POPULATION AND SOCIETY

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POPULATION AND SOCIETY

Course Objective

The course introduces the student to understand Population as a social phenomenon. It acquaints the students to the demographic features and trends of Indian Society vis-à vis World Population. It also reviews population control measures and their implementation.

Unit - I

Introduction to Population Studies: Nature, scope and importance of population studies, sources of demographic data. Interface between Population andsociety.

Unit - II

Theories of Population: Malthus, Optimum Population Theory, Demographic TransitionTheory.

Unit - III

World Population: An Overview of world population;

Unit - IV

Population profile of India: Trend of population growth anddistribution.

Unit - V

Population dynamics: Fertility, Mortality and migration; Causes and consequences of population growth inIndia.

Unit - VI

Population policy: Population policy in India, Evaluation of PopulationPolicy.

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TABLE OF CONTENTS			
UNIT	**LESSON**	**TITLE**	**PAGE NO.**
I	1	Introduction to Population Studies	1
II	2	Theories of Population	19
III	3	World Population	31
IV	4	Population profile of India	45
V	5	Population dynamics	51
VI	6	Population policy	67

UNIT – I

Lesson 1.1 - Introduction to Population Studies

Structure

Objectives

In this Unit, the learners would know about the concept, nature and scope of population studies and demography. The learners would be able to know about the interrelationship between various disciplines with population studies and through this unit the learners are expected to:

- Articulate and define the topics of demography and population studies;
- Know the history of population studies
- Key topics and perspectives of population studies
- Nature and scope of population studies

1.1 Introduction

Understanding the dynamics, traits, and implications of human populations is at the core of the wide field of study known as population studies. It covers a broad variety of subjects pertaining to population growth, distribution, composition, size, and mobility, as well as the connections between people and their social, economic, and environmental conditions. Informing policy choices, managing societal issues, and forecasting future demographic changes all depend heavily on studies of population.

Insights from a variety of disciplines, including sociology, demography, economics, geography, anthropology, public health, and statistics, are used in the field of population studies. To analyse and understand population patterns and trends, researchers in this subject employ a number of techniques and data sources, including census data, survey results, statistical models, and historical records.

1.2 Population Studies: Concept and Scope

What is population studies?

Population studies is a multidisciplinary field of research that focuses on the study of human populations, their characteristics, behaviours, and dynamics. It involves the collection, analysis, and interpretation of data related to populations, with the aim of understanding various aspects of human societies. Population studies encompass a wide range of topics and methodologies that play a crucial role in framing and reframing public policy, healthcare, urban planning, and also other diverse fields.

The study of population, which is also known as demography has grown in importance in the twenty first century this is because of demographic data that shows how human populations are changing through time, such as births, deaths, wealth, or the prevalence of disease. Analysis of various demographic data is a topic of population studies. This is very helpful in not only identifying the issues in a particular region's human society, but also in understanding the patterns of change, learning how various determinants relate to one another, and then offering a solution in addition to forecasting the future and engaging in effective planning. Research in population that is demographic research is becoming more and more important because of the rapid growth of population on developing nations and decline of population in the west. This change in population dynamics has also impacted society at various levels. Demographic variables, various theories of population change and fertility, migration-related issues, and policy considerations are covered by population studies. These topics are crucial in the present because of pressing difficulties like the population's constant growth, the scarcity of resources, and migrations brought on by humans (Atkins, 2001).

History of population Studies

The word "population" originates from the Latin noun "populacio" and the verbs "populate" and "populare". In prehistoric times, the term

"populare" meant "generally wasted, plundered, or destroyed," and the verb "populatio" "was a plundering or despoliation," according to McNicol. Another scholar, Francis Bacon first used the phrase "population" in an article he published in 1597.

