# Introduction to Demography and Population Studies

**SOC104**

*University of Ibadan Distance Learning Centre*
*Open and Distance Learning Course Series Development*

ISBN 978-021-717-7

*General Editor*: Prof. Bayo Okunade

**University of Ibadan Distance Learning Centre**
University of Ibadan,
Nigeria

Telex: 31128NG

Tel: +234 (80775935727)
E-mail: ssu@dlc.ui.edu.ng
Website: www.dlc.ui.edu.ng

## Vice-Chancellor's Message

The Distance Learning Centre is building on a solid tradition of over two decades of service in the provision of External Studies Programme and now Distance Learning Education in Nigeria and beyond. The Distance Learning mode to which we are committed is providing access to many deserving Nigerians in having access to higher education especially those who by the nature of their engagement do not have the luxury of full time education. Recently, it is contributing in no small measure to providing places for teeming Nigerian youths who for one reason or the other could not get admission into the conventional universities.

These course materials have been written by writers specially trained in ODL course delivery. The writers have made great efforts to provide up to date information, knowledge and skills in the different disciplines and ensure that the materials are user-friendly.

In addition to provision of course materials in print and e-format, a lot of Information Technology input has also gone into the deployment of course materials. Most of them can be downloaded from the DLC website and are available in audio format which you can also download into your mobile phones, IPod, MP3 among other devices to allow you listen to the audio study sessions. Some of the study session materials have been scripted and are being broadcast on the university's Diamond Radio FM 101.1, while others have been delivered and captured in audio-visual format in a classroom environment for use by our students. Detailed information on availability and access is available on the website. We will continue in our efforts to provide and review course materials for our courses.

However, for you to take advantage of these formats, you will need to improve on your I.T. skills and develop requisite distance learning Culture. It is well known that, for efficient and effective provision of Distance learning education, availability of appropriate and relevant course materials is a *sine qua non*. So also, is the availability of multiple plat form for the convenience of our students. It is in fulfilment of this, that series of course materials are being written to enable our students study at their own pace and convenience.

It is our hope that you will put these course materials to the best use.

**Prof. Abel Idowu Olayinka**

Vice-Chancellor

## Foreword

As part of its vision of providing education for "Liberty and Development" for Nigerians and the International Community, the University of Ibadan, Distance Learning Centre has recently embarked on a vigorous repositioning agenda which aimed at embracing a holistic and all encompassing approach to the delivery of its Open Distance Learning (ODL) programmes. Thus we are committed to global best practices in distance learning provision. Apart from providing an efficient administrative and academic support for our students, we are committed to providing educational resource materials for the use of our students. We are convinced that, without an up-to-date, learner-friendly and distance learning compliant course materials, there cannot be any basis to lay claim to being a provider of distance learning education. Indeed, availability of appropriate course materials in multiple formats is the hub of any distance learning provision worldwide.

In view of the above, we are vigorously pursuing as a matter of priority, the provision of credible, learner-friendly and interactive course materials for all our courses. We commissioned the authoring of, and review of course materials to teams of experts and their outputs were subjected to rigorous peer review to ensure standard. The approach not only emphasizes cognitive knowledge, but also skills and humane values which are at the core of education, even in an ICT age.

The development of the materials which is on-going also had input from experienced editors and illustrators who have ensured that they are accurate, current and learner-friendly. They are specially written with distance learners in mind. This is very important because, distance learning involves non-residential students who can often feel isolated from the community of learners.

It is important to note that, for a distance learner to excel there is the need to source and read relevant materials apart from this course material. Therefore, adequate supplementary reading materials as well as other information sources are suggested in the course materials.

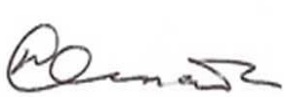
Apart from the responsibility for you to read this course material with others, you are also advised to seek assistance from your course facilitators especially academic advisors during your study even before the interactive session which is by design for revision. Your academic advisors will assist you using convenient technology including Google Hang Out, You Tube, Talk Fusion, etc. but you have to take advantage of these. It is also going to be of immense advantage if you complete assignments as at when due so as to have necessary feedbacks as a guide.

The implication of the above is that, a distance learner has a responsibility to develop requisite distance learning culture which includes diligent and disciplined self-study, seeking available administrative and academic support and acquisition of basic information technology skills. This is why you are encouraged to develop your computer skills by availing yourself the opportunity of training that the Centre's provide and put these into use.

In conclusion, it is envisaged that the course materials would also be useful for the regular students of tertiary institutions in Nigeria who are faced with a dearth of high quality textbooks. We are therefore, delighted to present these titles to both our distance learning students and the university's regular students. We are confident that the materials will be an invaluable resource to all.

We would like to thank all our authors, reviewers and production staff for the high quality of work.

Best wishes.



**Professor Bayo Okunade**

Director

# Course Development Team

| | |
|---|---|
| Content Authoring | Prof. Uche C. Osiugo Abanihe & Tari P. Akpandara |
| Content Editor | Prof. Remi Raji-Oyelade |
| Production Editor | Ogundele Olumuyiwa Caleb |
| Learning Design/Assessment Authoring | Folajimi Olambo Fakoya |
| Managing Editor | Ogunmefun Oladele Abiodun |
| General Editor | Prof. Bayo Okunade |

# Contents

# About this course manual

Introduction to Demography and Population StudiesSOC104 has been produced by University of Ibadan Distance Learning Centre. All course manuals produced by University of Ibadan Distance Learning Centreare structured in the same way, as outlined below.

## How this course manual is structured

### The course overview

The course overview gives you a general introduction to the course. Information contained in the course overview will help you determine:

- If the course is suitable for you.
- What you will already need to know.
- What you can expect from the course.
- How much time you will need to invest to complete the course.

The overview also provides guidance on:

- Study skills.
- Where to get help.
- Course assignments and assessments.
- Margin icons.

We strongly recommend that you read the overview *carefully* before starting your study.

### The course content

The course is broken down into Study Sessions. Each Study Session comprises:

- An introduction to the Study Session content.
- Study Session outcomes.
- Core content of the Study Session with a variety of learning activities.
- A Study Session summary.
- Assignments and/or assessments, as applicable.
- Bibliography

# Your comments

After completing Introduction to Demography and Population Studies we would appreciate it if you would take a few moments to give us your feedback on any aspect of this course. Your feedback might include comments on:

- Course content and structure.
- Course reading materials and resources.
- Course assignments.
- Course assessments.
- Course duration.
- Course support (assigned tutors, technical help, etc.)

Your constructive feedback will help us to improve and enhance this course.

# Course Overview

## Welcome to Introduction to Demography and Population Studies SOC104

This course provides students with knowledge and skills to analyze the demographic composition of population as well as the causes and consequences of population change. The emphasis is placed on population composition, demographic variables and other characteristics of
demographic analysis, with particular emphasis on trends and differentials: age and sex distribution, fertility, mortality, natural increase and migration. Introduction to the main population theories conducting trend analysis and examining the relationships between social, economic, and demographic trends will be explored.

## Bibliography

Resourceful links that will prove helpful in your course of study are provided below:

**Reading**


http://www.sociologyguide.com/social-demography/components-of-population-growth.php

http://sociology.about.com/od/Disciplines/a/Demography.htm

https://www.techopedia.com/definition/30326/demographic-data

https://en.wikipedia.org/wiki/Demography

http://worldpopulationhistory.org/map/1/mercator/1/0/25/

http://www.yourarticlelibrary.com/population/population-age-structure-sex-composition-and-rural-urban-composition/42529/

http://www.csun.edu/~vcpsy00h/students/sexual.htm

http://www.healthknowledge.org.uk/public-health-textbook/health-information/3a-populations/fertility-mortality-migration

https://en.wikipedia.org/wiki/Mortality_rate

https://humrep.oxfordjournals.org/content/15/8/1703.full

# Getting around this course manual

## Margin icons

While working through this course manual you will notice the frequent use of margin icons. These icons serve to "signpost" a particular piece of text, a new task or change in activity; they have been included to help you to find your way around this course manual.

A complete icon set is shown below. We suggest that you familiarize yourself with the icons and their meaning before starting your study.

| | | | |
|---|---|---|---|
|  **Activity** |  **Assessment** |  **Assignment** |  **Case study** |
|  **Discussion** |  **Group Activity** |   **Help** |  **Outcomes** |
|  **Note** |  **Reflection** |  **Reading** |  **Study skills** |
|  **Summary** |   **Terminology** |  **Time** |  **Tip** |

# Study Session 1

# Sources of Demographic Data

## Introduction

In this study session, we will discuss the concept of census as well as how to plan and execute, and factors affecting census data. Also, we will examine vital registration as one of the key steps of sources of demographic data. We will also discuss sample survey, population registers and finally, historical sources of gathering data.

### Learning Outcomes

**Outcomes**

When you have studied this session, you should be able to:

1.1 define the term census
1.2 explain the concept of vital registration
1.3 discuss sample survey
1.4 explain the concept of population register and list three countries that have population register
1.5 outline the historical sources of gathering data

## Terminology

| | |
|---|---|
| **Census** | An official count or survey of a population, typically recording various details of individuals |
| **Sample survey** | A survey which is carried out using a sampling method, i.e. in which a portion only, and not the whole population is surveyed |

## 1.1 The Concept of Census

The United Nations defines a census of population as the total process of collecting, compiling and publishing demographic, economic and social data pertaining, at a specified time, to all persons in a country or a delimited territory (United Nations, 1958:3). Censuses are undertaken to provide a profile of a country's population and to generate a data base for planning, monitoring and evaluation of performance of plans. It is a massive, complex and costly statistical operation, which requires some years of careful planning. Censuses are usually taken at regular intervals (usually 5 or 10 years) to ensure that comparable information is collected in a fixed sequence. Census is superior to other methods of data collection because it yields comparable data on all inhabitants of a country within a particular time (days). Such information provide data on

age, sex, marital status, place of birth, nationality, relationship to head of household, ethnic origin, educational level, occupation, religion, etc. for each member of the household, usually counted at sight.

The practice of census-taking, in some form or another, is almost as old as civilization itself. There are records of census-like enumeration in Babylonia (4000 BC), China (3000 BC) and Egypt (2500 BC). References to forms of census pr population count in Palestine and Rome, and eventually the whole Roman Empire, are found in the Bible. Most of these were partial in coverage because of the rather limited uses to which these data were put. Generally, they were limited to landholders or heads of households or males of military age or tax payers, and were for military, labour or tax purposes.

Among the first censuses in the modern sense were those of Quebec (1660), Italy and Sicily (in the 17$^{th}$ century), Prussia, Iceland, Denmark and Sweden (18$^{th}$ century). The USA commenced census-taking in 1790 and UK and France in 1801. The first national census in Nigeria took place in 1911, which was based largely on tax records and estimates by Colonial Administrative Officers. It yielded a total population of about 16 million. The next census in 1921 was based mainly on the tax lists, supplemented by head counts in some towns, and gave a total population of 18.7 million. Other national censuses were conducted in 1931, 1952/53, 1962, 1963, 1973, 1991 and finally 2006. The 1991 census counted a total of 88,992,220 Nigerians while the 2006 Population and Housing Census puts Nigeria's population at 140,431,790, with a national growth rate estimated at 3.2 percent per annum. With this population, Nigeria is the most populous nation in Africa and the eighth most populous in the world in 2006.

**Note**

The earlier Nigerian censuses were grossly incomplete and the later ones became very controversial due to charges of over-count and outright falsification of figures in some places. This led to the cancellation of at least two post-independence census – 1962 and 1973 censuses

## 1.1.1 Planning and Execution of the Census

During the planning stage of the population census the following issues are considered:

1. Fix the date of the census and set out the pre-census programmes
2. Inform the public and obtain their cooperation
3. Decide on the system of enumeration to be used
4. Decide on the type and content of the census questionnaire – Household; Individual
5. Test all forms and procedures, including a final pre-test
6. Prepare detailed maps and list all dwelling units – EA maps; house listings
7. Recruit and train the field staff
8. Plan the programme for processing and analyzing the data
9. Plan for publication of the results
10. Plan for dissemination of results of the census

As regards timing, it is clearly better for a census to be conducted at a time when population movement is at a minimum.

With respect to enumeration, populations are usually counted either on a de facto basis of a de jure basis. Under the former, a person is counted wherever that person is found at the time of the census enumeration. In the de jure system, people are enumerated at their place of usual residence, irrespective of where they were at the time of the census. Both of them have their advantages and disadvantages. The main advantage of the de facto method is that it offers less chance of double counting or omission of persons, while the major advantages of de jure method is that it gives a picture of the permanent population.

### 1.1.2 Factor Affecting Census Data

1. Absence of base maps. Area demarcation is difficult but it is essential for complete enumeration of subjects.
2. Absence of skilled manpower
3. Poor capital/financial allocation
4. Poor quality of field workers/enumerators
5. Illiteracy of the people, leaders, poor cooperation
6. Political interference due to constituency allocation and revenue allocation
7. Poor terrain; some areas are inaccessible
8. Inadequate pre-test of instrument before enumeration proper
9. Falsification of information, especially on age, fertility, occupation, income, etc.
10. Mobile population – Fulani herdsmen, nomads, fisher men and their families, people on the street, etc.
11. If duration is long, people move leading to double counting
12. Religious/cultural prohibitions – women in purdah
13. Processing of results, publishing and dissemination – poor equipment, poor data storage and retrieval system.

## 1.2 Vital Registration

Vital events in demography include births, deaths, marriages, etc. Vital Registration is the compulsory registration of births, deaths, marriages, etc. within a short time after their occurrence. It is defined as the continuous and permanent, compulsory recording of the occurrence of vital events and the characteristics of such events primarily for their value as legal documents as provided by law, and secondarily, for their usefulness as a source of statistics of a country.

In almost all developed countries, such registration of births, deaths, marriages, divorce, etc is compulsory, and must be made by lodging a standard form giving certain essential information. Certificates issued by the official legally responsible for administering the registration system (Registrar) are used for purposes of identification and for legal contracts, life assurance policies, etc. where proof of such characteristics as age, marital status, etc. is required.

In many developing countries, the registration of vital events does not work very efficiently. The reasons include:

1. Illiteracy and lack of interest by the general public who do not find in their daily activities much use for the certification of vital events.
2. Most vital events take place in situations where their documentation is difficult or impossible. For example, most births in Nigeria take place at home; customary system of marriage does not lend itself to documentation and certification. Complete registration of deaths is not possible in Nigeria since most deaths do not take place in the hospital, and no law forbids corpses from being hurried without death certificate.
3. Social custom may lead to non-registration as a result of superstition or taboos
4. The rural population may be widely dispersed or inaccessible.

### 1.2.1 Vital Statistics Data

**The Birth Registration Form**: The birth registration form usually includes characteristics of the child birth, such as date of occurrence, name, sex, type of birth (live, still, single or multiple), legitimacy, place of occurrence, characteristics of parents.

**The Death Registration Form**: The death registration form usually records the name, age, sex, marital status, occupation, place of birth, date and cause of death of the deceased.

**The Marriage Registration Form**: The marriage registration form includes dates of birth (or ages), occupations, religions, places of birth, previous marital status, together with date and place of marriage.

**Migration Data**: Migration data are derived from information collected on international arrivals and departures by Immigration Officers at all ports of embarkation (departures) and disembarkation (arrivals). Departure and arrival forms seek information such as age, sex, marital status, occupation, nationality, purpose of visit to the country/ reason for leaving, and expected length of stay.

