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Exam Code: DEMO

Demography

SEMESTER-IV

ECONOMICS

BLOCK- 1



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COURSE INTRODUCTION

"Demography" is the third course of fourth semester of the M.A. in Economics programme of this University. The third course of fourth semester of M.A. in Economics programme of this University is basically an optional course. Out of the two optional course viz. Econometrics and Demography, learners can opt any one course based on their interest. This course Demography is designed to help the learners to have a deep understanding about various concepts and theoretical perspectives of Demography. Further, the Learners shall have an understanding about the population dynamics of India as well as the North-Eastern Region of India. Various issues and concerns of population growth has also been discussed to develop critical thinking among the learners. Further an analysis of Census 2011 has also been included in two units of the course to give the learners an updated understanding of the trends of population growth in India as well as its North-Eastern Part of India. The last unit of the course attempts to give the learners an overview of the tends of population growth of the whole world. The Course consists of 15 units and is divided into two blocks. The first blocks consist of 8 units (Unit 1-Unit 8) and the second block consists of 7 Units (Unit 9- Unit 15).

BLOCK INTRODUCTION

This is the first block of the course titled 'demography' and consists of eight units (unit 1-8). The first unit discusses the meaning of demography , significance of demography and explains the relationship of demography with other social sciences. The second unit discusses the two important concepts of demography - fertility and mortality. The third unit familiarises the learner with the concept of migration. This unit discusses the types, causes and consequences of migration. The fourth unit discusses the different sources from which we can gather information on various aspects of demography. The fifth and sixth units explain the different theoretical perspectives on demography. The fifth unit discusses the Malthusian and demographic transition theory of demography. The sixth unit discusses the post-Malthusian, neo-classical, Marxian and optimum theory of demography. The seventh unit discusses the issue of population growth and demographic transition. It discusses the determinants of population growth as well as the consequences of population growth. The eight unit explains the relationship between urbanisation and demographic change. It will also discuss the causes and consequences of the growth of urbanisation.

While going through the units of the block, you will find that the unit is further divided into certain sections and sub-sections, wherever necessary, for your better understanding. Again, the units carry certain 'activities' after certain sections. These "ACTIVITIES" will provide you the opportunity to practically

apply your own thoughts based on the knowledge gained from reading the text in a particular section. Besides, in order to give you additional information on certain relevant topics, you will find a category called “LET US KNOW” after the sections in each unit. Another category that has been included at the end of each section of a particular unit is “CHECK YOUR PROGRESS”. The purpose of this category is to help you to asses for yourself as to how thoroughly you have understood a particular section. You may then match your answers with “ANSWERS TO CHECK YOUR PROGRESS” given at the end of each unit. The section “FURTHER READING” in each unit contains the names of a few books which you might want to consult if you are intereted in learning more elaborately about the concepts discussed in a particular unit. Furthermore, the category titled “MODEL QUESTIONS” intends to provide you a hint of the type of questions you are likely to get in the examination.

UNIT 1 : INTRODUCTION

UNIT STRUCTURE

1.1 Learning Objectives

1.2 Introduction

1.3 Demography: Meaning and Definition

1.4 Nature and Scope of Demography

1.4.1 Demography As a Science

1.5 Origin and Development of Demography

1.6 Relation of Demography with Other Social Sciences

1.7 Importance of Demography

1.8 Let Us Sum Up

1.9 Further Reading

1.10 Answers to Check Your Progress

1.11 Model Questions

1.1 LEARNING OBJECTIVES

After going through this unit, you will able to-

- know about the meaning of demography
- understand the scope of demography
- explain the relationship of demography with other social sciences
- discuss the importance of demography.

1.2 INTRODUCTION

This is the first unit of the course on demography and this unit shall give us a brief overview of the subject of demography. In this unit, we shall be able to learn about the meaning and definitions of demography, the scope of demography, the relationship of demography with other social sciences and also about the importance of demography. Let us first begin with the meaning and definitions of demography which is discussed in the next section.

1.3 DEMOGRAPHY: MEANING AND DEFINITION

Demography,in simple words, is the statistical study of population. The word demography has been derived from two Greek words Demos and Graphy. Demos means 'People' and Graphy means 'Study' which gives us the meaning of demography as the 'Study of People'. It was introduced in the middle of Nineteenth Century. It is a vast subject dealing right from the population size, its composition and distribution to changes occurring in these aspects during a given period of time. It has gained immense importance in the present era due to the relation between economic development and population growth.

Demography helps in identifying the quantitative and qualitative characteristics of human population. Many writers like **William Peterson**, **Hauser** and **Duncan** conclude that "population studies" and "demography" are two different concepts. According to them, 'Demography' plays a minor role and takes into consideration only the decisive factors of population growth but, 'Population Studies' covers not only geographical, political, economic, social, biological factors of population but also the relationship among them.

The basic characteristics of demography are easily traceable. This includes characteristics like age, sex, family status, educational level, income, occupation and race. Demography also takes into account the division of society on the basis of education, nationality, religion and ethnicity. Birth, Death and Migration are considered as the 'big three' of demography. Fertility, Mortality and Migration are therefore considered as the key determinants of population change.

A few definitions of demography put forwarded by different authors and thinkers are given below:

According to **Barckley**, "The numerical portrayal of human population is known as demography." Similarly, **Thomson and Lewis** defined demography as, "The population student is interested in population's size, composition and distribution; and in changes in these aspects through time and causes of these changes."

According to **Hauser and Duncan**, "Demography is the study of size, territorial distribution and composition of population, changes therein, and the components of such changes, which may be identified as natality, mortality, territorial movement (migration), and social mobility (change of status)." According to **Frank Lorimer**, "In broad sense, demography includes both demographic analysis and population studies. A broad study of demography studies both qualitative and quantitative aspects of population." According to **Donald J. Bougue**, "Demography is a statistical and mathematical study of size, composition, spatial distribution of human population, and of changes over time in these aspects through the operation of five processes of fertility, mortality, marriage, migration and social mobility. Although it maintains a continuous descriptive and comparative analysis of trend in each of these processes and its net result, its long run goal is to develop a body of theory to explain the events that it charts and compares."

1.4 NATURE AND SCOPE OF DEMOGRAPHY

The subject demography is sometimes divided for further elucidation into 'formal demography', meaning the formal statistical analysis of population parameters and dynamics, and 'population studies', the wider investigation of the cause and consequences of population structures and change. It is in this latter area that the interests of many demographers overlap those of sociologists, and in sociological investigation, demographic analysis forms an important component in the description and understanding of human societies. The terms 'demography' and 'population studies' are often used interchangeably, but some scholars have tried to distinguish demography from population studies. Demographic analysis is confined to the study of components of population, variations and the changes in it. On the other hand population studies are concerned not only with population variables but also with the relationship between population changes and also with the relationship between population changes and other variables- social, economic, political, biological, genetic, and geographical and the like. But in a broader sense both the terms are used in a similar manner in the academic periphery. In the words of Frank

Lorimer, "In broad sense, demography includes both demographic analysis and population studies. A broad study of demography studies both qualitative and quantitative aspects of population."

Demography is a branch of social science and covers different aspects. Therefore to understand the scope of demography, one has to go through the following aspects:

- **Subject Matter of Demography:**

  The subject matter of demography includes the following:

  - **Size and Shape of Population:** The population size is generally defined as the total number of person in a particular place at a particular time. A country's population size and shape keeps on changing from time to time as different tradition, culture, custom, uniqueness, moral values, socio economic conditions, etc. prevailing in that particular country exhibits a great impact in structuring the size and shape of the population.
  - **Birth rate and Death rate related aspects:** Birth rate and Death rate have great influence on the size and shape of the population and hence they play a very important role in this subject matter. Some factors affecting the birth and death rates are marriage rate, beliefs regarding social status and marriage, age of marriage, early marriage and its effects on the health of the mother and the child, child infanticide rate, maternal death, level of medical services, purchasing power of the people, etc.
  - **Population Composition and Density:** The study of composition and density of population is a crucial factor in studying the demography of a particular region. Information relating to factors like sex ratio, religious and linguistic division of population, rural to urban ratio, racial division of population, population per square kilometre, etc. helps in determining the composition and density of population.
  - **Socio- Economic Problem:** To study the demography of a particular region, it is very important to know the socio-economic problems prevailing there. Some important factors

which require attention in respect of socio economic problems are water and air pollution, slum areas, increasing number of crimes, addiction to harmful substances (liquor, drugs, etc.), juvenile crimes, and prostitution, etc.

- **Quantitative and Qualitative Aspects:** Population studies include the study of both quantitative as well as qualitative problem. The qualitative problems which form an integral part of the study of demography are the availability of doctors in the region, number of hospital available, life expectancy at birth, daily consumption level, policies of family planning etc.

- **Distribution of Population:** Demographic study covers the pattern of distribution of people among and within continents, countries and region; the changes in their numbers and composition. It also tries to highlight the economic, political and social causes which bring diversity in the distribution of population.
  - **Migration:** Supply of labour and distribution of population depends to a great extent on the migration rate. The factors which lead to internal as well as external migration of people within a country and between countries, the impact migration has on migrants and the place relating to such migration are studied under demography.
  - **Urbanisation:** Urbanisation has a crucial impact on the distribution of population within the country. Population studies highlight the factors that affect urbanization in a particular area, the problems incurred during urbanisation and their solution thereof.
- **Theoretical Model:** The study of demography also covers the vast theoretical aspects of population studies which consist of various theories put forwarded by sociologists, economists, demographers and biologists.
- **Practical Aspects:** A number of practical aspects are involved in the study of population. They include practical models related to the various methods of measuring population changes like the census,

population projection, age-gender pyramid, etc.

- **Population Policy:** Population policy of the government is also taken into consideration while studying demography, especially in case of developing countries. The population policy includes strategy for family planning and population control, policies for child, and reproductive health and maternal nutrition, etc.
- **Micro vs Macro:** The demography as a subject is related to whether it is a micro or a macro study. **Micro** demography represents the restricted view of population studies. According to **Bogue**, "Micro demography is the study of the growth, distribution and redistribution of the population within community, state, economic area or other local area." Under the micro concept, demography is the study of quantitative relations of demographic phenomena. **Macro** demography covers both qualitative and quantitative aspects. Prof. Bogue has defined macro demography as "the mathematical and statistical study of the size, composition, and spatial distribution of human population and of changes over time is these aspects through the operations of the five processes of fertility, mortality, marriage, migration and social mobility. It maintains a continuous descriptive and comparative analysis of trends, in each of these processes and in their net result. Its long run goal is to develop theories to explain the events that it charts and compares."

1.4.1 Demography as a Science

To know whether demography is a science, first we will have to understand what science is and to what extent demography fulfils the characteristics of science.*A science is a systematised body of knowledge ascertainable by observation and experimentation. It is a body of generalisation, principles, theories or laws which traces out a causal relation between cause and effect.*

The main characteristics of science are:

- It is objective in nature;
- It is verifiable;

- It is based on theories and principles;
- It can be tested by observation and experiments;
- It has predictive ability;
- It has universal applicability.

Demography possesses all the above mentioned characteristics of science which are described as below:

- Demography deals with the facts and the figures of population.
- Demography includes the data relating to population which is collected through Census. The data collected through Census is verifiable and accurate as it is directly collected from the targeted population.
- Demography has its own theories like the Malthusian Theory, Zero Population Growth Theory, Cornucopian Theory and Theory of Demographic Transition.
- These theories can be scientifically tested on the basis of observations and experiments.
- Demography predicts the changes in population on the basis of cause and effect relationships.
- The principles of demography are applicable to a large extent to all the countries, regions and states.

Thus, we can conclude that demography is a science and according to **Irene Taeuber**, "With the improved data, new techniques and precise measurement of the demographic transition that is occurring, demography has become a science. In fact, it has become an *applied science* and applied technology".

1.5 ORIGIN AND DEVELOPMENT OF DEMOGRAPHY

If we try to trace the origin of the discipline we can find that the concept and notion regarding the study of human population is as old as human civilization. During the time of Confucius many Chinese and Greek writers and after that Aristotle, Plato and Kautilya (around 300 B.C) have expressed their keen interest over the study of human population.But as a formal discipline it emerged around the middle of the seventeenth century

in England. Most of the early developments in the discipline took place in England, France, Germany and few other European countries. But gradually it spread to other areas of the world and United States of America latter contributed substantially towards the development of the discipline. John Graunt, an English haberdasher, who is generally acclaimed as the 'Father of Demography or Population Studies', first initiated the systematic research in case of population study. His pamphlet, *Natural and Political Observations made upon the bills of Mortality,* published in London in 1662, is a landmark attempt in establishing Demography as a formal discipline. The discipline of Demography will always remain grateful towards Graunt for his contribution towards the development and growth of the subject. After that, people like Sir William Petty, Edmund Halley, Johann Peter Susmilch, Thomas R. Malthus further built upon the works of Graunt and gradually were able to establish Demography as a widely accepted discipline in the academic periphery. With the passage of time, new issues and subject matters penetrated into the Demographic understanding. New ideas and new issues like Fertility, Mortality, Migration have made their mark on the study areas of the subject.The development of probability theory in statistics, the beginning of census operations and the establishment of the system of civil registration has given a new bloom to the academic discipline of Demography. Various underdeveloped and developing countries have shown their keen interest in population studies as it helps them to design and enhance various socio-economic policies. Measurement of the quality of population helps them create various administrative set up for the well being of the people. Thus a new era of planning on the basis of population for development dawned in these countries and terms like 'Economic Planning', 'planning for development', 'five year plans' etc came to be widely used. The quantitative element of demography has been joined by the qualitative element and this has enhanced the scope of the discipline into broader areas of studies. The inclusion of subjects like fertility studies, mortality studies, urban studies has helped in the diversification of research and more specialisation in the discipline helps it to be more inclusive in nature. The discipline is no longer confined to statistical analysis without reference to the social setting in which population phenomena

take place. The importance of estimating the future course of population growth as a basis for social and economic planning was also realised by planners and policy makers. Recently, various International bodies like the United Nations (U.N.) and others have shown their keen interest towards the issues related with population studies. Various U.N. bodies such as the World Health Organisation(WHO) ,The United Nations Economic, Social and Cultural Organisation (UNESCO), The Food and Agricultural Organisation(FAO) also continue to maintain their interest in the various issues and problems of population.



CHECK YOUR PROGRESS

Q 1: Name the two Greek words from which the term Demograpy has been derived.

.....

.....

Q 2: Mention three key determinants of population change. (Answer in about 10 word)

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.....

1.6 RELATION OF DEMOGRAPHY WITH OTHER SCIENCES

Demographical aspects of an individual are studied with the help of a social science i.e., “Demography”. There are different branches of social science which studies different aspects of an individual. Since the activities of an individual are inter-connected, various social sciences helps in a holistic understanding of the diverse facets of human beings as well as society. Each Social Science also has certain similarities with as well as distinctions from other social sciences. We can therefore say that the social science disciplines are not disconnected but are interrelated and interdependent. Similarly, demography too has relationship with other social sciences. Let us now study about the relation of demography with other social sciences.

- **Demography and Sociology:** Demography is the science of human population. It is concerned with various aspects like size, composition, density, birth and death rates, etc. On the other hand, sociology is the study of society, human relation, societal behaviour, etc. One can find a relation between sociology and demography to a great extent. The elements of population like family size, literacy level, type of employment, etc. affect the social behaviour of a person to a great extent. Therefore, it is necessary to consider the aspects of population while studying sociology. The qualitative aspects of population cover wide information concerning the problems in the society. Thus, we can say that both demography and sociology is interconnected.

  According to **Kingley Davis**, the areas of study which require a combined knowledge of demography and sociology are fertility, population changes, structure of labour force, social organisation, family with regard to demographic behaviour, and internal and external migration. **Broom** and **Selznick** regard demography as one of the nine elements of sociological analysis such as social organisation, socialisation, social stratification, primary groups, associations, collective behaviour, culture, ecology and population.

  Demography and sociology also have certain differences. Some of them are:

  - Family, marriage, migration are considered under both heads but sociology studies it as a social institution and identifies its impact on social life. On the other hand, demography studies these as a contribution to the framework of population and its size. Thus, we can conclude that sociology is about social relationships but demography is related to social relations and population.
  - Sociology mostly explains social relations qualitatively while demography is just the opposite i.e., it describes social relations quantitatively using various statistical methods.

- **Demography and Economics:** A society's wants and demands give rise to problems which forms the subject matter of economics.

On the other hand, the framework of population and other factors associated with it comes under the purview of demography. Thus, we can say that demography and economics are somehow related to each other.

Demography studies minutely about the regional distribution of population which has an impact on the economic activities. The information accumulated by the demographers is of great importance to the economists while framing various policies of the Government. On the hand, some important aspects of economics such as volume of production, its consumption are also important for the demographers while framing policies related to the size and pattern of population.

However, one can also find out certain differences between the two subjects, as under:

- Economics consider production as an economic activity of men whereas; demography considers production as a means to study the quality of the population.
- Economics consider birth rate in order to know its effect over price, production, consumption, demand, labour market, demand and supply, etc. while demography consider birth rate in order to know its impact on the composition of population.

