Chapter 9

INTRODUCTION

Human beings (male and female) are found in different parts of the world. New babies are also given birth to from time to time. Population is therefore the composition of all the males, females and newly born babies that are found in places where we live and other places around the world. This chapter examines the definition of population, population size and its implication, the growth of population, determinants of population growth, consequences of an increasing population and theories of population.

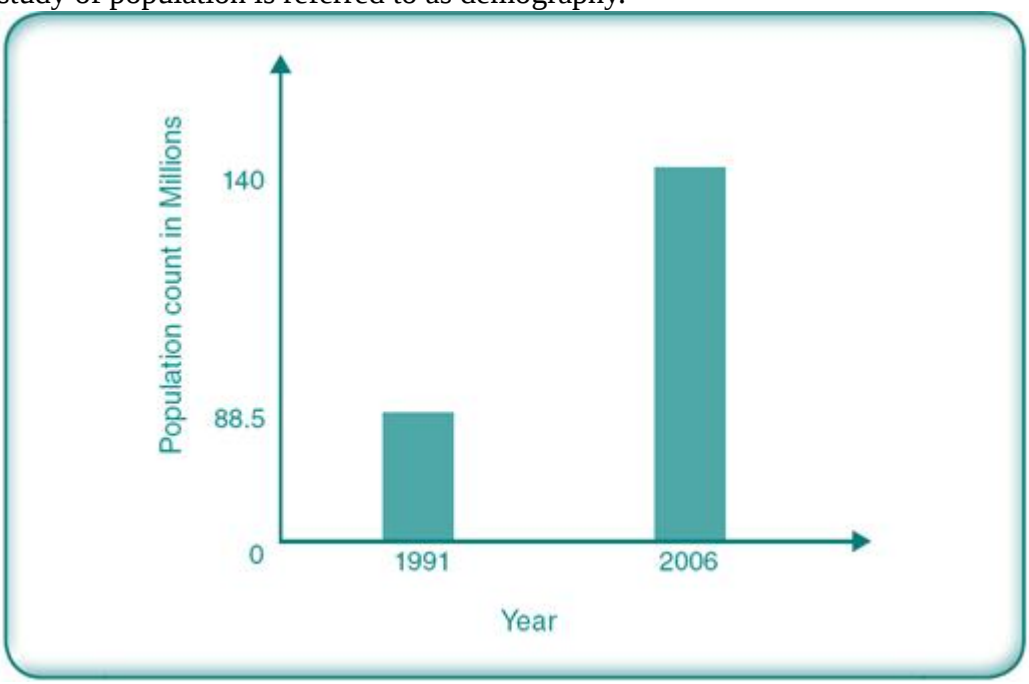
OBJECTIVES

At the end of this chapter, students should be able to:

- *Define and describe what the term 'population' entails and its application to economic development;*
- *State the purpose or reason for the study of the concept of population;*
- *Explain the various theories of population and their relevance to present day economies.*

9.1 Definition of Population

Population is defined as the total number of human beings living within a particular geographical area at any given point in time. Thus, the population of Nigeria is the total number of people living in the country at a particular point in time irrespective of their nationality. To get the population figure of Nigeria, a census will be conducted. For example, the total population figure for Nigeria by 1991 census was 88.5 million people, while in the year 2006, it was 140 million. Th is includes men, women, children, adult, able-bodied and the physically challenged or disabled persons. The study of population is referred to as demography.



9.2 Population Size and its Implication

Population size means how large or how small the population of a particular country is. A country may have a large population but have few able-bodied people. Similarly, the population of a particular country may not be as large as others but could have a greater number of able-bodied men and women. Thus, the size of a population may be determined by the dynamics (i.e., the changes that go on within that population).

Types of Population Concepts

(a) Overpopulation: If the size of a particular population is so large that the number of people are more than the available resources, then we refer to this type of population as overpopulation. This type of population would reduce the income per head or reduce the welfare of the residents of that country.

(b) Under population: When the population of a country consists of very few people so that they are unable to bring about a higher or a better level of income per head, we refer to such a population size as under population.

(c) Optimum population: Th e most acceptable size of population is one that is able to effectively and efficiently utilise available resources to increase the level of income per head or the welfare of the population in that country. This type of population is known as optimum population. By definition, optimum population is
the ideal population size which when combined with the other available resources or means of production of the country will yield the maximum returns or income, per head. Any rise above or fall below the optimum level will reduce income per head. Let us consider Fig. 9.1 as an illustration.