In the middle of the seventeenth century, population studies were established as a field of study in England. The majority of its early development was carried out by England, France, Germany, and a few other European nations. The United States of America afterwards significantly contributed to the development of this topic. John Graunt's study is important in certain aspects.Graunt is considered by many historians to have founded the science of demography as the statistical study of human population He investigated a wide range of population studies topics, and his findings are still valued today. He conducted a careful analysis of the mortality and fertility statistics, highlighting any clear biases and inaccuracies.John Graunt laid the foundation for new knowledge, and the area of population studies is grateful for his contribution.

In modern times the subject population studies draws its foundation from various academic disciplines, including sociology, demography, anthropology, economics, geography, epidemiology, and public health. Researchers in this field aim to provide valuable insights into the complex interactions between human populations, society, and the environment, helping to address some of the most pressing challenges facing humanity.

Key aspects and topics within Population Studies:

Demography: Demography is a fundamental component of population studies. It involves the study of population size, distribution, composition (age, sex, ethnicity, etc.), and changes over time. Demographers use various statistical tools and models to analyze demographic trends and predict future population changes.

Population Growth and Decline: Understanding the factors influencing population growth and decline is essential. Researchers examine birth rates, death rates, fertility rates, migration patterns, and other factors that contribute to changes in population size.

Migration: The movement of people within and between regions and countries is a significant area of study. Migration patterns can have far-reaching implications for social, economic, and political systems.

Urbanization: With an increasing proportion of the global population living in urban areas, the study of urbanization is crucial. Researchers analyze the growth and development of cities, as well as their impact on the environment and the quality of life for their inhabitants.

Population Health: This area focuses on the health and well-being of populations. Researchers study patterns of disease, healthcare access, mortality rates, and the factors that influence the health of different population groups.

Social and Cultural Factors: Population studies often delve into the social and cultural dimensions of population dynamics, including family structures, gender roles, education, and cultural practices.

Population Aging: As many societies experience demographic transitions, with increasing proportions of elderly individuals, there is a growing focus on understanding the challenges and opportunities associated with an aging population.

Environmental Impact: The impact of human population growth and behavior on the environment is a critical concern. Researchers study issues such as resource consumption, pollution, and climate change within the context of population studies.

Policy and Planning: Governments and organizations use population data and research findings to inform policy decisions and plan for the future. This includes areas like healthcare policy, education policy, and social welfare programs.

Forecasting and Projections: Demographers and population scientists use mathematical models and statistical techniques to make projections about future population trends, which can be essential for planning and resource allocation.

***Study box 1*Population Studies: Through Census**

The census is used to conduct a systematic examination of the population. In 1790, the United States conducted the first modern population census. This was followed throughout Europe in the early nineteenth century.

- The British government began conducting censuses in India between 1862 and 1872.

- India has had a regular census since 1881. It was a decennial census, which means it was done every 10 years.
- Since India's independence in 1951, the census has been held once every ten years.
- India's latest census was held in 2011. It was meant to take place in 2021, but the global pandemic of COVID 19 halted the task.
- The Indian census is regarded to be the world's largest census survey.

Learning Activity 1.1 *Visit the government of India census website and see the patters of birth rate and death rate among the states.*

Various Definition and perspectives of Population Studies

Now we have come to know that population studies is an interdisciplinary field that focuses on the examination and analysis of human populations. Through different persfectives the definition of population studies are as follows

Classical Demography Perspective: Population studies, often referred to as demography, is the scientific study of human populations. It involves the analysis of birth rates, death rates, migration patterns, and other demographic processes to understand how populations change over time.

Social Sciences Perspective: Population studies can be seen as a branch of the social sciences that explores the interactions between individuals and society. It investigates how demographic factors influence and are influenced by social, economic, and cultural factors.

Public Health Perspective: In the context of public health, population studies involve the examination of health-related data at the population level. This includes studying disease prevalence, healthcare access, and health disparities among different population groups.

Geographical Perspective: Geographers may view population studies as the analysis of the spatial distribution of human populations and the factors that influence population density and migration patterns.