- **Demography and Social Biology:** Social biology as a part of biology studies the biological actions of man. It is mainly concerned with the beginning of life forms, their reproduction, hereditary processes and their place of living. On the other hand, demography is all about studying the characteristics of population like birth rate, death rate, quality of living, etc. It also covers aspects like size, structure, formation, pattern, density, composition of population and their changes thereof. Demography and social biology are interlinked. Demography attempts to understand the reproducible aspect of population for which they seek the help from socio-biological theories and principles. In return demography highlights the differences in birth rate over the quality of population, which formed the basis of

reproduction science in social biology laid by Galton in England. One can also find certain differences between the two as summarised below:-

- Though marriage is a common concept in both the disciplines, difference lies in the fact that the demographers are more interested in the role played by age of marriage in population growth whereas the socio-biologists are concerned more about the effect of marriage and the role played by castes on reproduction and the traits of the new born.
- Social biology studies the process of reproduction of human beings, whereas demography is concerned with the ability to reproduce.
- Social biology is a natural science; hence its laws have universal applicability. On the other hand, demography is a normative science.

- **Demography and Geography:** Demography is the study of the human population in a particular place at a particular time, whereas, geography is the study of natural environment, the places and the species of earth surface, and their interrelationship with human beings. Geography also tries to understand how the human culture communicates with the natural environment and the impact of location and place on people.

  These two concepts are closely related to each other. Demography takes into account the geographical conditions for the distribution of population. According to Ackerman, "Recent geographers have taken the cultural features of the earth, analysed them generically and genetically in their space relations and established co-variant relations of cultural features with each other and with those of physical and biotic environment. These distributional features are common to both demography and geography."

- **Demography and Human Ecology:** Human ecology studies the relation and interrelations between nature in general sense and human nature in particular. Human beings exploit, change and

develop natural resources. Therefore, **Hutchinson** and **Dewey** defined human ecology as "nothing else but bio-demography".

Human ecology and demography has a close relation. Human ecology studies various problems associated with population like fertility and mortality and other demographic data. The demographic variables act as dependents or independent variables in research conducted by human ecologists. Similarly, various principles and concepts of human ecology are used by the demographers in formulating research hypothesis. Accordingly, **P.W.Frank** stated that "Ecology provides specific theoretical statements about human population".

The differences between demography and human ecology lie on the fact that the conclusions relating to birth, death and migration rates, in case of human ecology, are derived from the study of animals. Also, cultural and social institutions forming an important part of demography do not come under the purview of human ecology.

1.7 IMPORTANCE OF DEMOGRAPHY

With the tremendous rise in population of the developing countries, it has become important to study about population and its problems in an economy. Therefore, demography is an integral part in studying the different aspects of an economy. The importance of demography can be better understood as follows:

- **For the Economy:** Demography and its role in the economy are of immense importance. The study of population is important in understanding whether the economy of a particular region is growing in proportion to the population growth rate. If the population growth rate is increasing rapidly it becomes difficult for the economy to keep pace with the rising population. Rising population creates more demand as well as more problems which require more attention of the government while undertaking developmental schemes.

  Excessive rate of population growth adversely affect the economy in the form of reduced per capita income, decreasing standard of living, increasing unemployment, imbalanced social growth and

increasing environmental pollution etc. Demographic studies throw light on these problems, which requires the attention of the government and the policy makers so that adequate developmental policies can been formulated.

- **For the Society:** Demography plays a very important role in understanding the basic functioning of a society. Increasing population hampers the growth and development of society by creating shortage of basic facilities like water, sanitation, electricity, education, health, transport and communication and other infrastructural facilities. Migration and urbanization, which affects population growth, are two important aspects, which has a huge impact on society. These issues are pointed out by the population studies which are helpful for the government to take necessary steps required for mitigating social problems.
- **Economic Planning:** Population studies provide necessary inputs to policy makers and planners for the economic plan of the country. Result of population studies are reviewed while fixing the targets to be achieved in terms of agriculture and industrial products, provision of basic services like schools, hospitals, transport, electricity, water facility, etc. Formulation of policies for birth control, future fertility rate, availability of labour forces are based upon the population data.
- **For Administrators:** Population studies help the administrators in taking decisions relating to functioning of the government. The major problems which hampers the proper functioning of the government in most of the under developed countries are mainly caused by rapid population explosion. The issues, which need to be taken into consideration while formulating policies by the administrators, include child welfare, reducing communicable diseases, better housing and transport system, sewerage facilities, etc. Therefore demographic studies are of vital importance to them.
- **For Polity:** Demography also plays a significant role in the Polity of a particular Region/Nation. The Census figures help the Election Commission of a country to provide a basis for dividing the constituencies in the parliament . The change in the number of voters

in a particular region over a period of time identifies the number of migrants flowing in and out of that region. Census studies give data relating to number of male and female voters, their educational qualification, age group, occupation, annual income, composition of family, etc. which helps the political parties to frame their agenda during the time of elections. Some other decisions like appointment of election officers and staffs, establishment of election booths are also based on this information.



CHECK YOUR PROGRESS

Q 3: Mention any two negative consequences of Excessive Population growth on economy. (Answer in about 10 words)

.....

.....



1.8 LET US SUM UP

- Demography, in simple words, is the statistical study of population. The word demography has been derived from two Greek words Demos and Graphy. Demos means 'People' and Graphy means 'Study' which gives us the meaning of demography as the 'Study of People'.
- It is a vast subject dealing right from the population size, its composition and distribution to changes occurring in these aspects during a given period of time.
- Demography helps in identifying the quantitative and qualitative characteristics of human population.
- The demography as a concept is related to whether it is a micro or a macro study. Micro demography represents the restricted view of population studies. Under the micro concept, demography is the study of quantitative relations of demographic phenomena. Macro demography covers both qualitative and quantitative aspects.
- The scope of demography is very vast as it involves not only

theoretical understandings but studies pertainting to qualitative and quantitative aspects of population also.

- Demography can be called a science. A science is a systematised body of knowledge ascertainable by observation and experimentation. It is a body of generalisation, principles, theories or laws which traces out a causal relation between cause and effect. Demography makes use of scientific methods and procedures while studying about population and hence it is also a science.
- Demography has relationship with other social sciences like Sociology, Economics etc.
- The Study of population also has immense importance. With the tremendous rise in population of the developing countries, it has become important to study about population and its impact in an economy.
- The Study of population is important in understanding whether the economy of a particular region is growing in proportion to the population growth rate.
- Demography plays a very important role in understanding the basic functioning of a society. Increasing population hampers the growth and development of society by creating shortage of basic facilities like water, sanitation, electricity, education, health, transport and communication and other infrastructural facilities. These issues are pointed out by the population studies which are helpful for the government to take necessary steps required for mitigating social problems.
- Population studies provide necessary inputs to policy makers and planners for the economic plan of the country. Formulation of policies for birth control, future fertility rate, availability of labour forces are based upon the population data.
- Population studies help the administrators in taking decisions relating to functioning of the government.
- Demography also plays a significant role in the Polity of a particular Region/Nation.



1.9 FURTHER READING

1) Bhende, Asha, A.and Kanitkar, Tara. (2006). *Principles of Population Studies*. Mumbai: Himalaya Publishing House.

2) Raj, Hans. (1990). *Fundamentals of Demography (Population studies with special reference to India)*. Delhi: Surjeet Publication.



1.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: The word demography has been derived from two Greek words Demos and Graphy. Demos means 'People' and Graphy means 'Study'.

Ans to Q No 2: Fertility, Mortality and Migration.

Ans to Q No 3: Low per capita income and low standard of living.



1.11 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Is Demography a Science? If yes, why?

Q 2: Explain the relationship between Demography and Economics.

Q 3: Briefly explain about the origin and development of Demography.

Long Questions (Answer each question in about 300-500 words)

Q 1: Discuss the Scope of Demography.

Q 2: Explain the importance of Demography.

Q 3: Explain the relation of demography with other sciences.

*** ***** ***

UNIT 2 : BASIC CONCEPTS

UNIT STRUCTURE

2.1 Learning Objectives

2.2 Introduction

2.3 Concept of Fertility

- 2.3.1 Factors Affecting Fertility
- 2.3.2 Fecundity

2.4 Concept of Mortality

- 2.4.1 Factors Affecting Mortality
- 2.4.2 Infant Mortality
- 2.4.3 Maternal Mortality

2.5 Let Us Sum Up

2.6 Further Reading

2.7 Answers to Check Your Progress

2.8 Model Questions

2.1 LEARNING OBJECTIVES

After going through this unit, you shall be able to-

- understand the concept of fertility
- explain the various factors affecting fertility
- discuss the concept of mortality.

2.2 INTRODUCTION

In the previous unit, we have understood the meaning of the term demography. We have also learnt that fertility, mortality and migration are the key determinants of change in size of population any particular region. In this unit, we shall learn about the first two key determinants – fertility and mortality. Here we shall try to understand the concepts of fertility and mortality, factors affecting fertility and mortality, types of mortality so on and so forth. Let us first discuss the concept of fertility in the next section.

2.3 CONCEPT OF FERTILITY

Fertility is one of the key determinant of population growth and change. We all know that the survival of human society depends upon continuous addition of new members through the process of reproduction. Without human beings, society shall cease to exist. Therefore, human fertility is very important for existence of society. Human fertility is responsible for biological replacement and for the maintenance of human society. Fertility in simple words mean the ability of a woman to give birth to a child. According to Lewis and Thompson '*Fertility is generally used to indicate the actual reproductive performance of a woman or groups of women*'.

2.3.1 Factors Affecting Fertility

In the past, there was no check or control in so far as child producing was concerned. But today, fertility is being checked since a family of two children is considered a normal family. There are people who do not at all like to have a child, though they have capacity to produce children. There are, however, many factors which affect and influence fertility. There are numerous factors which affect fertility. Let us discuss them:

- **Biological Factors:** The two most important biological factors affecting fertility are age and sex. The reproductive capacity of a women beings with mensuration and continues till her menopause. With menopause, comes an end of the chid bearing capacity of a woman. Therefore from the beginning of mensuration to menopause is the reproductive span of a women. The start of the first menstrual period among girls depends on a variety of factors such as the health status of the girls, food and nutrition, climatic conditions etc. Some girls may attain puberty i.e her first menstrual period at an early age like 10-11 while some girls may attain it later. Once a girl attain puberty, her fertile period begins but it stops once her menopause occurs. However, such limitations does not

exist in case of man.

- **Physiological Factors:** Physiological factors too affect fertility. Sometimes there are certain periods in a women's life in which she is sterile and unable to conceive. The natural fertility of every population is affected by the extent of primary and secondary sterility among women or couples. The primary sterility means the couples who have never had a child throughout their lives either by choice or due to their inability. The extent of primary sterility varies with the female age at marriage. Secondary sterility is inability of women to participate in reproduction after getting one or more children. Secondary sterility may be due to certain infection, disease or due to accident during childbirth. Fertility is also affected by foetal wastage, i.e., ***abortion*** and stillbirth.
- **Social Factors:** Several Social factors such as caste, religion, education, family system so on and so forth also largely influence fertility in a particular region. Since every region varies in terms of socio-cultural values, therefore fertility rate also varies from region to region. Let us briefly understand some of these social factors:
- **Religion:** Certain religious beliefs tend to have a great impact in fertility. For example for the Hindus birth of a son and daughter are very important since birth of a son is considered essential for the salvation of parents and birth of a daughter is necessary for Kanyadaan, which is considered a divine act. Marriage and reproduction are given very much importance in Hindu religious beliefs. This ultimately has a great influence upon fertility. Similarly, Polygamy is permitted by religion among the Muslims thereby increasing fertility.
- **Caste System:** Caste system too has its influence in fertility. Caste is an important social institution particularly in the rural areas of our country. It is usually seen that the birth rate is higher among the lower caste Hindus in comparison to the

higher caste. The lower caste people due to their poor socio-economic condition, marries off their daughter at a very early age. This increases her reproductive span thereby naturally increasing fertility. In certain cases and regions, upper caste too believes in the early marriage of their daughters, whichleads to an increase in the fertility rate. However, in the modern society with the expansion of education such caste-led or caste-influenced practices have been significantly declining especially in the rural areas.

- **Race:** Race too is seen as having influence in the fertility rate. Fertility rate varies among racial groups in some societies. For example, in many countries of Africa, where several races like whites, Asians co-habit with the locals, it is seen that fertility rate is higher among the locals than the other races.
- **Family System:** Fertility rate usually differs among types of family system. In nuclear families especially those residing in urban areas, there is a tendency to restrict childbirth to just one or two children. Such types of families, constituting only husband and wife poses difficulties in raising children, as there is hardly any other member to share the responsibility of child rearing. This is witnessed mostly in the developed countries and also in a few developing countries. On the other hand, couples in joint-families have greater number of children because child rearing becomes easy with the presence of many family members. Further in such families, one cannot deny that there is a pressure on the couples from the older members to give birth to more children thereby increasing fertility.
- **Education:** Education plays a determining role in the fertility. An educated woman, having good awareness about health and hygiene is seen to have lesser number of children than others who are less educated and having less knowledge

about health related matters. Apart from that, an educated girl prefers to have a job before starting a family. This delay the age of marriage thereby reducing her reproductive span. Further, because of the difficulty to balance personal and professional life, such women prefers to have only one or maximum two children. Therefore those countries having higher literacy rate, has lower level of fertility.

- **Economic Factors:** Occupation, level of income, urbanisation, etc. have tremendous influence in fertility. Developed countries having higher per capita income and higher standard of living have lower fertility rate.

2.3.2 Fecundity

Fecundity implies the capacity to conceive or bear children. Thompson and Lewis describes fecundity as a biological potencial and the physiological capacity to participate in reproduction and the absence of this potencial is known as infecundity or sterility. Barclay try to define fecundity as potencial level of performance of physical capacity for bearing children of the population. Fecundity is the main factor determining the fertility of a population. With fecundity other socio-economic factors play its role in determining the fertility of a population. Age at marriage, customs, environment, public health amenities, living standards, sexual activity, mortality condition of the spouse, biological potentiality and tendency of location affects the fecundity of women. It is important to note here that involuntary childlessness after marriage was not always due to infecundity of wife but the sterility of either the husband or the wife may be responsible for that.

2.4 CONCEPT OF MORTALITY

Mortality is another biological factor, which greatly affects population growth. In simple words, mortality implies end of life or death of a person. The United Nations and the World Health Organization have defined death

as '*the permanent disappearance of all evidence of life at any time after birth*'. From this definition, it is evident that any death prior to a live birth is not considered death. As such, abortions and still births are categorised as foetal deaths and not as deaths. Death therefore implies end of life of person after birth. Death rate greatly impacts population growth. For example in times of epidemic or any natural disaster such as TSunami, hundreds and thousands of people die which alters the demographic size of a particular region/country. The current Coronavirus is one such case where thousands of people have died especially in China.

Death rate varies from region to region and country to country. Some countries have very high mortality rate, while some others have comparatively lower mortality rates. The main reason behind this is availability of healthcare facilities. The regions with modern health care facilities and where health facilities are accessible to all have lower mortality rates. Further regions having better hygiene and sanitation facilities tend to have lower mortality rates. So the developed countries have lower death rates because people in such countries are economically well off and can avail proper and timely medical aid and treatment. Further such countries also have sophisticated and advanced heath care mechanisms which reduces the number of deaths. In case of underdeveloped nations and poorer regions, where there is lack of health care facilities, there is higher death rate. Apart from this, we can also observe differences in death rate among various communities residing in one particular region. We all know that society is not homogeneous. It comprises of people belonging to different classes and socio-economic stratas. So member of every class do not have equal health care accessibility. Those who are economically better off have access to better health care while those who survive from hand to mouth often die untreated as they cannot avail medical treatment due to lack of money. Thus, death rate is higher among the lower income groups of the society. Further, death rate is also seen to be higher among those who are engaged in hazardous occupations.

However in the contemporary period, with better medical facilities, greater access to health care so on and so forth, mortality rates have declined considerably across the world.

2.4.1 Factors Affecting Mortality

Like fertility, mortality too is affected by a number of factors. These factors may be in the form of biological, physiological, environmental so on and so forth. In the past, mortality rates were usually high during the times of famines, epidemics, wars etc. But in the present time, due to the rapid advancement in medical sciences, rising health consciousness, greater access to health care etc. mortality rates have reduced to a large extent. Let us discuss these causes behind the decline in mortality rates in details.

Causes of Decline in Mortality Rates in the Contemporary Period

- **Advancement in Medical Sciences:** Rapid advancement in Medical Sciences have led to a significant decline in the mortality rates around the globe. Medical Science have become successful in fining panacea for most of the dreadful diseases. Due to the development of sophisticated medical technology, those diseases which were earlier considered to be fatal has now become a trivial health issue. Therefore, due to the availability of better medical treatments, mortality rates have declined to a large extent.
- **Disease Control Medicines:** Most of the countries today have achieved great control over pandemics like typhoid, malaria, small pox, plague etc. The various healthcare programs of World Health Organization (WHO) have been quite successful in exterminating diseases like small pox, polio, plague, TB etc.
- **Healthcare Programs:** The various healthcare programs run under the world bodies like WHO have achieved great success in spreading awareness about the health hazards caused by pollution etc. Consequently different countries have framed healthcare policies, taken measures to control health hazards etc. as per WHO recommendations and guidelines. This has

also largely contributed to the declining mortality rates.