### 1.2.2 Processing Of Data on Vital Events

Information collected through the registration system is usually passed to the official central statistical agency for compilation, preparation of tables and publication. This body also issues relevant certificates, such as birth certificate, marriage certificate, etc.

## 1.3 Sample Survey

Sample surveys are procedures utilized to gather information about a large number of people by interviewing only a few of them. The people interviewed are called respondents, and together, the respondents form a sample. A sample is a small-scale replica of the population under study. A sample is drawn by certain rules that assure that within an acceptable margin of error it is a miniature of the larger population.

If the sample survey strictly follows probability techniques in selecting the sample, and if the process is correctly executed, data collected in a survey will approximate or be a good estimate of the actual data from the entire population. Among the different method that a sample could be drawn are the following:

- Simple random sampling
- Stratified sampling
- Systematic sampling
- Cluster sampling

## 1.3.1 Uses of Survey include

1. To collect vital statistics where the official registration system is inadequate or non-existent, as in most developing countries.
2. To collect supplementary demographic and other data where is not feasible to collect the same from the population census (eg. opinion polls, survey of the knowledge, attitude and practice (KAP) of family planning; labour force survey, etc.)
3. To test the accuracy of the traditional sources of demographic data (eg. census pre-test and post-enumeration survey)
4. To conduct academic research on a subject matter in which primary data need to be collected (eg. most MSc and PhD research in the social sciences require the candidate to conduct original research through sample survey or other methods).

## 1.3.2 Advantages of Sample Surveys

1. Sample surveys are less expensive than census
2. They can be used to obtain detailed information rather rapidly or within a short time
3. By using well-trained staff and strict supervision to administer the survey, the quality of data generated tends to be higher than that of the census.
4. It is possible to estimate margin of error, or the accuracy of the data or results obtained.

## 1.3.3 Those who mostly use Sample Surveys

- The Federal Bureau of Statistics
- The National Population Commission
- Members of the academic community
- Civil Society organizations
- Opinion poll organizations

## 1.3.4 All Sample Surveys involve the following

- Justification and Concept definition
- The study population
- The sample design and selection
- The Questionnaire
- Data collection in the field or questionnaire administration
- Data analysis
- Presentation Results

- Reporting/publishing of survey findings
- Dissemination of results

# 1.4 Population Registers

This is a system of opening and keeping a register for every citizen of a country, and following the person through time to record all vital events occurring to him or her. A few countries maintain this system of continuous registration by keeping a separate record for each individual from the time of birth to his or her death. The record is continuously up-dated by recording the events in that person's life, such as marriage, birth of children, emigration, etc. Because of the difficulty in keeping such detailed information on everybody, only a few developed countries maintain population registers. Countries that maintain population registers include Belgium, the Netherlands, Finland, Sweden, Norway, Denmark, Iceland, etc. Clearly, these are relatively small and well advanced countries.

The advantages of the system include the completeness of coverage, accuracy, and contact with individuals if required. The disadvantages are the high cost, the need for a high cultural and educational level, and the fact that the existence of such records is regarded by many as an invasion of civil liberties.

# 1.5 Historical Sources

In the absence of data for the distant past, various methods and means have been used to re-construct data pertaining to fertility, death, migration, marriages and family composition in the past. These include:

1. Dates and other information on tombstones in cemeteries.
2. Church Parish registers, eg. births, marriages
3. Family genealogies
4. Archival materials
5. Archeological or excavational discoveries

## 1.5.1 Uses of Population Data

Both government and business have discovered that demography has important implication for social, environment, and potential.

- Money is typically allocated to administrative areas on the basis of population size for the purpose of maintaining schools, hospitals, etc.

- Local government uses demographic data for many purposes in their allocation of services and to know the characteristics of people living in the administrative area

- Politicians use demographic data to decide what their constituents are like, who will vote for them and to evaluate issues likely to be important in the area they represent. They

also use demographic data to provide insights into the forces producing social and environmental change in the area, whether that area is a local region, state or a nation

- Demographic data are crucial to business and social planners. For instance, insurance companies determine the probabilities of death before insuring individuals. Educational planners need to project the number of students in the area. Highway managers need to know how a proposed highway might alter the population of a nearby village or their means of livelihood. University administrators need to know and project the impact that high birth rate will make on the available university facilities and the consequences of declining birth rates.

In general, demographers use population data to improve the understanding of human society – past, present and future. For the individual, understanding the social, environmental, and political causes and consequences of population growth will improve his or her ability to cope with a future that will, without doubt, be significantly influenced by demographic events.

**ITQ**

**Question**

Who are those that mostly use Sample Surveys?

**Feedback**

They are**:**

- The Federal Bureau of Statistics
- The National Population Commission
- Members of the academic community
- Civil Society organizations
- Opinion poll organizations

.

# Study Session Summary

**Summary**

In this Study Session, we defined census as a collective process of collecting, compiling and publishing demographic, economic and social data pertaining, at a specified time, to all persons in a country or a delimited territory. We described planning and execution, and factors affecting census data. Also, we examined vital registration as one of the key steps of sources of demographic data. We also discussed sample survey, population registers and finally, historical sources of gathering data.

# Assessment

**Assignment**

1 Define the term census
2 Explain the concept of vital registration
3 What is sample survey?
4 Explain the concept of population register and list three countries that have population register
5 Outline the historical sources of gathering data

# Study Session 2

# Overview of World's Population

## Introduction

In this study session, we will examine the world's population as well as components of population, and how the world population is distributed.

### Learning Outcomes

**Outcomes**

When you have studied this session, you should be able to:

2.1 define the term population

2.2 list and explain the various components of population

2.3 discuss the concept of the distribution of the world's population

## Terminology

| | |
|---|---|
| **Population** | The total of all the inhabitants of a particular town, area, or country. |
| **Growth rate** | A measure of economic growth from one period to another in percentage terms |

## 2.1 Components of Population

There are three components of a population. These are factors that bring about a change in the population of a place, namely: births (fertility), deaths (mortality) and migration. As people are born, die or move, their total numbers in an area changes. During most of history, world population has increased very slowly because of high death rates accompanied by high birth rates. But during the 20$^{th}$ century world population growth accelerated, as death rates declined, but without a corresponding decline in birth rates. The effect of migration to population growth is relatively recent, but it was significant for population growth in the new worlds of North America, Australia, Israel and other such places that benefited from massive migration from Europe.

**Tip**

Population is a summation of all the organisms of the same group or species, which live in a particular geographical area, and have the capability of interbreeding

The most basic method of calculating numerical population change over time is the Balancing Equation, which is given below:

$$P_2 = P_1 + (B – D) + (I - E)$$

Where $P_2$ is the population at the later date,

$P_1$ is the population at the earlier date,

B is births between the two dates,

D is deaths between the two dates,

I is In-migration (or immigration) between the two dates, and

E is emigration (or out-migration) between the two dates.

Balancing equation provides the means of knowing the population size of a place by taking into account of the three components of a population. The availability of records of birth, deaths and migration for a population in a year through vital registration enables demographers to calculate the population size of a place, or even the future population. This underscores the importance of vital registration. Balancing equation is the basis for population estimation and projection which are essential part of the work of demographers.

## 2.1.1 Natural Increase

This is the surplus (or deficit) of births over death in a population in a given period

$$NI = B - D$$

If 2,000 children are born in a population in a year, and 500 people die in that population within the year, then the population has naturally increased by 1,500 people.

## 2.1.2 Rate of Natural Increase

This is the rate at which a population is increasing (or decreasing) in a given year due to the surplus (or deficit) of births or even deaths explained as a percentage of the base population. This does not include the effects of immigration and emigration.

If the total number of live births or children born in a city of 100,000 people was 2,000, and 500 deaths were recorded for the city in the same year, then the formula for rate of natural increase (RNI) is:

$$RNI = \frac{B – D}{\text{Pop in the year}} \times K;$$

where K = 100.

$$RNI = \frac{2{,}000 – 500}{100{,}000} \times 100$$

$$= 1.5\%$$

This means that the population of the city grew at natural growth rate of 1.5 per cent in that year.

## 2.1.3 Growth Rate

Growth Rate (GR) is the rate at which a pop is increasing (or decreasing) in a given year due to natural increase and net migration expressed as a percentage of the base population. GR takes into account all components of population growth: Birth, Death and Migration.

$$GR = \frac{(Births - Deaths) + (In\text{-}migrants - Out\text{-}migrants)}{Total\ Population} \times K$$

If in the above city, 600 people moved in to establish ne residence and 200 people move out to live in other places, we have information to calculate the growth rate taking account of all the components of population.

$$GR = \frac{(2{,}000 - 500) + (600 - 200)}{100{,}000} \times 100 = 1.9\%$$

This means that with the inclusion of migration the city's population increased by 1.9% in the year. Without migration the city increased by 1.5 %. This indicates that migration is an important component of the city's population.

## 2.1.4 Doubling Time

This is the number of years it will take a population to double in size if its current growth rate continues to prevail. Expressing growth rate in percentage does not always give intuitive information. A more informative way of expressing growth rate or vividly showing how a population is growing is to calculate how long, at its current growth rate, a population would take to double in size – termed doubling time. Doubling time is the number of years it will take a population to double its size if the current growth rate prevails.

It has been shown that a population ( or country) with a constant growth rate of 1% could double its population in 70 years, 2% in 35 years, 3% in 23 years. An approximate way of estimating Doubling Time (DT) is to divide 70 by the growth rate expressed as a percent. To calculate DT in the above example where the GR is 1.9 %:

$$DT = \frac{70}{GR\%} = \frac{70}{1.9\%} = 36.842 \text{ years, or approximately } 37 \text{ years}$$

This means that if the population of the city continues to grow at 1.9 5 annually, it will double its current size in 37 years. Obviously, this gives

a more informative indication of how the city's population is growing than the information given by GR of 1.9 per cent, which is more abstract.

## 2.2 Distribution of the World's Population

The world population in 2014 was 7,238 billion and is projected to reach 8,444 billion around 2030 and 9.7 billion in 2050. Most of growth in world population is attributed to the demographic events in the less developed countries. For instance, as the world population rose from 2.5 billion in 1950 to 7.6 billion in 2008, the population living in the developing countries of Africa, Asia and Latin America and the Caribbean expanded from 68% to more than 80%. India and China, with a billion-plus each, make up nearly 40% of the total. As world population has currently exceeded 7 billion, developed countries as a whole will experience little or no population growth in this century; much of their population growth will be from immigration from less developed countries. Less developed countries, which, together, are the poorest countries of the world, will continue to experience rapid population growth through most of the century.

In 1950, 1.7 billion people lived in less developed countries; this was about two thirds of the world population. In 2012, about 83% of the world population live in LDC, and by 2050, the population of LDC will number over 8 billion or 86% of world population. The 20$^{th}$ century was a period of rapid population increase, with more than 4 billion people added to the world population in the century. This is unprecedented in world population history.

During most of human history, human population increase very slowly. Estimates of the world population before 1900 were based on fragmentary data generated largely by conjecture but the consensus among scholars is that population growth rate approached approximately 0.002 per year at that period. However, growth was not steady but was marked by changes influenced by food supply, diseases and war. The world population was kept in check by high mortality resulting from predation, drought, and famine, war, plague, infections, diseases, poor sanitation and parasites.

Starting from the 17$^{th}$ century, great advances in scientific knowledge, agriculture, industry, medicine and social organization made possible substantial growth in a population. In 1650, the world population became 500 million. It took several millennia for the world population to reach 1 billion which took place 1800. At that period, population growth began to accelerate due to the fall in death rates. It took only about 130 years for the world population to reach 2 billion, around 1930. Compared to the period it took for the first billion to be reached, this is indeed a very rapid pace of population growth. The fall in death rates was due mainly to improvements in sanitation and communal association, and medical and health advances. People slowly acquired knowledge and means to control diseases, thus mortality began to decline.


World population attained the 3 billion mark in 1960, that is, within 30 years from 1930 when it was 2 billion. Population growth at this later period was affected by human capacity to control famine and diseases in areas that, before then, was characterized by high level of illiteracy and low technology. With the introduction of vaccines, antibiotics, insecticides, and high quality yielding varieties of seeds, human population recorded further rapid increase. In developing societies in particular, most countries had a population growth rate of 3% or higher.

The fourth and fifth billion marks were reached in 14 years and 13 years respectively in 1975 and 1987. The world attained the sixth and seventh billion populations in 1999 and 2011 respectively, each in a period of only 12 years. It is projected that the world population will increase to 7.8 billion in 2025, with the developed societies accounting for 1.2 billion only. Thus an important indication of the rapid growth of the global population is the fact that it has taken fewer years for another billion people to be added to the world population.

This rapid population increase is due to two contrasting factors:

- Rapid decline in death rates, especially in the developing countries.
- Continues high fertility, also in the developing countries

It can then be concluded that global population is greatly affected by events in the less developed countries. Because of rapid population growth in developing countries, they will continue to account for a larger share of the world population. This has had some effects on economic development in these countries. Some believe that the rapid rise in population of the third world nations is at the root of their development problems. Others argue that population growth and population density are intrinsically beneficial to modernization and increased productivity, which are needed by the less developing countries.

The rapidity of population increase in the developing countries is demonstrated by the Population Clock, presented in the Table below for 2013. It provides estimates of births, deaths and natural increase per year, day and minute between the more developed and less developed nations.

**POPULATION CLOCK, 2013**

| | | **World** | **More developed World** | **Less developed world** |
|---|---|---|---|---|
| **Population** | | 1,136,796,000 | 1,245,911,000 | 5,890,885,000 |
| **Births per** | Year | 142,634,000 | 13,934,00 | 128,670,000 |
| | Day | 390,778 | 38,175 | 352,521 |
| | Minut | 271 | 27 | 245 |

| | | | | |
|---|---|---|---|---|
| | e | | | |
| **Deaths per** | Year<br>Day<br>Minute | 55,973,000<br>153,351<br>106 | 12,305,000<br>33,712<br>23 | 43,668,000<br>119,638<br>83 |
| **Natural Increase per** | Year<br>Day<br>Minute | 86,661,000<br>237,427<br>165 | 1,629,000<br>4,463<br>3 | 85,002,000<br>232,882<br>162 |
| **Infant Deaths per** | Year<br>Day<br>Minute | 5,760,000<br>15,789<br>11 | 70,500<br>193<br>0.1 | 5,693,000<br>15,597<br>11 |

Source: Population Reference Bureau, 2013

The Table shows that countries in the developing world have higher births, higher deaths, higher natural increase and higher infant deaths. In spite of the higher death rates in the developing countries, they experience most of the natural increase in the world population. This means that their contribution to the world population would be even higher as their death rates continue to fall. The extent to which these countries would cope with such increases in their population remains a big development problem for them.

The human population is distributed in different continents of the world but this distribution is quite uneven. This is a constant feature of the world's population distribution from time immemorial. Evidence in the last 100 years at least, indicates that most of the world's population is located in the less-developed or developing countries. The table below indicates the distribution of world population in 2014.

**Distribution of World Population in 2014**

| Location | Population | % Contribution |
|---|---|---|
| **World** | 7,238 Billion | 100.0% |
| **More Developed** | 1,249 Billion | 17.3% |
| **Less Developed** | 5,989 Billion | 82.7% |
| **Less Developed, excluding China** | 4,625 Billion | 63.9% |
| **Least Developed** | 916 Million | 12.7% |

Source: Population Reference Bureau,

## 2.2.1 Global Estimate of Population in 2014

As at 2014, about 83% of the world's people live in less-developed parts of the world. When China is excluded, the percentage population of the

less-developed nation decreases to 63.7% or a little over three-fifths of the world's population.

