

# Population Equilibrium and Development Issues in Nigeria

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## Abstract

The study seeks to examine the relevance of population equilibrium to issues of development in Nigeria. Secondary data was utilized and the study revealed that population equilibrium centers around the carrying capacity of a nation's resources towards its population. In other words, the available resources in the society must be able and capable of meeting the needs of the people. When this is achieved, it indicates a drive towards development and sustainable growth. Findings reveal that Nigeria's population has grown tremendously (over 180 million), but cannot feed herself largely because of the inability of the country to utilize its resources, hence, its carrying capacity is far below what it should have. This has paved the way for food sourcing via importation to support the ever growing population, hence the continued state of underdevelopment. The paper recommends that the government should take a cue from China, India and Japan to initiate reforms that would help local contents, both human capital and material resources to meet the growing needs of the Nigerian populace.

**Keywords:** Population, Equilibrium, Development, Human Capital, Resources

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## INTRODUCTION

Population situation in many African countries contribute to or detract them from their chances of realizing the goals of development, not only for the current generation but also for the future generations (Badejo, 2012). The history of dramatic growth in population began when hunting and gathering was abandoned for farming, animal husbandry, increase in permanent settlement and eventually formation of cities. Factually, over the years and in various parts of the world, epidemics appeared and re-appeared resulting to seesaw of the world population. But triumph over these population fluctuations came during the 20th century as a result of improvement in medical sciences, bringing a tremendous fall in death rates but not immediate decrease in birth rates (Ukeji, 2000). Thomas Malthus (1766 – 1834), a clergy man and a mathematician, was the first to give serious thought to exponential growth in population and its consequences on humanity.

People, according to him, unless checked in some way doubled their numbers in every quarter of a century. Even though, attempts at population census in Nigeria have long history traceable to 19th and 20th centuries, the rapid population growth rate showed its statistical revelation in the census of 1952/53 with total population of 30.4 million with a growth rate of 2.1%. A population census conducted in 1963 put Nigeria's population at 55.6 million and growth rate at 5.6% per annum (Badejo, 2012). Though, the 1973 census was controversial and the result generally unacceptable, the 1991 census put Nigeria's population and its growth rate at 88.5 million and 2.6% respectively (Andrew, 2002). The last population census conducted in 2006 revealed that Nigeria's population is over 140 million. Today, Nigeria is ranked the most populated country in Africa and 8th in the world (Kunle, 2010). This trend indicates that Nigeria is one of the fastest growing countries in the world. Her population therefore, is expected to double in less than 25 year with population growth rate of 2 – 3.3% (UN, 2001). This high population growth rate is essentially due to persistent high fertility rate of 5.3 children per woman and decreasing death rate from 27 to 15 per 1000 persons (UN, 2010).

It is estimated that the world population reached 6 billion at the end of the 20th century, a remarkable expansion. While historical records are inexact, it is believed that at the beginning of the 20th century, the world population was approximately 1.6 billion, which means that global population nearly quadrupled in just 100 years. Most of this expansion in population occurred in the fifty years following World War II. This unprecedented increase in global population is due to the dramatic decline in mortality worldwide. The agricultural revolution, the availability of antibiotics, vaccines, and pesticides all have contributed to the increase in life expectancy. Life expectancy is estimated to have more than doubled over the course of the 20th century, from approximately 30 years to nearly 65 years (Ukeji, 2000).

## STATEMENT OF THE PROBLEM

In recent years an increasing number of African people are being added every year. This was not always the case these population increases are unprecedented in history. But the problem of population is not simply a problem of numbers; it is a problem of human welfare and of development. When population is not adequately checked, it can have serious consequences for the well-being of humanity worldwide. If development entails the improvement in people's level of living - their incomes, health, education and general well-being - and if it also encompasses their self esteem, respect dignity and freedom of choice then the really important question about

population growth is how does the contemporary population situation in many African countries contribute to or detract from their chances of realizing the goals of development, not only for the current generation but also for the future generations. Basically, when discussing population from the point of view of equilibrium, it should be noted that when there is a disparity, it affect the improvement in the level of living, increase labour forces and the problem of unemployment, it engenders unemployment among other. To this end has the study embarked on equilibrium population and its implication and relevance for development.