- **Improved Medical Facilities:** Improved Medical Facilities in particularly in the developed and developing countries have resulted in declining mortality rate to a great extent. These countries have invested a great deal of financial resources in increasing the number of doctors and nurses and in training them. Besides, government efforts in building hospitals with modern facilities in rural areas and mushrooming of private hospitals and nursing homes in urban areas have helped greatly in reducing mortality rate.
- **Spread of Education:** The mortality rates are declining in proportion to the increasing literacy rate. Expansion of education has signifantly helped in spreading health consciousness and awareness among people. People are now aware of the negative consequences of superstitions and other beliefs on human health. Education has made people realise the need of visiting doctors, availing medical treatments for resolving their health issues. People have also become aware of the importance of regular physical exercise, balanced diet, gym, yoga etc. for maintaining a good health. These trends have helped tremendously in lowering death rates in the contemporary period.
- **Status of Women:** Today the literacy rate among women is increasing in most of the developing countries, which has ultimately resulted in the rise of the status of women. Now, women are more concerned about hygiene, cleanliness, child-birth etc. They are also similarly concerned about the health of their children, thus, significantly contributing towards reduction in the infant mortality rate. Similarly, the death rate of women at the time of delivery is gradually decreasing due to the prevention of early marriages, increasing hospital-deliveries, availing modern medical treatments etc.
- **Life Expectancy:** In present scenario, factors like rapid

economic growth along with increase in per capita income, enhanced medical, health, sanitation, water facilities, etc. has helped in improving the life expectancy rate in most of the developing countries. It has also lead to decline in death rate subsequently resulting in increasing the percentage of people living beyond the age of sixty years.

In conclusion, it can be said that with the advancement of medical sciences, rising health consciousness among people and greater accessibility to health care facilities, mortality rates have immensely declined. On the other hand, decline in mortality rates contributes to increasing size of population and in countries like India where there is high fertility and low mortality, population growth is massive.

2.4.2 Infant Mortality

In demographic terminology, infants are the children below one year of age. The study of infant mortality gains importance, especially because mortality during the first year of life is invariably high for all countries, irrespective of whether the overall levels of mortality are high or low. Some of the important causes of infant mortality may be-

- Some babies die at the time of birth due to number of reasons like lack of medical facilities, complicacies during child birth, incompetency of the health-practitioner, so on and so forth.
- Some other causes may be lack of proper nutrition, exposure to cold or heat or harmful environment; lack of proper care from parents, hidden internal disorders etc.
- The mothers can be ignorant and may not realise the need of medical care after the birth of baby.
- Child-preference may be one of the causes. For example in families which prefer sons over daughters may not take necessary care if a girl child is born which may affect the growth of the child and may also lead to death of the child.

2.4.3 Maternal Mortality

Maternal mortality may be defined as the death of a woman while pregnant or within 42 days of termination of pregnancy. Maternal mortality is bound to be high in societies where-

- the women are illiterate;
- the people are of orthodox nature;
- the health of the women is not very much cared for;
- interval between the birth of two children is rather less;
- there are no medical facilities;
- pregnant women cannot be provided with nutritive food;
- the system of child marriage prevails.



CHECK YOUR PROGRESS

Q 1: State the meaning of fertility. (Answer in about 30 words)

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Q 2: Mention any two reasons behind infant mortality. (Answer in about 10 words)

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Q 3: What is meant by maternal mortality? (Answer in about 20 words)

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2.5 LET US SUM UP

- Fertility is one of the key determinant of population growth and change.
- Human fertility is responsible for biological replacement and for the maintenance of human society. Fertility in simple words mean the

ability of a woman to give birth to a child. According to Lewis and Thompson '*Fertility is generally used to indicate the actual reproductive performance of a woman or groups of women*'.

- Fertility is influenced not only by Biological factors but also by various Socio-Cultural factors.
- Mortality is another biological factor, which greatly affects population growth. In simple words, mortality implies end of life or death of a person.
- Death rate varies from region to region and country to country. Some countries have very high mortality rate, while some others have comparatively lower mortality rates.
- The regions with modern health care facilities and where health facilities are accessible to all, have lower mortality rates. Further regions having better hygiene and sanitation facilities tend to have lower mortality rates.
- Death rate also varies according to class. Members of every class do not have equal health care accessibility. Those who are economically better off have access to better health care while those who survive from hand to mouth often die untreated as they cannot avail medical treatment due to lack of money. Thus, death rate is higher among the lower income groups of the society.
- In the present time, due to the rapid advancement in medical sciences, rising health consciousness, greater access to health care etc. mortality rates have reduced to a large extent.
- Infant mortality and maternal mortality are important aspects of mortality. In demographic terminology, infants are the children below one year of age. Therefore, death of a child below one year of age is termed as infant mortality.
- Maternal mortality may be defined as the death of a woman while pregnant or within 42 days of termination of pregnancy.
- There are number of causes, which leads to infant and maternal mortality. Of them lack of proper medical treatment, lack of nutrition are most important.



2.6 FURTHER READING

1) Bhende, Asha, A. and Tara, Kanitkar. (2006). *Principles of Population Studies*. Mumbai: Himalaya Publishing Hopuse.

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3) Sinha, V.C. and E. Zacharia. (2007). *Elements of Dempgraphy (With Demographic Profile of India and the World)*. New Delhi: Allied Publishers Pvt Ltd.



2.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Fertility in simple words mean the ability of a woman to give birth to a child. According to Lewis and Thompson 'Fertility is generally used to indicate the actual reproductive performance of a woman or groups of women'.

Ans to Q No 2: Lack of medical facilities and lack of proper nutrition.

Ans to Q No 3: Maternal mortality may be defined as the death of a woman while pregnant or within 42 days of termination of pregnancy.



2.8 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Explain in brief the role of education in declining mortality rates.

Q 2: Briefly mention the causes of maternal mortality.

Q 3: What is mean by fecundity?

Long Question (Answer each question in about 300-500 words)

Q 1: Discuss the important factors which influence fertility.

Q 2: Discuss the causes behind declining mortality rates in the present era.

Q 3: 'Fertility and Mortality rates are not only influenced by biological factors but also socio-cultural factors'. Elucidate the statement with your own examples.

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UNIT 3 : MIGRATION

UNIT STRUCTURE

3.1 Learning Objectives

3.2 Introduction

3.3 Migration: Meaning and Definition

3.4 Types of Migration

3.5 Causes of Migration

3.6 Consequences of Migration

3.7 Let Us Sum Up

3.8 Further Reading

3.9 Answers to Check Your Progress

3.10 Model Questions

3.1 LEARNING OBJECTIVES

After going through this unit, you will able to-

- define migration
- describe the types of migration
- explain the causes of migration
- discuss the consequences of migration.

3.2 INTRODUCTION

In the previous unit, we have discussed about the basic concepts in demography. We have learned how fertility and mortality affects population growth. Along with fertility and mortality, migration too is a determining factor of change in population growth. Migration plays a significant role in changing the demographic scenario of any particular region. Therefore,it is an important aspect of study for a student of demography. In this unit, we shall discuss about migration, which is an important component of population change. Along with meaning and definition, we shall discuss about the different types of migration. Further we shall discuss about the causes of migration and after reading this unit

we shall also be able to understand the consequences of migration.

3.3 MIGRATION: MEANING AND DEFINITION

In simple terms, migration is defined as movement of people from one place to another. It is the movement of people between regions and countries. When a person moves away from his/her place of origin to another place and settles in the new place he/she is called a migrant. It basically refers to changing one's place of residence. The United Nations Multilingual Demographic Dictionary defined migration as 'Migration is a form of geographical mobility or spatial mobility between one geographical unit and another, generally involving a change in residence from the place of origin or place of departure to the place of destination or place of arrival. Such migration is called permanent migration and should be distinguished from other forms of movement which do not involve a permanent change of residence'. Thus migration implies mobility of a person from his place of birth to a new destination in which he either settles permanently, which is called permanent migration. In case of temporary migration, the migrants do come back to their place of origin at some point of time. From this, we can say that migration can be either permanent or temporary.

Another important aspect of migration is that it can be either individual or group. In some cases it may be an individual alone who decides to migrate from his place of origin to a new destination for a variety of reasons while in some other cases a large croup or an entire village may decide or be compelled to move to a new location. In such cases of group migration, population size and structure is enormously affected.

Further, unlike fertility and mortality, which are largely biological factors affecting population growth, migration is determined by socio-economic factors. Economic conditions, political instability, natural disasters, educational and health facilities so on and so forth are key determinants of migration.

Migration shows the trends of social changes. From the historical viewpoint during the process of industrialisation and economic

development, people migrate from farms to industries, from villages to cities, from one city to another and from one country to another. In modern times, technological changes are taking place in Asia, Africa and Latin America due to which these regions are witnessing large-scale migration from rural to urban areas.

Economists are interested in the study of migration because migration affects the supply of skilled and semi-skilled labourers, development of industries and commerce causing changes in the employment structure of the migrated people. Formulation of economic policies has a close relation with the process of migration because migration affects the economic and social development of a country.

Migration is an important determinant of population change. It determines population size, rate of population growth and the structure of population. Therefore, study of migration is inevitable for planners and policy makers.

3.4 TYPES OF MIGRATION

Migration can be of different types depending on varied factors. Let us now learn about the different types of migration

- **Immigration and Emigration:** When people move from one country to another then, for the country in which they have moved to, it will be a case of immigration. For example in case of people migrating from Bangladesh to India, it is a case of immigration for India. The people involved are known as immigrants in India. But the same will be a case of emigration for Bangladesh because they have left their own country i.e Bangladesh and come to India. In Bangladesh, they will be known as emigrants. Thus, people leaving their own country are known as emigrants in their own country and immigrants in the Country to which they have migrated. Similarly, for their place of origin, which they have left, it will be emigration and for the country to which they have migrated, it will be immigration.
- **In-Migration and Out-Migration:** These are types of internal migration and are confined within the borders of a particular country

only. Unlike immigration and emigration that involves more than one country and implies migrating from one country to another, In-migration and out-migration on the other hand implies migrating from one region of a particular country to another region of that same country. In-Migration refers to the phenomenon of individuals/ group of people coming into or migrating into a particular region while out-migration refers to individuals or groups of people moving out or migrating out of a particular region. For example, migration from Assam to West Bengal will be a case of out-migration for Assam and in-migration for West Bengal. In the case of this example, the migrant moves out of Assam and therefore it is out-migration for Assam and since the person moves to West Bengal, it will be in-migration for West Bengal.

- **Internal Migration and External Migration:** Migration of people from one region to another of a particular country is known as internal migration. For example when people move from one state to another or one region to another in India, it is called internal migration. This type of migration is confined to the borders of a particular country only. On the contrary, when people migrate from one country to another for permanent settlement, it is known as external migration.
- **Gross and Net Migration:** Gross migration is the total number of persons coming into the country and also going out of the country for settlement elsewhere during a particular time period. While, the difference between the total number of persons coming to reside in a country and going out of the country for residing elsewhere during a given time period is called as net migration.



CHECK YOUR PROGRESS

Q 1: State the meaning of migration. (Answer in about 50 words)

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Q 2: Distinguish between in-migration and out-migration. (Answer in about 60 words)

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3.5 CAUSES OF MIGRATION

There are innumerable factors, which lead people to migrate from one place to another. We shall classify them into push and pull factors. Before discussing the factors let us first understand what does push and pull factor mean.

- **Push Factors:** The push factors are those factors which compels people to leave their place of origin and migrate to a new place.
- **Pull Factors:** The pull factors on the other hand are those factors that attract people towards a particular region/place.

Let us first discuss about the push factors-

- **Economic Condition:** We all know that occupation and income are two very important determinants of a person's condition of life. Therefore, economic condition is a key determinant in migration. People generally migrate when they face lack of economic opportunities in their own place. Lack of opportunities for higher income, scarcity of land, unfavourable condition of land, lack of employment opportunities etc compels people to migrate to other regions in search of alternative and better livelihood opportunities.
- **Climatic Condition:** Climatic factors too play a significant role in migration. Regions affected by natural calamities and disasters often compel people to leave that place and migrate to a safer region.Regions which face rampant earthquakes or flood prone

regions often witness people moving out to other regions.

- **Political Instabilities:** Every individual chooses and prefers to live in a peaceful environment. Any kind of threat to their life-security becomes a provoking factor of migration. People migrate from regions which face political conflicts, wars, and other such hostile situations that adversely affect life of the people residing there. Thus Political instability, hostile environment leads to lack of security of the life and property of people and thereby pushes people out of such regions to settle in other peaceful regions.
- **Religious Factors:** Religious factors too act as crucial determinants in migration. Sometimes some regions face religious antagonisms and conflicts, which may act as threat to persons of particular religious group. In such cases of threat people migrate from that region.
- **Socio-Cultural Factors:** Similar to the above point, socio-cultural hostility, lack of favourable social conditions for human settlement acts as push factor in migration. They provoke people to move out and settle elsewhere.
- **Lack of Health and Educational Facilities:** Some regions suffer from the lack of health and educational facilities. People from such regions migrate to other regions where they can avail better medical and health facilities and better educational facilities.

From the above points, we can say that socio-economic backwardness, environmental hazards, wars and conflicts, lack of security of life, lack of infrastructural facilities are some of the important push factors in migration. Any region, which suffers from one or more of these problems, becomes unfavourable for human development, and,is therefore abandoned by people residing there. Hence due to these push factors, they migrate from such regions to other regions in search of better living conditions.

Let us now discuss about the pull factors in migration

- **Abundant Employment Opportunities:** It is often seen that people, especially from regions with high poverty, migrate to those regions where there are numerous employment opportunities and other

avenues for livelihood. Employment opportunity therefore is a strong pull factor in migration. Large scale migration takes place to regions, which are industrial hubs as they provide plentiful employment avenues.

- **Favourable Climatic Conditions:** Another pull factor is the favourable climatic condition. As we have mentioned above, people migrate from places, which are prone to natural disasters. And in such cases, the nearby regions which have favourable climatic conditions and are conducive for human survival becomes the destination for the migrants.
- **Better Health, Educational and Communication Facilities:** Better infrastructural facilities is another strong pull factor, which attracts huge number of migrants. Regions with good infrastructural facilities in terms of health, education, transport and communication so on and so forth become the favoured destination for migrants.
- **Favourable and Peaceful living conditions:** Along with the above three, security to life and property also becomes an important factor in migration. Even if a region is economically strong and has good infrastructural facilities, yet if it is politically unstable, conflict-ridden, etc., hardly people would migrate to such a region. So harmonious living condition becomes a determinant in migration and acts as a pull factor.



CHECK YOUR PROGRESS

Q 3: What is meant by push factor in migration? (Answer in about 50 words)

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Q 4: Give two examples of pull factor of migration. (Answer in about 10 words)

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3.6 CONSEQUENCES OF MIGRATION

Migration, as we have mentioned above, is an important factor of demographic change. Along with fertility and mortality, migration significantly affects the size of population. Further it also has a great impact on the socio-economic condition of any particular region or country. Therefore, though migration is a demographic event, it has long-term consequences on the socio-economic and cultural development of any region or country.

Migration also has several social consequences. It is a key reason behind the changing family system. In Rural areas, due to migration of many family members to urban centres, joint family system is gradually declining. Women now has a greater role to play not only in the family matters but also in managing the economic affairs of the family as the men folk migrates to work in the urban centres. Further, there has also been significant decline in the rigid practices of the caste system. Migration to urban areas and exposure to modern ways of life changes the beliefs and attitudes of the migrants. They bring the new values and attitudes when they come to the village, which gradually leads to the change in old customs and practices in the rural areas.

As we have already mentioned above, the consequences of migration are felt not only in the places of origin, it is felt in the place of destination as well. Let us understand the consequences of migration in the place of destination in the following-

Migration as we know is usually from rural to urban areas. When huge migration takes place to urban areas, it poses several adverse effects. The first major problem that is seen in the growth of slums. Due to lack of adequate housing facilities and acute housing shortage, huge slums areas grow in urban areas and these areas suffer from the lack of access to municipal facilities such as clean drinking water, clean toilets, electricity, sewage disposal system etc. The city transport system is unable to meet the demand of the growing population. Further large population also results in greater air and noise pollutions, traffic congestion etc. Apart from that, criminal activities also rise in such areas.The migrants

therefore suffer from lack of hygiene and sanitation and their living environments are not conducive to good health.



3.7 LET US SUM UP

- Migration plays a significant role in changing the demographic scenario of any particular region.
- In simple terms, migration is defined as movement of people from one place to another.
- When a person moves away from his/her place of origin to another place and settles in the new place he/she is called a migrant.
- The United Nations Multilingual Demographic Dictionary defined migration as 'Migration is a form of geographical mobility or spatial mobility between one geographical unit and another, generally involving a change in residence from the place of origin or place of departure to the place of destination or place of arrival.
- Migration can be either permanent or temporary. Migration is that it can be either individual or group.
- Unlike fertility and mortality, which are largely biological factors affecting population growth, migration is determined by socio-economic factors.
- Migration shows the trends of social changes.
- Migration can be of different types depending on varied factors.
- When people move from one country to another then, for the country in which they have moved to, it will be a case of immigration.
- People leaving their own country are known as emigrants .
- In-migration and out-migration implies migrating from on region of a particular country to another region of that same country.
- Migration of people from one region to another of a particular country is known as internal migration.
- On the contrary, when people migrate from one country to another for permanent settlement, it is known as external migration.
- Gross migration is the total number of persons coming into the

country and also going out of the country for settlement elsewhere during a particular time period. While, the difference between the total number of persons coming to reside in a country and going out of the country for residing elsewhere during a given time period is called as net migration.

- There are innumerable factors, which lead people to migrate from one place to another. They are classified into push and pull factors.
- The push factors are those factors, which compels people to leave their place of origin and migrate to a new place.
- The pull factors on the other hand are those factors that attract people towards a particular region/place.
- Migration is a demographic event but it has long-term consequences on the socio-economic and cultural development of any region or country.



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1) Bhende, Asha, A.and Tara, Kanitkar. (2006). *Principles of Population Studies*. Mumbai: Himalaya Publishing House.

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3.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: In simple terms, migration is defined as movement of people from one place to another. The United Nations Multilingual Demographic Dictionary defined migration as 'Migration is a form of geographical mobility or spatial mobility between one

geographical unit and another, generally involving a change in residence from the place of origin or place of departure to the place of destination or place of arrival.