The 2014 figures for the ten most populous countries of the world are given in the Table below. China is the most populous country in the world with a figure of 1,364 billion, followed by India and USA, with 1,296 billion and 318 million respectively. Nigerian falls in the 7th position in 2014. Of the ten most populous countries of the world, only USA, Russia and Japan are found in the developed world; others are in the developing world, mostly in Asia

**Most Populous Countries, 2014 and 2050**

| **Countries** | **Population (Million) 2014** | **Countries** | **Population (Million) 2050** |
|---|---|---|---|
| China | 1,364 | India | 1,657 |
| India | 1,296 | China | 1,312 |
| USA | 318 | Nigeria | 396 |
| Indonesia | 251 | USA | 395 |
| Brazil | 203 | Indonesia | 365 |
| Pakistan | 194 | Pakistan | 348 |
| Nigeria | 177 | Brazil | 226 |
| Bangladesh | 158 | Bangladesh | 202 |
| Russia | 144 | Congo (Dem Rep.) | 194 |
| Japan | 127 | Ethiopia | 165 |

Source: Population Reference Bureau, 2014

By 2050, it is projected that India will be the most populous country in the world with a figure of 1,657 billion, followed by China's 1,312 billion. Nigeria is projected to become the third most populous country in the world with 396 million people by 2050. It is worthy of note that Russia and Japan (belonging to more developed category), two countries among the ten most populous countries of the world as at 2014, are projected to be overtaken and replaced as the 9th and 10th most populous countries by Congo (Democratic Republic) 194 million, and Ethiopia 165 million, both of which are in the African continent. This shift in the relative position and size of countries is a strong indication of different population growth, a product mainly of fertility and mortality conditions among countries.

**ITQ**

**Question**

There are three components of a population, they are factors that bring about a change in the population of a place. What are they?

**Feedback**

They are:

1. births (fertility)
2. deaths (mortality)
3. migration

# Study Session Summary

**Summary**

In this Study Session, we defined population as the number of people in a geographic area. we also examined the world's population as well as components of population, and how the world population is distributed.

# Study Session 3

# Age and Sex Composition of a Population

## Introduction

In this study session, our focus will still be on population, but in the direction of age and sex in a population. We will also look at the measures of age. Finally, we will examine the concept of age structure as well as sex structure.

### Learning Outcomes

**Outcomes**

When you have studied this session, you should be able to:

3.1 discuss the concept of age structure
3.2 list and explain the measures of age
3.3 explain the term sex structure

## Terminology

| | |
|---|---|
| **Sex structure** | The ratio of males to females in a population |
| **Age structure** | Categorization of the population of communities or countries by age groups, allowing demographers to make projections of the growth or decline of the particular population. |

## 3.1 Age Structure

Some populations are relatively young, that is, they have a large population of people in the younger age group. Others are relatively old, with a large population of the aged. Countries in these two set of populations have markedly different age compositions. As a consequence, they would also have different proportions of the population in the labour force or in school, as well as different medical needs, consumer preferences and even crime patterns. Obviously, then, a population's age structure has a great deal to do with how that population lives.

In general, developing countries have relatively young populations, while most developed countries have old or ageing populations. In many developing countries, almost half of the population is under 13 years old, while less than 4 percent may be 65 or older. On the other hand, in most developed countries, less than 25 percent of the population is under age 15, and 15 percent may be age 65 or older. In addition, developing

countries or young populations have low median age, while developed countries have high median age. In other words, the age at which exactly half of the population is older and half is younger is low in young populations and high in old populations. As an example the median age of Nigeria (a young population) is about 15 years while it is about 39 years in Switzerland (on old population).

**Tip**

Of what importance is the knowledge of age and sex composition? Well, its knowledge helps further to plan, because some population have more younger people than older. Having these facts with you would help the government of a country to develop plans for the young, though not at the neglect of the older people.

The typical age structure for more developed countries follows the pattern below:

- 0 – 14 years = 16% = Low
- 15 – 64 years = 67% = Very High
- 65+ years = 17% = High

These countries are faced with the problem of maintaining good health facilities because of large number of old people. There is emphasis on the provision of health care services for the elderly. Examples of countries in this category are USA, Japan, and countries in Europe. These countries have a high working population because their population is concentrated within 16 – 59 year age brackets, people who can contribute to the socio-economic development of their countries. For this category of countries, population tends to grow slowly.

For the least developed countries, the population structure is characterized by very high young population - people 15 years or below. The typical pattern is as follows:

- 0 - 14 years = 40% = Very High
- 15 - 64 years = 56% = High
- 65+ years = 4% = Very Low

Here, there is a tendency for population to continue to grow rapidly due to the large number of young people who will become parents in future. The development focus of countries in this category is providing social amenities – health, education, etc, to meet the needs of the teeming young population. Examples of countries in this category are countries Nigeria, Burkina Faso, Benin, Niger, Somalia and Afghanistan, etc.

# 3.2 Measures of Age

**Mean Age:** This is the average age of a population. It is derived by summing the age of every member of the population and dividing that sum by the total population.

**Median Age:** This is the middle age that separates a population into two equal parts. It is the age at which exactly one-half of the population is

older and the other half is younger in a population. It is a good measure of central tendency because age typically has a skewed distribution.

**Age Dependency Ratio:** This is the ratio of persons in the "dependent" ages (under 15 and older than 64 years) to those in the "economically productive" ages (15-64years) in a population.

$$\frac{\text{Population under 15 + Population age 65 and older}}{\text{Population ages 15-64 years}} \times K$$

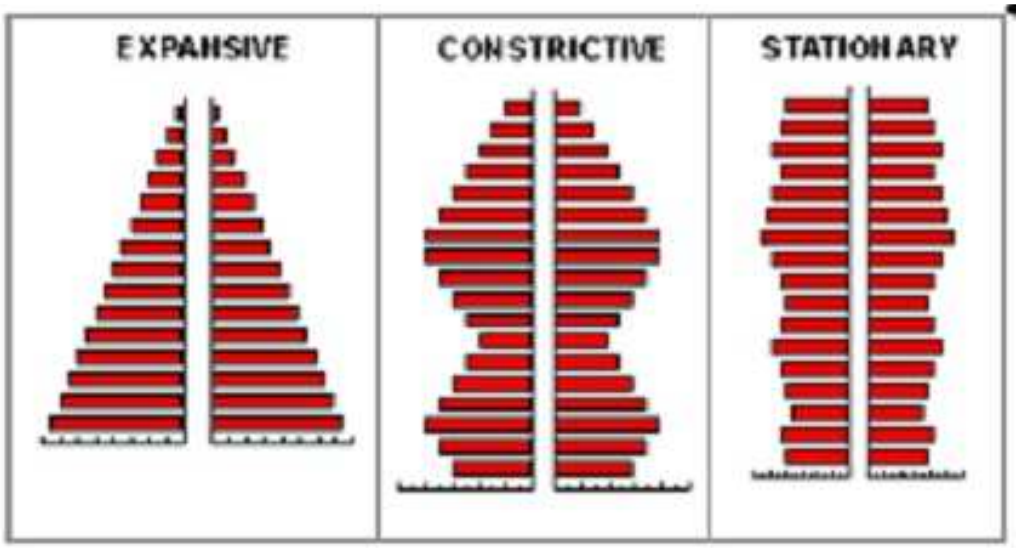
Where more detailed data are lacking, the age-dependency ratio is often used as an indicator of the economic burden borne by the productive portion of a population. The drawback in the definition is that some of the people in the 'productive' population may be dependent, and some of those in the 'dependent' population may be economically active. Countries with high fertility usually have high age dependency ratios because of the large proportion of children in the population.

## 3.2.1 Population Pyramid

A population pyramid is a graphical illustration of the age and sex composition of a population. By showing numbers or proportion of males and females in each age group, the pyramid gives a vivid "picture" of a population's characteristics. There are three general profiles of age-sex composition of every population depending on their past and current patterns of fertility, mortality and migration. These are:

1. **Expansive** (Rapid growth): - Large numbers of people in the young ages
2. **Constrictive** (Slow growth): - Small numbers of people in the young ages
3. **Stationary** (Near zero growth): - Roughly equal numbers of people in all age ranges, tapering off gradually at the older ages.

4. Source: Population Pyramid Types by Google, 2015



A population pyramid can tell a great deal about a population at a glance. For instance, it may show that females form a substantial majority in the older age groups; this is because it most countries, females outlive males. It can also show the effect of wars with higher male mortality and reduction on fertility in the cohorts that fought the war as well as during the war years. Age pyramid can also show heavy out-migration from a population, if there are deficits of a particular sex or age groups.

## 3.3 Sex Structure

The sex structure of the world indicates that there are more females than males in most countries of the world. This global characteristic is due to a number of socio-demographic and biological factors that tend to regulate sex ratio mostly in favour of females. Some of these include (a) under 5 mortality rate by sex (b) exposure to risks by sex.

Sex ratio is the relation between the number of males to females in a given population. It is usually expressed as the number of males for every 100 females. The sex ratio at birth in most countries is about 105 or 106 males per 100 females. After birth, sex ratios vary because of different patterns of mortality and migration for males and females within the population.

$$\text{Sex Ratio} = \frac{\text{Number of males}}{\text{Number of females}} \times 100$$

**ITQ**

**Question**

List and explain the three measures of age

**Feedback**

1. Age dependency ratio
2. Meadian age
3. Mean age

**Age Dependency Ratio:** This is the ratio of persons in the "dependent" ages (under 15 and older than 64 years) to those in the "economically productive" ages (15-64years) in a population

**Median Age:** This is the middle age that separates a population into two equal parts

**Mean Age:** This is the average age of a population

## Study Session Summary

In this Study Session, our focus was on population, but in the direction of age and sex in a population. We outlined the typical age structure for developed and least developed countries. We also looked at the measures

**Summary**

of age. Finally, we examined the concept of age structure as well as sex structure

# Assessment

**Assignment**

1 discuss the concept of age structure
2 list and explain the measures of age
3 explain the term sex structure

# Study Session 4

# Demographic Perspectives

## Introduction

In the field of Demography and Population Studies, there have been several attempts to explain population from different perspectives. In this study session, we will examine demographic perspective which are four (4). A look at each of these perspectives will reveal their major assumptions about population and also the criticism against each perspective.

## Learning Outcomes

**Outcomes**

When you have studied this session, you should be able to:

4.1 discuss briefly the following theories:
- a. Malthusian perspective
- b. Neo-Malthusian perspective
- c. Marxist perspective
- d. The demographic transition theory

## Terminology

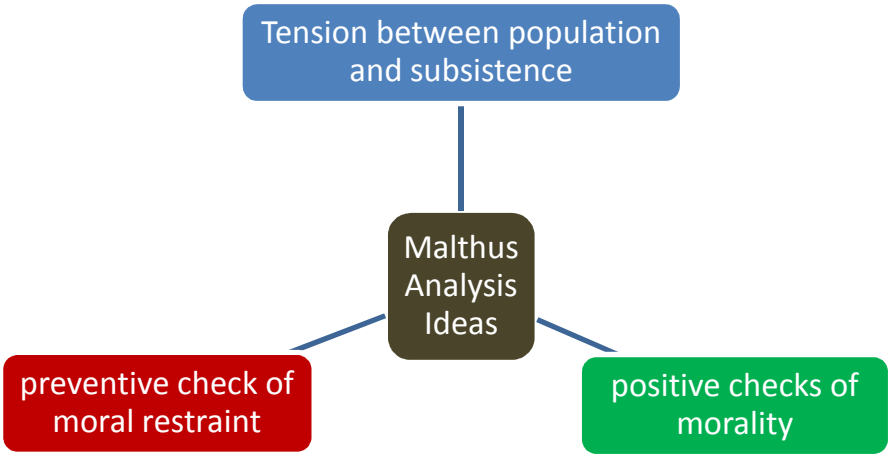
| | |
|---|---|
| **Demography** | The study of statistics such as births, deaths, income, or the incidence of disease, which illustrate the changing structure of human populations |

## 4.1 The Malthusian Perspective

The central historical personality in the recognition and formulation of a theory of interrelationships between population and social and economic change was Thomas Robert Malthus, a British Clergyman. Malthus is immortalized in demographic history for his Essay on the "Principles of Population" in no fewer than seven editions from 1798 to 1872 and for the controversy which raged and continues to rage around his ideas.

Malthus' first essay was a reaction against certain optimistic and romantic ideas current during the 18$^{th}$ century in England. These ideas were expressed by such writers as Condorcet and Godwin whose views on the perfectibility of man and society Malthus set out to disprove. Godwin, for instance, had argued that human misery was merely due to defective social institution. If only the national income could be distributed more equitably, poverty would disappear. Even Malthus' father espoused Godwin's ideas and a violent debate followed between

father and son. The son finally decided to write down his ideas on the subject, and thus the first Essay was born. His Essays are based on two postulates: (1) That food is necessary for the existence of man, and (2) that the passion between the sexes is necessary and will remain unchanged.




## The three central ideas in Malthus analysis:

1

First, since population tends to increase faster than food resources do, there is always tension between population and subsistence. He postulated that subsistence (food, resources) tends to increase arithmetically (1,2,3,4,5,6,7,8,9,10,etc.) whereas population tends to increase geometrically (1,2,4,8,16,32,64,128,etc), suggesting that population growth will always be ahead of resources. From his reasoning, in the absence of checks, a population would easily double itself every 25 years, while in the same period food production cannot possibly increase more than an amount equal to the original produce. Malthus hypothesized that the attraction between the sexes, a constant psychological factor, underlies the geometric progression whereas the arithmetic progression is based on the law of diminishing returns.

2

Second, the constant tendency for population or numbers to outgrow food supplies obviously leads to tension or conflicts which, according to him, are resolved by what he called "Positive Checks" of mortality or increased death rates. That is, the increase in population to a level close to the limits of subsistence produces poverty, misery, vice, disease, and ultimately high mortality operating to restrain population growth. These checks arise either from human actions (such as wars and dangerous occupations) or from nature (such as famines and epidemics).

3

Finally, Malthus stated that a measure of population balance can be obtained by other means beside the "Positive Checks". He advocated for "Preventive Checks" of moral restraint – such as delayed marriage or continence in marriage (abstinence) – which, to him, are better than positive checks. For Malthus, preventive checks or moral restraints are necessary to avoid the less desirable positive checks. By advocating for moral restraints, he meant among others that only those who could maintain a family should marry; those who could not should live in constant celibacy or chastity. Note, however, that Malthus did not advocate for birth control or family planning, which he might have considered as immoral give the Clergyman that he was.

**Note**

Malthus believed that in spite of the positive and preventive checks, there was an obstacle to economic betterment arising from inability of increased food production to keep abreast of increased population. To him, the constant pressure of population on the ability of the environment to support it made universal over-population an unavoidable and permanent phenomenon.

## 4.1.1 The Validity and Criticism of Malthus Population Theory

1. Malthus has often been blamed for his exclusive concern with food as if it is the only essence or concern for human survival. Today most of the resources consumed or used by mankind come from mines and quarries; food is now grown in greenhouses and other modern facilities that produce high yielding crops.
2. Malthus was oblivious of the tremendous technological change that has continued to increase the stock of the resources available to increased population. Indeed, the simultaneous increase in population and prosperity which took place in Europe during the 19$^{th}$ century and the industrial revolution seemed to invalidate Malthus' arguments. To Malthus, however, these were merely postponing the evil day, the time when population would eventually overwhelm the available resources.
3. Marxian critics argue that Malthus defended only the landed gentry and the bourgeoisie, by stating that the misery of the lower classes was due to a natural law rather than to a lack of distributive justice. They contend that Malthus lacked all concern for the welfare of the masses, and that the Malthus doctrine, if applicable at all, is the consequence of the capitalist system, and not universally and eternally applicable as argued by Malthus.
4. The graphic comparison between growth rates of population and agriculture in illustrating his theory proved a rather unhappy adventure for Malthus as it has often led to total rejection of his theory. Although the amount of cultivable land in a finite earth is limited, Malthus' way of expressing himself made him vulnerable to criticism. For instance, critics have rejected his doctrine on the basis that there has been no example of a population doubling itself in 25 years. However, at current growth rate, many African countries will double their population size in 25 years or less.

