduces infant mortality as do greater NGO aid per capita. They do not find any significant impact of total bilateral aid on infant mortality. The result was in line with Boone (1996) who found no significant impact of aid on improvement in infant mortality, primary schooling ratios or life expectancy. The higher levels of development, measured by GDP per capita, and possibly greater rural development, measured by agricultural value added per worker, lead to lower levels of infant mortality. If GDP per capita increases by 1 percent, infant mortality decreases by 0.3 percent. This also applied to reduction on female illiteracy and would have the strongest positive impact on infant mortality as a decrease in female illiteracy by 1 percent decreases infant mortality by 0.52 percent in the work. As argued further, that an increase in poverty leads to higher infant mortality as well; the elasticity of infant mortality with respect to poverty ranges from 0.16 to 0.26. It also finds a significant impact of the level of governance in reducing infant mortality, albeit with lower elasticities.

Razmi, Abbasian and Mohammad (2012) assert that health expenditure by government agency improves human development through economic growth, reduce mortality rates and improve the learning process.

They opined further that health directly and indirectly affects economic growth. Health promotion makes human capital increase through capital health accumulation, and has direct effect on growth. On the other hand, health promotion improves labour productivity through increased longevity and reduced working days due to illness, and indirectly affects production. They further argued that the main health impact on the economic growth is due to health effect on labour productivity. As, healthy workforce is more motivated with higher productivity, so if health expenditure improves public health, it can be leading to increased produced through efficiency improvement; for it directly impacts on efficiency of labours and as this, in the long run affects the workforce.

Opreana and Mihaiu (2011) carried out a study in European Union to examine the relationship between health systems and human development levels. It shows that there is a correlation between health expenditure and human development. They have mentioned that, life expectancy and longevity are one and same component of the human development index, and so there are strong correlation between health and human development. Also, health expenditure in public and private sectors were count in and they concluded that, in countries where private sector funding is furthered, efficiency of public health expenditure is larger. The findings of this study showed that, the cost for the health will increase human development and human development itself will increase health promotion too. So there is bilateral relationship between health expenditure and human development.

Himanshu (2006) in a study examining the effects of education and income on health expenditure, Great Britain and Latin American experiences shows that, to reduce mortality depends on improving the standard of life, and not associated with medical progress. This research shows that increase in income and education will increase health expenditure, and that health and treatment is not only a function of healthcare, but also the function of social and cultural development, economic factors, education and politics. So to raise the health status and quality of life should generally focus on the integration of social development, cultural needs, and economical training. Baldacci, Teresa, and Mello (2003) reviewed the cost effectiveness of public health and education and concluded that, social programs like health care and education in general are associated with human development. Thus, government spending on these two should grant good results, although empirical studies have shown weak effects in both developed and developing countries.

The distinctions between developed and developing countries have long been central to growth and development studies, and the debate is on development policies. This argument leads to the classification of countries into the so-called developed, developing and or less developed countries (LDCs). According to Harris, Moore and Schmitz (2009), between the 1940s and 1960s, countries were classified as first world, second world and third world, and on the other hand, as developing and developed countries based on their political economy structure, income levels, economic growth rates, influence in main international institutions, geopolitical relationship to other worlds and main trading partners.

Harris, Moore and Schmitz (2009) argued also that between 1970s and 1980s, and due to the gradual disappearance of the second world, there was less distinctive difference between the developed and

developing countries. The factors responsible accordingly where economic growth and rational effects, differing energy sources, the collapse of the Soviet bloc and end of the cold war, and the effects of globalization on world economic activities. For example, Asia fast economic growth led to the blurring of the bi-polar pattern of income distribution by countries. This is evident notably in China, India and Singapore which are the so called Asian tigers. All these nations now exercise considerable geopolitical and economic power at the global level.

Harris, Moore and Schmitz (2009) said, the distinguishing distinction between the developed and developing countries; donor and recipient, North and South, is largely due to the more pluralistic global political economy wealth which has become more widely distributed among countries. The western countries can no longer claim special competence in economic management or promoting economic growth, and niche frontier economies; the increasing specialization of some countries in niche activities shaped by the global economic integration, enables governments to finance themselves through means other than broad general taxations, rents from oil and gas, property development, narcotic production and trade, licensing off shore financial activities and aid receipts.