As the population increases from O to P_1 the income level per head rises until it gets to point “a”. Further rise in population beyond point “a” will reduce the income per head and any point below “a” is under population while point beyond “a” is overpopulation. However, due to

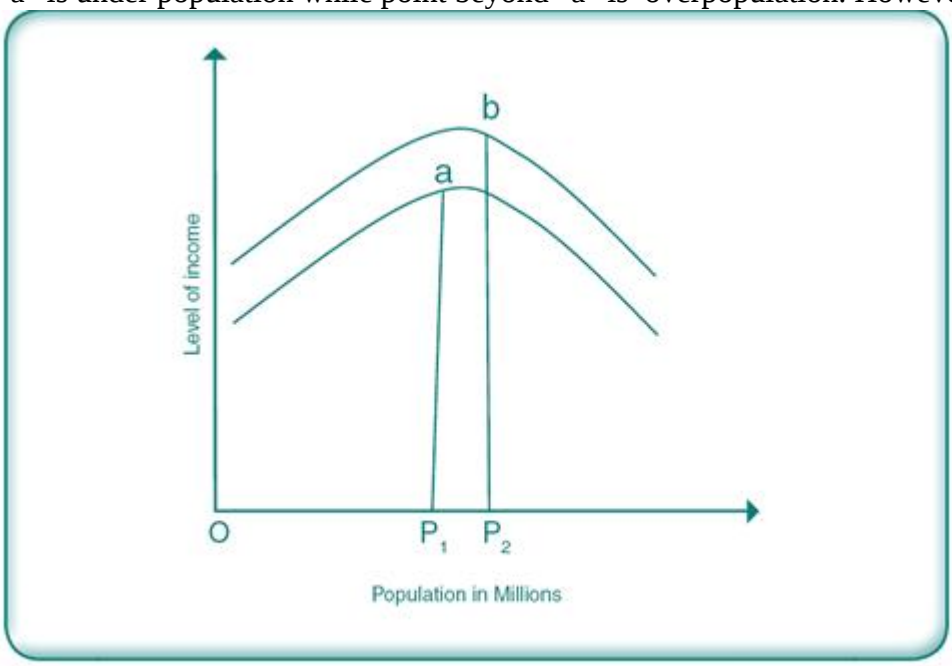


Fig. 9.1 Graph showing the optimum population level.

innovation or an improvement in production technique, the income level of a country can be improved, thus leading to a new higher income level point “b” at a new optimum population, that is OP_2.

9.3 The Growth of Population

Growth of population means the rate at which the size of the population changes or grows. It is usually calculated annually or over a stipulated period of time. Growth rate is measured by finding the net value of the changes in the birth rate, death rate and immigration.

9.3.1 Concepts of Crude Birth Rate, Crude Death Rate and Net Migration

(i) Crude Birth Rate (CBR): Th is is the yearly or annual birth in certain population divided by the total mid-year population. It is usually measured in per 1000 person as opposed to the usual percentages. For instance,

$$\text{Crude Birth Rate (CBR)} = \frac{\text{Birth}}{\text{Population}} \times 1000$$

So if we have 185,000 births in a particular year in a country of 67 million,

$$\text{CBR} = \frac{185{,}000}{67{,}000{,}000} \times 1000$$

CBR is approximately 3, that is, 3 births per 1000 population. This result indicates that there is a very low birth rate in this country because of legislative restriction of the number of births available and limited health facilities.

(ii) Crude Death Rate (CDR): Th is means the number of deaths per thousand people at a point in time. Crude death rate (CDR) is measured by dividing the number of deaths in a population and multiplying the result by 1000. Thus, we have

$$\text{CDR} = \frac{\text{Deaths}}{\text{Population}} \times 1000$$

For example, if the number of deaths is 85,000 per annum and total population is 67,000,000 then

$$\text{CDR} = \frac{85{,}000}{67{,}000{,}000} \times 1000 = 1.2$$

Th is means that for every 1000 persons, only 1 death is recorded annually. However, even in the most advanced countries like the USA and Sweden, it is very rare to fi nd only 1 death per 1000.

(iii) Net Migration: Net migration is the difference between emigration and immigration. The difference could be either positive or negative. Those who moved out are referred to as **emigrants**, while those who came in are known as **immigrants**. The difference between emigrants and immigrants is referred to as net migration. If there are more emigrants than immigrants, it will reduce the population of that country. Malthus population theory believes that man has the natural instinct to increase and hence, there is the likelihood that the population will grow more rapidly (geometric form) than the available food supplies which in itself grows at an arithmetic rate. The geometric form of growth means that the population doubles itself each successive year, that is, 1, 2, 4, 8, 16, 32, 64 while the food supply grows at an arithmetic rate, that is, 1, 2, 4, 6, 8, 10, 12. Th ere will be a serious consequence on the population if the population growth rate as posited by Reverend Malthus is anything to go by.