5. Some critics of Malthus argue that his alarm was unwarranted because the ideal quantitative relationship between population and physical resources has always been realized throughout human history, so that over-population has been rare. For instance, human societies have at all times practiced such habits and customs as abortion, infanticide, prolonged lactation, refrain from intercourse and late marriage, with the obvious purpose of reducing fertility so as to bring the actual population as close as possible to the most desirable density. In effect, the argument is, that when human survival is threatened by over-population or lack of resources, people have been able to adjust by innovations or discoveries so as to bring population size or growth to a balance with the available stock of resources.

Malthus concern for over-population has been a controversial issue. However, the fear of over-population stirred by Malthus served as impetus to census-taking in both England and France, and in the long run served as an impetus to the scientific study of population.

## 4.2 The Neo-Malthusian Perspectives

The neo-Malthusians include scholars who criticize Malthus's insistence on the value of moral restraint, while accepting many of his other conclusions. Specifically, neo-Malthusians favour contraception rather simple reliance on moral restraints. They see world population as growing at a fast rate and believe something must be done to reduce the rate of population growth for the general welfare of all.


One of the most influential of recent neo-Malthusians is Garrett Hardin, a biologist at the University of California, Santa Barbara. In his 1968 article entitled "The Tragedy of the Commons" he argued that since individuals will most certainly continue their reproduction for the good of all, there is need for mutual coercion, agreed upon by the majority of the people, in order to escape the horror and ruin of our earth. To Hardin, people will not limit their family size for the good of the nation because personal goals are not necessarily consistent with societal goals in population matters.

He compares people's fertility with a common pasture land, where each herdsman seeks to maximize his gain by adding more and more cattle. The herdsmen benefit from the net proceeds of selling additional animals, whereas the cost lies in the chance that additional animals may result in overgrazing of the common ground. Since the commons is shared by many people, the cost is spread out over all, so for the individual herdsman, the benefit of another cattle exceeds the costs. Since each rational herdsman seeks to maximize his gains from the commons, each man is locked into a system that compels him to increase his herd without limit. All this eventually leads to the destruction of the commons. Since freedom of the commons brings ruin to all, to avoid this tragedy, some controls or regulations are inevitable.

Applying this to population, Hardin notes that most nations are committed to social welfare society, where families are not completely on

their own. People share a lot of things in common either free or highly subsidized, such as education, public health, police protection, and transportation, etc, all at public expense. This leads to a moral dilemma: freedom to have as many children as the individual couples want results in tragedy for the society as a whole. This goes back to the ultimate Malthusian clash of population and resources. He therefore suggested a coercion to limit the number of children a couple would have before selfish individual actions destroy the mother earth.

Another influential neo-Malthusian is Paul Ehrlich another biologist at the Stanford University, USA. In his book "The Population Bomb", Ehrlich phrased the situation in three parts: "too many people", "too little food" and "environmental degradation". Ehrlich, working with his wife, observed that the primary cause of environmental degradation is rapid population growth. To them, "arresting population growth should be second in importance only to avoiding nuclear war". In their view, overpopulation and rapid population growth are intimately connected with most aspects of the current human predicament including rapid depletion of non-renewable resources, deteriorating of the environment (including rapid climate change), and increasing international tensions.

Ehrlich, thus argues that Malthus was right, and even that the problem is more complicated than foreseen by Malthus. To Ehrlich, the poor are dying of hunger, while the rich and poor alike are dying from the by-products of affluence – pollution, and ecological disaster. Indeed this is part of the 'commons' problem. A few benefit, all suffer. Ehrlich suggested that there are only two solutions to the population problems: the birth rate solution (lowering the birth rate) and the death rate solution (a rise in the death rate). He views the death rate solution as unlikely, thus the only way to avoid disaster is to bring the birth rate under control-perhaps even by force.

**Tip**

Like Hardin, Ehrlich believes that population growth is outstripping resources and ruining the environment. If nations and international bodies sit back and wait for people to react to this situation, disaster will occur. Therefore, there is need for swift action to push people to limit fertility by whatever means possible.

The neo-Malthusians thus differ from Malthusians because they reject moral restraint as the only acceptable means of birth control. They advocate for more drastic actions to compel people act to reduce their fertility. They see population growth as leading not simply to poverty but also to widespread calamity both of which are not desirable.

Gloomy they may be, but the messages of Ehrlich, Hardin and others are important and impressive and have helped to bring population issues to the attention of nations and the international community.

# 4.3 The Marxist Perspective

Karl Marx and Friedrich Engels were both teenagers in Germany when Malthus died in 1834. By that time several German states had responded to what they believed was overly rapid growth in the number of poor

people by legislating against marriages in which the applicant could not guarantee that his family would not wind up on welfare. As it turned out, that scheme backfired on the German states, because people continued to have children, but out of wedlock. Thus, the welfare rolls grew as the illegitimate children had to be taken care of by the state. The laws were eventually repealed but they had an effect on Marx and Engels, who saw the Malthusian point of view as an outrage against humanity. Their demographic perspective rose in reaction to Malthus.

Marx and Engels rejected the eternal or natural laws of population as stated by Malthus – that population tends to outstrip resources – preferring instead to view human activity as the product of a particular social and economic environment. The basic perspective is that each society at each point in history has its own law of population that that determines the consequences of population growth. For capitalism, the consequences are overpopulation and poverty, whereas for socialism, population growth is readily absorbed by the economy with no side effects.

Marx and Engels especially quarreled with the Malthusian idea that resources could not grow as rapidly as population, since they saw no reason that science and technology could not increase, the availability of food and other goods, at least as quickly as population grows. They flatly rejected the notion that poverty can be blamed on the poor. Instead, they said poverty is the result of a poorly organized society, especially a capitalist society. To them, the normal consequence of growth should be a significant increase in provision, since each worker should be producing more than he or she required to survive. According to Engels, in a well ordered society, if there were more people, there ought to be more wealth, not more poverty

Marx and Engels felt there was enough wealth even in England at the time of Malthus, to eliminate poverty. The only problem was that the wealth was controlled by a minority, who had had to exploit the majority through low wages, land deprivation, etc.

Marx argued that capitalism worked by using the labour of the working class to earn profits to buy machines that would replace the labourers, which, in turn, led to unemployment and poverty. Thus the poor were not poor because they overgrew more than the food supply, but only because capitalists has first taken away part of their wages and then taken away their very jobs and replace them with machines. To him, the consequence of the population growth which Malthus discussed were really the consequences of capitalist society, not of population growth per se. Overpopulation in a capitalist society was thought to be a result of capitalists' desire for an industrial reserve army that would keep wages low through competition for jobs and, at the same time, would force workers to be more productive in order to keep their jobs.

**Note**

In summary, the Marxian perspective believes that if society could be re-organized in a more equitable way, then the population problem would disappear; more population would lead to more production which is good for any country.

# 4.4 The Demographic Transition Theory

The most widely accepted theory explaining population change overtime is the demographic transition theory. It states that a population's fertility and mortality will both decline from high to low levels as a result of economic and social development. The decline in mortality usually precedes the decline in fertility resulting in unprecedented population growth during the transition period.

The process was observed in many European countries from the 2nd half of the 18th century and continuing until the early 20th century. In general, mortality rates began to decline with the beginning of several social and technological movements such as industrialization, agricultural revolution, the consolidation of nation states, and improvements of transportation and communication. Because birth rates remained high during the initial period of mortality decline, the gap between birth and death rates became wider with time, generating high rates of population growth. But by the second half of the 19th century, birth rates began to decline. This narrowed the gap between birth and death rates and diminished the rate of population growth somewhat. Finally, the last stage is when death rates and birth rates are both very low, and hence low or zero population growth rate.

**Tabular Representation of Demographic Transition Theory**

| Stages | Fertility | Mortality | Consequences |
|---|---|---|---|
| **1** | High | ↑ High | ↑ Little or no Increase |
| **2** | High | ↑ Declining | ↓ High Growth |
| **3** | Declining | ↓ Low | ↓ Slow Growth |
| **4** | Low | ↓ Low | ↓ Very Low Pop Growth |

## 4.4.1 The Four Stages of the Demographic Transition

The general mode of the process of demographic transition is viewed as having 4 stages:

**Stage I**: This is a period of high birth rate and high death rate, resulting in little or no population increase. This was observed in Finland in 1785 - 1790 with these vital rates:

- Birth rate = 38 per 1000
- Death rate = 32 per 1000
- Rate of increase = 0.6 percent

Birth rate and death rate were at equilibrium, hence very low growth rate, but High growth potential.

**Stage II**: This is a period of declining death and high birth rates, leading to high growth rates.

This was observed in Finland in 1825 – 1830 with the following vital rates:

- Birth rate = 38 per 1000
- Death rate = 24 per 1000
- Rate of increase = 1.4 percent

This is a stage of transitional growth, with declining death rate and birth rate that has scarcely declined. The wide gap between death rate and birth rate results in a rapid growth rate of the population.

**Stage III**: This is a period of declining birth rate and relatively low death rate which produced a slow population growth. Finland reached this stage in 1910-1915. It is a period of Incipient Decline of Population Growth.

- Birth rate = 29 per 1000
- Death rate = 17 per 1000
- Rate of increase = 1.2 percent

The declining birth rate produces slight reduction in population growth rate.

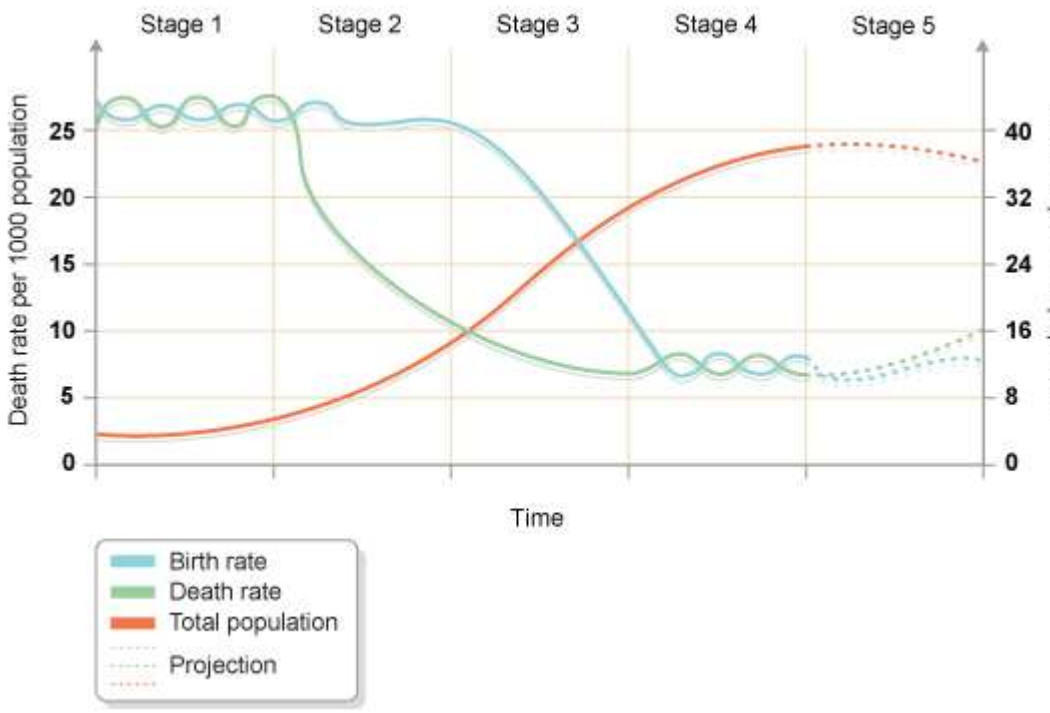
**Stage IV**: This is a period of low death rate and low birth rate, and therefore very low population growth. Finland in 1970-1976; this is the Stage of Low Equilibrium.

- Birth rate = 13 per 1000
- Death rate = 10 per 1000
- Rate of increase = 0.3 percent

This stage completes the original proposition of the demographic transition. It is a period of little population growth, which many developed countries reached in the 20$^{th}$ century.

**A** fifth stage of the demographic transition has been proposed as a result of recent demographic events in the developed countries that are at the low equilibrium or zero or negative population growth. Birth rate first starts to rise slowly, and this engenders a rising, even if still low, population growth rate. This is necessary else a population goes into extinction. Many countries in Western Europe have achieved this through government actions and incentives to increase fertility and through increased immigration.

**Graphical Illustration of the Demographic Transition Theory**




**Source: bbc.co.uk/schools/gcsebitesize/geography/images**

## 4.4.2 Critique of Demographic Transition Theory

The theory of Demographic Transition evolved originally as an attempt to explain the actual demographic evolution of Western Countries which passed from a situation of high mortality and fertility to one of low mortality and fertility without being very specific of the role of the factors underlying this process of transition. The theory, as formulated, does enumerate certain broadly conceived socio-economic factors, such as industrialization, and urbanization which it views as the determinants of fertility decline. Although the transition theory has its roots in history, it has been less than fully satisfactory in accounting for the actual process of demographic evolution, even in the case of the countries whose experience it was supposed to reflect.

Some of the limitations of the transition theory spring from its very general nature. Apart from the asserting that mortality decline will be followed by fertility decline, the theory does not go to such questions as the timing of the onset of mortality and fertility decline, the respective rates of decline and their possible changes over time. Hence, the transition scheme is of limited assistance in providing an explanation of the decline of fertility and its relation to economic and social factors.

**Note**

The transition theory postulates a time lag between the decline of mortality and the fall of fertility. This lag is explained by the lesser resistance to modernization of the forces sustaining high mortality than those maintaining high fertility. However, there are many instances in which the decline in fertility and mortality were more or less simultaneous or synchronous –

without the postulated lag (eg. in France). There are even a number of populations in which the decline in fertility came first (eg. in some German provinces).

Research on the history of demographic evolution in Europe has also raised a number of questions concerning the assumptions of the theory. Some of the results obtained in these studies suggest that in many areas of Europe fertility was already relatively low long before the beginning of modern economic development, mainly as a result of the so-called "European marriage pattern" Some studies also indicate that there were cases when development increased fertility, often during a transitory period corresponding to the initiation of development. For instance, in England, fertility increased during the period of industrial development in the 19th century. It has also been observed that in most countries of Western Europe birth rates rose before they began their historical decline.

The applicability of the theory to Africa is highly questionable given that many African countries have experienced considerable socio-economic development, as well as many years of declines in death rates, yet fertility has remain high. The factors that drive the demographic transition in currently developing countries and the process itself may well be different relative to the situation in Europe at the same point of demographic history.