Todaro and Smith (2011) said it is hazardous to define what constitutes developing countries or less-developed countries (LDCs) in 201 member countries of the United Nations. However, Harris, Moore, and Schmitz (2009) classified the world's economy into the following three distinct families by: Income, National Performance Ranking and Analytical Classification.

Shehu, Abdullahi and Aliero (2012) investigated the impact of IFAD poverty intervention programme on rural poverty reduction in selected Local Governments Areas (LGAs) of Sokoto State. The authors relied on structured questionnaire obtained from 210 respondents randomly drawn from the IFAD beneficiary LGAs. The study used both descriptive and Logit regression approach for the purpose of analysis. It was found that education has significant negative relationship with rural poverty while gender, age and household size have significant positive relationship with rural poverty. It was also found that IFAD poverty intervention programme has positively impacted on the rural poverty reduction in the selected LGAs. The study recommended that IFAD should focus more on educating the rural communities as well as the provision of infrastructural facilities in order to ensure more effective poverty

Methodology

The study used time series data covering the period 1985-2015 and adopted the descriptive statistics to capture the stated objectives of the study. Specifically, the Ordinary Least Squares (OLS) was used to analyse secondary data obtained to ascertain the independence of variables tested in the study. The variables were investigated for their stochastic properties using two traditional unit roots tests. The traditional tests deployed are the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP). The two tests were used to test for consistency and where conflicts exist, to decide on the most appropriate option (Hamilton, 1994).

The Ordinary Least Squares (OLS) was used to determine the impact of IFAD assistance provided on the living standards in the study area, and to test the hypothesis of the study at ($P < 0.1\%$) level of significance. To investigate empirically the effect of IFAD activities on the Nigeria economy, the study used data on incremental net income in Nigeria (ININ) proxy of per capita income; IFAD funded project inputs in Nigeria (IFPN); literacy rate in Nigeria (LIRN); life expectancy rate in Nigeria (LERN); and infant mortality rate in Nigeria (IMRN).

Model Specification

The main objective of the study was to analyse the impact of IFAD activities and funded programmes on the Nigeria economy. The study adopted Ordinary Least Squares (OLS) technique to determine the relationship between the dependent and the independent variables. Relying on the statistical package E-view 9.5, the goodness of fit of the regression line was determined. The parameters of the equation were tested for significance, using T-test statistics at 5% level of significance. Specifically, the model estimated is presented below:

$$\text{Log ININ} = a_1 \text{LogIFPN} + a_2 \text{LogLIRN} + a_3 \text{LogLERN} + a_4 \text{LogIMRN} + U \quad (1)$$

Where,

ININ represents incremental net income in Nigeria as a measure of economic development, proxy by per capita income; IFPN represents IFAD funded project inputs in Nigeria measured by agricultural value added (% of GDP); while LIRN, LERN, IMRN and U represent human development index; Literacy rate, Life expectancy, Infant mortality and the stochastic error term respectively. The a priori expectations are determined by the principles of economic theory and refer to the expected relationship between the explained variable and the explanatory variable(s). It is expected that $a_1, a_4 > 0$

For the necessity of uniformed scale of measurement and consistent interpretation of results, all variables were transformed to natural logarithms, which allow us to interpret the coefficients as elasticities.

Estimation Technique and Procedure

First, the variables employed in the study were investigated for their stochastic properties, using two traditional unit roots tests. The traditional tests deployed are the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP). The two tests were used to test for consistency and where conflicts exist, to decide on the most appropriate option (see Hamilton, 1994). The unit root tests were then followed by Ordinary Least Squares (OLS)

Empirical Results

Descriptive Analysis

In order to have glimpse of the data used in the study, a first pass at the data in form of descriptive statistics was carried out. This gives us a good idea of the patterns in the data and the nature of the estimations and diagnostics to be carried out. The summary statistics is presented below.

