



COURSE CODE: MASOD 205

COURSE NAME: POPULATION AND
SOCIETY

**CENTRE FOR DISTANCE AND
ONLINE EDUCATION
TEZPUR UNIVERSITY**

**MASTER OF ARTS
SOCIOLOGY
BLOCK I**



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MSO-205: POPULATION AND SOCIETY

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BLOCK I

MODULE I: INTRODUCING SOCIAL DEMOGRAPHY

UNIT 1: INTRODUCING SOCIAL DEMOGRAPHY

UNIT 2: RELATIONSHIP OF DEMOGRAPHY WITH OTHER SCIENCES

UNIT 3: BASIC CONCEPTS: FERTILITY, FECUNDITY, MORTALITY, MIGRATION

MODULE II: THEORIES OF POPULATION

UNIT 4: POPULATION THEORIES: ANTIQUITY, MALTHUSIAN, POST-MALTHUSIAN

UNIT 5: POPULATION THEORIES: NEO-CLASSICAL, MARXIAN, BIOLOGICAL THEORIES, OPTIMUM THEORY, DEMOGRAPHIC TRANSITION

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COURSE INTRODUCTION

This course explores the relationship between demography and society. It introduces the learners with the basic concepts and theories of demography and their critique. The course also discusses the various population policies in India and critically assesses them. At the end of this course, learners will be able to grapple with various complex issues relating to population.

The course is divided into four Modules, each consisting of multiple units. This has been done to discuss the major concepts more elaborately and, in a learner, friendly way.

Module I gives an introduction to the paper. It consists of three units, each dealing with different concepts of social demography. **Unit 1** is basically an introductory unit. The unit focuses on the meaning, nature, scope, subject-matter and significance of social demography. **Unit 2** is about the relationship of demography with other sciences like sociology, economics, political demography, anthropology and geography. **Unit 3**, on the other hand, deals with the basic concepts used in social demography. The learners will get introduced to terms like fertility, fecundity, mortality and migration, which are considered key to the understanding of the characteristics of demography and demographic variables within a country.

Module II is about the theories of population which will help the learners to understand the importance of theories in the study of population. **Unit 4** discusses pre-Malthusian, Malthusian and post-Malthusian theories. On the other hand, **Unit 5** gives an overview of neo-classical theory, Marxian theory, biological theories, optimum theory as well as demographic transition. The learners will get an insight into the use of different theories in the study of population and how these theories help in analysing various aspects of population differently.

Module III deals with the structure of population. **Unit 6** explores the age and sex structure of population. This unit will help the learners in making a sociological analysis of the characteristics associated with age and sex structure. **Unit 7** will help the learners to understand population pyramid. Here the learners understand the age-sex structure through the lens of population pyramid. **Unit 8** will introduce learners to the Human Development Index. **Unit 9**, on the other hand, explores different population policies. Here, the learners will get an insight into the fertility, mortality and migration influencing policies. **Unit 10** deals with population programmes such as the family planning programme.

Module IV is dedicated to dimensions of population. **Unit 11** explores the social dimensions of population education. This unit will help the learners make an analysis of population education with reference to health, environment, literacy and mass media. **Unit 12** will analyse population as an issue in a plural society. **Unit 13** deals with the various aspects associated with population and health. **Unit 14** explores the concept of population in the context of developing countries.

The complete course is divided into two Blocks. **Block I** contains Module I and II. **Block II** will have Module III and IV.

MODULE I: INTRODUCING SOCIAL DEMOGRAPHY

UNIT 1: INTRODUCING SOCIAL DEMOGRAPHY

UNIT STRUCTURE

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Social Demography
 - 1.3.1 Meaning of Social Demography
 - 1.3.2 Origin of Social Demography
 - 1.3.3 Interface between Sociology and Demography
- 1.4 Nature and Scope of Social Demography
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 - 1.5.1 Subject-matter of Social Demography
 - 1.5.2 Significance of Demography
- 1.6 Summing Up
- 1.7 Questions
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1.1 INTRODUCTION

Individuals living in society form groups and communities, which on a broader and macro scale culminate to form the population of a country or that of the world. The study of population is an important field of study as it helps provide insights into the ways in which a population is structured and behaves. Additionally, how individuals adapt and change in response to diverse population scenarios can be postulated. Non-demographic factors such as biological, cultural, economic and social processes also share a close relationship with demography or population.

1.2 OBJECTIVES

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

- Explain the concept of social demography;
- Describe the nature and scope of social demography;
- Describe the current population scenario of a particular place or region.

1.3 SOCIAL DEMOGRAPHY

Before dealing with the concept of social demography, let us get an idea of the concept of demography. Demography is the scientific study of the size, composition and distribution of the human population over time. It is concerned with determining and measuring population characteristics and the interrelationships between demographic variables. Social demography as a field of study is concerned with the analysis of how social and cultural factors underlie population structure, processes and patterns. The major focus of social demography is to study the impact of social and cultural factors on demographic aspects of society such as patterns of marriage and child-bearing, the age-structure of a population, life expectancy and so on. Since demographic attributes of a community or society are social phenomena, and an outcome of social (as well as biological) events “the demographic study of any human population is a form of social demography.” (Anon., 2008).

1.3.1 Meaning of Social Demography

The word Demography is derived from two Greek words namely ‘demos’ meaning people and ‘grapho’ meaning writing. The two Greek words were mixed together and coined by Achille Guillard, who in 1855 wrote the book *Elements de statistique humaine en demographie comparee*. Thus, formal demography can be said to be the statistical study of human populations. The Multilingual Demographic Dictionary defines demography as the “Scientific study of human populations, primarily with

respect to their size, their structure and their development”. This definition makes a distinction amongst various aspects of demography such as demographic statistics, economic demography and social demography, the latter two imply the “study of relations between demographic phenomena on the one hand and economic and social on the other.”

The history of demography can be conveniently divided into three periods, ancient, medieval and modern (Sinha and Zacharia, 1986). **Ancient demographic thought** comprised the views of Chinese, Greek and Roman thinkers. Confucius was of the opinion that a large scale population would slow down the per capita productive capacity which would ultimately result in social dissatisfaction. Therefore, Confucius believed that it was the duty of the state to maintain a perfect balance of population to avoid social tension. He suggested measures to control the growth of population by imposing restrictions on marriage, territorial migration etc. However, according to Greek scholars like Plato and Aristotle, the population was important to develop oneself and be self-sufficient to realize the potentialities of man. They also opined that the population should not be too large so as to put the government in difficulty, nor too small so as to inhibit resource utilization. Plato and Aristotle suggested measures to control the size of the population through means such as “ban on the marriage of physically handicapped, child exposure and abortion, unnatural sex, colonization and migration” (Sinha and Zacharia, 1986). Roman scholars such as Cicero and Pliny favoured population growth and encouraged marriage, monogamy and childbirth. **Medieval demographic thought** held that population would be reduced by natural and social calamities and birth rate needed to be kept high to keep the population at a particular level. Ibn Khaldun sought to explain the transition of the population in his book *Universal History*. The Mercantilist school of Political Economy which flourished in Europe during 17th and 18th centuries believed that growth of population would create increased demand for finished goods which would raise consumption patterns and as

well as facilitate economic, political and military strength of states. **Modern demographic thought** occurred from the 17th century onwards. John Graunt (1620-1674) often regarded as the father of demography, emphasized the use of statistics in the study of the population by using simple indices which could be calculated easily. Sir William Petty (1623-1687) was instrumental in establishing a central statistical office in England. He focused on the factors of urbanization, expansion of population, manpower, unemployment, national income, etc. (Sinha and Zacharia, 1986).

In terms of social demography, three main variables are taken into account namely fertility, mortality and migration. Social demography focusses on the social phenomena which contribute to the growth and decline of population, causes and consequences of population structure and their changing pattern over time. Three analytic systems are employed to study social demography. These are the demographic system, the social system and the social aggregate system. The demographic system includes size, composition, distribution, and by implication, the vital rates. The social action systems are characterized by interactional behaviour, especially role behaviour. Social action systems end up being the major social institutions, plus informal groups and associations and communities. The social aggregate systems are indicated by elements (people) possessing one or more common social traits and do not include interpersonal interaction as a process, namely racial categories, social class categories, religious categories, occupational categories, that may influence or be influenced by population variables.

1.3.2 Origin of Social Demography

John Graunt undertook the first systematic study of population using the mortality trends based on the weekly burial records in the city of London. John Graunt is regarded as the real founder of demography who wrote a book in 1662 namely *Natural and political observation made upon the bills of mortality*. Through his study, he discovered that changes in demography

follow certain patterns involving the expression of a divine mind and a biological factor. The Great Depression of the 1930s witnessed an increased population in America which made scholars and thinkers arrive at a conclusion that population growth could not neglect the importance of non-demographic social, economic and political factors. The demographic studies taken up in America were quite a diverse one incorporating the works and ideas of various scholars and their respective disciplines. This phase led to the emergence of a sociological approach to the problem of population what is today termed as social demography.

In the context of the census in India, the joint collaboration of the Government of India and the United Nations Population Commission first undertook the systematic and sociologically meaningful study centring around the interrelations of social, economic and demographic variables. The work on *Population of India and Pakistan* (1952) by Kingsley Davis is considered to be the beginning of the application of a sociological approach to the problem of the population of India. To study the interface between demography and sociology, the Indian census was the first of its kind.

1.3.3 Interface between Sociology and Demography

Sociology as a discipline is believed to be more analytical, generalizing and non-quantitative in nature. The area of interests in sociology range from social institutions, social norms, values, social change to socialization, social differentiation and so on. Field experiments and surveys are given importance in sociology to derive both qualitative data and statistical data. On the other hand, demography as a discipline is more quantitative and segmental in nature. Demographic elements like numbers, persons, birth and death rates, division of population by age and sex, etc are taken into account to study the population structure.

In assessing the relationship between sociology and demography, it is to be noted that sociology provides the base-structure (context) to demography while the infrastructure (text) is provided by demography. The importance

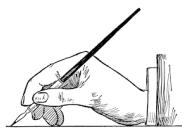
of the relationship between context and text was highlighted by Kingsley Davis in 1952.

Population is regarded as one of the important components in sociological analysis. The study of population is inextricably linked with various sociological components such as race, caste, class, socio-economic factors, minorities and so on. This enables demography as well as sociology to involve in a large framework of study to come up with possible outcomes of demographic changes in society. The complex network of interactions among the socio-demographic elements defines the population characteristics of society at large.