**ITQ**

**Question**

How many number of demograpgic perspective do we have? Mention tham

**Feedback**

There are four major perspectives in the field of Demography and they are :

4. The Malthusian
5. The Neo-Malthusian
6. The Marxian perspectives
7. The demographic transition theory.

# Study Session Summary

**Summary**

In this Study Session, we examined four demographic perspectives namely: the Malthusian, Neo-Malthusian, Marxian perspectives, and the demographic transition theory. We noted that each of these perspectives has their views of how to control population. While the Malthusian suggests moral restraint as the only acceptable means of birth control, the neo-Malthusians reject such position. They however advocate for more drastic actions to compel people act to reduce their fertility. The Marxian perspective believes that if society could be re-organized in a more equitable way, then the population problem would disappear; more

population would lead to more production which is good for any country. The Demographic Transition Theory, though questionable in the African societies, is the most widely accepted theory explaining population change. It states that a population's fertility and mortality will both decline from high to low levels as a result of economic and social development.

# Assessment

**Assignment**

1. discuss briefly the following terms:
   e. The Malthusian perspective
   f. The Neo-Malthusian perspective
   g. The Marxist perspective
   h. The demographic transition theory

# Study Session 5

# Fertility

## Introduction

In this study session, you will learn fertility as it applies to population. We will discuss fertility measurement and finally, we will clarify the trends, levels and explanation of fertility.

### Learning Outcomes

**Outcomes**

When you have studied this session, you should be able to:

5.1 Define the following term:
  a. Fertility
  b. Fecundity
5.2 discuss the measurement of fertility
5.3 explain the following
  a. fertility trends
  b. fertility levels

## Terminology

| | |
|---|---|
| **Fertility** | The quality and ability of being fertile; productiveness. |
| **Fecundity** | Refers to a powerful productivity, usually in the area of natural growth, either from the earth or by human reproduction. |

## 5.1 Concepts of Fertility and Fecundity

Fertility is different from fecundity, which is the biological or physiological capability of a woman or a couple to reproduce. Among other factors, fertility is affected by fecundity, age at marriage or cohabitation, the availability and use of contraception, economic development, the status of women, and the age-sex structure.

### 5.1.1 Factors that shape a Woman's Fecundity

**Late Marriage**: reduces fecundity of a woman; the higher the age at marriage, the lower the fecundity rate. If a woman marries at age 30 years, her capacity to give birth to a lot of children is reduced compared to another who marries at 20yrs.

**Health**: a woman has to be healthy to be able to carry pregnancies. For instance, an unhealthy woman can have miscarriages or infertility due to disease/illness reduces a woman's fecundity (capacity) to conceive and give birth. Poor nutrition can also reduce the biological capability of a woman to conceive.

**Socio-Cultural factors that Hinder Conception**: For instance, extensive breastfeeding periods may delay ovulation by 2-4yrs (lactation amenorrhea).

**Contraceptives**: the use of modern or traditional contraceptives to delay or avoid conception or to plan family affects the biological capacity of a woman to give birth.

### 5.1.2 Types of Fertility

There are two major types of fertility: natural fertility and controlled fertility.

**Natural Fertility**: This is a fertility that prevails in a society in which no method is being used to prevent childbirth. It is presumed that no effective form birth control is practiced in a population where natural fertility prevails.

**Controlled Fertility**: This is the fertility that practiced by a population or society in which birth control is used effectively.

The distinction between natural and controlled fertility was first observed by Louis Henry. Natural fertility prevails in a society in which the couples' behavior is not modified according to the number of children already born. On the other hand, controlled fertility is indicated by special measures taken by couples with many children or those that want to avoid having another child or other children. Most pre-modern societies are characterized by natural fertility while controlled fertility prevailed in modern societies.

## 5.2 Measurements of Fertility

### 5.2.1 Crude Birth Rate

Crude birth rate (CBR) indicates the number of live births per 1000 population in a given year. It is expressed thus:

$$CBR = \frac{\text{Number of live births}}{\text{Total mid-year population}} \times K; \text{ where } K = 1000.$$

A country with population size of 853,373 had a total of 27,300 live births in the year. The crude birth rate is calculated as below.

$$CBR = \frac{27,300}{853,373} \times 1000 = 32.0$$

CBR of 32 means the country has 32 live births for every 1000 population. CBR for Nigeria in 2014 is 39, that is, 39 live births per 1000

population. This is very high, one of the highest in sub-Saharan Africa – the region has a CBR of 37. Around the world, CBRs vary widely; it ranges from Niger 50, Chad 48, Central African Republic 47, Angola 46, to 13 in the USA, Russia, Australia, New Zealand and 8 in Japan, Portugal, Taiwan and Germany.

CBR is not a good measure of fertility, because it relates birth to the entire population, and not to the population at risk of having babies. A better measure will attribute births to female population of childbearing age.

## 5.2.2 General Fertility Rate

General fertility rate (GFR) is the number of live births per 1000 women of childbearing age, that is, ages 15-49 years in a given year. It is expressed thus:

$$GFR = \frac{\text{Number of Live Births}}{\text{Number of women ages 15-49}} \times K; \text{ where } K=1000.$$

The population above has 350,000 women age 15-49. We can therefore compute GFR.

$$GFR = \frac{27{,}300}{350{,}000} \times 1000 = 78.$$

This means that a group of 1000 women in the population will have 78 live births in the year. GFR is a somewhat more refined measure than CBR because it relates births more nearly to the age-sex group at risk of giving birth (that is, women ages 15-49).

## 5.2.3 Age Specific Fertility Rates

Age specific fertility rate (ASFR) is obtained for specific age group for comparison over time or to see differences in fertility behavior at different ages. It is defined as the number of live births occurring to 1000 women of a particular age in the year. It is expressed as:

$$ASFR = \frac{\text{Number of live births in a particular age group}}{\text{Number of women in that particular age group}} \times K; \text{ where } K = 1000.$$

If 42,066 women age 20-24 years gave birth to 2,144 live births in the year, ASFR will be calculated as:

$$ASFR = \frac{2{,}144}{42{,}066} \times 1000 = 50.967$$

There were about 51 live birth per 1000 women aged 20-24 in the year.

Age-specific fertility rates vary by age of women over the seven five-year age groups. It is low at age 15-19 and rises to a peak at age 25-29, and gradually declines to the lowest level at 45-49 years. This pattern of age-specific fertility curve is common, the differences being the height of the curve at the beginning, the peak age and the end of the curve. The age-specific fertility rates for Nigeria in 2003, 2008 and 2014 are given

below. It can be graphed to appreciate the difference in levels of fertility by age.

**Age Specific Fertility Rate, Nigeria, 2014 by Residence, 2008 and 2003**

| Age Group | 2014 | | | 2008 | 2003 |
|---|---|---|---|---|---|
| | Urban | Rural | Total | | |
| 15-19 | 62 | 162 | 122 | 121 | 126 |
| 20-24 | 188 | 267 | 235 | 225 | 229 |
| 25-29 | 237 | 265 | 253 | 265 | 274 |
| 30-34 | 218 | 247 | 234 | 241 | 244 |
| 35-39 | 146 | 169 | 160 | 161 | 168 |
| 40-44 | 59 | 91 | 78 | 87 | 72 |
| 45-49 | 20 | 35 | 29 | 44 | 18 |
| **TFR** | **4.7** | **6.2** | **5.5** | **5.7** | **5.7** |

The Table shows that for Nigeria in 2014, age-specific fertility rates are higher in rural areas over all age groups relative to urban areas. Also, age-specific fertility rates in 2003 are higher than those in 2008 over all age groups. Between 2014 and 2008, age-specific fertility rates are higher in 2014 in the first two age groups, and lower subsequently compared with 2008.

## 5.2.4 Completed Fertility Rate

This measure is defined as the number of children ever born to women over age 49, at the age they are biologically unable to bear more children. The completed fertility rate (CFR) is a cohort measure demonstrating how many children a certain cohort of women who have completed their childbearing actually produced during those years.

One of the weaknesses of CFR is that one has to wait till the end of childbearing before we can collect complete data on the number of live births occurring to a woman at all the ages of childbearing. Often we want to summarize what fertility is, as of now, without waiting for the end of the childbearing years. Total Fertility Rate enables us to do this.

## 5.2.5 Total Fertility Rate

The total fertility (TFR) is the average number of children that would be born alive to a woman (or a group of women) during her lifetime if she were to pass through all her childbearing years conforming to the age-specific fertility rates of the given year. In other words, it is the number of live-births a woman or 1000 women would have if they experience a given set of ASFR during their reproductive period.

The TFR sums up in a single number the fertility of all women at a given point in time. In effect, this is the total number of children a woman

would have if she had the same chance of having a birth at ages 15-19 as all women that age in a given year; at ages 20-24 as all women that age in that same year; at ages 25-29, … and so forth up to age 49.

The formula for calculating TFR sums up the seven ASFR and multiplying the sum by 5 which represent the five years in each age group.

$$TFR = 5 \sum \frac{\text{Number of live-births at a specific age group}}{\text{Total number of women at the same age group}}$$

OR

$$TFR = 5\sum ASFR$$

Where ∑ means summation over a range, in this case 15-19 … to 45-49; and

ASFR is derived from the formula above.


In the Table of ASFR above, TFR is given at the bottom of the table. You can verify to see that the figures are correct. TFR of 4.7 and 6.2 in urban and rural areas respectively, means that a woman who lives in an urban area would average about 47 children during her childbearing years, compared with her counterpart in rural area who would average 6.2 children during her childbearing years. Comparing the years, we see that TFR in 203 and 2008 are the same, 5.7, but different from TFR in 2014 which is 5.5. This is an indication that fertility decline has set in in Nigeria. TFR is perhaps the best fertility index for comparing fertility among countries and for studying trends in fertility.

## 5.2.6 Gross Reproductive Rate

The Gross Reproduction Rate (GRR) is the average number of daughters that would be born to a woman (or a group of women) during her lifetime if she passes through her childbearing years conforming to the age-specific fertility rates of a given year. It is like the TFR except that it relates to female births only. It is a measure of the number of daughters expected to be born to a woman or 1000 women during their reproductive years. The formula is:

$$GRR = 5 \sum \frac{\text{Number of female births at a specific age}}{\text{Total number of women at the same age}}$$

Like TFR, GRR is the summation over the 7 age-groups, multiplied by 5. GRR is a measure reproduction, since a woman reproduces herself by having a daughter. Thus a woman who has 3 daughters reproduces herself three times. It is therefore a very useful index to compare the fertility levels of countries.

### 5.2.7 Net Reproductive Rate

The Net Reproduction Rate (NRR) measures the number of girls that a category of newly born daughters will bear during their lifetime. It is the average number of daughters that would be born to a woman (or group of women) if she passes through her lifetime from birth conforming to the age-specific fertility and mortality rates of a given year. This rate is similar to GRR, but it is always lower because it takes into account the fact that some women will die before completing their childbearing years.

The formula for NRR is like that of GRR, except that it is further multiplied by a factor derived from a Life Table, called survivorship factor or the probability of survival to a particular age of childbearing. This factor excludes the women who died before they completed their reproductive period.

NRR is related to replacement level fertility. Replacement level fertility is the level of fertility at which a cohort of women, on average, has only enough daughters to 'replace' themselves in the population. An NRR of 1.00 is equal to replacement level. Once replacement level fertility has been reached, births will gradually reach equilibrium with deaths, and in the absence of immigration and emigration, a population will ultimately stop growing and become a stationary population. Today, many developed countries are at or below replacement level fertility.

The limitation of NRR is its unrealistic assumption that both birth and death rates will remain constant within a generation. Thus, some scholars have argued that it should not be used for projections into future population dynamics (Jhingan et al, 2006).

## 5.3 Fertility Trends, Levels and Explanations

Fertility rates around the world vary with respect to regions, countries, cultures and socio-economic development. Thus, there are high-fertility as well as low-fertility regions and countries; these regions and countries have differential total fertility rates as indicated by the following TFR figures.

**Regions with Highest and Lowest TFRs in the World, 1970 and 2013**

| Regions | Highest TFR | | Regions | Lowest TFR | |
|---|---|---|---|---|---|
| | 1970 | 2013 | | 1970 | 2013 |
| World | 4.7 | 2.5 | World | 4.7 | 2.5 |
| Less Developed | 5.7 | 2.6 | More Developed | 2.3 | 1.6 |
| Least Developed | 5.7 | 4.3 | Americas | 4.0 | 2.1 |
| Africa | 6.7 | 4.7 | North America | 2.3 | 1.8 |
| Sub-Saharan Africa | 6.7 | 5.1 | Latin America & the Caribbean | 5.3 | 2.2 |
| West Africa | 6.7 | 5.4 | South America | 4.9 | 2.1 |

| | | | | | |
|---|---|---|---|---|---|
| Northern Africa | 6.5 | 3.4 | Asia | 5.4 | 2.2 |
| East Africa | 7.1 | 4.9 | Europe | 2.3 | 1.6 |
| Middle Africa | 6.4 | 6.1 | Oceania | 3.4 | 2.4 |

Source: Population Reference Bureau, 2014

The TFRs of regions in the above table are indicative of the typical nature of fertility around the world. A glance at the table shows that the regions with the highest TFRs are the less or least developed parts of the world. Moreover, Africa, and its sub-regions constitute entirely regions of the world with highest TFRs as at 1970, and remained so in 2013. The continents and its sub-region had TFRs that ranged between 5.7 and 7.1 as at 1970; it fell to a range of between 3.4 and 6.1 in 2013, making it out as a high fertility region. Conversely, the more developed regions, and the especially the Americas and Europe, had TFRs that range between 2.3 and 5.4 in 1970, but declined to as low as between 1.6 and 2.4. They have the lowest TFRs .

**Countries with the Highest and Lowest TFRs in the World, 1970 and 2013**

| **Countries with highest TFR in 2013** | **2013** | **1970** | **Countries with lowest TFR in 2013** | **2013** | **1970** |
|---|---|---|---|---|---|
| Niger | 7.6 | 7.4 | Taiwan | 1.1 | 3.9 |
| South Sudan | 7.0 | 6.9 | Portugal | 1.2 | 3.0 |
| Somalia | 6.6 | 7.2 | Singapore | 1.2 | 3.2 |
| Chad | 6.6 | 6.5 | Korea. South | 1.2 | 4.5 |
| Congo, Dem. Rep. | 6.6. | 6.2 | Moldova | 1.2 | 2.6 |
| Central African Rep. | 6.2. | 6.0 | Poland | 1.2 | 2.3 |
| Angola | 6.2 | 7.3 | Bosnia-Herzegovina | 1.3 | 2.7 |
| Mali | 6.1 | 6.9 | Spain | 1.3 | 2.9 |
| Burundi | 6.1 | 7.3 | Greece | 1.3 | 2.4 |
| Zambia | 6.0 | 7.4 | Hungary | 1.3 | 2.0 |

Source: Population Reference Bureau 2014

The fertility figures in the above table compare countries with highest TFR in world 2013 with countries with lowest TFR. All the countries in the column with the highest TFRs are located within the African continent while those located in the column with the lowest TFRs are located in Europe and Asia. It is evident that countries with the highest TFR in 1970 were the same countries with the highest TFR in 2013. Interestingly, all of the countries with the lowest total fertility rates have TFRs between 2.0 and 4.5 in 1970; their TFRs declined significantly, ranging between 1.1 and 1.3 in 2013.

## 5.3.1 Explanations for High Fertility

High fertility is a feature mostly of traditional African society. A number of reasons account for its occurrence among Africans especially those living in the sub-Saharan African. These include the following:

**Traditional Beliefs**: There is a set of beliefs that connects large family size with a man's virility (machismo image), prestige and advancement. A man with many children is respected and feared. Conversely, a man with no child is looked down upon.

**Economic**: The economic/social status in an agricultural society largely depends on the number of children. Children are needed as hands in field – the work force in agricultural societies depends on the number of children and wives a man has. Children are also needed to earn income, run the household errands and domestic chores.