Table 1: Summary Statistics Results

	ININ	IFPN	LIRN	LERN	IMRN
Mean	822.7548	32.51613	91.18710	48.08387	105.9129
Std. Dev.	878.7323	7.008428	7.124640	2.446780	19.91016
Skewness	1.486196	-0.071482	-0.069148	0.882644	-0.509908
Kurtosis	3.700774	2.627759	2.368380	2.178389	1.752543
Jarque-Bera	12.04634	0.205378	0.540006	4.897081	3.353390
Probability	0.002422	0.902408	0.763377	0.086420	0.186991
Observations	31	31	31	31	31

Source: *Researchers' computations (2017)*

As observed from the table, the summary of descriptive statistics of the variables included in the model shows the existence of wide variations in the variables as depicted by the mean values during the 1985 to 2015 study period. All the distributions are negatively skewed except ININ and LERN variables that are positively skewed. Variables with value of kurtosis less than three are called platykurtic (fat or short-tailed) and IFPN, LIRN, LERN and IMRN variables qualified for this during the study period. On the other hand, variables whose kurtosis value is greater than three are called leptokurtic (slim or long tailed) and ININ variable qualified for this during the study period. Jarque-Bera test shows that majority of the residuals are normally distributed but with the exception of ININ and LERN variables since the probability values exceed 5%. In summary, the descriptive statistics revealed that majority of the data sets are normally distributed. This is so because the probability values of the variables exceed 5%.

Time Series Properties of the Variables

Econometric studies have shown that most financial and macro-economic time series variables are non-stationary and using non-stationary variables leads to spurious regression (Engel & Granger, 1987). Thus, the variables were investigated for their stochastic properties, using two traditional unit roots tests. The traditional tests deployed are the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP). The two tests were used to test for consistency and where conflicts exist, to decide on the most appropriate option (see Hamilton, 1994). The results of unit root tests are presented in Table 2 below:

Table 2: Traditional Unit Root Test Results (Trend and Intercept)

Variables	ADF	Critical Values	Order of Integration	PP	Critical Values	Order of Integration
ININ	-8.176	-4.356*	I(1)	-10.319	-4.309*	I(1)
IFPN	-6.152	-4.324*	I(1)	-8.387	-4.309*	I(1)
LIRN	-4.099	-3.574**	I(1)	-5.338	-4.309*	I(1)
LERN	-6.816	-4.309*	I(1)	-6.807	-4.309*	I(1)
IMRN	-6.019	-4.416*	I(0)	-3.447	-3.218***	I(0)

Note: *Indicates stationary at the 1% level; **Indicates stationary at 5% level; and ***Indicates stationary at 10% level.

Source: *Researchers' Computations Using E-views 9.5 (2017)*

From Table 2, the traditional tests of the ADF and PP indicates that all the variables tend to be stationary in first difference except IMRN which tends to be stationary at level in both ADF and PP tests. These stationary variables were then used for the linear regression analysis as presented below:

Table 3: Result of Estimated Equation; Dependent Variable = LOG (ININ)

Variables	Coefficients	t-Statistics	p-values
C	9.379	0.164	0.87
LOG(IFPN)	0.060	0.122	0.90
LOG(LIRN)	-0.382	-0.339	0.74
LOG(LERN)	3.405	0.309	0.76
LOG(IMRN)	-3.181	-1.187	0.24

R-Squared: 0.79; Adj. R-Squared: 0.76.

DW: 2.0; F-Statistic: 25.05; Prob (0.00).

No of Observations: 31.

Method: Ordinary Least Squares (OLS).

Source: *Researchers' Computations (2017)*

The estimated regression equation showed that the long-run determinants of economic development measured by per capita income are largely from IFAD funded project inputs in Nigeria (IFPN) and life expectancy in Nigeria (LERN). As 1 per cent change in IFAD funded project inputs in Nigeria results in a 0.060% change in economic development measured by per capita income in the long run. This outcome is in line with theoretical a-priori expectation as IFAD programmes and activities in Nigeria are targeted at

alleviating poverty, improving living standards, life expectancy, mortality rate and socio economic and basic infrastructures.

For the life expectancy, the coefficient is positive and results in 3.405% change in economic development. This result is in line with theoretical a-priori expectation as life expectancy is expected to increase standard of living and therefore economic development measured by per capita income.

For the literacy rate proxied by total enrolment in primary education, regardless of age, expressed as a percentage of the population of official primary education age, the coefficient is negative and results in -0.382% change in economic development in the long run. Therefore, literacy rate proxied by total enrolment in primary education may not serve as a threshold level for economic development in Nigeria. Thus, for Nigeria, education beyond primary level is good for economic growth and development but this has to be based on the acquisition of relevant and world of work skills through vocational educational and technical training (VETT) so as to avoid an “army” of unemployed graduates as currently the case in Nigeria.