STOP AND READ

The first systematic attempt to carry population census in India was during British rule between 1865 and 1872, although the first all-India level census started in 1881.

CHECK YOUR PROGRESS



1. What is social demography?

2. What are the three main variables used in social demography?

1.4 NATURE AND SCOPE OF SOCIAL DEMOGRAPHY

The nature and scope of social demography constitute a vital study within the field of demography and social demography. Since the population is increasing in an unchecked manner, its impact can be seen in human, social and economic lives. To address the issues emanating from the population in society, an in-depth look into the nature and scope of demography is helpful.

1.4.1 Nature of Social Demography

Science can be said to be a systematic body of knowledge dealing with cause and effect. Just as science applies methods of observation, classification, generalization and verification, similarly demography and social demography apply these methods in order to examine social phenomena in relation to demographic variables.

The methods employed under social demography are scientific, whereby the facts and data are collected, assembled and presented in sequence after a thorough observation of the same. The principles followed in a demographic study are universal and are subjected to repetitive verification and scrutiny. Understanding social facts, groups and events within social demography enable us to explain the causes underlying social phenomena and also their effects.

Demography focuses on the growth of population since ancient times to the contemporary period. It also examines the size and distribution of population within a specific area and assesses current and future demographic trends in response to diverse social occurrences.

Kingsley Davis, while discussing the importance of demography, emphasized that population figures and numbers comprised the main starting point in understanding the foundation of human society. He focused on the following sub-fields of demography namely, population information, fluctuations of population growth rates, along with current and future trends of population change.

1.4.2 Scope of Social Demography

The scope of social demography has been divided into macro-demography and micro-demography. Macro-demography is concerned with large scale aspects like social systems, culture and societies while micro-demography deals with micro aspects of the society like individuals and family. The views of Spencer, Moore and Vance among others lie within the domain of macro demography. As Prof. Bogue pointed out, “Micro Demography is the study of growth, distribution and redistribution of the population within a community, state, economic area or local area. This includes both numerical and composition aspects and is performed by using meaningful subdivision of community of local areas” (Sinha and Zakaria, 1986). The two branches of social demography are inter-related and dependent on one another.

According to Thompson and Lewis “under demography we can develop the understanding of population variables like fertility, mortality, information about female population, their health condition, marital status, distribution of population according to villages and their classification according to their occupation and also to collect and study information about the social and economic condition.” (Sinha and Zakaria, 1986).

The study of population size and composition generally involves the total number of persons occupying a definite area at a definite time. The population size and composition of a region changes according to time and situation. Due to changing customs, socio-economic conditions, cultural landscape, norms of family planning prevailing indifferent country and regions, the size and composition of the population tends to vary. Birth and death rates also determine the size of a population. Various factors such as the marriage rate, the age of marriage, maternal and child health, the quantum and quality of medical aid received play a role in influencing birth and death rates of a given population.

The development of a region or a country also depends on the distribution of the population in various sectors. The composition and distribution of the population in terms of urban and rural areas, religion and language, sex-ratio, age-structure and others form an integral part of the study of demography. The ever-increasing size and density of population in urban areas due to urbanization and growing industrialization affect the socio-economic scenario of a society and its people. Migration is another factor that brings about changes to the originating and destination areas and their populations.

Deviating slightly from the demographic aspect of the study of population, social problems in the form of crimes, juvenile delinquency, poverty and human trafficking also form a component of demography.

STOP AND READ

John. V. Gramman considered demography to be both an abstract science and applied science and applied technology.

CHECK YOUR PROGRESS



1. What is micro-demography?

2. What is macro-demography?

1.5 SOCIAL DEMOGRAPHY AND ITS SUBJECT MATTER

Social demography “uses demographic data and methods to describe, explain, and predict social phenomena” (International Encyclopaedia of the Social Sciences, 2008). While demography is concerned solely with population data and specifics, social demography explores the underlying social drivers behind demographic variables. The American demographer Kingsley Davis first used the term social demography in 1963.

1.5.1 Subject-matter of Social Demography

Social demography consists of the study of various aspects like families and households, health, ageing and inequalities disaggregated by social class, race, ethnicity and gender. These enable an understanding of population structure and dynamics in relation to the composition of the population (i.e. characteristics such as population size, growth and distribution among other attributes). Demographers often deal with the statistical analysis of population whereas social demographers tend to focus on the description and explanation of events, causes and consequences of changing demographic patterns.

Subject Matter of Demography

The subject-matter of demography covers many sub-fields which are necessary to determine the demography of a region or a country. The study of the size, composition and distribution of population, labour force and population policy lie within the ambit of demography. The following is a brief description of the subject-matter of demography:

- **Size:** the important elements of the size of the population consists of the number of people residing in a place and the comparative study made between the population of previous periods and assumptions and predictions of future population. The rate of change in population and causes underlying these changes namely migration, natality and mortality also determine the size of the population. Certain biological,

social, cultural and economic variables are also associated with changes in population size.

- **Composition of population:** to study the composition of the population, measurable demographic features such as age and sex are taken into account. Other characteristics like rural and urban living, occupation, education, religion, etc. are some characteristics that are also considered.
- **Distribution of population:** the study of population distribution deals with how people are distributed over rural and urban areas. It also covers under its study the changes taking place in population distribution due to differences in mortality, fertility, birth rates, trends of migration etc. The distribution in relation to specific geographical or administrative areas and divisions, cultural patterns, agricultural production zones and political boundaries are also considered.
- **Labour force:** two categories comprise the labour force. The first constitutes the economically active labour force which includes employed as well as involuntarily unemployed labour. The second constitutes the economically dependent force or inactive labour force which includes housewives, students, fixed income recipients, the elderly or the aged segment of population etc. Features like labour force participation rate, general labour force participation rates, age, sex, etc. form the principle attributes of labour force analysis. Further, labour force participation can be divided into male and female work participation.
- **Population policy:** socio-economic development of a country depends on population growth which can be beneficial as well as detrimental to a country's growth. Population policies include population planning, family planning targets, programs and achievements, and

devising the ways and means of keeping population size and growth within manageable limits, etc.

1.5.2 Significance of Demography

Demography occupies an important position in various disciplines. The statistical study of the human population constitutes an essential part of demography. The analysis and examination of population growth during the post-industrial revolution era and recent population decline due to medical advances and changing societal values has immense significance. Population is likely to decline significantly as it will be impacted by environmental hazards, economic reasons and climate change along with other determinants.

The field of political demography concentrates on the study of size, composition and distribution of the population in relation to both government and politics. In the words of Weiner, “political demography is concerned with the political consequences of population change, especially the effects of population change on the demands made upon the governments, on the performance of governments and on the distribution of political power”. Also, with the help of demographic data, the number of male and female voters can be determined and the rate at which they are increasing and the areas with high population can be understood. These attributes further help in understanding international relations and peace and prosperity within and between regions and countries.

To keep a track of economic development at various periods, the study of population growth is vital. In order to check economic imbalances and foster economic balance, there is a necessity to ascertain the changes in the human population. To assess the growth and development of an economy, it is important to focus on the sections of occupation in which various population are engaged. Information on variables such as income, production, consumption, demand and supply could be obtained through the study of population and its variables. To allocate opportunities to human resources, population figures are essential to encourage economic

planning in matters of food distribution and production of necessary commodities. To overcome regional imbalances and inequalities in terms of resource distribution in various sectors of the economy, knowledge about population is of utmost importance.

Thus, the demographic study of a society or assumes great importance. A systematic and organized study of population shall help in analysing the problems that occur or confront a society. The importance of social needs like effective communication, law and order, housing facilities, hygiene, etc. can be realized once the demographic data of male, female and children are studied. The social problems confronting the population and the need to solve it through proper implementation of plans and programmes can be determined only when actual facts and figures of demography are at hand. To maintain social balance, stability and organization, the precise knowledge of the population of a region is an essential prerequisite.

1.6 SUMMING UP

- The scientific study of aspects like size, distribution and composition of the human population is known as demography.
- The analysis of social and cultural factors in relation to population is known as social demography.
- The opinions of Confucius regarding population were relevant during the early period often called the period of ancient demographic study.
- Social demography and demography differ in that while the former is qualitative in nature, the latter is far more quantitative.
- Sociological components like race, caste, class etc. help in analysing demographic changes.
- Social demography is divided into two categories namely macro-demography and micro-demography.
- Demographers are interested in the statistical examination of population attributes.

- Social demographers are interested in explaining the social causes and consequences behind demographic phenomena.
- To understand social phenomena, the demographic data of male, female and children are required.
- Population study helps to make an estimate of the necessary quantum of production of essentialities required for human consumption.

Glossary

- **Census:** a complete and individual enumeration of all cases of the type specified within defined boundaries at a single point in time; a 100 per cent count of some social entity or type of event.
- **Fertility:** the actual level of childbearing of an individual or population.
- **Mortality:** the death-rate, usually standardized by age and sex, to facilitate comparisons between areas and social groups.
- **Norms:** the shared expectation of behaviour that connotes what is considered culturally desirable and appropriate.
- **Population:** the totality of the people living in a particular territory.
- **Socialization:** the process by which we learn to become members of society, both by internalizing the norms and values of society and also by learning to perform social roles.
- **Transition:** the process of change from one way to the process of adaptation to another way.
- **Variable:** attributes which are fixed for each person or a social entity, but which are observed to exist at different levels, proportions, or strengths across samples and other aggregate groups.

1.7 QUESTIONS

Short questions (Answer within 100-150 words)

1. What do the concepts of demography and social demography deal with?
2. What is the scope of social demography?
3. Briefly examine the relationship between demography and sociology.

Descriptive type questions (Answer within 300-400 words)

1. Describe the three historical time periods in which the study of population developed.
2. Elaborate on the subject matter of demography.
3. Why is it important to study population growth?