**Status of Women**: Children cement the marriage and enhance the status of women. A woman with no children is regarded as unfortunate and a sterile woman is often associated with witchcraft or evil thoughts.

**Family Tree**: The local desire to extend the family line through many children. A male child bears the family name. There is therefore the need to have many male children to perpetuate the family tree. A man without a child, often a male child, is disinherited. Also an only child is pitied; if he dies the family becomes extinct.

**Old Age Support**: Old age security is associated high fertility. In the absence of government welfare program for the aged, children are the main source of support at old age.

**Rituals and Burial**: Children needed to perform certain rituals and also to their give parents befitting burials. Traditional societies put high premium on these cultural demands, and children who carry these out are the pride of the society.

**Children Give Satisfaction**: A large family size is a source of pride and satisfaction to parents. Parents of a large family size are respected and envied; the children could aid their parents in litigation, title-taking, setting up big projects, houses, etc.

**Early and Universal Marriage**: Every woman is expected to marry and have children. Once married, a woman is expected to remain in marriage till death; divorce and separation are discouraged.

**Need to Replenish Society**: Because of high mortality rate, a baby's chances of surviving to adulthood are not very good. Yet if a society is going to replace itself, it needs some children who will survive long enough to be able to produce more children. Hence some social institutions have evolved to encourage childbearing and parenthood in various ways. Women with a large family size are rewarded by society. Also individual couples aim at having large number of children to hedge against high mortality.

Modern Means of Birth Control are not known; and there is little motivation to use them because large family size remains rational in the social realities of the traditional society. Because couples operate in a natural fertility regime their family size or fertility is largely by chance rather than by choice.

## 5.3.2 Explanations for Low Fertility

Change from tradition to modern society is accompanied by a change from high fertility to low fertility. Unlike the traditional African societies characterized by high fertility, European countries and North Americas are characterized by low fertility levels. Some of the reasons for this are as follows:

**Change in Perceptions and Lifestyle**: The desire to acquire personal wealth and prestige is a major motivation for fertility decline. Moreover, perceptions about the advantages of large family size have changed to small family size to suit changing lifestyle

**Urbanization and Industrialization**: Science and technology and socio-economic advancement have brought about urbanization – new sets of norms and values, and physical development – industrialization - changing workplace arrangements and requirements – have led to use of advanced machines and less dependence on large family size as labour for production.

**Improvement in the Status of Women**: Education of women has advanced the reproductive knowledge and rights of women; this has been enhanced through policy instruments and codified laws thereby leading to improved contribution on decision making on childbearing

**Female Late Marriage and Non-Marriage**: Due to increasing access to education and formal labour force, age at marriage among women has risen. This has reduced the lifetime chance to have large families and thus led to low fertility. Increasingly also, more women are choosing to remain single.

**Use of Family Planning**: Improved contraceptive use for family planning based on availability and informed choice has led to low fertility. Access is widespread, motivation or willingness to use high, and more egalitarian relations between husbands and wives encourages discussions on when and which methods to use.

**Low Infant and Child Mortality**: Very low levels of infant and child mortality owing to improved access to advanced medical facilities and services, hygiene and sanitary level and improved educational status of women give the assurance that one or two children would survive their parents. So there is no need to have many children because there no fear of child mortality.

**Income**: As family income rises, fertility falls, because lifestyles and taste change giving rise to quality of children rather than quantity of children.

**Occupation**: With development people enter into more prestigious occupations. People in more prestigious occupations have fewer children

than those with lower prestige occupations. As more women enter formal occupations the opportunity cost for children increases; children compete with work; and fewer rather than more, become the norm.

**Education**: With higher education, people become more individualistic, and large family size becomes a hindrance to upward mobility and personal satisfaction by couples.

**ITQ**

**Question**

Give the full meaning of NRR and explain

**Feedback**

NRR means Net Reproduction Rate. NRR measures the number of girls that a category of newly born daughters will bear during their lifetime

# Study Session Summary

**Summary**

In this Study Session, we differentiated between fertility and fecundity, we described the two types of fertility that exists, natural fertility and controlled fertility and also described fertility as it applies to population. We discussed measurement of fertility and finally, we explained fertility trends and levels.

# Assessment

**Assignment**

1. Define the following term:
   a. Fertility
   b. Fecundity
2. discuss the measurement of fertility
3. explain the following
   a. fertility trends
   b. fertility levels

# Study Session 6

# Mortality

## Introduction

In Biology or Agricultural Science, you learnt about the characteristics of living things 'MR NIGER D', an acronym for Movement, Reproduction…, and Death. In demography, some similar characteristics exist. We have, in previous study session discussed fertility, a semblance of reproduction. In this study session, we discuss mortality, a semblance of death characteristic in living things. Although the rate at which people die in different places is not the same, mortality is a common feature of all societies irrespective of the level of development. While we all eventually die, the probability of dying is linked to many factors, such as age, sex, occupation, social class, etc., and the incidence of death can reveal much about a population's standard of living and health care status. All this will be examined in this study session.

### Learning Outcomes

**Outcomes**

When you have studied this session, you should be able to:

6.1 discuss briefly the concepts and measurement of mortality
6.2 explain the causes of death
6.3 explain the different differentials in mortality

## Terminology

| | |
|---|---|
| **Mortality** | The quality or state of being a person or thing that is alive and therefore certain to die |
| **Maternal mortality rate** | The annual number of female deaths per 100,000 live births from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes). |

## 6.1 Concepts and Measurement of Mortality

### 6.1.1 Crude Death Rate

Crude death rate (or simply death rate) (CDR) is the number of deaths per 1000 population in a given year. It is expressed thus:

$$CDR = \frac{\text{Number of Deaths}}{\text{Total mid-year population}} \times K$$

It is called crude because it does not take into account the differences in the probability of dying by age, sex and causal variations in the likelihood of dying. As such, important information is lost about the occurrence of death using this measure. Nonetheless, it is frequently used because it requires only two pieces of information, total deaths and total population which are relatively easy to collect.


Differences in CDR between two countries could be due entirely to differences in the distribution of the population by age, even though the force of mortality was actually the same. Thus if one population has a high population of old people, its CDR will be higher than that of a population with high population of young adults.

For instance, the CDR for Nigeria in 2014 is 13, equivalent to those of the USA, Russia and New Zealand, even though the force of mortality is much higher in Nigerian then in these other countries. This is entirely due the young age structure of Nigeria compared with the old age structure of these developed countries. It is therefore prudent, when comparing death rates among countries, to adjust for differences in age composition before making conclusions about a country's health, economic, or environmental conditions.

## 6.1.2 Age-Specific Death Rates

These are death rates obtained for specific age groups in order to compare mortality at different ages or a change in mortality at different ages or a change in mortality at the same age over time. The age-specific death rate (ASDR) is computed separately for males and females. It is the average number of deaths in a year occurring to 1000 people in a particular age and sex. It is a more refined measure of death rate. It shows the number of registered death for a particular age in a given year divided by the total number of deaths among the people of the same age per 1000. It is expressed thus:

$$ASDR = \frac{\text{Total no. of registered deaths to people of a particular age}}{\text{Total population of people at that age}} \times K$$

For instance, ASDR at age 30-34 $= \frac{\text{Total deaths at age 30-34}}{\text{Total population age 30-34}} \times K$; where K = 1000.

ASDR is computed separately for age 0, that is, infant mortality rate, as well as for age 1-4 (child mortality) because of the peculiarities of deaths at infancy and childhood. Subsequently, it is computed for the five-year age groups until an advanced age, such as 80 plus. A typical ASDR curve

forms an asymmetrical U-shaped pattern (for developing countries) or an inverted J-shaped pattern (for developed countries). These shapes indicate that mortality is generally high at infancy and childhood years, and declines to lowest levels in the teenage and young adult years, and then starts to rise in the forties and fifties, until the reach the highest level after 70 years.

## 6.1.3 Cause-Specific Death Rate

Cause of death varies greatly from population to population and from period to period, and is influenced by many factors, including health and environmental conditions. Basic cause-specific death rates (CSDR) are usually expressed in deaths per 100,000 because for most causes of death, the rates of occurrence are very low.

$$CSDR = \frac{\text{No. of Deaths from a specific cause (Cancer)}}{\text{Total Population}} \times K; \text{ where } K = 100{,}000.$$

Cause-specific death rate of 150 for cancer means that 150 persons per 100,000 persons died of cancer in that population in a year.

### Proportion Dying of a Specific Cause

The proportion dying of a specific cause (PDSC) means deaths from a specific cause expressed as a percentage of all deaths in a population in a given year.

$$PDSC = \frac{\text{No. of deaths from a specific cause (Cancer)}}{\text{Total Deaths}} \times K; \text{ where } K = 100.$$

This enables the demographer to know the leading cause of death or to rank causes of death over time, thus revealing changes occurring in a population or among many populations. Such a computation will reveal that the leading causes of death vary greatly between developed and developing countries.

## 6.1.4 Infant Mortality Rate

Infant Mortality Rate (IMR) is the number of infant deaths under one year of age per 1000 live-births in a given year. It includes both neo-natal and post neo-natal deaths. Neonatal deaths are deaths occurring to infants in the first 28 days of life (or roughly first month). Post-neonatal deaths are death of infants after the first 28 days of life and before the infant's first birthday. The causes of death in these two periods vary considerably.

$$IMR = \frac{\text{No. of deaths to infants under age one}}{\text{Total live births}} \times K; \text{ where } K = 1000.$$

For instance, if the calculation yields IMR of 24; it means there were 24 deaths of infants under age one per 1000 live births.

Infant mortality rate is considered a good health indicator of a given area. In many less developed countries, high infant mortality and high fertility often go hand in hand as parents see large number of children as a guarantee for security in their old age.

## 6.1.5 Maternal Mortality Rate

The Maternal Mortality Rate (MMR) is the number of women who die as a result of childbearing in a given year per 100,000 births in that year. Maternal deaths are those caused by complication of pregnancy and childbirth. It is expressed thus:

$$MMR = \frac{\text{Total number of maternal deaths}}{\text{Total number of women age 15-49yrs}} \times K; \text{ where } K = 100{,}000.$$

Thus MMR of 16 means there were 16 maternal deaths per 100,000 live births in the year.

### Life Expectancy

Life expectancy is an estimate of the average number of additional yeasr a person can expect to live, based on the age-specific death rates of a given year. Because the measure differs significantly depending on sex, present age, and race, these categories are usually given separately. Life expectancy at birth is the most commonly cited life expectancy measure, and is a good indicator of current health condition of a population.

Most developed countries have life expectancies in excess of 70 years whereas most developing countries have life expectancies ranging from 50 to 60 years. The low life expectancies in developing countries are in part due to high infant mortality rates. It is obvious from the table below that life expectancy is higher among females than males; this is without exception among countries. This is a function both of biology and socio-cultural environment, both of which favour females over males.

**Life Expectancy of Selected Developing and Developed Countries, 2014**

| Developing Countries | Males | Females | Developed Countries | Males | Females |
|---|---|---|---|---|---|
| Algeria | 72 | 75 | Denmark | 77 | 82 |
| Sudan | 58 | 62 | Sweden | 80 | 84 |
| Ghana | 63 | 65 | U.K | 78 | 82 |
| Nigeria | 48 | 54 | France | 78 | 85 |
| Kenya | 60 | 63 | Germany | 78 | 83 |
| Uganda | 53 | 54 | Russia | 63 | 75 |
| Cameroon | 50 | 52 | Italy | 79 | 85 |

| | | | | | |
|---|---|---|---|---|---|
| Chad | 48 | 51 | Spain | 79 | 85 |
| South Africa | 55 | 54 | Australia | 80 | 84 |
| Botswana | 52 | 50 | Japan | 80 | 86 |

Source: Population Reference Bureau, 2014

# 6.2 Causes of Death

In general, there are three major reasons why people die: 1) they degenerate; 2) they are killed by diseases transferred from one person to another, and 3) they are killed by products of the social and economic environment.

## 6.2.1 Degeneration

Degeneration refers to biological deterioration of the body system. As people get older, their body organs become weak and continue to depreciate until death. All things being equal, such-age related death not only allows for predictability but is also described as natural. Arguably, it is "the best form of mortality" compared with others, particularly communicable diseases and accidents.

**Note**

Ailments related to age include cardiovascular or heart diseases, cancer, stroke, diabetes mellitus, cirrhosis of the liver, hypertension, ulcers of the stomach and duodenum, arthritis among others. It should be noted that degeneration, although biological, is also indirectly determined by socioeconomic and environmental factors given the variations across countries and times.

Degenerative diseases account for more deaths in developed countries than any other cause of death. For instance, in the USA in1990 chronic diseases accounted for three-quarters of all deaths. Heart disease alone accounted for 34% of all deaths, and cancer was responsible for 24%.

## 6.2.2 Communicable Diseases

Communicable diseases, also known as infectious diseases, are those that can be transmitted from one person to another. Deaths through communicable diseases are very low in developed countries, but high in developing countries. This is because sanitation and personal hygiene are good in developed countries, and people generally live in low densities. Smallpox was a major infectious disease historically, but modern medical and health discoveries have eliminated it worldwide, along with many other diseases.

Some communicable diseases are non-age specific as every member of the society are prone or vulnerable to the risk of infection. A new major infectious disease is AIDS which incidence has increased in many countries since the 1980's. The attention now paid to AIDS may obscure the fact that there is still a long list of other communicable disease that can and do continue to kill thousands of people yearly especially in developing countries. These include: Chicken-pox, Diarrhea, Lassa fever,

Diphtheria, Malaria, Measles, Meningitis, Poliomyelitis, Rubella (German measles), Tetanus, Typhoid, whooping Cough, Ebola virus disease, etc. These are major killers in developing countries, such as Nigeria. However, most of these diseases can be prevented through awareness campaigns, vaccination, personal and environmental hygiene practices among others measures.

### 6.2.3 Products of the Social and Economic Environment

The different social and economic environments in which people live and work constantly expose them to the risk of death, some instantly and other gradually. People regularly introduce pollutants and chemicals into the environment, which speed up the process of biological deterioration. Toxic wastes seep into the ground and water; contaminants escape into the air. Together, these contaminate our food, water and air and cause diseases. Hazardous jobs and habits also expose one to diseases, such as expose to chemicals at work place, oil spillage and pollution of waters in the Niger Delta, mining, long-distance driving, drunk-driving, and the kind of food one eats. There are other causes of death that are unrelated to disease of any kind. These include accidental death, suicide and homicide.


Note

Accident deaths include motor vehicle accidents, fire disasters, fir-arm accidents, armed robbery, etc. The only type of accidents not directly attributed to the social and economic environment are those due to natural phenomena such as floods, tornadoes, earthquakes, etc.

Suicide rate is high in many developed countries, especially in the Scandinavian countries. It has been noticed that suicide rate has been rising among teenagers and young adults, although the absolute number of suicides by elderly people is much higher. It has also been observed that suicide rate is higher among men than women, an indication that men are more successful in killing themselves than women.

For virtually all countries where data are available, homicide rates are highest for young adult males. For instance, in the USA, males are 3 times more likely than females to be homicide victims, and homicide rate peaks at the age group of 20-24. Homicide rates in the USA are higher than any other industrialized nation – a function of the cultural acceptance of violence as a response to conflict, combined with the ready availability of guns and drugs. High rates of divorce and associated low levels of social control also seem to contribute to higher probabilities of violent deaths.