Ans to Q No 2: In-migration and out-migration implies migrating from one region of a particular country to another region of that same country. In-migration refers to the phenomenon of individuals/group of people coming into or migrating into a particular region while out-migration refers to individuals or groups of people moving out or migrating out of a particular region.

Ans to Q No 3: The push factors are those factors which compels people to leave their place of origin and migrate to a new place. Lack of employment facilities; lack of infrastructural facilities are some of the push factors which often comples people to leave a particular place in search of a palce with better living conditions.

Ans to Q No 4: Abundant employment opportunities and favourable and peaceful living conditions are two pull factors of migration.



3.10 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Why does migration mostly take place from rural to urban areas?

Q 2: What are the problems faced by migrants in the place of destination?

Q 3: How does out-migration affect rural economy.

Long Questions (Answer each question in about 300-500 words)

Q 1: Explain the different types of migration.

Q 2: Discuss the various causes of migration.

Q 3: Critically discuss the consequences of migration.

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UNIT 4 : SOURCES OF DATA

UNIT STRUCTURE

4.1 Learning Objectives

4.2 Introduction

4.3 Sources of Population Data

- 4.3.1 Population Census
- 4.3.2 Registration Method
- 4.3.3 Sampling Method
- 4.3.4 National Register of Citizens (NRC)
- 4.3.5 Aadhaar
- 4.3.6 International Sources

4.4 Let Us Sum Up

4.5 Further Reading

4.6 Answers to Check Your Progress

4.7 Model Questions

4.1 LEARNING OBJECTIVES

After going through this unit, you will able to-

- know the features of census and the methods used to collect census data
- understand the registration method of recording data on population
- describe sampling method of collecting data on population
- explain the recent initiatives like NRC and Aadhaar as sources of population data.

4.2 INTRODUCTION

In the previous units, we have learned about the key determinants of population growth i.e. fertility, mortality and migration. The growth of population varies from region to region depending on these determinants. Regions having high fertility and low mortality has high population in contrary to those regions having low fertility and high mortality. Similarly,

the regions, which are destination for migrants often faces high population growth. Now the question is how is population data recorded or what are the sources from which we can get data on population. Population data is recorded through different ways like census, registration method etc.In this unit, we shall discuss in details about the various ways in which population data is recorded.

4.3 SOURCES OF POPULATION DATA

Population data refers to data and information on various aspects of a population of a particular region/country. Keeping record of population data is very essential as it gives a timely picture of the demographic scenario of a particular region of a country. It is only through these records that we know whether the population of a particular region is increasing, decreasing so on and so forth. Further, on the basis of these records, the government and the policy makers frame and implement different policies for human development. These records also help researchers to conduct research on different aspects of population change. Given its multiple usages, record of human population is a vital and significant exercise. In this unit, we shall discuss in details how population data is enumerated and recorded. Though there are three main sources of population data i.e Census, Registration and Sample Surveys, yet the recent initiatives like NRC and Aadhaar has also become important sources of information on population. Therefore, after reading this unit, you will learn not only about census, registration method, sampling method, but also on recent initiatives like NRC, Aadhaar so on and so forth. Let us first begin with a discussion on one of the most effective and prominent method of recording popultaion data i.e census method..

4.3.1 Population Census

The word ‘census’ is derived from the Latin word ‘censere’, which means to value or tax. A census of population may be defined ‘*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 in a well-delimited part of a*

country'. In other words, it can be said that census is the collection of information about birth, death, occupation, social and economic conditions of the people of the country at a given time.

According to the United Nations, the census of population is defined as '*the total process of collecting, compiling and publishing demographic, economic and social data pertaining, at a specified time or times to all persons in a country or delimited territory*'.

Population census is the primary source of basic national population data required for administrative purposes and for many aspects of economic and social planning and research. In most countries across the globe, population censuses are conducted at regular intervals. Many countries such as the United States and India conduct a population census every ten years (a decinneal census), however, the United Kingdom, Japan and Canada conducts at an interval of five yeras (a quinquennial census).

- **Significant Features of Census:** According to Hans Raj, Census has certain very important and significant features -
  - Census is a national stock-taking process, in which a nation gets information about migration of people, their age, sex, occupation, etc. and about people living in a country at a given point of time. A nation also gets information about the social and economic conditions of its citizens.
  - Census is almost always organised and conducted by the government, because it is such a gigantic task that it is impossible to get the whole work completed by any private agency, more so when the country is wide and vast and also thickly populated.
  - Census is almost carried out once in a decade in every country by way of which considerably dependable figures can be obtained.
  - Every country makes an atttempt that census operations should be completed within limited and

specified time and that too without involvement of huge manpower and economic resources, but not at the cost of efficiency or work.

- During census operations, every effort is made to collect first hand information about every person. While collecting information, either an individual or a family is considered as a unit.
- Before census data collection, all concepts should be made very clear because in the absence of clarity many mistakes are likely to occur.
- Census date is published, after the data collected has been authentically verified.
- Before the actual census operations are carried out, some preliminary steps are taken. These include identification of area, collection of information of houses, etc. in that area, the form in which information is to be collected, the process of collection and analysis of data.
- During census operation information is collected by personnel contacts.

➢ **Census Techniques or Methods:** Census data can be collected by two important census techniques, namely, De Facto Method and De Jure Method.

- **De Facto method:** Under this method, data is collected for the entire counrty on a particular day. Since, the people return home at night, such a census operation is conducted at night. Such a time of data collection at night is called the 'census night'. All the field workers are well-prepared for this specific night for data collection and are given proper training. On this night, anyone found anywhere are also counted. When the people actually present are counted at the same time in a census it is called a 'de facto population'. Since, the census is completed on a particular date, this

method is also called 'Date System' or 'One Night Enumeration System'. This method was followed in England as well as in India till 1931.

- **De Jure Method:** Under this method, every person in an area is counted and information are collected from every household. An effort is made that a temporary resident is not included in it, the people are enumerated at their permanent place of residence. For this method, a particular period is fixed within which census data is collected throughout the country. Usually census work is completed within a period of two or three weeks. This period is, therefore, called the 'Period Enumeration'. In this method, chances for inaccuracy are reduced to minimum, since the period given for completion of work is quite sufficient.

4.3.2 Registration Method

It is an important method of collecting population data. The method started during 19th century under which every birth, death and marriage is required to be registered. The registration method covers registration of such events as birth, death, marriage, divorce, separation, etc. It is compulsory for all the members of the family to have such significant events registered. There is no specific time for registration, the entire work continues throughout the year.

Sometimes, demographers use secondary data for their work and registration is one such source. Secondary data can be obtained from different sources, namely, vital registration, population registration, governmnet records, etc.

- **Vital Registration:** The registration of vital events is another important source of population information. A person's entry into the world, i.e., by birth and a person's departure from it, or in other words, by death, are considered to be vital events. The method of census gives information about the population

of that time. Whereas under registration method, every important event about population is registered. Today, in all countries of the world, it is almost compulsory that each and every vital events to be registered.

- **Population Registration:** In many European countries, it is necessary to maintain permanent population register for certain administrative and legal purposes. It is annually prepared, in which the name of each person in the country is entered. Migration of individuals are also registered. This type of registration is maintained in Sweden, Finland, Belgium, Israel and Korea.

4.3.3 Sampling Method

Sampling method is one of the important methods for the collection of population data. In this method, information is collected only from a sample of the population, which is representative of the whole population. There are different methods for the purpose of choosing a sample, such as, random sampling, stratified random sampling, etc.

Sample which is chosen at random without any plan or order is known as random sampling. Random sampling may be simple random sampling and stratified random sampling. In simple random sampling, each member of a population has an equal chance of being included in the sample. It is one of the easiest methods of sampling and is commonly used by the demographers. In stratified sampling method, a population is divided into a number of strata, and from each stratum, a particular number is chosen as sample.

Census is a time consuming and costly affair. Sometimes in some areas, it is not possible to count the population at the time of census because of some difficulties. In order to remove these problems and difficulties, sample surveys are conducted. In sample surveys, with the help of specially prepared questionnaires and trained interviewers, some special aspects of the population can

be studied in depth. However, sample surveys can never take the place either of a census or vital registration. Sample surveys are increasingly useful to planners and administrators.

- **Sampling Method used in India:** The use of sampling method is a very recent development in India. In 1949, a Register General of India was apointed and made responsible for collection of information on births and deaths. A system of collecting data between each census period was started and the National Sample Survey came into use. The aim of the National Sample Survey (NSS) organisation is to collect comprehensive information about socio-economic aspects for the entire country. The first round of the National Sample Survey was conducted in 1950; since then, information on different items, such as, birth, death, family planning, employment, housing conditions, etc., has been collected through various rounds of the NSS.

4.3.4 National Register of Citizens (NRC)

We all are aware that NRC has been a topic of debate and contestations especially in the last few years. NRC stands for National Register of Citizens. It is another important source of demographic data in our country. It is a register of all the legal citizens of India and it acts as an official record of all Indian citizens. It contains the demographic information about all the citizens of India as defined under the provisions of the Citizenship Act, 1955. It was first prepared after the 1951 census of India. The NRC has been made mandatory for the whole nation through the amendment of the Citizenship Act, 1955, in the year 2003. The purpose for which NRC has been created is to document all the legal citizens of India so that the illegal migrants can be identified and deported back to their own country. Citizenship Act, 1955 and The Citizenship (Registration of Citizens and Issue of National Identity Cards) Rules, 2003 provides rules for NRC up gradation. As per the rules, one's

eligibility for inclusion in updated NRC shall be determined based on the NRC, 1951.

Since the time of its inception, NRC, has got upgraded from time to time in some states in subsequent times in India. It is because of such continuity of the process of registration that it sought to include all sorts of information about each and every person of a territory concerned, and most importantly about one's citizenship rights. Since it emphasizes on both: a) strategic point to start the process and b) made rules for its up gradation, the register continues to serve as an important source of demographic data in India.

The implementation process of NRC has been initiated in the year 2013-2014 from the state of Assam. For the process of updating NRC in Assam under the surveillance of apex court, hundreds of NRC Seva Kendras (NSKs) were set up where more than 50,000 state Government officials were working over a long period of time to verify the documents and record the information. To register with the NRC, an applicant has to provide certificates mentioned under two heads, viz. List A and List B. List A consists of 14 documents while List B consists of 8 documents. Those whose names are not in the NRC list will have to approach the Foreigners Tribunal for further enquiry.

4.3.5 Aadhaar

Aadhaar, is a 12-digit unique identity number that can be obtained by the residents of India. Aadhaar is based on biometric and demographic data of the residents, which is collected by the Unique Identification Authority of India (UIDAI), a statutory authority established under the provisions of the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016 ("Aadhaar Act, 2016"). It was established on 12 July, 2016 by the Government of India, under the Ministry of Electronics and Information Technology (MeitY). The UIDAI is the only authority for the issuance of 12-digit unique identification (UID) number to all

the residents of India. The UID had to be

- robust enough to eliminate duplicate and fake identities
- verifiable and authenticable in an easy and cost-effective way.

Under the Aadhaar Act 2016, UIDAI is responsible for Aadhaar enrolment and authentication, including operation and management of all stages of Aadhaar life cycle, developing the policy, procedure and system of issuing Aadhaar numbers to individuals and perform authentication and the security of identity information and authentication records of individuals. The Vision of UIDAI is to empower residents of India with a unique identity and a digital platform to authenticate any time, any where.

Mission of UIDAI

- To provide for good governance, efficient, transparent and targeted delivery of subsidies, benefits and services, the expenditure for which is incurred from the Consolidated Fund of India, to residents of India through assigning of unique identity numbers.
- To develop policy, procedure and system for issuing Aadhaar number to residents of India, who request for same by submitting their demographic information and biometric information by undergoing the process of enrolment.
- To develop policy, procedure and systems for Aadhaar holders for updating and authenticating their digital identity.
- Ensure availability, scalability and resilience of the technology infrastructure.
- Build a long term sustainable organization to carry forward the vision and values of the UIDAI.
- To ensure security and confidentiality of identity information and authentication records of individuals.
- To ensure compliance of Aadhaar Act by all individual and agencies in letter and spirit.
- To make regulations & rules consistent with the Aadhaar Act, for carrying out the provisions of the Aadhaar Act.

World Bank Chief Economist Paul Romer described Aadhaar as, “the most sophisticated ID programme in the world”. However, it is not a proof of citizenship but a proof of residence, so it does not grant the rights to domicile in India.

Aadhaar is any 12 digit random number, which doesn’t start from 0 or 1. This number isused as a valid ID while availing various government services such as a new LPG connection, pension schemes, digital locker, MGNREGA, NEFT etc.

The first UID number was issued to a resident of Nandurbar, Maharashtra. The Authority has so far issued more than 124 crore Aadhaar numbers to the residents of India.

4.3.6 International Sources

Population enumerations are also done by several international organisations such as the United Nations, World Bank so on and so forth. They maintain records of population data across the globe and publish population data for the world as a whole and for different countries separately at regular interval. The most important of them is the Demographic Year Book, published by the UN.

The records maintained by different world organisations provides varied aspects of demographic data such as population size, area, density, urban population, population growth, age-sex composition, number of births and birth rate, number of deaths and death rate etc. Besides, the UN also publishes quarterly report on the Population and Vital Statistics Report. These reports comprise of updated information on total population, total mid-year population and estimate of population for a recent reference year. Further Fertility rate, Mortality rates, infant deaths and other such vital events are also included as a part of Vital Statistics.

The Human Development Report of the United Nations Development Programme (UNDP) also publishes data on different social, economic and demographic aspects of different countries

and the world as a whole. Other international publications comprising data on world population includes ILO's Year Book of Labor Statistics, FAO's Production Year Book, Statistical Year Book of UNESCO so on and so forth.

The UNESCO also has various publications pertaining to data on education, literacy etc. among different countries in the world. Similarly, one can find data relating to varied aspects on health in the publications of WHO. Important data on Public health and Mortality for different countries of the world are found in WHO publications. Apart from the above sources, the World Bank also publishes data on various demographic, social and economic aspects in its annual World Development Report.



CHECK YOUR PROGRESS

Q 1: Name the two methods for the purpose of choosing a sample. (Answer in about 20 words)

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Q 2: What is 'Period Enumeration'? (Answer in about 40 words)

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4.4 LET US SUM UP

- The data required for the study o2f population are obtained mainly through three sources, namely, population censuses, registration of vital events and sample surveys.
- A census of population may be defined as the total process of collecting, compiling and publishing demographic, economic and social data pertaining to a specified time, to all persons in a country or to a well-delimited part of a country.

- Census data can be collected by two important census techniques, namely, De Facto method and De Jure method. In De Facto method, data are collected for the entire counrty on a particular day. On the other hand, in De Jure Method, every person in an area is counted and information are collected from every household in a particular period.
- The registration method covers registration of such events as birth, death, marriage, divorce, separation, etc. In sampling method, information is collected only from a sample of the population, which is representative of the whole population.
- It is another important source of demographic data in our country. It is a register of all the legal citizens of India and it acts as an official record of all Indian citizens. It contains the demographic information about all the citizens of India as defined under the provisions of the Citizenship Act, 1955.
- NRC was first prepared after the 1951 census of India. The NRC has been made mandatory for the whole nation through the amendment of the Citizenship Act, 1955, in the year 2003.
- The purpose for which NRC has been created is to document all the legal citizens of India so that the illegal migrants can be identified and deported back to their own country.
- Aadhaar, is a 12-digit unique identity number that can be obtained by the residents of India. Aadhaar is based on biometric and demographic data of the residents, which is collected by the Unique Identification Authority of India (UIDAI), a statutory authority established under the provisions of the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016 (“Aadhaar Act, 2016”).
- Population enumerations are also done by several international organisations such as the United Nations, World Bank so on and so forth.
- They maintain records of population data across the globe and publish population data for the world as a whole and for different countries separately at regular interval.



4.5 FURTHER READING

1) Bhende, Asha, A.and Tara, Kanitkar. (2006). *Principles of Population Studies*. Mumbai: Himalaya Publishing House.

2) Raj, Hans. (1990). *Fundamentals of Demography (Population studies with special reference to India)*. Delhi: Surjeet Publications.



4.6 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Simple random sampling and Stratified random sampling are the two methods for the purpose of choosing a sample.

Ans to Q No 2: In De Jure method of data collection, a particular period is fixed within which census data is collected throughout the country. Ususally census work is completed within a period of two or three weeks. This period is therefore, called the 'Period Enumeration'.



4.7 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: What is meant by census?

Q 2: Define registration method.

Q 3: Write briefly the methods of collecting census.

Long Question (Answer each question in about 300-500 words)

Q 1: Describe the salient features of census.

Q 2: Define NSS. Analyse the sample method used in India.

Q 3: Write a brief note on Aadhaar highlighting its missions.

Q 4: Write about the various international sources of population data.

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UNIT 5 : POPULATION THEORIES-I

UNIT STRUCTURE

5.1 Learning Objectives

5.2 Introduction

5.3 Antiquity

5.3.1 Mercantilist, Physiocratic and Related Views

5.4 Malthusian Theory

5.4.1 Criticism of Malthusian Theory

5.5 Demographic Transition

5.5.1 Stages of Demographic Transition

5.5.2 Demographic Characteristics of Today's Developing Countries

5.6 Let Us Sum Up

5.7 Further Reading

5.8 Answers to Check Your Progress

5.9 Model Questions

5.1 LEARNING OBJECTIVES

After going through this unit, you will able to-

- understand the concepts of antiquity theories
- explain Malthusian theory and its criticism
- discuss demographic transition and its limitation.