9.4 Determinants of Population Growth

1. Birth rate: Birth rate is the total number of births per thousand in a given population at a given time. When there is an increase in birth rate compared with the rate at which people die in a country, there will be an increase in the population.

2. Low death rate: Th e growth in the population of a country can be determined by the rate of deaths in that country. A country with a higher rate of deaths compared with the rate of births may experience low population growth.

3. State of availability and accessibility of medical services:
Availability and accessibility to medical services by citizens of a country improves their well-being. Th is invariably influences the growth in the population of such country.

4. Early marriage: Due to culture belief of some people as well as the low level of illiteracy among many tribes, young people go into early marriage. Th is practice has the potential of increasing the population of a country.

5. Net migration level: Net migration refers to the difference between immigrants and emigrants. When the number of immigrants is higher than that of emigrants, there will be an increase in the population other things being equal.

9.5 Consequences of an Increasing Population

(a) High or increasing population will have negative effect on the standard of living (i.e., the welfare) of the citizens:
This will occur when the rate at which the population grows exceeds the level at which goods and

services are produced. When this happens, the per capita income or income per head will fall which will result in poverty with its attendant social consequences.

(b) Limit the amount of resources that will be available to the individuals in that population: If there is a high and increasing population, the available land resource may be insufficient to be divided among the people. Th is could affect the amount of land to be made available for farming. Th e available land will be overused, thus reducing the quality of the land, which could lead to famine or hunger among such population.

(c) A nation may find it difficult to provide social service to the growing population: The cost of meeting the provision of social needs of such population may become very high. For example, the government may find it costly to provide new roads, schools, hospitals as well as maintain the existing ones.

(d) It could open the door to unemployment and exploitation of labour: When the number of people are more than the available resources, the employment facilities and activities in the country may not be adequate. Thus, people, in an attempt to survive,
resort to doing menial jobs with very low payment and would be exploited by the employers of labour.

(e) It could lead to social unrest/vices: Active youths with no gainful employment could resort to criminal activities and other social vices such as armed robbery, hostage-taking and kidnapping, while young ladies could take to prostitution, which leads to dreaded diseases like HIV/AIDS and syphilis.

9.6 Consequences of Declining Population

(a) Decline in the production of goods and services: When there are very few active populations, it could reduce the production of goods and services in the economy.

(b) Increase in the poverty level of the populace: As very few productive people are engaged in the production of goods, such people may not be able to increase the income level of the country. Such nations may not be able to increase the provision of social services to her citizens, thereby increasing their poverty rate.

9.7 Theories of Population

Thomas Malthus was the first to state a systematic principle of population in 1798. Th is theory was later referred to as the Malthus population theory. This and other succeeding theories of population are briefly discussed below.

(a) The Malthus' theory of population: Th is theory which was first put forward by Reverend Thomas Malthus in 1798 is also known as the Malthusian theory of population. The theory explains the relationship between the growth in food supply and that in population. It states that population increases faster than food supply and that, if unchecked, could lead to negative consequences such as vices and misery. The Malthusian doctrine states that:

- There is a natural sex instinct in human beings to increase population geometrically (1, 2, 4, 8, 16, 32, 64, 128, 256…) and that, if unchecked, the population could double itself every 25 years.
- On the other hand, food supply increases slowly in successive similar periods arithmetically as 1, 2, 3, 4, 5, 6, 7, 8, 9…
- Since population growth (geometric progression) outruns the food supply (arithmetic progression) there will be imbalance which will result in overpopulation.
- He then argued that both natural and non-natural means could be used to check such occurrence.