## 6.3 Differentials in Mortality

Differences in mortality by social status are among the most pervasive inequalities in modern society. The connection between income and health has been obvious for centuries, and whatever characteristic lower ones status in the society may therefore put one at greater risk of death. Marx attributed the higher death rate in the working classes to the evil of capitalism and argued that mortality differential would disappear in a

socialist society. That may have been overly optimistic, but data do clearly suggest that by nearly every index of status, the higher one's position in the society, the longer he/she is likely to live.

### 6.3.1 Occupation

Data from the developed countries indicate that as the prestige level of people's occupation goes up, death rate goes down. For instance, a 1960 study of White Americans aged 25-64 when they died, found that mortality rate of labourers were 19% above the average, while those for professional men were 20% below the average.

The whole family is also affected by the social status of the household head. Many studies in LDCs have shown an inverse relationship between infant and childhood mortality and the father's occupation. Clearly, people with higher prestige occupations are more likely to afford good medical care; they are also more likely to live a healthy life, etc.

### 6.3.2 Income and Education

It has been shown in many places that as income goes up mortality goes down. Education also has revealed inverse relationship with mortality. Income and education have been found to have independent effect on mortality – that is, they operate independent of each other. In other words, having both high income and high education is more advantageous than having only one or the other. A study in the USA found that for virtually every major cause of death, people who have some tertiary education have low risk of death than those with less education.

### 6.3.3 Race and Ethnicity

In most societies in which more than one racial or ethnic group exists, one group tends to dominate the others. This generally leads to social and economic disadvantages for the subordinate groups, and such disadvantages frequently result in higher mortality rates for the minority groups. For instance, in the USA, Blacks have higher risk of death from almost every major cause of death than do Whites – resulting in lower life expectancy for Blacks. Also in Israel, the Jews have higher life expectancy than the Muslims - probably due to the higher economic status of the Jews. Data from South Africa also confirms the pattern with respect to Whites, Coloured and Blacks. No Nigerian study has demonstrated mortality differentials by ethnicity because of paucity of mortality data.

### 6.3.4 Marital Status

It has long been observed in developed countries that married people tend to live longer than unmarried people. A long standing explanation for this phenomenon is that marriage is selective of healthy people. That is, people who are physically handicapped or in ill-health may have both a lower chance of marrying and a higher risk of death. Another explanation

is that marriage is good for one's health – good food, sharing emotional and psychological life, better medical treatment, etc.

## 6.3.5 Urban/Rural Differential

Until a few decades ago, cities were deadly places to live. Mortality levels were generally higher in the cities than the countryside because of overcrowding of people, along with poor sanitation and contact with travelers who might be carrying some diseases. Overtime, however, medical advances and environmental improvements have benefited the urban population more than the rural, leading to the current situation of better mortality conditions in urban areas.

## 6.3.6 Gender Differentials

Women generally live longer than men do, and the gap has been widening in many countries. It has been suggested that this indicates a basic biological inferiority in the ability of males to survive relative to females. However, men are more likely to engage in risky occupations and habits or behaviours that may endanger their lives, such as drunk-driving, homicide, suicide, and cigarette smoking. Men are also more likely to be miners, drivers, climbers, etc., occupations that carry high death risks.

**Note**

It has been found that in countries where women are most dominated by men, they tend to have higher mortality risk than men. This is most noticeable in the prime reproductive years where women in many LDCs tend to have lower life expectancy than men.

## 6.3.7 Overview of Global Mortality

Historically, high mortality was the norm for global population, and high mortality of infant and children helped to sustain high fertility for a long time. The high mortality was as a result of:

- The spread of infectious diseases and epidemics in the absence of medical and public health measures.
- Wars - such as inter-tribal wars, inter-religious wars, inter-regional wars, etc.
- Predation - both human and animal predation, cannibalism, and human sacrifice.
- Famine and crop failures.

## 6.3.8 Mortality Decline

The following lead to mortality decline

i. Improvement in public health
ii. Rising standard of living
iii. Improvement in medical advances and facilities
iv. Improved knowledge of causes and symptoms of diseases

v. Immunology – eradication of man killers (plague)

Despite these improvements, mortality remains high in developing countries and will remain so well into the 21st century.

Reasons:

- Natural disasters – earthquakes, flood, landslides
- Conflicts and Wars
- Malnutrition
- Epidemics/infections – ebola, cholera, measles, AIDS, etc.
- Poor public health measures – poor water supply and sewage disposal
- Poor sanitation
- High level of accidents
- Ignorance and fatalism

Why Infant Mortality high in less developed countries

a) High level of congenital malformations
b) High home delivery in many places especially rural areas and in the northern Nigeria
c) Poor prenatal care
d) Teenage motherhood
e) Poverty, poor nutrition
f) Ignorance of parents of proper child care and medication ( use of herbs)
g) Poor public health/vaccination
h) High cost of medical care/ poor access to care in rural areas
i) Low status of women and inability to deal with modern medical practitioners

**Major causes of Death in Nigeria**

**1) Infants and Children**

- ❖ Congenital Malformations
- ❖ Malaria
- ❖ Infectious Diseases
- ❖ Respiratory Diseases
- ❖ Malnutrition
- ❖ Measles, Tetanus etc

**2) The Youths**

- ❖ Accidents
- ❖ Violence and armed conflicts
- ❖ Homicide
- ❖ Maternal Deaths due to hemorrhage, sepsis (spread of bacteria), complications from abortion, pre-eclampsia/eclampsia, prolonged/obstructed labour
- ❖ AIDS related deaths

**3) Older People**

- ❖ Heart diseases
- ❖ Cancers
- ❖ Accident
- ❖ Malaria
- ❖ Maternal
- ❖ Hepatitis
- ❖ Respiratory Diseases
- ❖ AIDS Related diseases

**HIV/AIDS**

**Mode of Transmission**

- ➢ Mainly through heterosexual relations
- ➢ Mother–to-child transmission – vertical transmission
- ➢ Blood Transfusion
- ➢ Unsterilized/infected sharp objects (eg. needles, razor, etc)

**Prevention of AIDS**

1. Scaling up intervention to core transmitters (IEC, BCC)
2. Promoting voluntary counseling and testing (VCT)
3. Scaling up prevention of mother-to-child transmission (PMTCT) (Neviropine at the onset of labour and one dose of the syrup for the baby within the first 72hrs after birth)
4. Expanding national Antiretroviral vaccine (ARV) program and possibly producing ARV in Nigeria.
5. Need for some understanding of the etiology and dynamics of HIV transmission through in-depth social research.

**ITQ**

**Question**

Explain the concept of life expectancy

**Feedback**

Life expectancy is an estimate of the average number of additional yeasr a person can expect to live, based on the age-specific death rates of a given year

# Study Session Summary

**Summary**

In this Study Session, we examined the concepts and measurements of mortality in population, through the lenses of Crude Death Rate, Age-Specific Death Rates, Cause-Specific Death Rate, Infant Mortality Rate, and Maternal Mortality Rate. We also examined causes of death, namely, degeneration, Communicable Diseases, and Products of social and economic environment. We as well explained mortality differentials, that is, factors that put one at greater risk of death, which are but not limited to: occupation, income and education, Race and Ethnicity, and marital status.

# Assessment

**Assignment**

1 Discuss briefly the concepts and measurement of mortality
2 What are the causes of death?
3 Explain the different differentials in mortality

# Study Session 7

# Migration

## Introduction

In this study session, we will examine the concept of migration. We will also discuss migration measures, as well as causes of migration.

### Learning Outcomes

**Outcomes**

When you have studied this session, you should be able to:

7.1 Explain the term migration
7.2 Discuss the measures of migration
7.3 List and explain the causes of migration

## Terminology

| | |
|---|---|
| **Migration** | The movement by people from one place to another with the intentions of settling temporarily or permanently in the new location |
| **Immigration** | The movement of people into a destination country which they are not natives of or where they do not possess citizenship in order to settle or reside there |
| **Emigration** | The act of leaving one's resident country with the intent to settle elsewhere. |

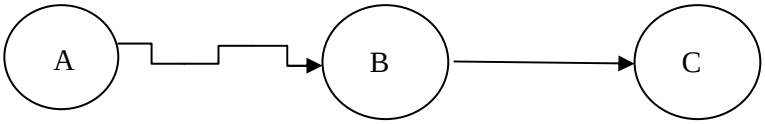
## 7.1 Migration Concepts

Migration has two major components: internal migration and international migration. Internal migration is movement within a country and international migration involves a movement across an international boundary. Movement out of an area of origin is termed out-migration, while moving into a new place to settle is called in-migration. The corresponding terms for international migration are emigration and immigration respectively. Hence, a man who moves out his village to live in Kano City, is an out-migrant from his village and an in-migrant to Kano City, and a Nigerian who goes to live in Sweden is an emigrant in Nigerian and an immigrant in Sweden.


Internal migration is by far the most important component of migration. There are four typologies of internal migration on the basis of the origin and destination of migrants: rural-rural, rural-urban, urban-urban and urban-rural migration. The causes and consequences of these different aspects of migration vary.

Two types of migration are easily identifiable – voluntary and forced migrations.

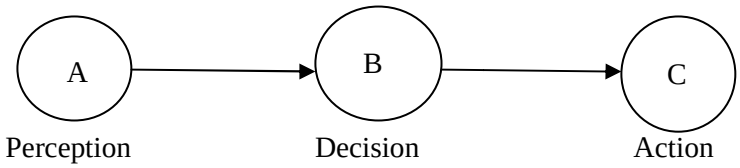
**Voluntary/Free Migration**: derives from individual choice having considered the likely merits and demerits of the decision. This is illustrated graphically below:




Perception Decision
Action

The above diagram shows that for voluntary migrants, perception of the possibility of migration translates to decision to act which eventually leads to action (migration). It suggests that between perception and decision, the prospective migrant experiences some level of crises due to the uncertainty about the future at destination. The waves represent the psychological disposition of the intending migrant – sometimes, s/he conjures a mental picture of a bright future, but at other times low morale is experienced due to factors like thought of losing friends and networks built over time, property and positions among other likely worries. At each low stage in the wavy-corridor, the actor adduces justification to sustain the quest for planed relocation. This back-and-forth emotional dilemma continues until the point that the decision is made. The waves then disappear because points B and C are not characterized by tension. We note that for the most part, the crisis of migration is latent and only explainable by the would-be migrant.

**Forced Migration**: in this case the migrant is compelled to depart his/her location as a result of unforeseen circumstances, such as wars and conflicts, natural disasters like earthquakes, famine and so on.




In such a situation, the perception of the feasibility to migrate is natural and a short interval exists between that perception and the decision to act, and the eventual migratory action. Due to the dangers inherent in not moving, including death, battery, injuries and assault among others, the prospective migrant maintains a stable psychological disposition towards intended migration throughout the contemplative period.

### 7.1.1 Patterns of Migration

In this section, we discuss horizontal and vertical patterns of migration. When migration is described as *Horizontal*, it means that the migrant would not have a significantly different experience at destination from what exists at place of origin. As such, the level of development, particularly infrastructure, between origin and destination would not be markedly different. Thus s/he can cope and/or adjust quickly to the new location and the question of culture shock will not arise. Rural to rural and urban to urban migration are examples of such migration.

Vertical migration, on the other hand, is such that the migrant will have a significantly different experience between former and new locations. The likelihood of culture shock is high especially with respect to levels of development at the area of destination. Rural to urban and urban to rural are typical examples of this type of migration. On the one hand, it will take most typical rural dwellers some time to adjust to cities like Abuja, Lagos, Calabar, Kaduna, etc. On the other hand, moving back from these urban centers to rural communities (return-migration) also poses a great challenge for the migrant who may find it quite difficult to adjust to rural life.

## 7.2 Migration Measures

Unlike fertility and mortality, few measures exist for migration analysis.

**In-migration or Immigration Rate ((IR):** this is the number of in-migrants (or immigrants) arriving at a destination per 1000 population at that destination in a given year. It is arrived at by dividing the number of in-migrant or immigrants by the total population at destination:

$$IR = \frac{\text{Number of In-migrants}}{\text{Total population at destination}} \times K; \text{ where } K = 1000.$$

**Out-Migration or Emigration Rate (OR or ER)**: This is the number of out-migrants or emigrants departing an area of origin per 1000 population at that area of origin in a given year. It is calculated by dividing the number of emigrants in a place by the total population at origin.

$$OR = \frac{\text{Number of emigrants}}{\text{Total population at origin}} \times K; \text{ where } K = 1000.$$

**Net Migration Rate (NMR):** This shows the net effect of in-migration and out-migration on an area's population, expressed as increase or decrease per 1000 population in a given year. It entails subtracting the number of in-migrants from the number of out-migrants or emigrants divided by the total population.

$$NMR = \frac{\text{Number of In-migrants} - \text{Number of out-migrants}}{\text{Total population}} \times K;\ K = 1000.$$

**Gross Migration Rate**: This is a measure of migration turnover, or the total number of people who are involved in the migratory movement in a place. High gross migration rate may mean that the location has considerable social and economic activities such that many people gravitate to it and many people also leave the place.

$$GMR = \frac{\text{Number of In-migrants} + \text{Number of out-migrants}}{\text{Total population}} \times K;\ K = 1000.$$

# 7.3 Causes of Migration

Voluntary migration has its root in economic factors, since most people migrate for diverse economic motives. Non-economic reasons why people move are also important, but economic reasons are by for more dominant. Researchers have categorized the causes of migration into two, namely the Push and Pull factors.

**Push Factors**: The push factors are those things that make individuals quite uncomfortable in their places of abode to the extent of contemplating relocation to another location (Kammeyer & Ginn, 1986). It is important to note that these factors are relative to individuals and times especially given that motivations, goals, aspirations, taste and fashion are usually different among persons and periods. Push factors include, but not limited to, harsh economic environment, poor infrastructure, insecurity, boredom, war, natural disasters among others. To be sure, one or a combination of factors could become push factors for a migrant; the same factors may be regarded as normal by another individual. However, what makes an individual uncomfortable in a place ought to be remedied by the potential intended destination. If, for instance, the single push factor is insecurity, it would be irrational for a migrant to relocate to another destination characterized by the same problem. Rather s/he is expected to identify a location where migrant's security is or will be guaranteed (Kammeyer & Ginn, 1986; Jhingan, *et al*, 2006)

**Pull Factors:** These are those things that attract a prospective migrant to a new location. The most important pull factors are employment opportunities which are offered in urban-industrial areas which attract migrants from rural areas as well as other urban areas. Indeed, most migrants move because of job related reasons. Other pull factors to migrants include opportunities for higher income or expansion of business, good weather/climate, opportunities for schooling, better health facilities, security, better infrastructural facilities, opportunities to live in close proximity to relatives, opportunities for marriage etc.

## 7.3.1 Consequences of Migration

Migration has consequences to the individual migrant, to the places or origin and to the place of destination. Some of the consequences of migration are positive and others are negative, but on balance the positive consequences of migration tend to dominate.

### Consequences to the Individual

- Migrants, at least in the short run, are usually maladjusted at the place of destination; they face culture shock; are discriminated against and suffer all kinds of hardships, including housing and language problems. Jobs may not be readily available at the destination so they face poverty, unemployment and underemployment.
- Ultimately, migration leads to the improvement of the welfare and status of the migrants. Their income rises, they get jobs, change occupations, live in better houses and can afford higher living conditions relative to the their situation before migration; and in some case better than host population at destination.
- Migrants provide the necessary networks for new migrants and help them settle, as well as provide financial support and loans to new migrants to establish their own businesses. This improves their prestige and status among the people at destination; the number of such activities earns them recognition and respect. They are seen as patrons, role models and mentors.
- Migrants are seen as agents of change and rural transformation. They are given recognition in their rural communities, and consulted in social, political and religious ventures. They take the pride of place in household, family and community decisions, being regarded as enlightened and well informed people compared to those who did not migrate. Migration confers the status of knowledge, wisdom and prestige to a migrant.