Economic Perspective: Economists often use population studies to analyze the impact of population size, growth, and composition on economic development, labor markets, and resource allocation.

Environmental Perspective: Population studies can also be related to environmental science and sustainability. It examines the relationship

between population growth and its impact on natural resources and the environment.

Policy and Planning Perspective: Population studies play a crucial role in informing government policies and urban planning. It helps policymakers make decisions related to healthcare, education, housing, and infrastructure based on demographic trends.

Historical Perspective: Historians use population studies to understand historical demographic patterns, such as population booms, busts, and migrations, and how they have shaped societies and cultures over time.

Gender and Women's Studies Perspective: Population studies often intersect with gender studies, examining topics like fertility, reproductive health, and gender disparities in population dynamics.

Global Perspective: In a global context, population studies may involve the study of global population trends, international migration, and the implications of a growing world population for global challenges like food security and climate change.

Ethnic and Cultural Perspective: Population studies can also focus on the study of ethnic and cultural diversity within populations, exploring issues related to cultural identity, assimilation, and multiculturalism.

Interdisciplinary Perspective: Population studies often draw on various disciplines, including sociology, anthropology, statistics, epidemiology, and geography, to provide a comprehensive understanding of human populations

Nature of Population Studies

Population Studies has over the years been able to understand the effects of population expansion on the environment, carbon footprint, livelihood and quality of lives of the people.

Three components are covered under population studies which becomes the core component, these are namely, size, composition anddistribution of population.

- Size: Size represents the number of individuals which that reside in a particular area. The number of people living in a population area, the size of the group distinguishes the characteristics of the population area.

- Composition: It included every measurable trait of the individuals that make up the population. There are many ways in which the two groups are different in composition. The traits need to be meaningful to his endeavor to comprehend particular facets of the national experience and effectively connected to demographic dynamics.The most often used demographic study characteristics are age and sex.
- Distribution: The study of population distribution addresses questions like how people are dispersed and what causes changes in population distribution.

Subject Matter and Scope of Population Studies

Population studies have a very broad scope. Students who study population studies gain knowledge and comprehension of the current state of the population both domestically and globally. Additionally, it makes the students aware of the connections between the global population issue and their own nation. It helps us make thoughtful, deliberative, and educated decisions on family size, community demographic issues, and state policies. It gives us the information, abilities, attitudes, and values we need to determine and assess how population growth will affect students' future well-being as well as the wellbeing of their community, society, country, and the entire planet.

Population studies look at the composition, dynamics, causes, traits, cooperation, and distribution of the human population. It examines how people relate to their surroundings and how well they live. On the one hand, this topic deals with a quantitative analysis of the number, composition, and geographic distribution of human populations as well as the changes that affect them. Conversely, its focus lies in investigating the fundamental reasons behind population-related events. Thus, through the study of fertility, mortality, migration, and social mobility, a student of population is involved in characterizing and comparing the size, structure, characteristics, and territorial distribution of the population, as well as the changes occurring in it.

Relationship of population studies with other social science

Here are some of the key relationships between population studies and other social sciences:

Sociology: Sociology is the scientific study of society, human social behavior, and the various aspects of social life. It is a social science that seeks to understand and explain how societies are organized, how they function, and how they change over time. Sociologists use systematic research methods and theories to examine a wide range of social phenomena and issues.

Sociology and demography are closely linked because both fields study human behavior and social structures. Demographers often work with sociologists to understand the social implications of population changes, such as the impact of aging populations, migration patterns, and family structures on society.

Economics: Economics is the social science that studies how societies allocate their limited resources to meet their unlimited wants and needs. It is the study of how individuals, businesses, governments, and other organizations make choices to optimize the allocation of resources to achieve their objectives. Economics seeks to understand how people make decisions in various situations where resources are scarce. There are two main branches of economics:

Microeconomics: Microeconomics focuses on the behavior of individual agents, such as consumers, producers, and firms, and how they interact in markets. It examines topics like supply and demand, pricing, consumer behavior, production, and competition. Microeconomics is concerned with the allocation of resources at the individual and firm level.