5.2 INTRODUCTION

The population during ancient times experienced a high mortality due to lack of progress in science and technology. Therefore, the concern about population in ancient societies was restricted to replacement of population lost through the unusually high mortality. During the Greek period there were some definite views on population. For example, Plato, the great Greek philosopher, emphasized that for human perfection stability of population is indispensable. In other words, he emphasized the

importance of quality of population rather than mere quantity. Kautilya, ancient Indian administrator and economist, was of the view that the situation of too few people is a greater evil than too many. At the height of the Roman Empire, being pro-natalist was more common. Cicero was of the view that rapid population growth is necessary to replace war casualties; this was an era of colonization which would be easier with more people.

However, with the decline of the Roman Empire an anti-natalist policy started gaining ground. It was a period of economic stagnation and "fatalist period" of European history. Celibacy was considered to be the highest form of human existence. By the thirteenth century, slight changes in the anti-natalist policy were visible. For example, Thomas Aquinas argued that marriage and family building were not inferior to celibacy. With the growth of mercantilism, where nations were built on increasing trade and wealth, population assumed new importance. Thus, there were different views and policies as a response to changing population situations. Such efforts have gradually led to theorizing about the population changes keeping in view the consequences of population change. There have been divergent views on population situations which have contributed to formulation of important theories of population. Important of them are antiquity theory, Malthusian theory and theory of demographic transition. Population size and change play such a fundamental role in human societies that they have been the subject of theorizing for millennia. Most religious traditions have had something to say on these matters, as did many of the leading figures of the ancient world.

In modern times the subject of demographic change has played a central role in the development of the politico-economic theory of mercantilism; the classical economics of Adam Smith, David Ricardo, and others; the cornucopian images of utopians such as the Marquis de Condorcet; the contrasting views of Malthus as to the natural limits imposed on human population; the socio-political theories of Marx, Engels, and their followers; the scientific revolutions engendered by Darwin and his followers; and so on through the pantheon of human thought. Most of

these theoretical viewpoints have incorporated demographic components as elements of far grander schemes. Only in a few cases have demographic concepts played a central role, as in the case of the theory of the demographic transition that evolved during the 1930s as a counter to biological explanations of fertility declines that were then current. In this section we will discuss two important theories /models that explain the linkages between population and development. These theories /models are Malthusian theory and demographic transition model. Malthusian theory is an example of population affecting development whereas the demographic transition model is an example of how development affects population.

5.3 ANTIQUITY

In the Greek scheme of political life, the individual was only a part of the state and had to play a subordinate role to it. In ancient Sparta, all Spartans were compelled to get married and celibacy was punishable by law and denounced in public. Procreation within marriage was emphasized, as the continual wars demanded a constant supply of able-bodied men. Deformed babies were invariably eliminated. Plato and Aristotle considered the problem of population size not so much in economic terms, but more from the point of view of defence, security and government. Plato in his laws held that if the so-called “highest good” was to be achieved the city-state should have 5,040 citizens. In the event of either excess or shortage of population, he proposed measures to maintain the desired size. In the case of under-population, he recommended rewards, advice or rebuke to the young in order to increase the birth rate and immigration. To remedy overpopulation he proposed birth control for large families, and if necessary, colonization. Aristotle in his “Politica” held that land and property could not be increased as rapidly as the population would grow and concluded that an excessive number of inhabitants would increase poverty and social ills.

The Romans viewed population questions in the perspective of a great empire rather than a small city-state. Roman writers encouraged procreation by granting certain privileges to married couples with children

on the one hand, and by taxing and disinheriting those who did not get married or have children. Early and mediaeval Christian writers considered questions of population almost entirely from a moral and ethical standpoint. On the one hand, they condemned polygamy, divorce, abortion, infanticide and child exposure, and on the other, they glorified virginity and continence and frowned upon second marriage. Some early Christian writers attributed the growth of world's population to want and poverty and cited pestilence, famine, war, etc., as nature's means of reducing excess population. While others favoured high birth rates due to constant threat of depopulation through famines, epidemics and wars.

The views of Muslim authors on population resemble those of Hebrew and Christian authors. The worth noting among Muslim writers was Ibn Khaldoun (1332- 1460), an Arab author of the fourteenth century. In the first place, he held that a densely settled population was conducive to higher levels of living since it permitted a greater division of labour, a more effective use of resources, and military and political security. Secondly, he maintained that favourable economic conditions and political order stimulated population growth by increasing natality and checking mortality. He also sounded a note of warning stating that economic progress also encouraged luxurious living, led to higher taxation and brought about political instability, which in turn caused economic depression and depopulation.

The period between the beginning of the sixteenth century and the end of the eighteenth century is known for rapid changes that took place in several aspects of human life. It was the beginning of the modern age. During this period new routes to India were explored, America was discovered, gun-powder and printing were invented and a new impetus was provided to arts and sciences as well as to trade and manufacturing. Old feudal system collapsed making way to capitalism.

5.3.1 Mercantilist, Physiocratic and Related Views

Mercantilist doctrine oriented towards economic policy did not develop a population theory in a strict sense, although views on

population occupied a prominent place in the mercantilist system. Mercantilist ideas dominated economic thinking in most of Europe during much of the seventeenth and part of the eighteenth century. They attached utmost importance to industry and foreign trade because these activities alone could earn precious metals like gold. As a result, they favoured large population and large labour force.

According to Botero (1956), the strength of the state is to be found in its population and the predominance of industry over agriculture. However, he also noted that population tends to increase to the full extent made possible by human fecundity, while means of subsistence and their capacity to increase it were limited and, therefore, imposed a ceiling on population increase. This limit on population growth manifested itself through poverty which discouraged marriage, and through periodic calamities such as wars and pestilence. Batero advocated at the same time that population increase would strengthen the power of the state. Thus, the mercantilist writers in general stressed the advantages of large and growing population and favoured policies of stimulating population growth including measures to encourage marriage and large families, to improve public health, to check emigration to other countries and to promote immigration especially of skilled workers.

Population was not only an important factor in the power of the state but also played a role in increasing the state's revenue and wealth. They asserted that the density of population is the basis of wealth. He argued that when population is scarce, people can easily obtain their livelihood and that, as a result, they would become lazy. On the contrary, under conditions of high density people would have to work hard to live which creates attitudes favouring economic activity and industry. According to most mercantilist writers, the benefits of a larger population and additional labour would be particularly great, if they served to develop manufacturing. Manufactured products could yield increasing returns as they could be exchanged abroad for precious metals. The *physiocratic school*

of thought was in part a reaction against the ideas and policies proposed by mercantilist writers, and consequently opposed state intervention, trade regulation and other aspects of mercantilist thinking. Unlike the mercantilist, the physiocrats found the agricultural sector to be most strategic: the growth of the entire economy was supposed to be governed by the increase in agricultural produce. The physiocrats did not agree with the mercantilist policy of increasing population even at the expense of levels of living. Nevertheless, they took a generally favourable view of population growth on the condition that it was possible to expand agricultural production to support the increasing population.

Some of the ideas of the physiocrats were shared by Cantillon who in other respects can be considered a mercantilist writer. He believed that land was the main factor determining wealth, and that population would be limited by the amount of agricultural production. In his explanation of population trends, Cantillon distinguished between maximum people living at subsistence level and the wealthier classes such as royalty, landowners, etc., who were willing to either give up or postpone marriage in order to maintain higher standard of living. Immediate predecessors of Malthus like Condorcet and Godwin were optimistic about the future due to the influence of the French Revolution and the ideas of liberty, equality and fraternity. Adam Smith, the Father of Economics, was influenced by the Industrial Revolution in England. He advocated naturalism in his book 'Wealth of Nations' (1776) and expressed optimism about the future of world.

5.4 MALTHUSIAN THEORY

Thomas Robert Malthus was an English Clergyman, a wrangler in Mathematics by education and a college professor of History and Political Economy. His views on population provided the first systematic approach to study of population. His views were published in 1798 in his first essay "An Essay on the Principle of Population" which emphasizes that population

affects the future improvement of society with remarks on the speculations of Godwin, Condorcet and other writers. William Godwin, a philosopher and social reformer, and Condorcet, a mathematician and philosopher, had tremendous faith in science. According to them, science would help to multiply the food supply, and men will be able to live with little work and more leisure. According to them, men's will-power is sufficient to control procreation. Contrary to it, Malthus (1798) put forth the 'pessimistic view' which stated that a large and growing population is a burden for the society and a cause of poverty, misery and all types of societal problems. He postulated that populations have a tendency to grow at a faster rate than the means of subsistence.

The basic assumption underlying Malthus' population theory is that reproduction is faster than production. He expressed this in mathematical terms, as it was easy to convey the message. According to him, population increased in geometric series (i.e. 1,2,4,8,16,32,. . .) while food production increased in arithmetic series (i.e., 1,2,3,4,5,. . .). That means, with every increase in population further increase becomes easier which is not exactly the same in the case of food production. However, he also stated that population is necessarily limited by the means of subsistence. Population invariably increases more than the rate at which means of subsistence increases unless prevented by some very powerful and obvious check. These checks, according to him are in the form of moral-restraint, vice and misery. The former two he termed as preventive checks and the later as positive checks. Under moral restraint, he considered late marriage, prostitution, extra-marital sexual relation and abortion; while epidemics, wars, famines, etc. come under the umbrella of misery. His theory is referred to as Malthusian dilemma or Malthusian trap. This is, of course, a different theory, which was stated by Ricardo later.

In general, Malthus appears to assume diminishing returns from land. Unrestrained population growth can be prevented by late marriage coupled with economical use of available resources. He substantiated his theory by reviewing the situations that prevailed in various countries. His theory was a landmark in the history of population theories. In recognition

of this, the population theories were later referred to as pre-Malthusian, Malthusian and post-Malthusian theories. He also stated that if wages of labourers are increased, they will produce more children and poor people will multiply. It implied that he assumed positive relation between income and fertility.

5.4.1 CRITICISM OF MALTHUSIAN THEORY

The importance of Malthusian theory can be measured by the number of books/articles written favouring or criticizing him. There are three major aspects in his theory which are subjected to strong criticism. They are:

- the assertion that food production cannot keep up with the population growth,
- the belief that moral restraint was the only acceptable preventive check, and
- the conclusion that poverty was an inevitable result of population growth.

Malthus' conclusion that population would double in a period of 25 years was based on the evidence of doubtful statistics. He placed undue emphasis on the limitation of the supply of land. David Glass criticized him as a poor prophet because his model did not consider the enormous impact of technological progress in offsetting the growth-inhibiting forces of rapid increase in population. The availability of food could be increased by improving production and productivity. All countries, therefore, have the potential of escaping the Malthusian Population Trap. The agricultural revolution of the nineteenth century brought rotation of crops, chemical fertilizers, plant and animal breeding and improvements in the quality of livestock which tremendously increased the agricultural production. The gloomy predictions of Malthus, therefore, did not come true. Moreover, it is argued that the tendency for diminishing returns in agriculture will be more than compensated by improved productivity in manufacturing. The

neo-Malthusians also believed that modern artificial contraceptives are better than moral restraint. He also could not visualize that with development more and more couples, even the poor, will accept contraception on their own. After industrial revolution one by one all the countries in Europe, America and Oceania experienced fertility decline. Further, the pessimistic attitude reflected in increased poverty was questioned in the light of technological development, which comes to the aid of mankind. It helps in improving the production, in discovering substitutes and in finding new sources of satisfying needs. Moreover, population pressure was eased by large-scale migration to the New World, a possibility which he did not foresee. It was also said that his ideas were not original and the usage of mathematical language was inappropriate. The use of arithmetic and geometric series was the weakest link in his theory.

5.5 DEMOGRAPHIC TRANSITION

Demographic transition explains a form of relationship between population and economic development. In the western countries it has been found that they have moved from a condition of high birth and death rates, to a condition of low birth and death rates which led to a slow rate of growth of population. This demographic change is known as 'Demographic Transition'. In other words, demographic transition describes the passage through which countries move from high birth and death rates to low ones. This has been the experience of countries going through a process of modernizing economic and social development. However, it must be kept in mind that, the reasons for this change are very uncertain. There is no simple, continuous and quantitative relationship between economic development and the decline in birth and death rates.

5.5.1 Stages of Demographic Transition

The inter-relationship between population and economic development may be divided into three stages:

- The first stage is characterized by high birth and death rates. These features give rise to low population growth. To understand the forces that generate this situation you have to remember a society whose economy is dominantly agrarian and level of technology is traditional. High death rates in such a society could be due to chronic malnutrition, famines and epidemics, inadequate medicinal and health services and poor living condition. High birth rates are influenced by the socio-cultural system (i.e. illiteracy, early marriage, traditional values, religious beliefs, demand for family labour, etc.). The difference between high birth and death rates becomes narrow resulting in one percent per annum or less growth rate of population. Sometimes, it may even tend to stagnate at a particular level.
- In the second stage of demographic transition, death rate begins to decline. There is beginning of the process of economic development. Better nutritional components are included in food and living condition improves. However, the birth rates continue to remain high. Consequently, there is an increase in the growth rate of population and it tends to grow quite rapidly.
- During the third stage when the country's economy is properly developed, the already low death rates decline further only slightly. Birth rate, on the contrary, goes down rapidly. The low birth and death rates are now stabilized resulting in a low population growth rate. It is expected that today's developing countries, if successful in their development efforts, would also reach the third stage of demographic transition.

In Europe, with improvement in agricultural techniques like crop rotation, use of fertilizers, use of agricultural equipments, etc. food production increased. This released some persons from agriculture who migrated to cities. At the same time, industrial development resulted in improved standard of living of masses.

General improvement in sanitation, changes in the habits of personal hygiene, medical improvement, immunization and so on helped to bring down death rates. All these changes had effect on fertility. People were motivated to obtain their desired family size through use of birth control methods. Thus, fertility also started declining slowly at first and rapidly later. This process of change from high birth and death rates to low birth and death rates has been called “demographic transition”. Demographers such as Landry (1909) and Warren Thompson (1929) had attempted to construct a typology to describe the transition from conditions of high mortality and high fertility to conditions of low mortality and low fertility. Blacker (1947) attempted to identify it into five phases:

- The high stationary stage - characterized by high birth rates and high death rates;
- The early expanding stage - characterized by high birth rates and high but decreasing mortality;
- The late expanding stage - characterized by falling birth rates but more rapidly decreasing mortality;
- The low stationary stage - characterized by low birth rates balanced by equally low mortality and
- The declining stage - characterized by low mortality and lower natality but deaths exceeding births.

5.5.2 Demographic Characteristics of Today’s Developing Countries

In today’s developing countries, regarding their population growth, we find that there are high population growth rates and inadequate opportunities for the absorption of manpower. The high population growth rates are due to high birth rate and fast declining death rates due to better sanitation and health facilities. However, the capacities to absorb increasing manpower are much weaker. Furthermore, the process of economic development tends to be more capital intensive under modern technological conditions, and

hence, has less potential of employment generation in the short run. Since the total size of the population is already large, there is urgency for speedy achievement of demographic transition from high birth rate to low birth rate resulting in lower population growth.



CHECK YOUR PROGRESS

Q 1: What is the Thomas Malthus Theory? (Answer in about 20 words)

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Q 2: What are the different stages of demographic transition theory? (Answer in about 60 words)

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Q 3: What is the basic assumption behind the Malthusian theory? (Answer in about 30 words)

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5.6 LET US SUM UP

- There have been divergent views on population situations which have contributed to formulation of important theories of population. Important of them are antiquity theory, Malthusian theory and theory of demographic transition.
- The population during ancient time was experiencing a high mortality due to lack of progress in science and technology. Therefore, the concern about population in ancient societies was restricted to

replacement of population lost through the unusually high mortality.

- Demographic change is thus one of the most pressing problems facing the modern world today. The problems are different, specific to societies and countries and are closely related to wider economic and social changes. Attempt to understand demographic change without reference to time and region- specific context has failed.



5.7 FURTHER READING

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5.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: The Malthusian theory of population is a theory of expontial population growth and arithmetic food supply growth.

Ans to Q No 2: Different demographic stages in the theory of demographic transition, according to C. P. Blacker (1947**),** are as given below.

- The high stationary stage - characterized by high birth rates and high death rates;
- The early expanding stage - characterized by high birth rates and high but decreasing mortality;
- The late expanding stage - characterized by falling birth rates but more rapidly decreasing mortality;

- The low stationary stage - characterized by low birth rates balanced by equally low mortality; and
- The declining stage - characterized by low mortality and lower natality but deaths exceeding births.

Ans to Q No 3: The basic assumption of Malthusian population theory is that reproduction is faster than production. According to Malthus, population increases in geometric progression while production increases by arithmetic progression.



5.9 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Explain in brief the population theory of Antiquity.

Q 2: Mention the different historical contexts which have led to different demographic patterns in areas like Europe, India and Asia.

Q 3: Mention the criticisms of Malthusian Theory of Population.

Long Questions (Answer each question in about 300-500 words)

Q 1: Describe the demographic transition theory.

Q 2: Describe the limitations of the demographic transition theory.

Q 3: Discuss the basic assumption behind the Malthusian theory.

Q 4: Explain any three criticisms of the demographic transition.

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UNIT 6 : POPULATION THEORIES-II

UNIT STRUCTURE

6.1 Learning Objectives

6.2 Introduction

6.3 Understanding Post-Malthusian Theory

6.3.1 Criticism of Malthusian Theory

6.3.2 Understanding Neo-Classical School of Thought

6.4 Marxist Theory of Population

6.5 Biological Theories of Population

6.6 Optimum Theories of Population

6.7 Let Us sum Up

6.8 Further Reading

6.9 Answers To Check Your Progress

6.10 Model Questions

6.1 LEARNING OBJECTIVES

After going through this unit, you will be able to-

- understand in details about why was Malthus criticized for his theory of population
- explain the neo-classical school of thought on population theory
- discuss how Karl Marx was different from Malthus regarding population study
- discuss the opinion given by the biologists on population growth
- discuss the optimum theory of population.