1.8 RECOMMENDED READINGS AND REFERENCES

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UNIT 2: RELATIONSHIP OF DEMOGRAPHY WITH OTHER SCIENCES

UNIT STRUCTURE

- 2.1 Introduction
- 2.2 Objectives
- 2.3 The Relationship of Demography with Other Sciences
 - 2.3.1 Demography, Sociology and Political Demography
 - 2.3.2 Sociology and Demography
 - 2.3.3 Political Demography and Demography
- 2.4 Demography, Anthropology and Economics
 - 2.4.1 Anthropology and Demography
 - 2.4.2 Economics and Demography
- 2.5 The Relationship of Demography with Human Ecology and Geography
 - 2.5.1 Human Ecology and Demography
 - 2.5.2 Demography and Geography
- 2.6 Summing Up
- 2.7 Questions
- 2.8 Recommended Readings and References

2.1 INTRODUCTION

The introductory unit on demography has already given you an overview of the meaning and scope of demography. Demography constitutes an essential part of the study to keep a track on the latest problems and solutions emerging out of population change. Demographic behaviour is affected by factors like poverty, economic backwardness and the socio-cultural milieu. Hauser and Duncan gave the following definition: “Demography is the study of the size, territorial distribution, changes therein, and the components of such changes, which may be identified as natality, mortality, territorial movement (migration), and social mobility

(change of status).” (Carmichael, 2016). Since demography is not an isolated entity or a separate discipline per se, it shares a vital relationship with other sciences. To observe the close association of demography with other sciences, there is a need to examine the relationships between demography and several allied disciplines. A multi-science methodology or approach is fused with demographic analysis to get a better understanding of the causes and concerns arising out of the study of population and its various dimensions. This unit looks into the various relationships and significance other sciences share with demography.

2.2 OBJECTIVES

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

- Explain the importance of studying about different sciences related to demography;
- Describe the relationship of various sciences with demography;
- Analyse the human population from the viewpoints of various disciplines similar to demography.

Stop and Read

Joseph J. Spengler pointed out the multi-science approach or method of demography in 1959 and such an approach has been supported by Wilbert Moore.

2.3 THE RELATIONSHIP OF DEMOGRAPHY WITH OTHER SCIENCES

A holistic approach taking into consideration various parts of the study in relation to the whole is necessary to understand the multi-disciplinary issue of population and its effects on society. Numerous changes in demographic behaviour have occurred due to a variety of causes that are not the domain

of a single subject or discipline. For example, the desire to earn more and become independent and derive economic gains for oneself has resulted in delayed marriage and childbirth. This often results in low birth rates in certain highly developed countries, a relatively new trend in demographic behaviour. It is also to be noted that different demographic behaviours arise out of social norms existent in a particular society, community or country. The latter is the result of the various social conditions or scenarios in which an individual grows up in and/or conditions or circumstances that individual is exposed to during a major part of his or her life.

2.3.1 Demography, Sociology and Political Demography

Sociology and political demography form an integral part of a demographic study. Both disciplines contribute to determining and understanding the changes in demographic attitudes and behaviour. The social and political structure of society also determines the changing demographic trends prevalent in a community or society. The scientific study of population and political behaviour can be addressed through the link existing between demography and political demography. Changes and consequences brought about in the political scene due to population change fall within the domain of political demography. Factors such as the mass movement of people influenced by political forces and subsequent impacts on society can be studied within such a framework.

2.3.2 Sociology and Demography

The close relationship between demography and sociology lies in the fact that the society we live in comprises of a population which engages in social actions and relations. In order to complete a thorough population study, a knowledge of the society and its people along with their customs and culture is essential. Demographic structures consist of age and sex composition, rural and urban setup, religious, economic, racial, ethnic and marital compositions, etc. Social structures consist of social actions, groups and classes, communities, associations and social institutions like family, kinship, economy, politics and education etc. The socio-demographic

characteristics interact and integrate with one another. Demographic processes which consist of fertility, mortality, migration and urbanization etc., interact with social processes such as social differentiation, social status, socialization, social mobility, social change, social movement etc. An example of the relationship between social status and human fertility rests on the fact that certain social features determine and regulate fertility of a population since certain behaviour may at times be related to the status of certain community or family.

Rates of fertility or birth rates which are components of demography turn into a social phenomenon as birth rates also depend on aspects such as child marriage and family structures. Sociological variables such as social habits and living environments also affect and influence mortality rates or death rates. The qualitative analysis of social patterns enables us to make a thorough study of socio-demographic trends.

2.3.3 Political Demography and Demography

The political framework of a country shares a close relationship with its population. Changes in population can bring about political repercussions. Population growth can result in changes in developed, developing or less developed countries. This is because governments or political processes in different countries adopt different measures to address population growth or to tackle the fallout of a growing or declining population. For some countries, a large population could be used as a demographic dividend while for other countries, it could act as a barrier to development due to the scarcity of resources such as food, clothing and shelter. Political demography concerns itself with aspects of size, composition and distribution of the population in relation to government and politics.

Myron Weiner (1971) opined that political demography was concerned with the political consequences of population change, especially the effects of population change on the demands made upon governments, on the performance of governments and on the distribution of political power. An

increase in population put varying pressures on the governmental and political institutions. A large population could result in population instability at a particular region which could be intensified by high expectations over limited resources and the rise of socio-religious problems. This leads to the probability of a government being unable to address the problem in the correct manner; which could result in either oppressive government rule, narrow political conventions and/or violation of human rights.

2.4 DEMOGRAPHY, ANTHROPOLOGY AND ECONOMICS

Anthropology and economics constitute an important part in studying the demography of a region. In the case of demography and anthropology, their research and study centre around human populations. While anthropology deals with the full range study of human behaviour at present and during the past on physical, social, linguistic and cultural considerations, demography concentrates statistically on factors being determined by the anthropological aspects. In the field of economics, the estimate of the population may be regarded as the primary condition for economic growth and development. Population change (increase or decrease) of a country will have an impact on the economic structure and economic progress. The distribution of economic resources will be fairly equal or egalitarian when there is an optimal population living in a region.

2.4.1 Anthropology and Demography

Demography is regarded as a branch of anthropology. Anthropology studies the biological and cultural conditions of humankind and is concerned with the evolution and development of humans at present and in the recent past. To understand the demographic phenomena in past and present populations, the socio-cultural aspects of anthropology and demography need to be intersected. The social structure focusing on the production and reproduction of population is studied under the umbrella of social anthropology. Demography as a discipline takes into account the

quantitative aspects of fertility, mortality, marriage and migration which determine the structure of the human population within the field of anthropology. Changes in frequency in matters of fertility, mortality, marriage etc. are of fundamental importance to the relationship between demography and anthropology.

A demographic study looks into population processes within the anthropological considerations of kin and family contexts. The cultural and social elements of anthropology such as kinship, political economy and other fields of non-literate, non-western and isolated communities, attracts population studies in a bid to develop the interconnection between anthropology and demographic variables. The complexity of individual behaviour and that of cultural expectations of particular communities or social groups with regard to the production and reproduction of human population are often complex. These have to be addressed by anthropological demographers. Well, known scholars like Raymond Aron and Meyer Fortes looked upon population issues to focus on analysing kinship systems.

Tackling conditions like the increase of human population and human migration across various cultures and region, demography has turned to culture as a means of understanding social action and social behaviour. Demographers pay attention to aggregate population analysis rather than focusing on individual behaviour, whereas anthropologists focus on the individual motivations, actions and responses to social circumstances. Institutional demography intends to look into the local institutions to understand and explain demographic behaviour. For example, the institutional approach to gender determines the behaviour of men and women in regard to decision making about the fertility of a family or an established culture. To explore the cultural dimensions of fertility, mortality, marriage etc. the interactions and links between demography and anthropology are required.

2.4.2 Economics and Demography

Demography is an important field of study that looks into the population structure which in turn helps economists to determine the process of demand and supply of resources that are necessary for a given population. The context of a given population over time and space is essential to economic development. Underdeveloped regions with large populations tend to depend on agriculture while a shift to industries and services over time is necessary to cater to the needs of the population that migrates to the urban areas or relatively developed enclaves. Economics deals with the process of production as an economic activity in response to the never-ending need for resources and essentials of the human population. The birth rate and its changes are taken into account by demography as well as economics. While demography studies birth rates to assess its impact on the overall population of a region, economics studies birth rate to estimate its impact on goods, the market and the labour system. The population is the source of labour supply which can be utilized to achieve high per capita income for a nation.

A small population with proper utilization of manpower resources and high production of goods and services can improve the standard of living in a region or a nation. However, an abnormal increase in population if not tackled properly will have adverse effects on the economy. Problems stemming from large population growth (or boosted by high immigration) can make resources scarce and limited. Various economic variables like distribution of income, land resources, occupational composition of people etc. are determined by the size of the population. Population increase can benefit the market economy and boost productivity and often result in a demographic dividend in certain contexts.

An emerging trend of decreased fertility and mortality rates has led to the increase of ageing populations which again depends on the working members of the family. Thus, the ageing group becomes the dependent group for whom extra resources need to be saved and planned for by the

working population thereby placing pressure on the economy of a society or nation.

CHECK YOUR PROGRESS



1. How is sociology related to demography?

2. What is political demography?

STOP AND READ

Thomas Malthus, William Petty and William Godwin were well-known economists who had considered the economic effects of population growth.

2.5 THE RELATIONSHIP OF DEMOGRAPHY WITH HUMAN ECOLOGY AND GEOGRAPHY

The inter-relationship between demography, human ecology and geography is symbiotic and helps in deriving a comprehensive understanding of population and its ramifications. Human ecology focuses on the study of a human population that connects environment as well as the way through which the environment is affected by the exploitation and utilization of

resources. Geography is the science which deals with space and in regard to demography, it focuses on the patterns that deal with the distribution of the population in terms of its spatial patterns and spatial differentiation. The nature and spatial characteristics of regions that attract (river valleys or fertile lowland areas) or deter population (arid or frigid areas with extremes of climate) are covered by geographers and is closely linked to demography.

2.5.1 Human Ecology and Demography

Human ecology is concerned with the relationship and inter-relation between human beings and nature thus bringing it close to demography. Ecology makes use of demographic variables, methods and techniques to arrive at answers regarding the distribution of human population. In the words of Hawley, human ecology is the study of the form and development of the community in the human population. The study of man and environment is essential in response to the problem of population. Professor Hawley in his book “Human Ecology” (1950), emphasized that human ecology should deal with how growing, multiplying beings maintain themselves in a constantly changing but ever restricted environment. The growth and functions of the population in urban areas, rural areas and study of the socio-economic status of cities form the link between the two disciplines. Hawley pointed out the various features of human ecology after determining the relationship between the community and the environment. He was of the opinion that population was a point of reference for analysing its relationship with the environment and that organization arises out of the interaction between population and environment.