Macroeconomics: Macroeconomics looks at the economy as a whole and studies aggregate phenomena such as overall economic growth, inflation, unemployment, and government policies' effects on the economy. Macroeconomists analyze factors that influence the performance of an entire economy, including fiscal and monetary policy, international trade, and economic stability.

Economists use various models, theories, and empirical research to analyze and understand economic phenomena. They also provide insights and recommendations to policymakers, businesses, and individuals to make informed decisions in the face of economic challenges and opportunities. Economics plays a crucial role in shaping public policy, guiding business strategies, and informing personal financial decisions.

Population studies and economics intersect in several ways. Economists study how population dynamics can affect labor markets, economic growth, consumption patterns, and resource allocation. Demographic trends, such as fertility rates and population aging, can have significant economic implications.

Anthropology: Anthropology is the scientific study of humanity, encompassing the exploration and analysis of human behavior, culture, societies, biology, and evolution. It is a holistic discipline that seeks to understand the diverse ways in which human beings have lived and continue to live in various parts of the world, throughout history and across different cultures. Anthropologists study and document the full range of human experiences, from our biological origins to our cultural practices and social structures.

Anthropology and population studies share an interest in understanding human cultures and societies. Demographers may collaborate with anthropologists to examine population-related topics like migration, kinship systems, and cultural factors influencing fertility and mortality.

Geography: Geography is a multifaceted field of study that examines the Earth's physical features, natural environments, human societies, and the interactions between them. It seeks to understand the spatial relationships and patterns that exist on our planet, from the physical characteristics of landscapes to the distribution of populations and cultures.

Geography plays a crucial role in population studies as it deals with the spatial distribution of populations. Geographers and demographers collaborate to analyze issues related to urbanization, regional population disparities, and the environmental impact of population growth.

Political Science: Political science is the systematic study of politics, government, and political behavior. It is an academic discipline that seeks to understand and analyze political systems, institutions, processes, and behaviors at local, national, and international levels. Political scientists study a wide range of topics related to politics, including the distribution of power, the behavior of political actors, public policies, and the impact of government on society.

Population studies intersect with political science in various ways, such as the study of political representation, voting patterns, and the impact of demographic changes on political power and policy decisions. Demographic factors, like age and ethnicity, can influence political behavior and policies.

Public Health: Public health professionals often work closely with demographers to study patterns of disease, healthcare access, and mortality rates within populations. Population studies provide essential data for public health planning and interventions.

Social Work: Social workers may collaborate with demographers to understand the needs and challenges of specific population groups, such as vulnerable or marginalized communities. Demographic data can inform social service delivery and policy development.

History: History is the study of the past, encompassing the examination and interpretation of events, people, societies, and cultures that have existed before the present time. It is both an academic discipline and a narrative of human experiences across time. Historians use various sources, including written documents,artifacts, oral traditions, and archaeological evidence, to reconstruct and analyze the past.Historians often use demographic data to study the past, such as population growth, migration patterns, and the impact of epidemics on historical societies. Demography helps historians contextualize historical events within broader population trends.

Environmental Science: Population studies are closely related to environmental science because population growth and consumption patterns have significant environmental impacts. Environmental scientists may collaborate with demographers to assess the ecological consequences of population dynamics.

Psychology: Psychologists may study the psychological factors that influence family planning decisions, fertility choices, and aging-related concerns, contributing valuable insights to population studies.

1.3 Demography: Concept, Nature and Scope

Introduction

Demography, the scientific study of populations, is a vital field that examines the size, structure, and distribution of populations, and how they change over time due to births, deaths, migrations, and aging. This

field is foundational to understanding the dynamics that shape human societies and influence economic, social, and environmental policies. As such, demography not only provides crucial insights for public planning and resource allocation but also helps to address pressing global challenges such as population aging, urbanization, and migration.