### **OBJECTIVES OF THE STUDY**

The objective of this study is to critically examine the relevance of population equilibrium to issues of development in Nigeria, with special attention appraising Nigeria's population vis-à-vis its resources and its impact on her development.

### **CONCEPTUAL CLARIFICATION**

- **POPULATION:** this is the total number of people residing in a geographical location at a particular point in time.
- **POPULATION EQUILIBRIUM:** informs of the state of balance between two elements. Basically, according to this discourse, population equilibrium is a state at which the available resources in the society are effectively utilized and adequately enough for the carrying capacity of a given population.
- **DEVELOPMENT.** It is a discontinuous and spontaneous change in the stationary state which alters and displaces the equilibrium state previously existing.

### **THE CONCEPT OF POPULATION EQUILIBRIUM**

The vast majority of human societies, from the original foragers of the African savannah, through settled agrarian societies until about 1800, had an economic life that was shaped and governed by one simple fact: in the long run population and available resources in term of its carrying capacity and sustainability. Since this same logic governs all animal species, until 1800, in this "natural" economy, the economic laws for humans were the same as for all animal species. It is commonly assumed that the huge changes in the technology available to people, and in the organizational complexity of societies, between our ancestors of the savannah and Industrial Revolution England, must have improved material life even before modern economic growth began.

Hence, this back drop would usher us into the subject matter which is centered around equilibrium population. This has been a great debate among sociologists, demographers and key stakeholders as to the nexus between these variables and its implication for a sustainable growth and development.

Equilibrium population has been defined as that size of population enabling per capita output of the maximum orders accompanied by the highest possible standards of living under a given set of economic and technological conditions (Bleakley, 2010). Therefore, equilibrium population lies between two extremes, i.e., overpopulation and under-population, although the size of equilibrium population is not sacrosanct. It is a theoretically perfect situation difficult to estimate or define. The Penguin Dictionary of Geography characterises equilibrium population as a situation when the number of individuals can be accommodated in an area to the maximum advantage of each individual.

Thus equilibrium population yields highest quality of life, which means each person has access to adequate food, water, energy and air of highest quality, adequate medical care, recreational facilities and cultural outlets. In other words, equilibrium population permits the highest per capita output; therefore the marginal productivity exceeds the average productivity whereby the rates of growth of total production are the highest.

The Equilibrium Theory of Population appeared as a reaction to the Malthusian theory (Ukeji, 2000). Criticizing the approach of the Malthusian Theory of Population, modern economists Edwin and Carr -Saunders of London School of Economics have called it the modern theory of population. In recent years, Dalton and Carr- Saunders have refined and polished the theory and put it in a more presentable form (Ukeji, 2000). This theory is an improvement over the Malthusian Theory. The founders of the theory state it as "Given the natural resources, stock of capital and the state of technical knowledge, there will be a definite size of population with the per capita income. The population which has the highest per capita income is known as equilibrium population".

According to Bleakley (2010), he considered 'equilibrium population' as that which produces maximum welfare. On the other hand, Badejo (2012) further took it a step further when he defined this theory in terms of 'return to labour'. He remarked, "Knowledge and circumstances remaining the same, there is what may be called maximum return when the amount of labour is such that both an increase and decrease in it would diminish proportionate return." Similarly, it can be affirmed that, "Equilibrium population is that at which standard of living is maximum.

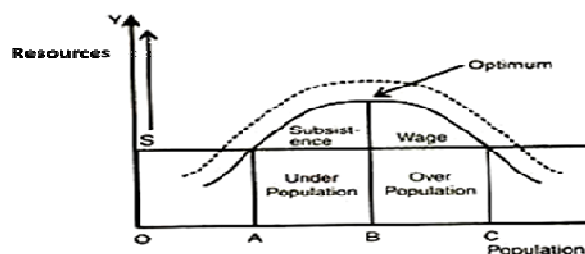
We should note that under population is when the actual population in a country is less than the equilibrium or ideal population, there will not be enough people to exploit all the resources of the country fully. Thus, the

population and the per capita income will be lower. In other words, if the per capita income is low due to too few people, the population is then under population. On the other hand, over population is when the actual population is above the level of equilibrium population, there will be too many people to work efficiently and produce the maximum goods and the highest per capita income. As a result, the per capita income becomes poorer than before. This is the stage of over population. In other words, if the per capita income is low due to too many people, the population under these circumstances would be over population.