The relation between demography and human ecology can be ascertained in the following definition which states that human ecology is based the study of population, technology, organization and environment; and that population was the principal unit of analysis seen in a territorial context. Human ecology undertakes the study of human social systems which comprise of a population and the processes of their development within a

given environment. Demographic variables are often used by ecologists to ascertain social organizations and consequent interactions. In the words of Duncan (1959), Frisbie and Poston (1978, 1980, 1981), human ecology is concerned with the organizational aspects of the population that arise from their sustenance-producing activities. They also opined that these activities are necessary for the collective existence of the populations and must be adapted to the changing conditions that confront them. To anticipate the future growth of population in response to changing ecology, size and geographical distribution, human community need to be addressed as a symbiotic community to study them within the field of ecology. It is thus required that individuals need to act as an aggregate entity in order to make better use of their space and habitat and thus survive as a collective organization.

2.5.2 Demography and Geography

Geography and demography are closely intertwined. Geography as a discipline has focused on spatial dimensions or dimension of space. The relationship of the human population in relation to their environment is covered by the discipline geography. Geography comprises the study of natural elements of environment like climatic conditions, rain, temperature, etc. Thus, demography takes into account the distribution of the population according to the geographic conditions over time and space. The natural increase of population or due to migration and subsequent decrease of the population depends on the geographical conditions of an area, region or country. For example: declining or increasing population may be influenced or triggered due to processes of soil movement, erosion, flood, climate and/or availability of resources. Demographic movement i.e. movement of people influences the change in the context of space and place. The processes of population distribution and migration in terms of spatial patterns and processes are important to ascertain the causes and consequences of population growth and decline over geographic space. In 1953, Glenn T Trewartha a leading American geographer was of the opinion that population was the point of reference from which all other

elements could be observed, and from which all, singly and collectively, derived significance and meaning. Population mobility or migration affected the spatial dimension i.e. space or place due to the pressure it exerted on resources and their exploitation or utilization in a region.

According to Trewartha, just as areal differentiation could be regarded as the theme of geography in general, similarly population geography constituted the area of analysis of a population with aspects such as the distribution of population, settlement size, mortality and fertility variations, etc. In response to this system of population geography as used by Trewartha, another geographer, namely John I. Clarke proposed an influential approach where he opined that population geography was concerned with demonstrating how spatial variations in the distribution, composition, migration and growth of populations was related to spatial variations in the nature of places. The phenomena of the population and geographic characters are both said to vary across time and space which ultimately determines population density and how regions differ from one another in terms of their population profile.

2.6 SUMMING UP

- Demography requires a holistic approach in order to study its various components and is closely linked with other disciplines.
- Demographic attributes such as age, sex etc. of a population merge with social structures like social classes, actions, communities, etc.
- A growing or declining population will depend on the population policies and strategies adopted by the ruling political organization of a country.
- The development and growth of human beings in the past and present context is studied in reference to the anthropological variables of culture, family, etc.
- The growth and decline of the economy of a country depends on the resources being used by its population.

- Population increase with proper utilization of manpower can help in economic development while an inability to make use of manpower could result in a stagnant economy.
- The rise and adjustment of the population will vary according to the ecology or the natural environment which allows or restricts the growth of the human population.
- Human beings need to live as a community or an organization to sustain themselves in a given environment.
- Geography is concerned with spatial dimensions, that looks into the distribution of the population in specific places.
- Migration is an important aspect of geography that determines the changing size of the population over space and time.

Glossary

- Culture: a learned complex of knowledge, belief, art, morals, laws and custom.
- Density: the degree of aggregation, concentration, or crowding within a defined geographical or social space, measured in different ways.
- Ecology: the scientific study of the interactions that determine the territorial distribution and abundance of organisms.
- Kinship: this system establishes relationships between individuals and groups on the model of biological relationships between parents and children, between siblings, and between marital partners.
- Migration: indicates more or less permanent movement of individuals or groups across symbolic or political boundaries into new residential areas and communities.

- **Social Action:** behaviour among individuals and groups that see social actors choosing between ends and means, in an environment which limits choice both physically and socially.
- **Social Mobility:** the movement-usually of individuals but sometimes of whole groups- between different positions within the system of social stratification in any society.
- **Social Structure:** refers to any recurring pattern of social behaviour, or more specifically, to the ordered interrelationships between the different elements of a social system or society.
- **Spatial:** something related to space either occupying space or having the character of space.

2.7 QUESTIONS

Short type questions (Answer within 100-150 words)

1. Why it is important to study demography in relation to other sciences?
2. Briefly state the relationship shared by demography with ecology.
3. Write a short note on Political Demography.

Descriptive type questions (Answer within 300-400 words)

1. Explain the significance of studying sociology in relation to demography.
2. How is geography be related with population?
3. Elaborate the scope of the relationship between economics and demography.

2.8 RECOMMENDED READINGS AND REFERENCES

Bernadi, L. (2007). *An Introduction to Anthropological Demography*. Max Planck Institute for Demographic Research, Rostock, Germany, MPIDR Working Papers.

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UNIT 3: BASIC CONCEPTS: FERTILITY, FECUNDITY, MORTALITY, MIGRATION

UNIT STRUCTURE

3.1 Introduction

3.2 Objectives

3.3 Fertility

3.3.1 Characteristics of Population and Fertility

3.3.2 Fecundity

3.3.3 Factors Affecting Fecundability

3.4 Mortality

3.4.1 Crude Death Rate

3.4.2 Characteristic of Mortality

3.5 Migration

3.5.1 Economic Perspectives of Migration

3.5.2 Sociological Perspectives of Migration

3.6 Summing Up

3.7 Questions

3.8 Recommended Readings and References

3.1 INTRODUCTION

To have a proper understanding of the characteristics of demography and demographic variables operate within a country, we need to study the basic concepts of fertility, fecundity, mortality and migration. The number of people born, the ability of people to reproduce, the time period of the survive of the population and the conditions that cause people to migrate from one place to another makes the subject-matter of demography challenging. This shall assist in understanding the changing and developing

trends of the population. Human population since the pre-industrial era to the present day, has undergone widespread changes. Observing and understanding these demographic concepts enables us to foresee a variety of social problems and thereby seek solutions to improve people's lives, life expectancy and their all-round productivity. The collective analysis of a population can be made only when the individual process of survival, growth and reproduction are known and measured properly. Statistical data can be obtained from rates of fertility, fecundity, mortality and migration which can further ascertain the underlying social conditions and constraints if any. The age structure and sex distribution of the population can be studied with the aid of the basic concepts of demography. Thus, this unit will focus on the concepts used in demography and enable readers to observe and understand their relevance and the change they potentially cause to society, community or nation.

3.2 OBJECTIVES

After going through this unit, you will be able to

- Explain the meaning of the basic concepts;
- Assess the difference among these concepts;
- Analyse the degree to which these concepts affect the human population.

3.3 FERTILITY

Fertility refers to the precise level of childbearing of an individual or a population. A fertility trend is regarded as an index of the reproductive performance of society. It also shows the actual number of children born to a woman. Crude birth-rate which refers to the number of live births in a given year to the total population size in that year is a simple measure of the fertility of a population. Fertility as a demographic variable is instrumental in bringing about changes in the overall population growth both at national and global levels.

The various factors of biology, culture, society and economy make the process of crude birth rate complex. The social contexts of fertility affect the trends and levels of fertility differently. To understand the structural and cultural contexts of fertility behaviour, there are two sets of variables namely conditioning variables and intermediate variables. Conditioning variables comprise of stratification variables, family structure variables and non-familial variables. Stratification variables consist of indicators of socio-economic status like wealth, education, occupation, caste or class, according to which fertility behaviour varies and depends upon. Family structure variables consist of attributes such as types and norms of marriages, fertility decisions, the time span of marriage, arrangement of social relationships etc. that determine the fertility behaviour. Non-familial variables include factors such as religion, ethnicity, processes of social change and development, types of work, population policies, etc. that determine or affect fertility behaviour.

Intermediate variables propounded by David and Blake (1956) consist of the three phases of reproduction process namely sexual intercourse (age of entry into sexual union, voluntary or involuntary abstinence from sexual union), conception (fecundity or infecundity by voluntary or non-voluntary uses) and parturition or gestation (meaning foetal mortality from voluntary or involuntary causes).

It is to be noted that the developing regions of the world tend to reproduce more as they are more or less governed by the various conditioning variables like caste, marriage, rural outlook towards marriage and reproduction etc. The intermediate variables, on the other hand, tend to reduce or enhance the fertility behaviour among a population.

STOP AND READ

Uttar Pradesh, Maharashtra, Bihar and West Bengal are the most populous states in India according to 2011 census.

3.3.1 Characteristics of Population and Fertility

Population and fertility have certain features or characteristics that directly or indirectly affect fertility behaviour and attitude within populations. A brief explanation of some of the features will help shed light on various demographic variables that bring variations and change in fertility.

- Age and sex affect fertility behaviour where male and female either at early or later ages enter sexual unions for reproduction.
- Rural and urban factors affect fertility wherein people in rural areas engage mostly in agriculture and to increase economic status, reproduction is high among them. For example, rural families tend to believe that more children can bring additional income. Whereas families in an urban area tend to restrict the number of children due to diverse occupations and individual social outlooks.
- Education as a demographic variable is vital in determining fertility as the pursuance of education tends to impart knowledge on population control and small family norms. On the other hand, an illiterate individual or family will tend to favour a large family for economic benefit and/or as companions for old age.
- Family structure and status of women also affect fertility behaviour as some familial norms opt for higher fertility and some families lower the status of women by not allowing them to be decision makers in family planning. Further, some families follow a small family norm and give adequate status and respect to women in decision making.

3.3.2 Fecundity

Childbearing is generally said to be at a younger age though some women can have children at older ages too, either naturally (though this is rather rare) or artificially with the aid and assistance of medical technology. In this sense, we refer to fecundity. Often fertility and fecundity are used synonymously, however, they vary from one another. The term fecundity refers to the total biological potential of a woman to produce children and


is usually a focus of medical research. It is, in fact, difficult to measure the fecundity of a woman. The reason could range from a woman's adoption of contraceptive measures and to not demonstrate fertility in spite of being fecund. , on the other hand, refers to the probability of conceiving during a given time period, which also provides us with a measurement tool for measuring fecundity. The term fecundity has a biological significance while fertility performance will depend on various factors of social, cultural, psychological and economic aspects.