Nature of Demography

The nature of demography is inherently quantitative, relying on statistical data to analyze population trends and patterns. Demographers use a variety of data sources including censuses, surveys, and vital statistics (records of births, deaths, marriages, and divorces) to create models that explain and predict demographic behaviors.

Definitions of Demography

Demography and population studies are often used synonymously. The terms "demographic analysis" and "population studies" have been attempted to be distinguished by certain scholars. Population is described and analysed through the science of demography. More specifically, demography investigates the size, make-up, and age structure of human populations in addition to their geographic distribution.

Here are several key definitions of demography:

Classical Definition: Demography is the scientific study of human populations, encompassing the processes of birth, death, and migration, as well as the structure and characteristics of populations.

Modern Definition: Demography is a social science that examines the quantitative and qualitative aspects of populations, including their size, structure, distribution, growth, and the factors that influence these characteristics.

Population Science Definition: Demography is the interdisciplinary field that combines principles from sociology, economics, statistics, geography, and other disciplines to study and explain population phenomena.

Population Dynamics Definition: Demography explores the patterns and changes in population over time, including birth rates, death rates, fertility, mortality, and migration trends.

Population Structure Definition: Demography examines the demographic composition of populations, including age, sex, race,

ethnicity, education, and other socio-economic characteristics

Various scholars have defined demography and some of them are:

Guillard: Demography is "The mathematical knowledge of populations,their general movements, and their physical, civil, intellectual and moral state"

Hauser and Duncan: "Demography is the study of thesize, territorial distribution, and components of population,changes therein, and components of such changes, which maybe identified as natality, mortality, territorial movement (migration), and social mobility (change of status)."

Stenford: "In its most formal sense, demography is a very technical and highly mathematical study of the vital statistics of human population (especially birth, death and migration) as well as of the characteristics of population structure (including age, sex and marital status) as they contribute to an understanding of population change."

Frank Lorimer: "In broad sense, demography includes both demographic analysis and population studies. Demography studies both qualitative and quantitative aspects of population."

Key concepts in demography include:

1. Population Size and Growth: This refers to the total number of people in a given area and how this number changes over time. Population growth can be influenced by birth rates, death rates, immigration, and emigration.
2. Population Composition: This involves the structure of a population, typically categorized by age, sex, and other demographic factors such as marital status, education, and occupation. Understanding the composition is crucial for identifying the needs and potentials of different population segments.
3. Population Distribution: This examines how populations are spread across geographic areas. Urbanization, migration patterns, and population density are key components, helping to understand regional development and resource allocation.
4. Fertility and Mortality: These are core components affecting population change. Fertility rates determine the number of births, while mortality rates influence the number of deaths in a population. These metrics are crucial for planning healthcare, education, and social services.

5. Migration: The movement of people across regions or countries impacts population dynamics significantly. Migration can be influenced by factors such as economic opportunities, conflicts, environmental conditions, and policy regulations. Understanding migration patterns is essential for managing urban growth, labor markets, and integration policies.

Scope of Demography

The scope of demography extends into various subfields and applications, reflecting its interdisciplinary nature. Key areas of focus include:

1. Social Demography: This branch explores the relationships between demographic variables and social structures. It examines how factors such as family dynamics, education, and employment impact and are impacted by demographic changes.
2. Economic Demography: This area studies the economic implications of demographic trends. It looks at how population changes affect labor markets, economic growth, and public expenditures. For example, aging populations pose significant challenges for pension systems and healthcare services.
3. Health Demography: This subfield focuses on the health aspects of populations. It investigates how demographic factors influence health outcomes, the distribution of diseases, and the effectiveness of health interventions. Issues such as life expectancy, infant mortality, and access to healthcare are central concerns.
4. Urban Demography: This area examines the demographic aspects of urbanization, including the growth and composition of urban populations, housing, infrastructure, and urban planning. It addresses the challenges and opportunities of rapidly expanding cities.
5. Environmental Demography: This field studies the interactions between population dynamics and the environment. It looks at how population growth and distribution impact natural resources, climate change, and environmental sustainability.
6. Policy Demography: This practical application involves using demographic data to inform public policy and planning. Governments and organizations rely on demographic analyses to

design effective policies in areas such as education, healthcare, housing, and social services.