#### ASSUMPTIONS OF EQUILIBRIUM THEORY

1. The proportion of working population to total population remains constant as the population of the country increases.
2. As the population of a country increases, the natural resources, the capital stock and state of technology remain unchanged.

**Diagram 1. Diagrammatic Representation of the Equilibrium Population Theory.**



**Source: Economic Commission for Africa (2010).**

In the diagram above, the volume of population is shown along X axis and resources which other literature call income per head along Y-axis. OS is the income per head which gives only subsistence wage rate to the population. This level of wages puts the minimum limit to the income per head. The subsistence income per head can prevail with two levels of population:

1. When population is too small to exploit the country's resources with maximum efficiency. This is the level of OA population.
2. When population is too large and the efficiency falls to give only a subsistence income to the labour force. This is the level of OC population.

**OB shows equilibrium population which uses the available resources to give itself the maximum income per head.** For a population less than OB, income per head increases with the increase in population. For a population higher than OB, income per head can increase with the decrease in population through preventive checks.

The dotted curve in the diagram shows the level of income per head with an improvement in technology or expansion of foreign trade. This will help to raise the income curve and generate population growth until wages are once again equal to subsistence level.

#### RELEVANCE OF POPULATION EQUILIBRIUM TO NIGERIA'S DEVELOPMENT

The socio-economic consequences of demographic evolution and vice-versa are extremely difficult to measure with accuracy. However, some studies have attempted to show the relationship between population equilibrium and socio-economic development. The correlation matrix of population and socio-economic development for 50 African countries during the last three decades has proved that population and development are inseparable and their relationship is reciprocal (ECA, 2010). Basically, the following critically explicate the relevance of population equilibrium to Nigeria's development.

##### A) POPULATION, AGRICULTURE AND ENVIRONMENT.

The relationship between the three variables shows that the situation in Africa is critical. From the 660 million hectares of forest, about 3.2 million hectares per year are lost. The demand for fire wood is increasing about the same rate of population growth. This degradation of environment has a negative repercussion on the agriculture production and among other things on the availability of water resources. The food deficit generated aggravated the malnutrition situation in African countries. The agriculture and economic stagnation impede the process of transition towards the lowering of fertility. The rapid population growth affected also the satisfaction of immediate needs of the people and sustainable development.

##### B) POPULATION AND EDUCATION.

It is noted that population growth is closely correlated with the number of children per woman and in the countries where the primary school enrollment for girls is high it is found that the infant mortality is lower. The fertility rate is also negatively correlated with the number of girls registered in primary school showing that education of women is a crucial variable in the explanation of the fertility tendency observed in African

countries and accordingly constitutes an important factor of the relation between demographic growth and development

**C) POPULATION MIGRATION AND URBANIZATION**

Population growth affects the increase of urban areas through the process of migration. Fertility is higher among population working on agriculture than it is in urban population. As a result rural-urban migration takes place. This could cause serious shortage of labour force in the area of origin and as a consequence lack of food supply while it could cause an excess of labour, increased demand for health and education services and could create rapid urbanization and development of towns in the areas of destination.

Therefore - this situation and realities which exist in our countries have become causes for the failure of our efforts in development.

**D) POPULATION AND FAMILY PLANNING.**

The correlation matrix of fertility trends and contraception shows also that proportion of women using contraception are the most negatively correlated with fertility and was less degree to the proportion of children enrolled in secondary schools, the degree of urbanization, growth of GDP per capita and other factors. The African countries with low fertility are the countries where the contraceptive prevalence rate the primary school enrollment of girls, the expenditure in social sector are very high and the expenditure for defense and security very low. therefore increase of general education of the population specially for girls and favorable socio-economic situation constitute the important elements in the use of contraception and family planning and consequently control the fertility and better quality of life.