3.3.3 Factors Affecting Fecundability

The health conditions of both male and female are important in determining the fecundity period. The fecundability of a woman is more important to consider. Factors that affect female fecundability are as below:

- Age: it is found that women in their twenties show high fecundability as compared to women of later ages.
- Medical conditions: pelvic infections or inflammation of uterus may result in reduced fecundability. Thyroid disease and other health hazards in the female may be because of reduced fecundability.
- Obesity: endocrine imbalances tend to occur among obese women, thus cutting down their chances of conceiving. Adolescents with abnormal high body weight are likely to experience reduce fecundability at their adult stages.
- Lifestyle: changes in lifestyle and adoption of new intake habits like alcohol consumption and smoking also tend to reduce the fecundability of both men and women.

CHECK YOUR PROGRESS



1. What is fertility?

2. What is fecundity?

3. Write two factors that affect female fecundability.

3.4 MORTALITY

Mortality is the rate of death in a given population. It provides a measure of health risks, improvements in the quality of health care, and the overall comparative health of different groups in the population. To understand the health status of a population and the changes accruing during various demographic processes and stages, knowing the mortality rate is indispensable.

Mortality rates are also calculated for specific causes of death, such as deaths due to health hazards like cancer, cholera and deaths from suicide due to the social consequences of unemployment, depression etc. In India, states such as Madhya Pradesh, Rajasthan, Uttar Pradesh and Bihar recorded high mortality rates during the decades 1971-2001, compared to the national aggregates of the crude death rate (CDR) and the infant mortality rates (IMR). Just as fertility rate has been on the decline, similarly mortality rates are also reducing in urban and rural areas.

Neo-natal deaths i.e. the number of infants dying within the first month remains alarmingly high in India. Thus the IMR i.e. the number of infant deaths within the first year also remains high. This is due to lack of medical aid being provided to the mother at the time of delivery and before the death of the infant. As a vast number of women, i.e. nearly two-thirds of

the women in India deliver babies at home and receive nominal medical aid at the hands of untrained medical practitioners; this makes the health of both the mother and the baby precarious.

3.4.1 Crude Death Rate

Various measures are available to calculate the mortality rate of which the most common measure is the crude death rate. The crude death rate is the number of deaths in a year per 1000 population in a defined geographical area. Age-standardized death-rates are calculated separately for men and women, in a bid to generate an overall standard mortality ratio (SMR) for each sex, or for both sexes combined, for a given area or social group. Crude death rates are the actual measures of mortality risk in a population and therefore it enables us to determine the probability or underlying risk of death.

3.4.2 Characteristics of Mortality

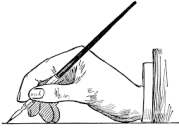
Mortality rates play an important role in keeping a check on the growth of a population. Low mortality rates are found in relatively richer states or countries while high mortality rates are found in the poorer societies, states or countries. The indirect factors of mortality like socio-cultural and economic development are affected by the direct factors of mortality such as health facilities and quality of health. Some features of mortality have been highlighted below.

- Age and sex: death rates are high among the younger age groups (infants) than the older age groups. Females are more favourably placed in the developed regions of the world which leads to higher life expectancy. Further, mortality rates among females are higher in rural areas.
- Rural and urban: people living in rural areas are not in a position to afford better living and health conditions resulting in high mortality rates. In urban areas, awareness of health problems and better living and health facilities along with a wider spread of

literacy tends to slow down death rates. Additionally, urban areas tend to possess better access to health centres and physician-population ratios are better.

- Education: developed regions with literate and educated people are aware of problems arising from early marriage whereas illiterate people often lack awareness and knowledge pertaining to family planning. These collectively increase fertility and adversely affect maternal and child health and mortality.
- Religion: due to social practices coming directly or indirectly from some religions, as female foeticide, infanticide, early age at marriage, etc. tend to increase mortality rates among the young and adult population.

CHECK YOUR PROGRESS

	<p>1. What is mortality?</p> <p>-----</p> <p>-----</p>
	<p>2. What is crude death rate?</p> <p>-----</p> <p>-----</p>
	<p>3. How does education affect mortality?</p> <p>-----</p> <p>-----</p>

3.5 MIGRATION

Migration refers to the movement of people from one place to another. As a demographic variable, it implies a permanent (or semi-permanent)

movement of individuals or groups across symbolic or political boundaries into new residential areas or communities. The study of migration involves the rural or urban place of birth or the place of last residence and the new place to which people move. There are various types of migration which has been taking place at different times due to various reasons associated with it. The following categories of migration are discussed below:

- Intra-district migrants: persons who were born in a district and but migrate to a different place within the district.
- Inter-district migrants: persons who were born in and migrate to a different district within the state.
- Inter-state migration: persons who were born in a particular state and migrate to other states.
- International migration: persons who were born in one country but migrate to other countries.

Apart from the above-mentioned categories of migration, there are other categories which include rural to rural, rural to urban, urban to rural and urban to urban. In India, the most dominant pattern of migration is rural to rural (short distance) and rural to urban (long distance).

3.5.1 Economic Perspectives of Migration

The economic perspective of migration deals with aspects like why people move, settle at other places, and that economic motives are the prime concern that regulates people's movements.

E.G. Ravenstein made an important contribution to the economic perspective of migration when he asserted that migration was primarily over short distances and that the volume of migration decreased with distance. He also opined that availability of opportunities at certain places determined the degree of migration i.e. rural to urban migration took place when people in rural areas found that more attractive opportunities for investment and enhancing their livelihoods and incomes in urban areas. Another economic approach of migration was given by Everett S. Lee

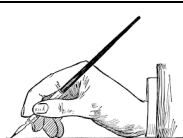
where he focused on push and pull factors of migration. This approach focuses on the expulsive forces (push factors) at the place of origin and the attractive forces (pull factors) at the place of destination that encouraged migration. It is to be noted that there may be different reasons associated with push and pull factors of migration but some common factors that may force people to move from one place to another include better education facilities, job opportunities, health facilities, living conditions and higher wages.

3.5.2 Sociological Perspectives of Migration

Within this approach, migration as an integrated process is seen through the structural-functional approach. Spatial mobility or long distance migration may be undertaken as it can be culturally and structurally suitable for an urban industrial society whereas spatial mobility may be slow in case of an agrarian society. Many factors may have to be considered to study the structural-functional causes of mobility or migration like causes and consequences of mobility, changing patterns of migration, etc. A society provides certain social conditions like modernization and social changes for migration and makes it a socially coordinated process.

The process of social stratification provides the conditions for migration where people belonging to a particular class tend to remain at a specific location and maintain their social status. At the same time, when the class character of a group encourages people to move to different places to acquire a similar or higher status, people adjust themselves at the new destination. Culture is also regarded to be a cause and effect of social change and it sometimes fosters movement among people. For example, the cultural setting of caste, class, resources, patterns of family life and work etc. may encourage migration decisions from the place of origin to a new place to seek a better life.

CHECK YOUR PROGRESS



1. What is migration?

2. What do you mean by push and pull factors of migration?

3.6 SUMMING UP

- Fertility as a demographic variable brings changes to the rate of the population at global and national levels.
- Conditioning variables and intermediate variables help to define the structural and cultural contexts of fertility behaviour.
- Fecundity refers to the biological potential of a woman to produce children and is different from fertility which refers to the level of childbearing of an individual or a population.
- Factors like age, obesity, lifestyle etc. tend to affect the fecundability duration of women.
- Mortality refers to the death rate of a population and this rate may be affected by different variables like health, social and individual causes etc.
- Neo-natal deaths in India are high and the causes may be attributed to conditions like traditions of early marriage, poor health of mothers before and after delivery which ultimately affects infants.

- To produce a standard mortality ratio (SMR) for each sex, age-standardized death-rates are calculated separately for men and women.
- Migration or the movement of people may occur within a district, state, country or even at an international level (i.e., between countries).
- The economic perspective of migration was propounded by E.G. Ravenstein.
- Everett S. Lee focused on the push and pull factors of migration due to which people move from a place to another.

Glossary

- **Contraceptive:** a method to control birth or prevent fertility.
- **Endocrine:** a system that consists of glands in the human body which makes the body work in the way it should.
- **Expulsive:** act of forcing individuals to leave a place.
- **Foeticide:** the method of aborting or ending the female foetus.
- **Infant:** a new born baby or child.
- **Infanticide:** intentional killing of a child within a year of its birth.
- **Inflammation:** the physical condition when a part of the body gets swollen or expanded.
- **Obesity:** the physical condition in the human body where excess fat gets accumulated and detrimentally affects physical health.
- **Perspective:** a viewpoint or notion regarding something.
- **Reproduction:** a biological process through which new individuals or species are born.
- **Spatial:** something related to physical space either occupying space or possessing a spatial attribute.

- **Variable:** attributes which are fixed for each person or social entity, but which are or can differ to at various levels, amounts, or intensities across samples and other aggregate groups.

3.7 QUESTIONS

Short type questions (Answer within 100-150 words):

1. Define fertility.
2. Mention two characteristics of population and fertility.
3. Define mortality and write two of its characteristics.
4. Explain briefly the various categories of migration.

Descriptive type questions (Answer within 300-400 words):

1. Explain about the conditioning and intermediate variables of fertility.
2. Assess the economic and sociological perspectives of migration.

3.8 RECOMMENDED READINGS AND REFERENCES

Goldman, M.B., Hatch, M.C. (1999). Women's Fecundability and Factors Affecting it. In *Women and Health*, pages 1-13. Academic Press, New York.

Haq, E. (2007). *Sociology of Population in India*. Macmillan India Ltd, New Delhi.