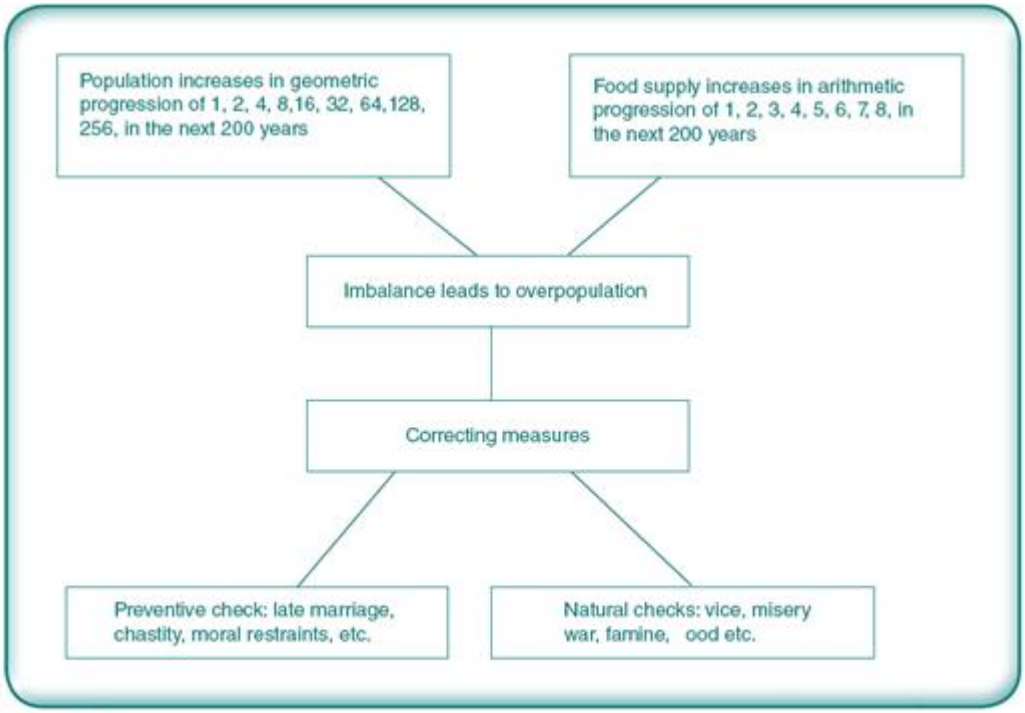


FIG. 9.2 Diagrammatic representation of Malthus' population theory.

Malthus' population theory has been faulted because recent inventions and innovation techniques have shown that food supply can be improved and increased by means of technology. He failed to note that economy is not static. He did not foresee the possibility of unprecedented increase in scientific knowledge and agricultural
inventions over a period of time which has diminishing returns. However, despite some of the criticisms against the Malthusian theory, it is still applicable to most developing countries like Nigeria.

(b) The demographic transition theory of population: This theory is based on the actual population trends of advanced countries of the world. It emphasises that every population in the countries of the world passes through certain stages. These stages are mainly three. Th e first stage is known to be the period of pre-modernisation. It
is characterised by high birth and death rates, which subsequently result in low population growth rate. The second stage is the period of modernisation, which is further characterised by stable birth rate but with a declining death rate. By this development, the growth rate in population increases swiftly. Th e third stage is that of modernization and development in which the birth rate tends to equate the death rate. In this case, the growth in population becomes very slow.

Summary

Meaning of population: Population is the total number of people living in a given geographical area at a particular point in time.

- Population size: This means how large and how small a particular population of a country is.
- Population growth: This is the rate at which the size of a country's population changes.
- Net migration: This refers to the difference between immigration
- and emigration.
- Determinants of population: (a) birth rate, (b) death rate and (c) migration
- Theories of population: (a) Malthusian theory of population and (b) demographic transition theory.
- Demography: This is the study of population.
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Class Activities

(a) Students should identify within which of the population growth stage Nigeria presently falls.

(b) By what percentage has the Nigerian population grown since the 1991–2006 census?

Revision Questions

Objective Questions

1. Which of these best explain Malthus population theory?
(a) Increase in population causes hunger and death
(b) Population increases faster than food supply
(c) Population grows at arithmetic progression while food supply grows at geometric progression
(d) People could be sent to “No man’s land” when the population increases **(SSCE 1988)**
2. Which of the following is not correct?
(a) Population refers to the number of people living in a place
(b) The population of a place is not static
(c) Population is known through a census
(d) Population is affected by the amount of money in circulation **(SSCE 1989)**
3. The effect of emigration on a country’s population, all other things remain constant, is to
a) Increase its size
b) Cause over population
c) Increase its growth rate
d) Reduce the proportion of children
e) Reduce its size **(SSCE 1991)**
4. The optimum population of a country is reached when the
a) Production of goods and services is less than optimum
b) Output per head is at its highest with a given volume of resources
c) Total population increases with a given volume of resources.
d) National resources increase as population increases.
e) Working population rises at a geometrical rate. **(SSCE 1997)**
5. Th e grouping of a population into males and females is known as the
a) Geographical distribution
b) Age distribution
c) Sex distribution
d) Man-woman distribution
e) Occupational distribution (**SSCE 1998)**

Essay Questions

1. What is the population growth of a country whose population in last January was 40 million: births = 250,000; deaths = 150,000; immigrants = 60,0000; emigrants = 45,000?
2. State the advantages and disadvantages of a growing population.
3. Define the following population concepts:

- Crude birth rate
- Crude death rate
- Migration
- Immigration

4. Using a graph, explain the concepts of under, optimum and over population.

Glossary

Population: Total number of human beings.
Population Size: Th is is how large or how small a particular number of human beings are in a country.
Over population: Population is larger than the available resources.
Under population: Population is smaller than available resources.
Optimum population: Population size is equal to available resources.
Birth rate: Number of births per thousand of population at a given time.