6.2 INTRODUCTION

In the previous chapter, we got various theories related to population growth and its consequences including Malthusian theories, demographic transition theories, etc. Here we will learn how incomplete Malthusian theory has led other thinkers focus on other aspects. The size and growth of population have always been viewed as an influential factor underlying the

development of any country. In different times and different contexts, many thinkers and philosophers have emphasized on the question of desirable size of population and the need for either encouraging or discouraging growth of it. The foundation of each thought was practical covering social, economic, political and military issues that helped to formulate particular public policies. Here, in this chapter we will discuss different theories related to population growth that contradicts Malthusian views of population.

6.3 UNDERSTANDING POST- MALTHUSIAN THEORY

6.3.1 Criticism of Malthusian Theory

In the previous unit we have already discussed the criticisms of Malthusian Theory. Let us learn some more details about it. The Malthusian theory of population has been severely criticized on several grounds like:

- Malthus over emphasized on land supply failing to justify the consequence of agricultural revolution of the nineteenth century such as rotation of crops, modern agricultural advancement with chemical fertilizers, plant and animal breeding and improvements in the livestock etc that carried a tremendous shift in the production of agriculture. Therefore, Malthusian predictions are regarded as gloomy and pessimistic.
- Malthus under-estimated the significance of industrial development and he almost neglected the faster and reliable modes of transport that helps to provide additional raw materials, an exploitable land supply and new markets for manufactured products.
- It is viewed that his religious beliefs prevented him from considering the possibility of the widespread use of contraceptives.

Philosophers like Kingsley Davis admitted the fact that although Malthusian argument is theoretically significant but empirically it was not valid. The ideas of Malthus have been severely

criticized. Post-Malthusian theories are the theories that came into existence after Malthusian notion regarding population and specifically as the resultant criticism of Malthusian thought. Post-Malthusian theories are initiated by those thinkers who have traced various angles to look into the matter of population that was missed out by Malthus. Malthus' conclusion that population would double in a period of twenty five years was based on the evidence of doubtful American statistics. Moreover, one argument against Malthus was that he did not clearly distinguish between fecundity- the psychological capacity to reproduce and fertility- the actual reproductive performance measured in terms of live births.

The classification of checks on population growth into the two categories of preventive and positive also came in for criticism and was cited as an example of "poor classification", for the two do not form "independent categories". Moreover, it was observed that Malthus could not complete his theory with the notions of positive and preventive checks.

Theories of economic growth hypothesize that the transition from pre-industrial stagnation to sustained growth is associated with a post-Malthusian phase in which technological progress raises income and spurs population growth while offsetting diminishing returns to labour.

6.3.2 Understanding Neo-Classical Schools of Thought

The Neo-Classical school of thought was founded by William Jerons, Carl Menger and Leon Walrus and their leaders were Alfred Marshall, John Bates, Clerk, Irving Fisher and Vilfredo Pareto. The neo-classical school of thought emphasized more on mathematical economics and the analysis of the psychological background and consumer demands, consumer decisions and consumer actions.

It is true that both the classical and neo-classical schools of political economists contributed to population theory with the

observation of the inter-relationship between population and production. According to the classical school of thought, increasing population was an asset to production, resulting in improved standards of living. The neo-classical school of thought maintained that population increase led to a lowering of production. The controversy arose due to the increase in population was considered by the classical school in terms of the number of hands that produce that leads to economic well-being whereas the neo-classical school viewed population growth exclusively in terms of the number of mouths to be fed. Due to the insufficient empirical and theoretical evidence, both the views were not proved conclusively.

6.4 MARXIST THEORY OF POPULATION

It is true that early socialist writers were concerned with the questions of population, but their views were not clearly stated. The credit of formulating consistent approach to the population problem may be given to Marx and Engels. Marxist and other socialist writers in general focused on capitalist social order. Moreover, they have claimed that if the reforms suggested by them are implemented, the productive capacity of human being would increase and with that the problem of unemployment and over-population would be checked.

Although all the socialist writers were against the Malthusian theory of population, their doctrine regarding population varied to large extent.

The Malthusian theory was completely rejected by Marx as it did not fit into his ideas of a socialist society. It is to be noted that Marx and Engels did not formulate a separate population theory but they set forth basic principles which according to them would determine population size and its socio-economic correlations. Marx said there could be no natural or universal law of population growth. According to him, “An abstract law of population exists for plants and animals only, and only in so far as man has not interfered with them.” In this view, the population law was peculiar only to the capitalist systems of production and that the tendency

of over-population was inherent in that system and was not due to excessive reproduction.

Engels supported Marxist views of population size and he added one point from his own side. He talked about "**social reorganisation".** According to him, it is true that under the capitalist system surplus population was associated with surplus capital but such contradiction inherent in capitalism could be overcome only by 'social reorganisation' or reorganizing the current social order.

Marx basically believed that the nature of economic relations in Europe's industrial societies was the central problem for the world's rapidly growing population. He said it is capitalism which is the cause of all ills. Marx argued that when society is well ordered, increases in the population should lead to greater wealth, not hunger and misery. In contrast, he saw that the problem was the evils of the capitalistic order of society. He emphasized that the system of capitalism has the capacity to produce food and other necessities, but it was the unequal distribution of social and economic wealth that undetermined production. Marx held that poverty and unemployment were not due to increased population, but on capitalist system which failed to provide jobs. Surplus population was the consequence for real production and uneven distribution of wealth and for providing jobs to only a few people.

Socialist views on Birth control: Both *Communist Manifesto* by Marx and *Origin of the Family* by Engels have emphasized on the emancipation of women from household drudgery. However, it was not clearly stated there whether they should be emancipated from excessive child bearing. Engels, in a letter to Kautsky, wrote about the "abstract possibility' which means the number of persons in a communist society might have to be limited by conscious control. A German socialist, Augustus Bebets confined her analysis to the status of women under capitalist and socialist societies. According to her, population in a socialist society would increase more slowly than a bourgeois society because of the superior status of women under socialism.

Later socialists indicate that they support responsible parenthood.

The Marxists are of the view that in a socialist society, reproductive behavior would develop a complete harmony between the individual and society. Though they are generally opposed to the theme of birth control as an independent means to fight the socio-economic causes of poverty, the modern socialists hold the view that birth control contributes to the emancipation of women by "combining happy maternity and creative work". They say to that extent birth control is accepted and with that logic even abortion is permitted in the modern socialists countries of Europe.

6.5 BIOLOGICAL THEORIES OF POPULATION

The biological theories are mainly concerned about human fertility. Most of the biological theories of population growth assume the existence of the metaphysical will of Nature to perpetuate the species, which is not accepted by the demographers.

- **The Density Principle:** Michael Thomas Sadler, an English liberal political economist, in his popular work *The Law of Population* was concerned mainly about refutation of Malthusian theory. He also contributed independently to population theory. He introduced a principle that says that fertility varies inversely with the density of population. Countries like the Netherlands have high fertility and density rate. Sadler pointed out a distinctive correlation between fertility and mortality- "the prolificness of an equal number of individuals, other circumstances being similar, is greater where mortality is greater." According to him, increasing fertility is today nothing but a function of increasing mortality. According to his theory, however, increasing density decreases fertility but increases mortality, which in turn increases fertility. It is difficult to reconcile to this kind of logic.
- **The Diet Principle.** Thomas Doubleday, another English political economist propounded a theory what he termed as *the true law of population* in the year 1841. By his theory, he basically tried to attempt a relationship between population growth and diet of the people. He says that poverty stimulates population growth since the poor have insufficient diet. He based his principle on the well known

fact about the animal world: rabbits and swines "will not conceive if fed to a certain height of fatness." He observed that the Chinese, the Irish and the Scotch were highly fertile because their diet was inadequate; the birth rates in France were low because the French were well-fed.

Josue de Castro, in his book, *Geography of Hunger,* contended that deficiency of proteins make under-nourished people more fertile than those who are well-nourished. He based his conclusions on the negative correlation between the protein content of the diet and the birth rates of various countries.

But demographers did not accept Doubeday and Castro. Because the demographers maintained that fertility variations are associated with business cycles, which are actually not related to diet. Many countries in the West experienced an upsurge in fertility once economic recovery set in (1937-38) following the Great Depression of the early 1930's. The phenomenon cannot be attributed to low protein consumption. Even if it is obvious that reproductive capacity is determined by diet, the utilization of the available food depends on many other social, psychological and economic factors too. Ralph Thomlinson criticized Castro's theory by saying that "He might as well have considered the correlation between national fertility and consumption of ice-cream soda, use of washing machines or watching of televisions."

- **Biological Theories of Spencer and Gini:** Herbert Spencer introduced that fertility increases in response to the progress of society and that in fact is a great agency for mankind's advancement. This theory was introduced in the year 1880. He added that when population growth becomes excessive and threatens the very existence of the human species, individuation steps in and resolves all these difficulties.

  Another Italian biologist Corrado Gini put forward a theory which is known as cyclical theory of population which states that population tends to follow an evolution which is similar to that of the life cycle

of the individual passing though the successive stages of development, maturation and involution.

6.6 OPTIMUM THEORIES OF POPULATION

The theory of optimum population was popularized by the English economist, Edwin Cannan (1861-1935). The basic ground for the optimum theory of population is formulated by the relationship between population and resources. The first attempt of this theory is believed to be initiated by the German Professor, Karl Winkelblech in some of his writings while analyzing population theory and policy. In that he classified nations into some categories-

- Under-populated nations
- Over-populated nations
- Nations with normal populations (with favourable size of population to the greatest possible productivity)

Cannan used the term 'optimum population' as synonymous with the best possible population and specified the term like this, "At any given time, the population which can exist on a given extent of land, consistent with the greatest productiveness of industry at that time, is definite."

The concept of optimum population has been interpreted in various ways by various thinkers. Some thinkers have justified the term "to mean the size of the population which results in the highest per capita income, the highest productivity as measured in different manners, or the highest level of living, real income and, in some cases, employment."

Some writers found this term too confined to use as 'economic optimum'; therefore they suggested it in total well-being, health, longevity of a nation, the ideal family size, the conservation of natural resources, power, defense and other spiritual, cultural and aesthetic factors. For many writers, in optimum population theory, the economic aspect was the most considerable factor. Gradually the idea of a population of optimum size for maximum production was accepted.

One noteworthy aspect of the optimum theory of population was that it was a reconciliation of the optimistic and pessimistic theories of

population which indicates that the growth of population is beneficial up to a certain point after which it does not remain beneficial but becomes harmful.

The idea of an optimum population drew mass attention in the 1920's and 1930's.

- **Criticism:** The optimum theory of population has been criticized on several grounds. Many thinkers have expressed their doubts regarding the universal meaning for the word 'optimum'. According to them, the concept of optimum itself is ambiguous. In fact, very few attempts have been made to determine the optimum size of the population of any country. For instance, an American demographer put the optimum population size for the United States of America at 120 million. Alfred Sauvey, the French thinker has given this figure in between 50 to 75 million for France. Coale and Hoover with a conclusive note, said that one-fourth of the rural population of India was useless.

  According to some other critics, the very concept of the optimum population is quite static in nature. For them, the theory is based on some assumptions of *ceteris paribus* condition for all other possible factors such as technology, resources, social structure, external trade, etc. Such assumptions are, of course, highly unrealistic.

  In fact, Sauvey has extended his idea with a greater length not as an absolute theoretical concept but as a convenient tool to refer optimum population as "that population which best assures the realization of a pre-determined objective."



CHECK YOUR PROGRESS

Q 1: What does the diet principle of population say? (Answer in about 30 words)

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Q 2: What does the optimum theory of population say? (Answer in about 30 words)

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Q 3: What does 'ceteris Paribas' mean? (Answer in about 10 words)

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Q 4: Define 'social reorganisation'. (Answer in about 10 words)

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6.7 LET US SUM UP

- In different times and different context, many thinkers and philosophers have emphasized on the question of desirable size of population and the need for either encouraging or discouraging growth of it.
- According to Doubleday poverty stimulates population growth since the poor have insufficient diet. He based his principle on the well known fact about the animal world.
- The biological theories are mainly concerned about human fertility. Most of the biological theories of population growth assume the existence of the metaphysical will of Nature to perpetuate the species, which is not accepted by the demographers.
- Cannan used the term 'optimum population' as synonymous with the best possible population and specified the term like this, "At any given time, the population which can exist on a given extent of land, consistent with the greatest productiveness of industry at that time, is definite."
- Cyclical theory of population states that population tends to follow an evolution which is similar to that of the life cycle of the individual passing though the successive stages of development, maturation and involution.
- The basic ground for the optimum theory of population is formulated by the relationship between population and resources.
- The Malthusian theory was completely rejected by Marx as it did not fit into his ideas of a socialist society.

- Marxist and other socialist writers in general focused on capitalist social order. Moreover, they have claimed that if the reforms suggested by them are implemented, the productive capacity of human being would increase and with that the problem of unemployment and over-population would be checked.
- Engels supported Marxist views of population size and he added one point from his own side. He talked about "**social reorganisation".**



6.8 FURTHER READING

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2) Raj, Hans. (1990). *Fundamentals of Demography (Population studies with special reference to India)*. Delhi: Surjeet Publications.



6.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Diet theory of population tries to attempt a relationship between population growth and diet of the people. He says that poverty stimulates population growth since the poor have insufficient diet.

Ans to Q No 2: The optimum population means the best and most desirable size of a country's population. This theory basically talks about the relationship between population and natural resources.

Ans to Q No 3: Ceteris Paribus is a Latin phrase meaning "other things being constant".

Ans to Q No 4: Social reorganisation means re-organizing the current social order if there is some disorder or lack of equilibrium.



6.10 MODEL QUESTIONS

Short questions (Answer each question in about 150 words)

Q 1: What do the biological theories mainly emphasize on?

Q 2: What is meant by 'optimum population'?

Q 3: Explain in brief why Marx has rejected Malthusian theory of population.

Q 4: What is cyclical theory of population?

Q 5: Write about the socialist view of birth control.

Long questions (Answer each question in about 300-500words)

Q 1: State the differences between classical theories and neo-classical theories of population.

Q 2: What is Post-Malthusian theory of population?

Q 3: Discuss Marxist theory of population.

Q 4: Explain the optimum theory of population.

Q 5: Describe biological theories of population.

Q 6: Discuss how the matter of women emancipation is discussed in the writings of socialist writers.

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UNIT 7 : POPULATION GROWTH AND DEMOGRAPHIC TRANSITION

UNIT STRUCTURE

7.1 Learning Objectives

7.2 Introduction

7.3 Determinants of Population Growth

7.4 Consequences of Population Growth

7.5 Causes for the Rapid Growth of Population in India

7.6 Population Bomb

7.7 Theory of Demographic Transition

7.8 Let Us sum Up

7.9 Further Reading

7.10 Answers To Check Your Progress

7.11 Model Questions

7.1 LEARNING OBJECTIVES

After going through this unit, you will be able to-

- understand the factors that determine growth of population
- explain the consequences of massive population growth
- discuss the causes for the rapid growth of population in India
- analyse the major demographic trends in India
- elucidate the concept of “population bomb”

7.2 INTRODUCTION

Human beings are endowed with reproductive capacity like other species of plants and animals, which, if unchecked, may result in great increase in numbers. Population growth and density are responsible for some of the challenges we face with our environment. There is a possible fear for the entire human species if they can sustain the current way of living with the given size of the national and world populations. Two demographic variables, fertility and mortality are responsible for world

population growth. When the world situation of population growth is considered, the migration is not considered as much effective factor. The term 'Population Growth' or 'Population change' is used in its broadest connotation to cover changes in population numbers; in fact this change in the number is a continuous process. This chapter is sought to analyze the factors that affect in the increase in numbers worldwide in general and also in particular.

7.3 DETERMINANTS OF POPULATION GROWTH

The term population growth is used to refer to the changes in population numbers, inhabitants of a territory during a specific period of time irrespective of the fact that the change may be positive or negative. Population growth varies from nations to nations and among different regions of a nation. These variations are caused by several factors, sometimes directly and sometimes indirectly. Some of the prominent determinants are demographic, economic, social, political and also technological. These factors are discussed below:

- **Demographic Determinants:** It is one of the principle determinants of population growth. It Influences through the degrees of fertility, mortality and migration. Fertility and mortality are considered as more important factors than migration. The rate of growth is primarily determined by the co- relation between birth and death rates. Migration also affects growth, but in respect of regional variations and open populations only. Otherwise it is not much effective as a determinant of growth of population. Fertility as an important determinant of population growth, does not concern only to women themselves but also that community which they belong to. Fertility has a direct impact on the growth, size and structure of a population in greater scale. The growth of the population depends mainly on fertility. In population dynamics fertility is the positive force, through which the population expands, counteracting the forces of attrition caused by mortality. If this replacement of human beings is not adequate i.e. if the number of deaths in particular society continues to be more than that of births

the society would face the danger of becoming extinct. Apart from the immediate effects of fertility on the size and growth of population fertility change (upsets) the age structure of population which as a result of it determines the proportion of population in different age groups. A high fertility includes an age structure which is highly weighted towards the younger ages.