The coefficient of infant mortality rate in Nigeria measured by 1000 live birth is indirectly related to economic development. This outcome is not in conformity with theoretical prediction as increase in economic development captured by per capital income is expected to increase the disposable income of the farming household and thus their well being. This will in turn also, grant them more access to health care facilities, and other basic socio amenities.

Furthermore, the model R-squared and Adjusted R-squared are 0.79 and 0.76, respectively, thus, indicating that over 79 per cent of the variation in the dependent variable is explained by changes in the explanatory variables. The F-statistic (25.1), which measures the overall significant of the model, was equally high; while the Durbin-Watson statistic is 2.0 ($D-W \approx 2$) suggests that autocorrelation is unlikely to be a problem. Consequently, the estimated model is confidently relied upon for making inferences and for prediction purpose as utilized in this study.

Conclusion

The study was basically undertaken to assess and evaluate the impact of IFAD development assistance programmes on economic development between 1985 and 2015 in Nigeria. In a bid to achieve the objectives of the study which include: examining the impact of IFAD intervention programmes on incremental net income; literacy rate; life expectancy; and infant mortality.

The study started with preliminary analysis on the model as a first pass at the data in form of descriptive statistics which showed the existence of wide variations in the variables as depicted by the mean values during the 1985 to 2015 study period. All the distributions are negatively skewed except ININ and LERN variables that are positively skewed. The Jarque-Bera test shows that majority of the residuals are normally distributed but with the exception of ININ and LERN variables since the probability values exceed 5%. In summary, the descriptive statistics revealed that majority of the data sets are normally

distributed. This is so because the probability values of the variables exceed 5%. All the distributions are positively skewed.

Since the analysis is based on time series data and in order to avert the occurrence of spurious results and to determine the order of integration. Thus, the variables were investigated for their stochastic properties, using two traditional unit roots tests. The traditional tests deployed are the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP). The results of unit root tests indicate that all the variables tend to be stationary in first difference except IMRN which tends to be stationary at level in both ADF and PP tests. These stationary variables were then used for the linear regression analysis.

The estimated regression equation showed that the long-run determinants of economic development measured by per capita income are largely from IFAD funded project inputs in Nigeria (IFPN) and life expectancy in Nigeria (LERN). In addition, literacy rate proxy by total enrolment in primary education, regardless of age, expressed as a percentage of the population of official primary education age, the coefficient is negative and results in -0.382% change in economic development in the long run. Thus, for Nigeria, education beyond primary schooling level is good for economic growth and development but this has to be based on the acquisition of relevant and work skills through vocational educational and technical training (VETT) so as to avoid an *army* of unemployed graduates as currently the case in Nigeria. Similarly, the coefficient of infant mortality rate in Nigeria measured by 1000 live birth is indirectly related to economic development. Therefore, both literacy rate and infant mortality in Nigeria are indirectly related to economic development and do not serve as a threshold for economic development in Nigeria. The result conforms to Boone (1996) and Masud and Yontcheva (2005) who found no significant impact of total bilateral aid on improvement in infant mortality, primary schooling ratios or life expectancy.

Furthermore, the model R-squared and Adjusted R-squared are 0.79 and 0.76, respectively, thus, indicating that over 79 per cent of the variation in the dependent variable is explained by changes in the explanatory variables. The F-statistic (25.1), which measures the overall significant of the model, was equally high; while the Durbin-Watson statistic is 2.0 ($D-W \approx 2$) suggests that autocorrelation is unlikely to be a problem. Consequently, the estimated model is confidently relied upon for making inferences and for prediction purpose as utilized in this study.

Policy Implication of Research Findings

Based on the findings from this research and by implications, evidences points to the need to facilitate a favourable investment climate through increase funding of agricultural activities and rural savings mobilization, and by extension promotes development through increasing the volume and productivity of human capital as result improvement in life expectancy. These policies recommendation are in line with Paul Rosenstein-Rodan theory of (1943) that higher aid assistant and well managed intervention programme will exert a real positive effect on the average productivity of physical capital in LDCs. It is also the study conviction that there is very urgent need to re-orientate the thinking and value system of both parents and their children through mass educational campaign regarding the importance of education (particularly technical and vocational education that bestows life skills for self-employment) and the need

for parents to insist on their children (male and female) going to school (at least up to technical and vocational secondary education level) before seeking employment or going into business. This policy prescription is as result of the negative relationship between literacy rates proxied by total enrolment in primary education and economic development in the long run.

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