MODULE II: THEORIES OF POPULATION

UNIT 4: POPULATION THEORIES: ANTIQUITY, MALTHUSIAN, POST-MALTHUSIAN

UNIT STRUCTURE

4.1 Introduction

4.2 Objectives

4.3 Antiquity

4.3.1 Pre-Malthusian Theory

4.3.2 Views on Population

4.3.3 Physiocratic Approach to Population

4.4 Malthusian Theory

4.4.1 Measures to Check Population

4.4.2 Principles of Malthusian Theory

4.5 Post-Malthusian Theory

4.5.1 Basic Principles of Post-Malthusian Theory

4.5.2 Overpopulation and the Working Class

4.6 Summing Up

4.7 Questions

4.8 Recommended Readings and References

4.1 INTRODUCTION

The study of population can be carried out in a detailed manner when we look into the theories associated with it. To arrive at a logical and scientific explanation, a grasp of the underlying theories and a conceptual understanding is essential. A theoretical explanation of population is important since the theories explain the relationships and inter-connectivities that exist between different demographic variables and how these variables affect changes in the population of a region. Thus, to arrive

at a holistic and integrated understanding of population, its characteristics and relationship with society, we need to develop a proper understanding of the population scenario during the pre-Malthusian, Malthusian and post-Malthusian periods, which forms the focus of this unit. The gradual development and changes to the size, growth and decline of population can be analysed with the help of theories. In this unit, the readers and learners will delve into the logical system of thought associated with each set of population theories of and their relevance to the present day context of the study of population.

4.2 OBJECTIVES

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

- Explain the importance of theory;
- Analyse the use of theories in the study of population;
- Differentiate between the various aspects of population in the three sets of theories.

4.3 ANTIQUITY

Antiquity was the period of classical times which is generally considered to be the period before the European middle ages of the 5th to the 15th centuries. This period is divided into various groups of ancient history, classical antiquity and late antiquity. Every period has a different account of population and its demographic significance. In terms of classical antiquity, it refers to the civilizations of both Greece and Rome. Though an exact size of population has been difficult to ascertain, yet it could be assumed that the size of population and the demography of the early Roman empire was important to determine the living standards of the people, their economic performance and type of human development. Urbanization was prevalent in the Greek and Roman societies. Many people resided in Greek cities within the ambit of a thriving cultural and

political environment. However, studies also point to the fact that many city dwellers may have been engaged in the agricultural sector or in farming activities.

4.3.1 Pre-Malthusian Theory

According to the pre-Malthusian theory, population had to be analysed in terms of the prevalent political, economic, social and religious forces. Pre-Malthusian theory viewed population as an asset that could be utilized for both territorial defence and economic productivity. Military leaders and kings were in favour of a large population because to acquire power and territorial security, population growth was an important factor. Increase in population was considered a divine blessing and the reproductive power was viewed as holy and sacred by orientalist philosophers.

Stop and Read

Plato and Aristotle held anti-natalist views of population while the orientalist held pro-natalist views

4.3.2 Views on Population

Many philosophers held various views on population and its merits. Chinese philosophers encouraged population growth but were concerned that population should not overtake the level of agricultural production as this could be problematic for the region. They therefore advocated a balance between population and agricultural productivity.

On the other hand, Greek philosophers like Plato and Aristotle, held a different view. For Plato, population growth needed to be maintained because it was the cause of political instability in a city. He suggested that population was to be controlled through birth control and that all citizens should not be allowed to reproduce since only a few citizens were required to rule a state. Aristotle's view on population was different from those of

Plato. Aristotle focused on the economic factors and opined that a large population with limited economic resources would lead to problems like poverty, exploitation of poor in the society, etc.

Roman philosophers like Cicero were in support of population growth as it was considered an asset and increase of numerical strength. The Romans promoted the multiplication or increase of population through monogamous marriages occurring at an appropriate age.

Christian philosophers viewed population growth as a problem and offered divine ways (divine in their opinion) like long married life, virginity and a single pattern of marriage to control the growth of population. However, the notions and viewpoints of Christian philosophers regarding growth and control of population changed with the passage of time.

Hindu society supported marriage at an early age and the system of reproducing more children was considered an essential social function, and a sacred and religious duty. According to the Hindu tradition, both daughter and son had certain social and cultural functions to perform. In addition to this, the position of sons was higher than daughters, since sons and not daughters could inherit ancestral property. Thus, reproduction was encouraged to have more sons than daughters. This highlighted the social importance of marriage and reproduction in the Hindu tradition and culture of ancient times. In fact, this practice still exists in the present time although with certain changes.

The Islamic tradition also supported and believed in procreation and the establishment of families due to moral, ethical, political and economic reasons. They focused on early family formations, an appropriate age at marriage and were against social practices like divorce, abortion, infanticide etc., which according to them would not help in the continuance of the Islamic religion and tradition.

Stop and Read

Ibn Khaldun, an Arab writer of the fourteenth century considered population growth to be positive for the effective utilisation of economic resources.

4.3.3 Physiocratic Approach to Population

The populationist views of pre-Malthusian times regarded the greater size of population to be useful for economic productivity and territorial defence. Similarly, the theory of Mercantilism which was based on the theory of power economics and gathering of wealth and economic resources, encouraged the numerical strength of people because according to mercantile scholars like Bodin, people were the sources of economic assets. Seeing that over-population had unfavourable effects on livelihood and that land was neglected altogether, both the pre-Malthusian approach and mercantilism theory were rejected by the physiocratic approach of population in France.

Quesnay, a writer belonging to the physiocratic approach of population, was in support of limited population growth which could adjust to the level of subsistence. He was of the view that as population depended on food supply, therefore, the agricultural sector needed to be enhanced and taken care of for greater production. There were two phases of the physiocratic approach. They were:(a) the **pessimistic views** of Gide and Rist and (b) the **optimistic views** of Godwin and Condorcet. The former considered social problems to arise out of the increasing population, which would limit the capacity to maintain population on land. This view, thus, advocated restricting population growth. The latter consisted of the views of Godwin and Condorcet which did not consider population growth as a problem. According to them, the land did not have limited production capacity and institutions like government were responsible for not being able to check social problems like poverty, inequality, etc.

CHECK YOUR PROGRESS



1. What is pre-Malthusian theory?

2. What were two phases of the physiocratic approach to population?

4.4 MALTHUSIAN THEORY

The Malthusian theory is a systematic theory of population that was given by Thomas Robert Malthus. This theory came as a reaction to the optimistic phase of the physiocratic thinking and the naturalistic theory of Adam Smith.

According to this theory and in the words of Malthus, man's ability to reproduce was greater than his ability to produce the necessities of life. Thus, Malthus opined that man's capacity to reproduce and produce was both unlimited but at the same time limited. This was so since a man might be able to keep reproducing, but not be able to keep producing enough for survival and sustenance. He was also of the opinion that the capacity of land to produce the necessities for a given population was limited, even after the application of science and technology to produce enough to meet the requirements for subsistence. Thus, it was an immutable law of nature that became the principle of population.

In the words of Malthus, social problems like poverty, exploitation, sufferings of masses, etc. in a society arise not because of the governmental institutions but because of human nature to reproduce and not being able to

sustain population additions. Thus, in order to solve social problems, the solution lies within humans themselves and this needed to be kept with manageable limits.

4.4.1 Measures to Check Population

Malthus advocated that in order to achieve happiness and welfare in society, there was the need to keep a constant check on the reproduction of humans and production of food. Thus, he noted two types of checks, namely positive and preventive checks to keep the human population and resource production in balance.

Malthus felt that positive checks in the form of the various diseases, famines, wars, hunger, etc. are the determinants of death and thus, increases mortality rates. Malthus believed that such natural forces would maintain the balance between food supply and population growth. Positive checks tend to restrict the normal duration of life and result in untimely and premature deaths, thereby acting as a check on rapid population increase. Preventive checks include factors like delay in marriage, abstinence within marriage, etc. Practices like postponement in marriages as well as the higher age of marriage reduce the reproductive period and effectively reduce the birth rate. The preventive checks are voluntary and depend on the prevailing social conditions.

4.4.2 Central Principles of Malthusian Theory

According to Malthus, if there was no measure to check population growth, population will tend to increase at a faster rate than agricultural production. Thus, the growth of population and agricultural production share an inverse (or opposite) relationship. There are certain principles of Malthusian theory with regard to population increase and food production. As Malthus said, population tends to increase in geometric progression i.e. in a pattern of 1, 2, 4, 8, 16, 32 etc. while agricultural production tends to increase in arithmetic progression i.e. in a pattern of 1,2,3,4,5 and so on. Thus,

arithmetic and geometric progression constitute the central tenets or principles of Malthusian theory.

Due to the seemingly antagonistic relationship between population growth and food supply, certain results accrue:

- Firstly, social evils like poverty can occur due to geometric progression where population increase tend to make poor people poorer (in what economists' term 'a vicious cycle of poverty') due to non-availability or scarcity of necessities.
- Secondly, geometric progression also encourages early family formation and thus, multiple childbirths. This, in turn, makes the lower age group people dependent on the higher age group population. Thus, social institutions like the government will be faced with challenges to meet the requirements of a growing population.
- Thirdly, as overpopulation outstrips the process of the food supply, it becomes difficult to maintain a judicious balance. This could eventually lead to protests and civil movements (or unrest) among a population when the deprivation of the basic necessities like food and shelter sets in.

Keeping in view the necessity to control population balance, Malthus opined that along with preventive and positive checks, mass education needed to be extended to the people to make them aware of the need to control the size of population considering the limited nature of resources.

However, Malthusian theory was criticized as Malthus had ignored certain factors like technological advancements and wealth accumulation which could help people to improve their living conditions. Thus, it could be said that Malthusian theory did not have sufficient facts at hand and was based on limited data that agricultural

production could never grow as rapidly as population due to finite land and productive capacities.

STOP AND READ

Thomas Malthus wrote a book, *An Essay on the Principle of Population* in 1798.

CHECK YOUR PROGRESS



1. What, according to Malthus, are the measures to check population?

2. Do you think Malthusian theory is valid today? Give reasons.

4.5 POST-MALTHUSIAN THEORY

Post- Malthusian theory or neo-Malthusian theory followed Malthusian theory. The term neo-Malthusianism was first used in 1877 by Dr Samuel Van Houten, who was one of the vice-presidents of the Malthusian League. This theory came about not only as a protest in favour of birth control but also focused on the effects of population on human and societal behaviour. According to the neo-Malthusian theory, the socio-economic development of society was affected by the ever-increasing growth of population. In order to maintain balanced demography and also to derive maximum

economic returns, there had to be a judicious and optimal balance between population and the available resources.

4.5.1 Basic Principles of Post-Malthusian Theory

Post or neo-Malthusian theory considered population growth and exhaustion of resources as a threat to mankind. The theory states that an optimum size of population is to be sustained. This concept of the optimum size of population has two related terms associated with it, namely overpopulation and underdevelopment. The neo-Malthusian theory opined that overpopulation gives rise to problems of poverty and underdevelopment and that it adversely affected investments, savings, output and per capita incomes.