Historically also, the mortality had played a dominant role in determining the growth of population, the size of which fluctuated in the past mainly in response to variations in mortality. After the industrial revolution, the increase in the population of European countries was mainly due to a decline in the death rates. The developing countries, which are undergoing a typical demographic transition, have also been affected initially by the decline in the death rates. In India, too the most important factor that has caused a very high growth rate which kept the population during last four decades has been the sudden and phenomenal fall in death rate and before independence it was the high mortality rate which is responsible for the much feared population explosion. Migration is the Third dynamic constituent of population growth. A population may gain in size by experiencing an influx of migration and it may diminish in size by an exodus of some of its members to join another population. All sort of migrations have played a very important role in the history of population growth in most of the countries.

The only principal mechanism for the wide variations in population growth rate is internal migration. The rural to urban migration is usually associated with industrialization and urbanization. Migrants from the rural areas develop a tendency to adopt the urban way of life, which in turn has a direct impact on reducing the fertility. Migration may change the size, structure and sex ratio of the population quite drastically at any point of times. Regional growth rate results from both differential natural increase and migration increase leading to growth of population.

- **Economic Determinants:** Economic factors are also important

determinants for their potential for affecting population growth. It might be assumed that economic hard times would cause people to migrate in search of jobs and thus increase migration. However, since the rate of migration actually falls at the time of difficult economic situations, one could speculate that there is reluctance to leave familiar places. The Time honored adage that population grows in response to the demand for labor has the characteristics of an over worked half- truth it is eminently reasonable, yet presents only one side of the problems certainly the massive demands for labor by the expanding American economy in the nineteenth century did lead to emigration from the old world just as the industrial revolution in Britain created the opportunity for rural urban migration. But it is also acceptable that there can be population growth without having a demand for labor, while labor shortages can be chronic without inducing population growth. The economic factors also influence population growth through the standard of living. The inverse relationship between improving living standards and mortality has often been observed by several thinkers at different point of times. Particularly as it weeks through the pattern of better diet, clothing and housing to ameliorate the worst excesses of those diseases which stem from under nourishment and poverty. In advanced countries the progress towards ever higher standards of living and wages was self perpetuating and it could be stopped only by perversion of the system. Moreover, basic changes in the economic development associated with the agricultural manufacturing and tertiary states of development always put strains on the structure of population. In nineteenth centuries it was fully observed that the increase of food supply regulated the growth of population many a time directly and sometimes indirectly.

- **Social Determinants:** The social class factor is the most influencing factor in accounting for differential population growth. The patterns of mortality, fertility and migration are empirically related to differences in class situation. The pure social factor can be understood through

a large variety of factors. The cultural, religious, linguistic, ethnic and racial characteristics of a population growth are important in giving it a distinctive demographic structure. Such attributes are often used as scale of inferiority or superiority and are thus potential means of self or imposed isolation, which can itself have a variety of demographics and spatial expressions. The oppression involved has also established demographic distinction between minority and majority. For instance, the relative social position of woman, the form of marriage pattern, the organization of family groups, whether nuclear or extended are some of the social factors that matter to spatial expressions.

- **Political Determinants:** The rapid growth of world's population with its consequent demand for more food supply, keeps the world in a state of potential crisis. The green revolution in different parts of the world, brought out more productive cereals like a miracle in some places like Philippines and Sri Lanka and wheat, in Mexico, India, Pakistan let the populations score a point only temporarily over the promotion of the issue of great priority. Japan which achieved a precipitous decline in its birth rate mainly through abortions, still remains the prime example of the east to have contained the crisis successfully. Ironically, the population control measures in the recent part have not been very effective in the large sized less developed countries like India, Indonesia, Pakistan where the crisis is felt most strongly. In such countries the problems are great in number: the annual increment is substantial; the masses are illiterate; the majority of population continues to struggle to wrest a meager harvest from landholding. To improve the productivity and production in the agriculture sector such countries are not technologically sound and utilising labour intensive technology, which still appears to lie in more man power, and that inhibits the acceptance of the realization about the need for birth control measures is meager. Also the dissemination of the required information and devices to control births is slow and difficult. It is also an expression of an assortment of variables which

are concerned with resulting population growth. The distinctive government policies enacted in the nation are bound to have impact on the size and structure of the population. The effects of political factors are not of course, limited to child bearing. Immigration and migration laws and policies can have a significant impact on the movement of people from country to country and place to place which can have the effect of decreasing death rates.

- **Technological Determinants:** The technological determinants of population growth comprises of the following aspects-
  - invention,
  - practical development adoption and
  - mass use

  These determinants are of varying degree responses to stimulation from the other determinants. Advances in medical, transport, agricultural and industrial technologies have contributed to rapid population growth. Medical advances in the field of contraception, oral technology have meant that birth control can now be practiced effectively by the many millions of women who wish to space out the children's births and limit their completed family size. However these developments have not been always whole beneficial. The ever widening gap between the technologically advanced western states and those in the third world means that health services are differentially distributed and there are wild slipperiest in living standards both having important implications for long term rapid population growth. There is a need to comprehend these determinants and to work on these factors to keep a check on the increasing population.
- **Improvement in Public Health:** Now-a-days, people are aware about their survival issues and basic needs such as food, water and shelter. Before 1990, less than 50% of people had the access to safe drinking water. Many people died of water related diseases such as cholera, malaria etc. Now- a -days people have the concerns about safe and sustainable water. Secondly, people are hankering after improving food

supply, ending mal nutrition, improving living standard, providing adequate housing which in turn lead to a decline in death rate.

- **Food Production Distribution:** The remarkable fact about the last 150 years is the capacity to increase food production in many places. In the last two centuries, in many places, the practice of agricultural production has improved to a greater extent.

Each of the above mentioned determinants plays its role in its own way and each need to be tackled with designing and implementing specific framework and guidelines.

7.4 CONSEQUENCES OF POPULATION GROWTH

If the population size exceeds the reasonable limit, problems start coming into existence as a threats for livelihood with various scales. Here some of the consequences of rapid population growth are discussed.

- **Population and Poverty:** Poverty and excessive population growth often go hand in hand. In fact in many cases these two phenomena cohabit as cause and effect.
- **Unemployment and Underemployment:** Not only new born individuals are to be fed and sheltered but also they are to be provided with jobs. New jobs are to be created for the new hands but it is not easy to create jobs. There is already unemployment coupled with underemployment which gives birth to other related problems.
- **Low Per Capita Income:** During the past 50 years of planning, the national per capita income of this country has increased by about 3.6% per annum. But the rate of increase is too low per annum. The low per capita income of India is attributed to rapid population growth.
- **Shortage of Food:** Country like India, even though has attained self-sufficiency in food production, but is unable to produce enough of food sufficient for the mass population. As a result, a greater portion of human-being suffers from mal nutrition and other diseases related to insufficient nutrition. This will increase the cost of the social overheads. For every government, it is quite difficult to find

sufficient funds to meet these unproductive expenses.

- **Increased Burden of Social Overheads:** When there is rapid growth of population in the country, the government is required to provide the minimum facilities for the people for their comfortable living. Hence it has to increase educational, housing, sanitation, public health, medical, transportation, communication and other facilities.
- **Population and Labour Efficiency:** Since an increase in population reduces per capita income, the standard of living of the people deteriorates. This affects very badly on the health and productive efficiency of the workers. The physical as well as mental efficiency become low.
- **Population and the Standard of Living:** Standard of living connotes the quantity and quality of consumption of the people. The rapid growth of population often affects adversely on standard of living.
- **Population and Pressure on Land:** Land is limited natural resource that can not be produced in order to offer space to the increased population. The supply of land is fixed in nature. An increase in population can put heavy pressure on it degrading its quality too.
- **Increased Unproductive Consumers:** When there is a rapid growth of population in a country like India, there will be large proportion of unproductive consumers. Rapid growth of population contributes to an increase in the dependency ratio.
- **Slow Economic Development:** Economic development is bound to be slower in a country in which the population is growing at a very fast rate. Absence of savings results in low capital formation. The shortage of capital has restricted investments and contributed to the slow economic growth of the country.
- **Political Unrest:** Unmanageable population size may contribute to political instability and unrest. The failure of the government to provide the basic minimum facilities to the people contributes to agitation and unrest among the masses.
- **Climate change:** Due to over population, there can be seen a massive climate change worldwide. The matter of climate change

has become a mere threat to all sorts of animals and species.

- **Environmental Disorder:** Due to the overpopulation there can be seen various imbalance in natural environment. Carbon footprint, various kinds of population, global warming are some of the bad effects of over population.
- **Growing Urbanization and Slums:** Overpopulation results in the creation of city and urban life. It gives rise to crowd and slums too.

7.5 CAUSES FOR THE RAPID GROWTH OF POPULATION IN INDIA

In India, several factors have contributed to the rapid growth of population in India. Some factors are discussed below:

- **Peaceful Conditions:** For nearly a century, India enjoyed relative peace without involving herself in major inter-conflicts or war lie situations after the establishment of British rule. Peaceful conditions provide an impetus for thinking about reproduction that lead to over-population.
- **Improvement in Transport Facilities:** It has helped people to avail the medical and health facilities without many difficulties. It has saved countless lives and added to the size of the population.
- **Social Attitudes of Indians:** Poverty, illiteracy, ignorance, absence of recreational facilities, attitudes of conservatism, orthodoxy, extreme religiosity, a sense of resignation towards life, looking upon children as old age pension, etc. are responsible for the rapid growth of population.
- **Excess of Birth over Death:** Population growth depends on the excess of births over deaths. Death rate has been gradually declining in India.
- **Progress in Medical Knowledge:** The advanced medical knowledge and its application have considerably reduced the death rate. It has helped us to control the spread of life-taking diseases like Malaria, T.B., Cholera, Plague, Influenza, Smallpox, etc. and protected the people from the jaws of death. Positively, it has added to greater population, because those persons saved from the death

also produced children to contribute to the existing numbers.

- **Social factors like Universal Marriage, Child Marriage, and Early Marriage:** These social factors have contributed a lot in the population increase. Indian tradition prescribes marriage as a social obligation and it's quite noticeable that almost all marriageable persons are in a married state. Particularly for the women, woman is almost an inescapable obligation. Further, the number of children born per couple is also large.
- **Lack of Conscious Family Planning:** Among the married couple in India, it has been observed that there is a lack of proper family planning. The illiterate masses are ignorant about the use of contraceptives. People feel that more children are wanted for economic purposes.
- **The Climatic Conditions of India:** This is another conducive factor that influences the growth of population. The tropical climate stimulates sex urge. **Montesquieu** said that people of warm land are more sex-indulgent. Further, girls become physically mature at an early age ranging from 11 to 15 years of age. After puberty, their chances to become married go higher and in return they become positive influential factors of increase in population.

7.6 POPULATION BOMB

Very recently, a modern Malthus has appeared in the form of Paul Ehrlich along with his wife Anne Ehrlich. Ehrlich has written a book *The Population Bomb* (1968) where he argued that many of the dire earlier predictions of Malthus were not far from wrong. He claims that the growth in world population is equivalent to a time bomb ready to go off in the near future, with dismal consequences. He emphasized on the fact that the sheer mathematics of population growth worldwide are sufficient to demonstrate that world population cannot possibly continue to expand at its present rates.

The Ehrlich couple pointed out that worldwide population growth has outgrown food production and that massive starvation must inevitably follow. They were among the earliest modern thinkers who focused in the

correlation between population growth and environmental issues. They argued that the quality of the environment, especially the availability of clean air and water, was a critical factor in the growth and health of populations. Regarding their justification, they pointed to mass starvation in many parts of Africa, the intensity of hunger and poverty in the United States among Black and Hispanic populations, increased homelessness in the cities, rampant extinctions of several species of plants and animals, and irrecoverable destruction of environments such as the rain forests, as evidence of the massive threats if population growth and environmental degradation are not checked.

7.7 THEORY OF DEMOGRAPHIC TRANSITION

The theory of demographic transition is based on the actual population trend of the some of the advanced countries of the world. It is the reflection of the population trends which have moved from a condition of high mortality and high fertility with consequent slow growth of population to conditions of low mortality and low fertility once again leading to a slow growth of population. The theory focuses on changes in birth rate and death rate and the consequent yet fluctuating growth rate of population.So, this theory is an attempt to grasp the process of change from situation of high mortality and high fertility to a situation of low mortality and low fertility.

The theory of Demographic transition explains the effects of changes in birth rate and death rate on the growth of population. According to E.G Dolan, “Demographic transition refers to a population cycle that begins with a fall in the death rate, continues with a phase of rapid population growth and concludes with a decline in the birth rate.” According to this theory, there are certain stages of population development and almost every country has to pass through these stages. The theory of demographic transition has been popularised by W.S Thomson and F.W. Notestein along with various other theorists who have contributed towards the solidification of the theoretical framework of the Theory of Demographic Transition.They have divided the process of transition of population into five stages. They are as follows-

- **High stationary stage:**

  It is the preliminary stage of a society which is characterized by ***high birth rate and high death rate*** resulting in low population growth. In this stage, majority of population lives in the countryside and depends on agricultural output which has lower productivity leading to poverty in the society. Along with this, people are mostly illiterate and live in dirty, unhealthy and unventilated houses. All these social and economic factors are cumulatively responsible for high birth rate and high death rate in this society resulting in a static equilibrium in population growth.

- **Early expanding stage:**

  In the second stage, the economy is supposed to enter the phase of economic development in which all sectors of the economy-agriculture, industry, trade, transport, service sector start developing. The productivity in the sector increases. Medical, health and education services also largely improve, which has been reflected in the fact that the ***death rate comes down considerably, but birth rate almost remains stable.*** This leads to a situation of 'population explosion' in the economy. This stage has been referred to as early expanding stage when population grows very rapidly due to declining death rate and birth rate remains almost unchanged.

- **Late expanding stage:**

  In this stage, a ***declining birth rate and low death rate*** lead to a situation of low population growth. Along with economic development of a country, structural changes in each country begin to take place. In this stage, large numbers of industries are established in the country. A major part of population begins to reside in urban areas. People now start to treat children as a liability more than an asset. In this stage, couple prefer to have a car or any luxurious items than a child in order to maintain a high standard of living in the society. Consequently, birth rate begins to fall and death rate remains low. Thus population growth grows to a phase of diminishing growth.

- **Low stationary stage :**

  In the fourth stage***, the birth rate comes down and tends to be equal with the death rate,*** resulting in a situation of decline in the population growth. The leading growth sectors like agriculture, industry and trade expands and pass through technological transformation. The levels of education, income, savings, investment and employment rises. Most of the advanced countries in the world are passing through this stage of low stationary growth of population development.

- **Declining stage :**

  In this last stage of population growth, the economy reaches a phase when continuously ***declining birth rate is accompanied by the lowest death rate***. This trend leads to a declining stage of population growth. This stage in any advanced country is an imaginary phenomenon.

Critical Evaluation of the theory of Demographic Transition

The theory of demographic transition is widely accepted as an important theoretical orientation towards the study of population growth. However, various questions has been raised by various critics regarding the practical implication of this theory. According to some eminent scholars this theory is only precises the empirical experiences which is common to sociologists but criticized by others. Again, this theory cannot be used for making predictions and it fully ignores the role of migration. Even this theory does not explain the causes of changes in birth and death rates. So, considering these understanding the various criticisms of Demographic Transition theory have been discussed below-

- Critics have pointed out that the sequences of the demographic trends or different stages of population growth as discussed in the theory is not uniform in nature. For instance, in some East and South European countries like Spain in particular, the fertility rates declined even when mortality rates were high. But in case of countries like Unites States of America, the growth rate of population was higher than in the second and third stage mentioned in the theory of demographic transition.

- The theory has failed to give a fundamental explanation of decline in birth rates in Western countries. In fact, the causes of decline in birth rate are so diverse that they differ from country to country.
- The critics have forwarded the idea that the theory of demographic transition cannot really be called as "theory" rather they would prefer to call it generalised implications.
- Although various theorists have tried to scrutinise the theory of demographic transition with a critical viewpoint, this theory has been recognised as the most acceptable theory of studying the trend of population growth.



CHECK YOUR PROGRESS

Q 1: How are population and poverty related? (Answer in about 20 words)

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Q 2: What are the aspects that technological determinants of population growth comprise of? (Answer in about 20 words)

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Q 3: How can marriage influence population growth? (Answer in about 50 words)

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7.8 LET US SUM UP

- The term population growth is used to refer to changes in population numbers, inhabitants of a territory during a specific period of time

irrespective of the fact that the change may be positive or negative.

- There are many determinants of population growth, i.e. economic, political, social, technological etc.
- Social factors have contributed a lot in the population increase. Indian tradition prescribes marriage as a social obligation and it's quite noticeable that almost all marriageable persons are in a married state.
- The advanced medical knowledge and its application have considerably reduced the death rate. It has helped us to control the spread of life-taking diseases like Malaria, T.B., Cholera, Plague, Influenza, Smallpox, etc. and protected the people from the jaws of death. Positively, it has added to greater population, because those persons saved from the death also produced children to contribute to the existing numbers.



7.9 FURTHER READING

1) Ashraf, D. N. Major Determinants of population growth. *International Journal of Human Resource & Industrial Research.*

2) Srivastava, S.C. and Srivastava, S. (2004).*Studies in Demography*.New Delhi: Anmol Publications Pvt. Ltd.

3) Raj, H. (2001). *Population Studies*. Delhi: Surjeet Publications.



7.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Poverty and excessive population growth often go hand in hand. In fact in many cases these two phenomena cohabit as cause and effect.

Ans to Q No 2: The technological determinants of population growth comprises of the following aspects-

- invention,
- practical development adoption and
- mass use.