### Consequences to Places Origin

**Under-Population:** When people migrate, it leads to under-population in their places of origin; the number people living in such places may reduce in relation to land mass, resources and/or population density. Consequently, under-population may lead to slow progress in development

**Loss of Manpower:** Migration may lead to loss of manpower to places of origin. Reduced manpower has negative implications for development in place origin; skilled and unskilled labour is sometimes lost due to able bodied men/women migrating to other centers; there may also be reduced standard of living due to reduced communal income. In particular, it may lead to loss of manpower in farming and a reduction in agricultural produce.

**Affects Economic Growth**: Because of the migration of people to other places, there may be a rebounding effect on the economy of the places of origin. Demand and supply of goods and services are likely to suffer negatively due to low patronage and reduced purchasing power.

Economic activities have a tendency to slow down thereby affecting internally generated revenue required for further development.

**Low Standard of Living**: Due to under-population that results from migration, places of origin are likely to experience decline in standard of living. Such places are unlikely to attract developmental projects, business and social amenities required to achieve a good living standard since the required population to influence location of such projects may not be available.

**Remittances**: On a positive side, migrant send remittances in the form of money, material and services to their relatives home which may help to improve the overall wellbeing and household economy at the place of origin.

Successful migrants make investments at their places of origin, such as start a business, shop, build schools, houses, etc. For example, Igbo migrants undertake development projects in their places of origin, which has led to relative development of rural areas in Igboland compared to rural areas in other parts of Nigeria. Migrants also return home with new ideas, skills, new crops, etc. and successfully organize village associations (Ohagi and Isiugo-Abanihe, 1991)

### Consequences to Places of Destination

**Over-Population:** a major consequence of migration in the places of destination is over-population. This is because migrants add to the population of their destination, which leads to over-population, a situation where the people in the places of origin are more than the resources and amenities available to cater for their needs.

**Congestion**: due to over-population in the places of destination, high densities of population and congestion result. This is a situation where overpopulation causes obstruction of human and vehicular movement, reduced space for construction of standard amenities and overcrowding. Migration therefore may lead to conflicts.

**Unemployment and Underemployment:** at the places of destination, over-population means that available jobs would be insufficient to satisfy the quest for employment among the teeming population of job seekers. Thus, the rate of unemployment is likely to increase and underemployment results. Moreover, new migrants particularly those from rural areas are unlikely to have skills necessary for formal employment in the city.

**Burden on Infrastructure:** basic infrastructural amenities are put under severe pressure sometimes up to the point of dilapidation as a result of over-crowding and congestion. Public utilities like road, hospital, water, electricity, schools, etc. are over stretched beyond intended capacity leading to poor standard.

**Housing Problem**: naturally, due to over-population, housing or accommodation is sometimes limited in the places of destination because the number persons requiring habitation is in most cases more than the available accommodation. This gives rise to shanty towns and construction of make-shift accommodation; in Lagos, a lot of people who

cannot afford or find accommodation end up make their home under overhead bridges.

**High Cost of Living:** cost of living in places of destination, especially when place is over-populated, is usually high because so many people are competing for scarce resources required for daily survival.

**Child Labour**: when people migrate to a new destination where they have no housing or employment, there is always a tendency to involve children in labour activities to support the needs of the family; some children undertake such activities on their own to survive the harsh realities at the place of destination. This phenomenon has tended to attract more children to urban areas where they engage in all manners of child labour.

**Crime**: in order to survive in an environment where employment is scarce, migrants and citizens alike may take to crimes to fend for themselves, particularly those who have no support or skill with which to earn a living.

**Big Market:** On a positive side, big markets are always found in major destinations of migration to cater for the large number of people. This tends to reduce the cost of commodities and provides incentives for those who render services to make a living.

**Economic Growth:** high rates of demand and supply of goods and services in migration destinations translates to economic growth such places. Commercial activities are always viable in such places because the high population thereby generating huge revenue that creates economic growth. Furthermore, manufacturing activities flourish in such places because of the cheap labour and a large market for their products.

**Fusion of Cultures:** migration of people to another place (a destination) sometimes results in aggregation of people from different ethnic or racial background leading to cultural fusion. People learn new customs, norms and values and end up developing a new culture based on their new environment and interaction with people from different background.

**Exchange of Ideas/Skill:** one of the consequences of migration at the places of destination is the exchange of ideas/skills between and among migrants from diverse places of origin. People acquire new ideas/skills to survive in their new environment or fuse ideas to create a new one; people also learn new trades and activities which, because of the large population at the place of destination, attract good patronage.

**ITQ**

**Question**

Explain the two factors that can cause migration

**Feedback**

**Push Factors**: The push factors as those things that make individuals quite uncomfortable in their places of abode to the extent of

contemplating relocation to another location

**Pull Factors:** These are those things that attract a prospective migrant to a new location

# Study Session Summary

**Summary**

In this Study Session, we discussed the concepts and patterns of migration. We mused that moving from one location to another does not necessarily translate to migration in so far such a movement is not with the intent of residing in the new location for some period of time. We identified two types of migration which are: voluntary/free and forced migrations. We also discussed the measures of migration, as well as the causes of migration.

# Assessment

**Assignment**

1. Explain the term migration
2. What are the measures of migration?
3. List and explain the causes of migration

# Study Session 8

# Human Sexuality and Reproductive Health

## Introduction

In this study session, we will discuss the concept of human sexuality and reproductive health. We will also examine the factors affecting reproductive health. Lastly, we will explain in details the concept of sexuality education.

### Learning Outcomes

**Outcomes**

When you have studied this session, you should be able to:

8.1 define the following term:
   a. human sexuality
   b. reproductive health

8.2 explain the factors affecting reproductive health

8.3 discuss concept of sexuality education

## Terminology

| | |
|---|---|
| **Huamn sexuality** | The expression of sexual sensation and related intimacy between human beings |
| **Reproductive health** | A state of complete physical, mental and social well-being in all matters relating to the reproductive system. |

## 8.1 Factors Affecting Reproductive Health

Several factors affect reproductive health of women; these include:

**Cultural Beliefs and Practices** – There are some African traditions and customs such as female genital mutilation (FGM), otherwise called female circumcision, which affects women's reproductive health negatively by exposing them to health risks, and sometimes death. Another is the Ewu-Ukwu customary title conferred on women who have 10 children or more. This endangers their lives due to high birth rate and short birth intervals or the desire of women to achieve such titles. Other include child betrothal, early marriage, forced marriage, etc. which leads to early initiation of sexual activities and early childbearing.

**Ignorance/Lack or Poor Sexuality Education/Socialization** - some parents are ignorant of the importance of sexual education or what

it is all about, some have limited knowledge of it and thus are unable to socialize their children/wards on the importance reproductive health.

**Gender Inequity** - the status of men and women is unequal; this is especially the case in African. Due to gender inequity in our society, the majority of women do not have the right to make decisions related to their reproductive health. Health seeking decisions are mostly the exclusive preserve of men, a right conferred by the patriarchal nature of our social milieu.

**Poverty** - poor socio-economic status of most women deprive them the opportunity to take charge of their reproductive health need, since most of them rely on their husband or extended family members for financial support. Consequently, they are unable to take appropriate steps to ensure favourable reproductive health status.

**Lack of Access to Reproductive Health Information and Services** - sometimes reproductive health information and services are not easily accessible to women especially those who are uneducated, as well as rural women. This is because such information and services are concentrated in urban areas where the medium of dissemination of information and services abound.

**Male Role and Responsibility** - it has been observed that men's role in reproductive health is minimal. Most do not play active positive role in the reproductive health of their women; more often than not they trivialize such issues; the responsibility to ensure a healthy reproductive life is hinged on the women while few men overtly support – financially, morally, emotionally, and in seeking care - their wives.

**Spousal Communication** - is a major factor affecting reproductive health; couples with healthy spousal communication perception, attitude and practice have a tendency to have a healthy and fulfilling reproductive life as against those who do not. For the latter, decision making on good reproductive health is hardly ever achieved.

### 8.1.1 Causes of Maternal Mortality

The above reproductive health problems and other social and environmental factors are responsible for high mortality experience of mothers during pregnancy and at childbirth in Nigeria and other developing countries. There are five major causes of maternal mortality:

- Hamorrhage - Bleeding before, during and after delivery. It is the most common cause of maternal mortality. Excessive bleeding can result in kidney failure, difficulty in breathing, miscarriage, prolonged labour, etc.
- Toxemia (Pre-eclampsia) - Pregnancy induced hypertension.
- Eclampsia - Convulsion and sometimes coma among pregnant women; this is not related to epilepsy.
- Abortion - This include induced and spontaneous abortion. The first refers to the individual's choice to terminate pregnancy, while the second may be due to accident, disease or illness.
- Obstructed Labour/Ruptured Uterus.

Reproductive health and outcomes in Nigeria are characterized as poor. Lifetime chances of dying from maternal causes among several countries indicate that the situation is grim in Nigeria. The 2011 statistics on the lifetime chance of dying presented below are instructive. For instance, one woman in twenty-three died from maternal causes in Nigeria relative to one in sixty-six in Ghana, and one in more than two thousand women in the USA.

**Lifetime Chance of Dying from Maternal Causes**

| Africa | Ratio of Dying | Others | Ratio of Dying |
|---|---|---|---|
| Mauritius | 1:1600 | Greece | 1:31,800 |
| Tunisia | 1:860 | Ireland | 1:17,800 |
| Egypt | 1:380 | Italy | 1:15,200 |
| Morocco | 1:360 | Austria | 1:14,300 |
| South Africa | 1:100 | Slovakia | 1:13.300 |
| Ghana | 1:66 | Spain | 1:11,400 |
| Nigeria | 1:23 | Canada | 1:5,600 |
| Niger | 1:16 | USA | 1:2,100 |

Source: Population Reference Bureau, 2011

# 8.2 Sexuality Education

Sexuality education involves providing a lifelong education to teenagers so that they can make informed choices about their sexuality and later in their reproductive lives. The aim is to ensure that youths especially teenagers learn how to take care and protect themselves once they attain puberty so as to prevent or manage difficulties associated with this phase of their lives. Sexuality education focuses on providing comprehensive education on the following;

- Development of body parts and changes thereto - when children attain puberty, they are taught the implications of the visible changes (menarche, menstruation) and the invisible changes (ovulation e.t.c) for the sexuality and reproductive life.
- Hygiene behavior - teaches teenagers and young children how to take care of their bodies; good hygiene practices to ensure and enhance a healthy lifestyle.
- Assertiveness and negotiation skills - through sexuality education, teenagers especially females learn assertiveness and negotiation skills, that is the ability to refuse sexual overtures and harassment boldly without compromise.
- Prevention of sexually transmitted infections - sexuality education provides teenagers with the knowledge of the dangers associated with HIV/AIDS/STIs, the mediums through which they are transmitted and how to avoid contacting it.

## 8.2.1 Factors Undermining Sexuality Education

A number of factors undermine or prevent effective and efficient sexuality education in Nigeria, including the following;

**Ignorance** - on the part of the parents of the need for sexuality education for their teenage children. Some parents are not aware of what sexuality education is or what it entails and so are unable to teach their children changes experienced at puberty and how to manage them. Ignorance may be due to illiteracy, lack of information on teenage sexuality or negative socialization regarding the subject.

**Low Comfort Level** - while some parents or guardians are ignorant; some have low comfort level to discuss about sexuality and health with their children especially those of the opposite sex. Such parents consider the subject of sexuality education above teenage maturity level, so they avoid such discussions when necessary or when the need arises.

**Cultural Norms and Values** - in some cultures, it is taboo to discuss sexuality issues with teenagers because it is believed that such discussions will corrupt them and expose them to indiscriminate sexual practices and negative attitudes. Consequently, for instance, they tell a female child that has attained puberty that if a male touches or holds her hand, she will become pregnant. Such misleading norm sometimes has negative effects on the ability of such teenage girls to confide in their parents when going through sexuality crises.

**Opposition from Religious Groups and Communities** - religious groups and communities oppose sexuality education for teenagers on the grounds that it corrupts them morally and expose them to promiscuity at early age in life.

**Lack of Political Will** - Government has not demonstrated enough political will to ensure that sexuality education becomes the norm for teenagers. Support is limited and in some cases – in rural areas - lacking. Information and service centers designated for sexuality education are few – limited mostly to higher institutions and selected government hospitals. The ones that are established is poorly funded and located mostly in urban areas.

**Peer Pressure** – This is a major factor affecting effective sexuality education among teenagers. Most teens are easily influenced by ignorant or bad friends on sexuality behavior especially if they have not been educated by parents/guardians at home or at school. The pressure to conform sometimes leads teenagers to engage in risky sexual behaviours.

**The Media** - the internet, books in form of magazines, music with immoral lyrics and movies with obscene visuals affects proper sexuality education for youths and teenagers alike. Access to negative media products on sexuality is injurious to the sexuality morals of youths.

**Socio-Economic Factors** - The bid to provide the necessities of life and take care of individual family and collective needs, the pursuit of socio-economic wellbeing sometimes prevent parents or guardians from educating their children/wards on sexuality and the dangers surrounding

it. Simply put, many parents are not available or are too busy to train their children or give them appropriate moral upbringing. Poor parents are likely to invest most of their time in daily economic activities with little or no time spared for sexuality education. For those with high socio-economic status, the demands of workplace can sometimes act as a barrier to teaching children about sexuality and all matters relating to it.

**ITQ**

**Question**

Explain three factors undermining sexuality education

**Feedback**

**Lack of Political Will** - Government has not demonstrated enough political will to ensure that sexuality education becomes the norm for teenagers.

**Low Comfort Level** - while some parents or guardians are ignorant; some have low comfort level to discuss about sexuality and health with their children especially those of the opposite sex.

**Ignorance** - on the part of the parents of the need for sexuality education for their teenage children

**NOTE:** There are still other five factors, explaining any factor from the remaining five factors in place of any one of the above factors is still very correct.

# Study Session Summary

**Summary**

In this Study Session, we discussed factors that affect population and reproductive health. We also discussed sexuality education, as education given to teenagers so that they can make informed choices about their sexuality and later in their reproductive lives. We considered these because they are issues that could affect population status of any country.

# Assessment

**Assignment**

1. define the following term:
   a. human sexuality
   b. reproductive health
2. what are the factors affecting reproductive health?
3. discuss the concept of sexuality education

# References

Haupt, A. and Thomas, T.K. 1988. *Population Handbook*. The Population Reference Bureau.

Isiugo-Abanihe, U.C. 1996. *Determinants of Fertility in Nigeria*. Ibadan Sociology Series No 3.

Isiugo-Abanihe, U.C. 2003. *Male and Responsibility in Fertility and Reproductive Health in Nigeria*. Lagos: Alaba Press

Jhingan, M.L, Bhatt, B.K and Desai, J.N. 2005. *Demography*. 2nd Revised Edition. Vrinda Publications (P) Ltd. Mayur Vihar, Phase-1, Delhi-11009

Kammayer, K.C.W. and Ginn, H. 1986. *An Introduction to Population*. The Dorsey Press Chicago, Illinois, 60604

Onokerhoraye, A.G. 1985. *Population Studies.* Department of Geography, University of Ibadan.

Weeks, J.R. 1992. *Population: An Introduction to Concepts and Issues*. Wardsworth Publishing.