The neo-Malthusian approach was of the view that Third World countries or societies suffered from socio-economic problems which actually accrued from the rapid and uncontrolled growth of population.

The growing population in Third World societies overtook the rate of pace at which resources were generated; thus the scanty or limited resources got further reduced for the population. The consequence or result of overpopulation and limited resources were political instability, hindrances in economic growth and obstacles to socio-cultural progress and development.

4.5.2 Overpopulation and the Working Class

The post-Malthusian approach stressed on birth control methods as a means to control overpopulation. They focused on the working class which was confronted with the problem of overpopulation. Post-Malthusianists espoused that all members of society could contribute to society and that the contribution of one class could significantly benefit another class (in society). For example, if the working class was considered as the lower class, they would have to work for the upper classes and might not be able to derive benefits for themselves or might not be able to consume what they produce. It is to be noted that the elite class was concerned with the issue of

overpopulation as they were concerned about the share of property and resources of the lower classes. Thus, the post or neo-Malthusians were in favour of birth control methods to control population; a control that was supported by the elites.

Overpopulation would require people to repeatedly work the land without any fallow period (a fallow period in which land remains untilled and is helpful to allow the soil to naturally regenerate its fertility). Tilling land near-continuously without any fallow period leads to diminishing returns from the soil and reduces soil fertility. Similar negative consequences accrue in industrial production and human productivity. In the latter instance, the working class would be unduly stretched by working extra hard to produce necessities but without being able to maintain productivity standards. The scarcity of natural resources would slowly set in as scarce natural resources (for instance mineral supplies) are inputs for industrial production.

Thus, the post or neo Malthusians were supportive of factors like the growth of human skill, progressive social change, technological progress, etc. which would counterbalance the system of diminishing returns from agriculture. With the progress of industrial development and utilization of human skills, increasing returns from the industrial sectors would accrue, albeit within a framework of limits to population outstripping resource availability. Thus overpopulation was a problematic rider to social and societal progress.

CHECK YOUR PROGRESS



Fill up the gaps:

1. The term neo-Malthusianism was first used in _____ by _____.

2. The post-Malthusian approach stressed on _____ as a means to control overpopulation.
3. This concept of the optimum size of population has two related terms associated with it, namely _____ and _____.

4.6 SUMMING UP

- Population was viewed as an asset and considered to be of great importance and power in pre-Malthusian theory.
- The Chinese philosophers favoured population but held that its growth did not overtake the level of agricultural production.
- In Plato's view, political instability was caused by population growth.
- Aristotle opined that a large population with scanty resources would lead to social problems.
- Traditional Hindu society supported the system of reproducing more children in a family which was considered as an important social function.
- The Islamic tradition encouraged early marriage and early formation of family to sustain the existence of the religion.
- The theory of mercantilism was in favour of the greater population to serve as a source of numerical (military) strength or strength in numbers.
- The physiocratic approach encouraged limited population growth to maintain the level of subsistence.
- There are two views under the physiocratic approach- a pessimistic view and an optimistic view.
- Malthusian theory of population states that human population tends to grow at a faster rate or pace than that which the means of human subsistence grows.

- The post-Malthusian theory favoured birth control methods to control population and were concerned with issues of population that tended to hamper human behaviour and livelihood.

Glossary

- **Antagonistic:** a way or method of showing opposition towards something or towards some behaviour.
- **Anti-natalist:** any person or belief in opposition to the process of birth.
- **Hindrances:** a way or thing that stands as a barrier or obstacle to something or someone.
- **Implications:** the likely result or fallout of a certain action or policy.
- **Monogamous:** the form of marriage where an individual has one partner during his/her lifetime.
- **Orientalists:** scholars of Oriental studies who are engaged in studying cultures, archaeology, history etc. of eastern and Far Eastern societies.
- **Pro-natalist:** any person or belief in favour or support of high birth rates.
- **Procreation:** the process of reproduction or producing children or offspring.

4.7 QUESTIONS

Short Type Questions (Answer within 100-150 words):

1. What does the pre-Malthusian theory say about population?
2. Write in brief about the pessimistic and optimistic views of the physiocratic approach.

Essay Type Questions (Answer within 300-400 words):

1. Discuss in detail the Malthusian theory of population.
2. Elaborate on the post or neo-Malthusian approach to population.

4.8 RECOMMENDED READINGS AND REFERENCES

Haq, E. (2007). *Sociology of Population in India*. Macmillan India Ltd, New Delhi.

Internet sources:

<https://www.britannica.com/biography/Thomas-Malthus>

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UNIT 5: POPULATION THEORIES: NEO-CLASSICAL, MARXIAN, BIOLOGICAL THEORIES, OPTIMUM THEORY, DEMOGRAPHIC TRANSITION

UNIT STRUCTURE

- 5.1 Introduction
- 5.2 Objectives
- 5.3 Neo-Classical Theory
 - 5.3.1 Neo-Classical Theory of Population Growth
 - 5.3.2 Marxian Theory
 - 5.3.3 Basic Tenets of Marxian Theory
- 5.4 Biological Theories
 - 5.4.1 Biological Theory of Herbert Spencer
 - 5.4.2 Biological Theory of Corrado Gini
- 5.5 Optimum Theory of Population
 - 5.5.1 Demographic Transition Theory
 - 5.5.2 Stages of Demographic Transition
- 5.6 Summing Up
- 5.7 Questions
- 5.8 Recommended Readings and References

5.1 INTRODUCTION

The study of population is vital to understand the harmonious relationship between various components and dimensions of society. Birth rate, death rate, fertility rate, mortality rate etc. which occur and affect society are better comprehended if population theories are taken into account. Readers must have understood, by now, basic concepts pertaining to pre-Malthusian, Malthusian and post-Malthusian theories which were explained in the previous unit. These theories enable us to understand what is happening and how certain problems or issues can be best tackled.

Similarly, several new theories of population will be dealt with in this unit so as to ascertain the scenarios under which population is growing, how it benefits or affects an environment and the living conditions of a community and society at large. Population theories like other theories involve the development and organizing ideas into a body of knowledge which facilitates understanding the changes in the population of a society, community or country. The integration of the various dynamics of population is important to encourage developmental planning keeping the population in perspective. Since population is a determining factor in the interplay of environment, development and reproductive health, a deeper study into the new theories of population in this unit will help learners and readers to identify and understand the processes and structure of a population and population change.

5.2 OBJECTIVES

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

- Explain the significance of theory;
- Analyse various population theories;
- Differentiate the theories on the basis of population studies.

5.3 NEO-CLASSICAL THEORY

Neo-classical school of thought had scholars like Alfred Marshall, Irving Fisher, Carl Menger, etc. Unlike the classical school of thought which was based on the notion that economic laws determined principles of production, consumption and distribution of wealth, the neo-classical school of thought had a different interpretation. The neo-classical theory of population stated that the increase of population led to a decline in production processes. Also to meet the larger demand necessitated by a growing population, additional goods and services needed to be produced.

5.3.1 Neo-classical Theory of Population Growth

The population explosion in the 18th century in Europe created the classical theory of population or the famous Malthusian theory. However, the classical theory of population came to an end with the coming of the neo-classical theory of population growth. This new theory opined that real GDP per person grows as technological advancement inspires more savings and investment which, in turn, makes capital grow. As higher incomes are brought about by technological advances, therefore health improvements set in and lead to improvements in human longevity. As a result, both mortality at birth and death rates decline. Thus, the opposite forces of maternal and child mortality slowdowns and decreased death rates gradually result in the rise of population.

5.3.2 Marxian Theory of Population

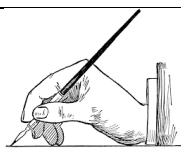
Karl Marx in the Marxist theory of population did not offer a clear explanation on population. Rather the basic characteristics of the theory of population were taken into account to explain the Marxist theory of population. Karl Marx was of the opinion that population was not a problem and that socio-economic conditions of different societies determined the stages and features of a society's population. Marx also opined that overpopulation in society was the result of the peculiar tendency of the capitalists' class to gather capital. Therefore, in due course, the demand for labour would be replaced by the demand for machines in the process of production. As the main objective of the capitalist class was capital accumulation, thus, according to Marx, the demand for capital investment gradually increased. Hence it resulted in restricting the excess population from joining the employment sector as the labour force. This occurred due to the growing interest of the capitalists to focus on production through machines and to gather capital. As a result, the living conditions of various groups changed and the demographic behaviour was affected. The fertility and mortality rates were altered due to the changing socio-economic conditions among various categories of workers.

5.3.3 Basic Tenets of Marxian Theory

Marxian theory comprised of some essential features or basic tenets which set it apart from the other approaches or theories of population. Some of the features are to be discussed here.

- The Marxist approach believes that overpopulation is not a problem as the effects of attributes like underdevelopment, poverty etc. This approach also suggests that the social problems are due to inherent constraints present in the social organization of production.
- Unlike the Malthusian approach which advocated universal laws like geometrical and arithmetic progression, the Marxist approach rejects the existence of any such law on socio-economic grounds.
- The Marxist approach suggests that population growth and the means of subsistence could mutually adjust themselves in the process of development.
- The Marxist approach suggests that with the application of science, technology and capital, the productive capacity for land could be increased thereby contributing to the growth and progress of the population.
- According to the Marxist theory, the problem of overpopulation could be tackled and a permanent solution could be brought about by implementing certain programmes and schemes of development.

CHECK YOUR PROGRESS



1. Write two essential features of Marxian theory on population.

5.4 BIOLOGICAL THEORIES

The biological theories of population growth are related to two scholars namely Herbert Spencer and Corrado Gini. Herbert Spencer was an English biologist, sociologist and political theorist who coined the term ‘survival of the fittest’, many years before Charles Darwin’s work on natural selection. Corrado Gini was an Italian sociologist and demographer. Both Spencer and Gini were of the view that biological factors were responsible and associated with population growth and change. Herbert Spencer opined that there was a biological law that governed the growth of population. On the other hand, Corrado Gini put forward a theory which stated that population growth followed an evolutionary process where it went through successive stages of development, maturation and involution.

5.4.1 Biological Theory of Herbert Spencer

Herbert Spencer advanced the biological theory of population and was concerned with the self-regulating principle of population growth. He criticized the Malthusian theory of population and did not find any contradiction between the power of the earth to produce the necessities and capacity of population to multiply.