**E) POPULATION AND STRUCTURAL ADJUSTMENT PROGRAMMES.**

African countries who have adopted the structural adjustment are those who have experienced lower GNP per capita, rapid demographic growth due to high fertility, high proportion of illiterate woman, slow decrease of infant mortality, high poverty, low rate of prevalence of contraception, rapid degradation of environment etc.. It also appears that the adoption of the structural adjustment programme by those African countries seem to have no amelioration in their critical situation they were experiencing before the adoption of structural adjustment programme.

**POPULATION AND RESOURCE UTILISATION: A NEXUS**

The population of Nigeria has not grown geometrically as postulated by Malthus, however over time growth has been tremendous. For instance, it doubled in about 25 years (see table 1 below). The misery or vice envisaged by the theorists have manifested in Nigerian economy and continue to do so. Agriculture which was (citadel of Malthusian theory) the leading sector in the 1960s has declined due to low investment and level of technology. Although, the sector is richly endowed with cultivatable land mass of 71.2 million hectares out of the available 98.3 million hectares (only 47% is cultivated) and employs 70% of the country's labor force (UN, 2001), but majority of the farmers are still involved in using rudimentary technology of cutlasses and hoes (Ukeji, 2001).

In the same vein, harvest technology is so primitive that the annual losses to harvest amount to 25 million metric tons of agricultural products with estimated value put at N500 billion (Exchange rate in table 1) annually (Ange, 2002). Thus, domestic food production continued to lag behind the food needs of the population (Avan and Uza, 2002). These have led Nigeria to become net food importer.

**Nigeria's population and some other variables.**

	1980	1985	1990	1995	2000	2005	2010
<b>Population (in millions)</b>	64.7	75.5	86.7	96.8	115.2	133.5	158.8
<b>Poverty (%)</b>	28.3	46.3	42.7	65.6	70.4	54.4	54.0
<b>Total food import (millions of naira)</b>	1,437.5	1,199	3,474.5	88,349.9	113,630.5	193,359.1	522,333.10
<b>Percentage of total food import</b>	13.0	17.0	7.6	11.7	11.5	6.9	6.58
<b>Average exchange rate in Naira</b>	0.55	0.89	8.04	21.89	102.11	132.15	150.30

Sources: CBN (2011).

Although, there has not been acute hunger in Nigeria over the years, but records suggest sourcing of food via importation to support the ever growing population. For instance as at 1985, the report of the study group set-up by government to examine the food situation of the country, showed that there was hardly a single food commodity in which the country can claim to be self sufficient. This fact remained true up to date in Nigeria. In table 1 above, Nigerian economy perpetually imported food to augment domestic production from 1980 - 2012. In other words, Nigeria's rapid growing population cannot feed her, largely because of the inability of the country to utilize its available resources to meet its growing population, hence, population dis-equilibrium.

Excluding Japan, the whole of Asia, Africa and South America come under this purview. In the least developed countries of Africa in general and Nigeria in particular, population is growing faster than the food supply. There are deaths by starvation. Positive checks like floods, wars, droughts, earthquakes, epidemics, etc. operate in all the underdeveloped countries.

This was what Malthus wrote. “The poor are themselves the cause of their poverty”. This is very true because it is the poor people who are responsible for the rapid growth of population in these countries. Thus equilibrium population theory is fully applicable and relevant to underdeveloped countries.

## CONCLUSION

There is no doubt that the population problem in Africa is real and challenging. The impact of the effect of high birth and death rates, increasing population size and density, rapid population growth, and increasing dependency burden all translate into greater demands on the Nigerian government in productive activities which in turn accentuate the problems of unemployment, underemployment, persistent poverty, urban slums, crime and political unrest. To the extent that population variables influence development and are also influenced by them, the theme of this analysis is that if Nigeria is to effect changes in the critical growth components of their populations (especially fertility) consistent, then a viable population policy for the constituent states should be one integrated into their development plans.

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