Ans to Q No 3: Indian tradition prescribes marriage as a social obligation and it's quite noticeable that almost all marriageable persons are in a married state. Particularly for the women, woman is almost an inescapable obligation. Further, the number of children born per couple is also large.



7.11 MODEL QUESTIONS

Short questions (Answer each question in about 150 words)

Q 1: What is meant by Population bomb?

Q 2: How can overpopulation affect the standard of living?

Long questions (Answer each question in about 300-500 words)

Q 1: Explain the technological determinants of population growth.

Q 2: Explain the causes of rapid growth of population in India.

Q 3: What are the consequences of overpopulation?

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UNIT 8 : DEMOGRAPHY AND URBANIZATION

UNIT STRUCTURE

8.1 Learning Objectives

8.2 Introduction

8.3 Urbanization

8.3.1 Meaning

8.3.2 Size of Urbanization

8.4 Methods of Measurement of Urbanization

8.5 Factors Responsible for Urbanization

8.6 Problems of Urbanization

8.7 Let Us Sum Up

8.8 Further Reading

8.9 Answers to Check Your Progress

8.10 Model Questions

8.1 LEARNING OBJECTIVES

After going through this unit, you will be able to-

- understand the meaning of demography and urbanization
- explain the methods of measuring urbanization
- discuss the factors responsible for urbanization
- analyse the problems of urbanization.

8.2 INTRODUCTION

This unit basically tries to trace the relationship between growth of population and urbanization as a result of it and also its consequences. All spaces are socially organized and transformed. We build the places we live in and the spaces in which we move around. For instance, if we look at the maps of different places we will know that different history, different cultures create different shapes of the places. Therefore, sometimes it can be called ‘social construction of space’. Great concentrations of people have always had the power to intensify the triumphs and tragedies of

human existence. Thus, the world's demographic, environmental and social problems are most pronounced in cities, especially in poor nations.

8.3 URBANIZATION

8.3.1 Meaning

Urbanisation implies the process where by an increasing proportion of a country's population came to live in urban areas in search of employment, better opportunity, better standard of living, better health and educational infrastructure and economic prosperity.In the past as most of the world population were concentrated on agricultural activities as their way of livelihood, so people were basically concentrated in rural areas. The trend of urbanisation was started just after the starting of the process of industrialisation in the world economy and the people in large numbers began to migrate from rural to urban areas. In urban areas activities of the people are primarily centered in government, trade manufacturer or allied interests unlike the rural areas where communities concerned ethiefly with agriculture.The speed or rate of urbanisation is depended on time and place and varies accordingly.

In short, urbanisation is a method by which rural areas become urban and urban society emerges.The people who migrated from rural to urban areas adopt the new way of urban living by participating in new urban social customs, which affect their interests, values and behaviour.

8.3.2 Size of Urbanization

For most human history, the sights and sounds of great cities such as Hong Kong, Rio de Janeiro, Paris or Los Angeles were completely unknown. The world's people lived in small, nomadic groups, moving as they depleted vegetation or searched

for migratory game. Humans survived for tens of thousands of years without permanent settlements. Cities first emerged in the Middle East, then arose on all the continents, but held only a tiny fraction of the earth's people until very recently.

Today, the population of the world's five largest cities exceeds the total planetary population when cities first developed. By 1950, nearly 80 cities had populations in excess of 1 million; by 2000 that number exceeded 250. By 2010, half of the world's population lived in cities. These figures testify to the steady march of **urbanization,** *the concentration of humanity into cities.* Urbanization not only redistributes the population within a society but also transforms many patterns of social life.

Urbanization is the process by which a community acquires the characteristics of city life and the 'urban' end of the rural-urban continuum. Growth of cities is the consequence of the elaboration of society. Urbanization refers to the increasing number of people that live in urban areas. It predominantly results in the physical growth of urban areas, be it horizontal or vertical. It simply refers to the population shift from rural areas to urban areas, the gradual increase in the proportion of people living in urban areas, and the ways in which each society adapts to this change. It is the process by which large numbers of people become permanently concentrated in relatively small areas forming cities and leading to population growth. Urbanization is closely linked to modernization, industrialization, and the sociological process of rationalization. Urbanization is relevant to a range of disciplines, including urban planning, geography, sociology, architecture, economics and public health. Growth of population in most of the developing countries is closely associated with growing urbanization. Urbanization is taking place at a relatively greater pace in India. The proportion of urban population in India increased from 10.84% in 1901 to 17.3% in 1951, to 25.7% in 1991, and to 28.53% in 2001. As per 2011 census, it crossed 30%, standing at 31.16%. In 2017, it increased

to 34%, according to the World Bank. According to the data of Census 2011, out of 121.02 crore total population of India 37.7 crore (31.16%) population reside in urban areas. And acording to the data of Census 2001, out of 102.87 crore total population of India 28.61 crore (27.81%) population reside in urban areas.

Cities are relatively new development in human history. Only about 12,000 years ago our ancestors found the earliest permanent settlement, setting the stage for the first urban revolution. As glaciers drew back at the end of the last ice age, people congregated in warm regions with fertile soil. At the same time, human discovered how to domesticate animals and cultivate crops. Whereas hunting and gathering demanded continual movement, raising food could require people to remain in one place. Domesticating animals and plants also yielded a material surplus, which freed some people from concentrating on food production and allowed them to build shelters, make tools, weave clothing and take part in religious rituals. Thus, the founding of cities, made possible by favorable ecology and changing technology, was truly revolutionary, enhancing productive specialization and raising living standards as never before.

8.4 METHODS OF MEASUREMENT OF URBANISATION

Urbanisation as a process has four dimentions viz. **degree of urbanisation, tempo of urbanisation, concentration and dispersion of population and components of urban growth**. These four dimensions of the process of urbanisation can be measured in the following way-

- **As pertantage of population:**

  In this method, the percentage of population living in an urban area can be calculated as

  $Pu = \frac{U}{P} X\ 100$

  where, Pu is percentage of urban population

  U is urban population

P is total population

This method of finding the degree of urbanisation is easy to calculate, compare and interpret. The information needed for this method is also easily available. This formula does not provide us any indication of the percentage of the population living in different types of towns.

- **Ratio of urban-rural population:**

This index can be calculated by dividing the urban population (U) by rural population(R) as follows-

$UR = \frac{U}{R}$ where, UR is urban -rural ratio

It is an useful index for historical comparision and also indicates tempo of urbanisation.

- **Size of locality of residence of the median inhabitant:**

This index also follows the same principle as that of median age.In this index, the entire population of a country is divided in two equal halves to find out the median inhabitant for a locality.This index is calculated by the following formula-

$$MI = Q_i + \frac{50 - PP_i}{PP_{i+1} - PP_i\ (Q_{i+1} - Q_i)}$$

where, MI is the median inhabitant

PP_i is the cumulative percentage of the population for the locality size just under 50 percent

PP_{i+1} is the cumulative percentage of the population for the locality size next to 50 percent category

Q_i is the super limit of the locality size i

Q_{i+1} is the upper limit of the locality size i + 1

- **Tempo of urbanization:**

The above methods of measuring urbanization provide the information of urbanization at a particular point of time.So calculating it for two times, we can obtain the rate of change in urbanization, which is known as tempo of urbanization.Such change may occur in any form like linear, exponential or hyperbolic.

- **Scale of urbanization:** The degree of urbanization is based on an arbitrary minimum size limit. It reflects the urban size hierarchy too. The formula for the measure of **scale of urbanization** is

  Su = ΣXY,

  where Su is the measure,

  X is the proportion of the urban population on units above a certain size

  and Y is the proportion of the table population in the same units.

It describes the projected average rate of change of the size of the urban population over the given period of time.

8.5 FACTORS RESPONSIBLE FOR URBANIZATION

Urbanization in the developing world occurs for various reasons. They are discussed below-

- **Natural Increase in Population:** Population is increasing in a rapid pace all over the world. With limited natural resources it becomes troublesome for these populations to survive. Therefore, they keep on searching for better opportunities and better facilities.
- **Rural to Urban Migration:** Predominantly rural traditions and cultures are being replaced by urban culture. As the towns and cities are expanding rapidly, working age people from rural areas migrate from the countryside to earn more money in the city. They leave behind the old and the young. This process is called **rural depopulation**.
- **Industrialization:** Industrialization has historically led to urbanization by creating economic growth and job opportunities that drew people to cities. Urbanization typically begins when industries, factories are established with a high demand of labour. Other businesses such as building manufactures, retailers, service providers then follow the factories and industries to meet the product demands of the working class. This in turn creates more job opportunities and demands for housing, establishing an urban area.
- **Spread of Education:** Urban areas offer more access for higher education to majority of the youth. It ensures availability of better

teaching with a competition of knowledge. It offers advanced and better access to libraries with better technology for the students. It produces ideas of latest trends of career world. It entails easier and better placement strategies for large number of students which attract people to shift to it.

- **Other Social Factors:** Poverty, unemployment, religious instability, conflicts, modernization of agriculture are some of the social factors that push people away from their rural areas to city areas.

8.6 PROBLEMS OF URBANIZATION

The problems of urbanization can be discussed as follows-

- **Globalization, Global Cities and the Global Souls:** Global cities are cities with considerable economic power, commanding global investments and the concentration and accumulation of capital. For Saskia Sassen, global cities stand out as key command points in the organization of the world economy, and are the key locations of the marketplaces for the leading industries. Global cities are the prime location of major corporate headquarters of TNCs, international banks and an international division of labour, with privileged foreigners who 'jet set' around the world. They have to be major centers of communication and a good air transport system is central. All global cities are connected by air to all other global cities.

  These global cities have led to a large number of people now living not in one society but in several simultaneously. Although, they are likely to have apartments in a number of cities across the world, their real home is probably the airport and the jet aircraft! These are what novelist Pico Iyer has called 'the global souls'.

- **The Urban Divide: Planet of Slums, Wasted Lives and Inequalities:** Many people across the world flee from their desperately poor villages in search of a life in the city. But cities do not produce wealth for many of their citizens. The most striking feature of the cities of modern world is the scale of their slums. They are characterized by immensely poor housing, overcrowding, poor

access to safe water and sanitation and insecurity. Instead of being a focus for growth and prosperity, the cities have become a dumping ground for a surplus population working in unskilled, unprotected and low wage informal industries and trade.

In 2010, there were around 800 million people living in such slums. The world slum population will probably grow by at least six million each year, reaching an estimated 889 million by 2020.

This is a kind of passive proletarianisation whereby traditional forms of works are dissolved and the great majority of people become part of a huge informal and unstructured labour market. The slums and shanty towns now spread for miles at the outskirts of the city. Then they offer them scavenging work, the refugee camps for the socially excluded, and miles and miles of 'make do' shelters.

Throughout history, the city has improved people's living standards more than any other type of settlement. The question facing humanity now is whether cities in poor countries will be able to meet the needs of vastly larger populations in the coming century. The answer, which rests on a heady mix of sociological understanding, grasping of international relations and global economic ties and, possibly above all, a concern for simple justice, will affect us all.

- **Environmental Problem:** The process of urbanization has created a big dent in the environmental health. The natural resources are depleted and this excessive use of technology and energy become a major source of pollution and today we live in a world that is highly polluted and unfit for living. Due to growing urbanization, various pollutions are caused like air pollution, noise pollution, water pollution, thermal pollution, global warming, deforestation, etc. Moreover, urbanization leads to radio active pollution that occurs due to accidental leakage by nuclear power plants and it poses a big threat to both human life and other animals life. Another pollution that is caused due to rapid urbanization is visual pollution that happens due to the over exposure of visuals in the cities in the form of signs, billboards, screens, high intensity lights, etc which are very disturbing. Thermal pollution is

caused by excessive amount of heat trapped in earth's atmosphere.

- **Increase in Crime:** Data shows that there is an increase in crime in urbanized areas. Historically, crime and urbanization have gone hand in hand. The simplest explanation is that, areas with a higher population density are surrounded by greater availability of goods. Committing crimes in urbanized areas is also more feasible. Modernization has led to more crimes as well. There is a greater awareness of the income gap between the rich and poor due to modern media. This leads to feelings of deprivation which can lead to crime. In some regions where urbanization happens in wealthier areas, a rise in property crime and decrease in violent crime is seen.

  Migration is also a factor that can increase crime in urbanized areas. People from one area are displaced and forced to move into an urbanized society. Here, they are in a new environment with new norms and social values. This can lead to less social cohesion and less control that leads to more possibility for crime.

- **Weaker Sense of Community:** The social thinker Louis Wirth has correctly said that urban settings do sustain a weaker sense of community than do rural areas. They do not produce strong solidarity among the dwellers. They create highly secondary relationships which may have adverse psychological effect on individuals. People are often self-centered and they have no concern for the fellow human beings.
- **Disintegration of Joint Family:** Joint family cannot be maintained in cities on account of high cost of living. People prefer to live in nuclear type of families so that cost of living might come down.
- **Strain from Competition:** In rural areas a man's role in life and society is fixed, well defined and assured. On the other hand, competition over urban resources on a large scale and to a greater extent is a regular feature of urban life.
- **Urban Tensions:** Physical irritations such as excessive noise, constant cacophony or mechanical sounds, incessant visual attacks on the eyes by multi-glared lights, mass congestion in public conveyances, restaurants, departmental stores and amusement

places, and the strain caused by daily commuting are some of the other problems of urbanization.



CHECK YOUR PROGRESS

Q 1: What is meant by urbanization?(Answer in about 30 words)

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Q 2: State the meaning of Net- Migration Rate. (Answer in about 50 words)

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Q 3: What is meant by global city?(Answer in about 50 words)

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Q 4: What is meant by tempo of urbanization?(Answer in about 30 words)

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8.7 LET US SUM UP

- Urbanization is a global trend reflecting the growing population of the world.
- Urbanization results from various factors like natural increase in the population, rural to urban migration, etc.

- People migrate from rural areas to urban areas in hope of gaining a better standard of living. They are influenced by pull factors that attract them to urban life, and push factors that make them dissatisfied with rural living.
- Urbanization affects the physical environment through the adverse impacts of over population, their activities and increased demands of resources.
- The pressures of urban living may lead to crime and other consequences of social deprivation.



8.8 FURTHER READING

1) John J. and Macionis, K. P. (2018) *Sociology: A Global Introduction.* United Kingdom: Pearson.

2) Srivastava, S.C. and Srivastava, S. (2004). *Studies in Demography*. New Delhi: Anmol Publications Pvt. Ltd.

3) Raj, H. (2001). *Population Studies*. Delhi: Surjeet Publications.



8.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Urbanisation implies the process where by an increasing proportion of a country's population came to live in urban areas in search of employment, better opportunity, better standard of living, better health and educational infrastructure and economic prosperity.

Ans to Q No 2: People's movement into a territory, commonly termed immigration, is measured as an in-migration rate, calculated as *the number of people entering an area for every thousand people in the population.* Movement out of a territory, or emigration, is measured in terms of the out-migration rate, *the number leaving for every thousand people.* Both types of migration usually occur simultaneously; their difference is called the net migration rate.

Ans to Q No 3: Global cities are cities with considerable economic power,

commanding global investments and the concentration and accumulation of capital. For Saskia Sassen, global cities stand out as key command points in the organization of the world economy, and are the key locations of the marketplaces for the leading industries. Global cities are the prime location of major corporate headquarters of TNCs, international banks and an international division of labour, with privileged foreigners who 'jet set' around the world. They have to be major centers of communication and a good air transport system is central. All global cities are connected by air to all other global cities.

Ans to Q No 4: The different methods of measuring urbanization provide the information of urbanization at a particular point of time.So calculating it for two times, we can obtain the rate of change in urbanization, which is known as tempo of urbanization.



8.10 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: What is meant by urbanization?

Q 2: Write a short note on size of Urbanization.

Q 3: Briefly explain the ratio of urban-rural population as a method of measuring urbanization.

Long questions (Answer each question in about 300-500 words)

Q 1: Describe the consequences of urbanization.

Q 2: Discuss the factors responsible for urbanization.

Q 3: Explain the methods of measurement of urbanization.

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Name of the Paper: Course Code:

Centre for Internal Quality Assurance (CIQA)
Krishna Kanta Handiqui State Open University
City Office, Housefed Complex, Guwahati- 06

Learner's Feedback on Course

Dear Learner,

Regarding the course as mentioned above, we would like to know your opinions and comments so as to improve the quality of self learning materials in future. Please respond to the following statements by ticking the number you feel most reflect your opinion. After completion of the additional comments, please detach the page and send/mail the same to us at the address given below.

The Director, Centre for Internal Quality Assurance, KKHandiqui State Open University
Housefed Complex, Dispur, Guwahati- 781006
(E-mail id: ciqa@kkhsou.in)

1. Approximately how many hours did you spend for studying the units in the course?

2. Please give your opinions (by √ mark) to the following items based on your reading of the block:

Sl. No.	Statements	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I.	The SLMs of the course fulfil the learning objectives set out in the beginning of each unit					
II.	The units of the SLM could satisfy my academic needs and expectations					
III.	The Unit writers have excellent knowledge about the course contents					
IV.	Language and contents of the units were presented at a level which I could readily understand					
V.	Ample opportunity for participation in the activities provided in the units					
VI.	Used enough Illustrations (Diagrams, tables etc.) for conceptual clarity					
VII.	Quality of content is engaging, relevant, and up-to-date					
VIII.	The self check questions are very helpful					
IX.	The Possible/model questions and the answers to check my progress have benefited me a lot					

Additional Comments: *(Please feel free to provide your open comments)*

1. Which aspects of the SLM, according to you, worked well?

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2. What sort of changes/improvements do you feel KKHSOU could implement to improve the overall quality of the SLM?

Thank you for taking the time to complete this form.

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