Spencer noticed an opposition between individuation (individual social progress) and genesis (reproduction), between social progress and biological reproduction and between the growing power of individuals to maintain a social life and the power to produce his/her subsistence. Thus, a conflicting relationship existed between the social and biological aspects of life but this conflict was resolved through the process of natural adjustment between the two. The birth rate tended to decline during the process of individuation as a human tendency and instinct to multiply weakened.

Thus, the greater the process of social progress or individuation, the lower is the process of genesis and smaller is the size of a family. This is regarded as a natural pattern or relationship. According to Spencer, there seems to occur a natural decrease in the reproductive capacity in individuals as he/she makes more efforts to prosper and move up the social ladder. Therefore, there existed a natural process of adjustment between the numbers and the means of subsistence and Malthusian theory of preventive and positive checks was not acceptable to Spencer. Hence, the natural opposite relationship between individuation and genesis determined the growth of population.

Fertility seems to be high in rural areas where the complexity of life is less and daily life is relatively simple. However, fertility is low in urban areas due to the high complexity of life and with new desires to fulfil various material desires. The process of individuation first seems to take occur among the people of affluence and in developed societies. Gradually this spreads to other sections of society, including the middle class. Thus, social pressure is exerted on the fertility behaviour of human beings which ultimately lowers the process of biological reproduction.

Spencer believed that women belonging to rich families had low reproductive power while women belonging to poor family backgrounds had relatively higher reproductive power. This is due to the different level of individuation and genesis present among women in societies. Spencer was in favour of high population as he believed that it would provide more manpower which in turn could be utilized for exploiting natural resources for socio-economic development.

There were many who criticized Spencer and his biological theory of population. His critics opined that the biological theory was not realistic and his view that fertility decreased when the complexity of life increased is not wholly true as very often the fertility rate remained high even in rich families. Moreover, the problem of population growth is a complex process

going on since time immemorial and one that cannot be given a biological angle.

Stop and Read

Herbert Spencer postulated the biological theory of population in his book *The Principles of Biology*.

5.4.2 Biological Theory of Corrado Gini

Corrado Gini (1884) who was a natural law theorist did not give importance to any external factor (for example, means of subsistence) in determining the growth of population. He was of the opinion that the main principle in determining the growth of population was a natural or biological factor. The biological factor brought in cyclical form of rise and fall in population growth rates. Gini observed that the cyclical patterns of population growth were like the lifecycle of an individual, a social class or a social group. The cyclical pattern of population growth was affected by biological traits like fertility or fecundity and did not get affected by the socio-economic change in society.

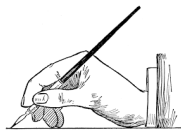
According to Gini, at the early stages of a population cycle, the growth in population went hand-in-hand with complex social organizations, greater division of labour, social mobility etc. On the other hand, at a later stage, the growth of population tended to decline with continuous improvement in social development. The social mobility among various classes changed and speeded up and the rate of fertility and fecundity seem to be less among the upper classes in comparison to the lower classes. Biological change first occurred among the upper class and then percolated down to the lower class. The upper class did not change and revive their fertility behaviour. Thus, those who moved up the social hierarchy ladder also become less fertile as the reproductive instinct among the upper classes and the lower classes gradually declined. According to Gini, initially, the fertility behaviour weakened among the upper sections of the society, and

then it gradually weakened among the lower sections of society; when the society marched towards being wealthy and rich, then the growth of population finally declined in that society.

Stop and Read

Sadler (1780-1835) was a natural law theorist who discovered that after a certain period of time the number of people itself was a natural factor that controlled population growth.

CHECK YOUR PROGRESS



1. Who wrote *The Principles of Biology*?

.....

2. Why does Spencer believe that women belonging to rich families have low reproductive power as compared to those belonging to poor family backgrounds?

.....
.....
.....

5.5 OPTIMUM THEORY OF POPULATION

The optimum theory of population which has been developed by Marshall, Gini and others is considered an alternative to Malthusian and Marxist theories. This theory refers to the size of the population which could bring maximum welfare to a population and at the same time enable them to achieve a high level of per capita income. The theory states that due to the law of diminishing returns, the stock of resources and the techniques of

production, there is a definite size of population corresponding to high per capita incomes. Other things being equal, if there occurs a deviation from the optimum size of population, the per capita income would decline. The per capita income of a country may rise along with that of population but after a period of time, the per capita income would get lowered when population grew beyond an optimal level or threshold.

In the words of Carr-Saunders, the optimum population is that which produces maximum economic welfare. Optimum population is considered to be of an ideal size which provides the maximum income per capita, i.e. the particular size of population that maximizes real output per worker. Most authors and scholars relate economic welfare to population size.

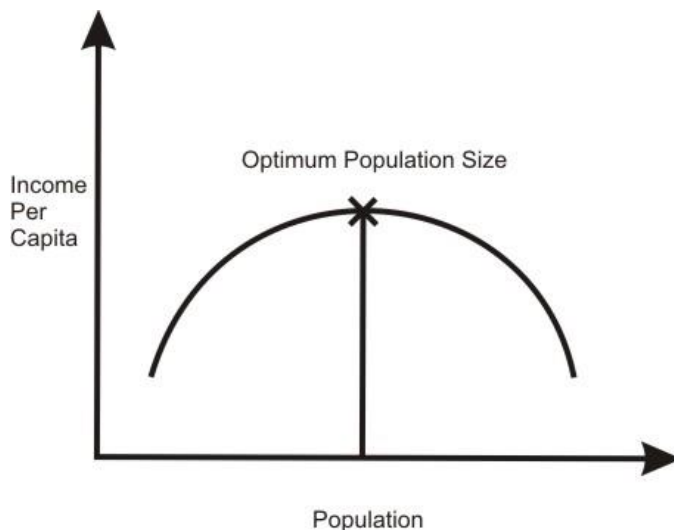


Figure:1 Optimum Population Theory

The figure depicts the per capita income increases till a certain point, after which it declines with a rise of population. This point is the optimum size of population.

5.5.1 Demographic Transition Theory

The theory of demographic transition is based on the interpretation of demographic history proposed by the American demographer Warren Thompson in 1929. According to Thompson, demographic transition refers to the transition from high birth and death rates to low birth and death rates as a country transitions from a pre-industrial or agricultural society to an

industrialized economic system. The theory of demographic transition involves changes in the mortality, fertility and growth rates as societies move from one demographic regime to another. The historical process of demographic transition is regarded as one of the important changes that have affected human society in the spheres of democratic government, the industrial revolution, increased urbanization and improved levels in healthcare, education and quality of life.

5.5.2. Stages of Demographic Transition

The process of demographic transition comprises of four stages which are elaborated here. The **first stage** refers to the period of the pre-industrial era in western Europe where birth and death rates had been high and so the balance of population was maintained until the late 18th century. Population growth in this stage was slow as there were limits on the availability of food resources; although this could have been avoided by improved technologies to yield higher production levels. The **second stage** was the period in the developing countries of eastern and southern Europe wherein death rates declined more rapidly than birth rates due to improvements in the food supply. Thus, life expectancies increased and the rate of diseases was reduced. As there was no fall in birth rates, population growth and population imbalances set in. The **third stage** covered the period when birth rates began falling due to various fertility factors like use of and access to contraception, urbanization, investment in the status and education of women and so on. Northern Europe in the late 19th century witnessed a fall in fertility rates due to changes in value systems regarding reproduction. The **fourth stage** was during the period of the 20th century which witnessed the decline of both birth and death rates. Birth rates declined faster than the death rates resulting in a net population rate decrease.

Stop and Read

The term demographic transition was first used by Adolphe Landry and later the American demographer Frank Notestein.

CHECK YOUR PROGRESS



1. What does optimum theory of population state?

2. Who first used the term 'demographic transition'?

5.6 SUMMING UP

- The neo-classical theory of population opines that the process of production declines as an increase of population occurs.
- According to Karl Marx, population growth was not a problem in itself and the stages and features of population were determined by various socio-economic conditions.
- According to the Marxist approach, the productive capacity of land could be increased with the application of science, technology and capital which would contribute to the growth and progress of a population.
- Herbert Spencer and Corrado Gini are mainly associated with the biological theory of population growth.
- The opposition between individuation (individual social progress) and genesis (reproduction), between social progress and biological reproduction and between the growing power of

an individual to maintain a social life and the power to produce his subsistence was highlighted by Herbert Spencer in his biological theory of population growth.

- The process of individuation was first said to have taken place among the people of the higher class, advanced sections and in developed societies.
- According to Corrado Gini, the main principle in determining the growth of population was the natural process or the biological factor. The biological factor was believed to usher in a cyclical form the rise and fall of population growth rates.
- The optimum theory of population developed by Marshall, Gini and others was considered an alternative to Malthusian and Marxist theories. The theory refers to the size of a population that could bring maximum welfare and high per capita income to people.
- In the words of Warren Thompson, the transition from high birth and death rates to low birth and death rates as a country passed through a pre-industrial or agricultural stage to an industrialized economic system is referred to as a demographic transition.
- Demographic transition comprises of four stages.

Glossary

- Ascertain: the process or a way to discover or find out something.
- Comprehend: a means of understanding a certain phenomenon.
- Dimension: some aspects or features of a situation or circumstance.

- **GDP:** Gross Domestic Product; it is defined as the sum or aggregate of market values or prices of goods of a nation.
- **Involution:** the state of decay or shrinkage of an organism to a point when it ceases to function.
- **Mobility:** the movement of people or organisms from a place to another.
- **Unprecedented:** a phenomena that occurs at a scale not seen, experienced or comprehended previously.

5.7 QUESTIONS

Short Type Questions (Answer within 100-150 words):

1. What does the Neo-classical theory of population growth state?
2. What is meant by the optimum theory of population?
3. Briefly explain the theory of demographic transition.

Essay Type Questions (Answer within 300-400 words):

1. Provide a detailed analysis of the Marxian theory of population.
2. Elucidate the biological theories of population postulated by Herbert Spencer and Corrado Gini.

5.8 RECOMMENDED READINGS AND REFERENCES

Bongaarts, J. (2009). Human population growth and the demographic transition. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1532): 2985–2990. <http://doi.org/10.1098/rstb.2009.0137>

McTaggart, D, Findlay, C. C., & Parkin, M, 1939- (2007). *Macroeconomics* (5th ed). Pearson Education Australia, Frenchs Forest, N.S.W.(online version).



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