Importance of Demography

The importance of demography lies in its ability to provide comprehensive insights into population trends and their implications. Demographic research helps in:

Planning and Development: By understanding population dynamics, policymakers can make informed decisions about infrastructure development, resource allocation, and service provision.

Public Health: Demographers analyze health trends and disease patterns, aiding in the design of public health interventions and strategies to improve population health.

Economic Forecasting: Population data are crucial for predicting labor market trends, consumer demand, and economic growth, helping businesses and governments to plan for the future.

Social Services: Demographic insights are essential for planning social services, such as education, childcare, and elderly care, ensuring that these services meet the needs of different population groups.

Environmental Management: Understanding the relationship between population and the environment helps in developing sustainable practices and policies to mitigate environmental impact.

Conclusion

Demography is a critical field that encompasses the study of population size, structure, and distribution, along with the factors influencing these aspects. Its nature is quantitative and interdisciplinary, drawing on data from various sources to analyze and predict population trends. The scope of demography is broad, covering areas such as social, economic, health, urban, and environmental studies. The insights gained from demographic research are invaluable for public planning, policy development, and addressing global challenges, making it an essential component of modern society.

1.4 Sources of Demographic Data: Systems and Methods

Population Census

The Census is the most important source of population statistics. The term "census" is derived from the Latin word censere, which meaning "to assess". According to the New International Webster's Dictionary, it is "an official count of the people of a country or district, including age, sex, employment, etc." According to a United Nations study, a population census is the collection, compilation, and publication of demographic, economic, and social data for all individuals in a nation or defined region at a certain period. A population census is an official enumeration of a country's population, including information such as location, age, gender, marital status, literacy status, language, educational level, economic activity, number of children, and migration.

A census includes the following features:

1. A census is normally done every ten years.
2. The census encompasses the entire nation or a portion of it.
3. The census activities are finished by the scheduled dates.
4. The government organises and conducts it through the country's Census Commission.
5. The Census Commission determines a reference period for the census at that time.
6. A home or family is viewed as a whole. However, in big census operations, migratory and homeless people are counted at night in their places of rest or sleep.
7. Before beginning census operations, the Census Commission takes several preliminary procedures, such as creating timetables, lists of homes in each region, training enumerators, and so on.
8. The Census Commission collects, examines, and statistically analyzes completed census schedules.
9. Census data are made available for distribution.
10. Census activities entail enumerators going door to door to gather information from homes. In other countries, schedules are mailed and the necessary information is collected.
11. A census is a procedure that collects information from people living in a nation such as their age, gender, marital status, employment, education, and so on.

Registration of life events, such as births, deaths, marriages, and divorces, is a continuous process that provides valuable information about citizenship, marital status, succession rights, and birth and death disputes. Unlike the census, registration of vital events is required by law.

1. Vital Registration: Every person in a country must record vital events such as births, deaths, marriages, and divorces. In India, a child's birth must be registered with the town's municipal government. Similarly, death must be registered. Such registration requires the completion of a proforma with the following columns in each case:

Birth certificate details include name, father's name, mother's name, father's and mother's ages, and legitimacy status.

Death certificates typically include the deceased's name, date of death, gender, race/caste, age, location, cause of death, occupation, marital status, and permanent address.

***The population Register*:**

It is a secondary source of demographic statistics. A number of European and Asian countries, including Belgium, Sweden, Korea, and Israel, keep permanent population registers for administrative and legal purposes. The database includes information about all citizens, including their names, residences, ages, and gender, as well as individuals who move or enter the country. Population records check census results for each year.

2. Other records: In industrialized nations, secondary sources of demographic data include records other than the population registry. They manage demographic records for social security systems such as unemployment insurance, old age pension, and maternity allowance. In certain nations, insurance firms keep track of births and deaths, as well as demographic changes. Demographic data may be obtained from several sources, including election lists, income tax payer records, and telephone subscriber databases. Administrative data can be useful for conducting sample surveys, despite its limitations.
3. International Publications: Other sources of demographic statistics for the world and individual countries include the United Nations Demographic Year Book and the Statistical Year Book. The World Health Organization (WHO) publishes the monthly publication Epidemiological and Vital Records, which provides statistics on

public health and death in various nations. The UNDP's Human Development Report and the World Bank's World Development Report provide annual demographic statistics on population growth, predictions, fertility, mortality, and health for nations worldwide.

Sample Surveys

Another method of gathering population statistics is the sample survey. Information is gathered from a sample of people rather than the complete population in a sample survey. A sample is just a portion of the entire population. Based on sample surveys, a variety of demographic samples, including those pertaining to the frequency of abortions, the use of contraceptives, etc., can be selected for the purpose of fertility research. A few nations use stratified random sampling or random sampling based on national sample surveys. Regardless of the approach used, it is important to choose a sample that accurately represents the whole population. A small team of trained personnel and brief questionnaires focusing on a single demographic component are needed for the sample survey. The gathered data are tallied, examined, and released. Thus, this approach is less expensive and takes less time. Sample surveys can be used to further investigate trends in population growth in the interim between census operations and to augment the census data. In cases when there is uncertainty about the census findings, sampling is also employed to verify the correctness of the data. If the sample is selected appropriately, this procedure produces satisfactory results.

1.5 Summery

- Population studies is a multidisciplinary field of research that focuses on the study of human populations, their characteristics, behaviors, and dynamics.
- Population studies is a multidisciplinary field of research that focuses on the study of human populations, their characteristics, behaviors, and dynamics.
- Population studies look at the composition, dynamics, causes, traits, cooperation, and distribution of the human population.
- Demography, the scientific study of populations, is a vital field that examines the size, structure, and distribution of populations, and how they change over time due to births, deaths, migrations, and aging.

- The Census is the most important source of population statistics. The term "census" is derived from the Latin word censere, which meaning "to assess".

1.6 Self Assessment Questions

1. Write a note on nature and scope of Demography.
2. How Demography is related to Sociology? Discuss
3. How would you differentiate between Demography and Population Studies?
4. What are the factors that determine population growth?

1.7 References

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UNIT – II

Lesson 2.1 - Theories of Population

Structure

Objectives

Through this chapter the learners would learn the different theories of population and would understand how these theories have contributed greatly for the development of the subject.

2.1 Introduction

From early time different people from diverse background have always focused on population and population related matters have always been a part of attraction. These focused has been generated because a large and rapid growing population caters the need to the labour market which is also a positive push for economic conditions. But this also has certain negatives such as - increase in population has also been a contributory factor in impoverishment and also in catastrophes as wars, famines and epidemics. Therefore different scholars have expressed differed views with respect to population phenomena with the socio economic political context.

2.2 Historical background of Malthus work

Malthusian theory of population is associated with Thomas Robert Malthus. Malthus was born on February 14, 1766. Malthus had his academics initially from his home. When he was eighteen years old he

was enrolled in Jesus College, Cambridge. He was elected as a fellow of the college in the year 1793. And in the year 1797, he was ordained as a priest. In the year 1804, he was appointed as a professor of history and political economy at Haileybury College. Malthus passed away in the year 1834.

Malthus published his most famous work, his essay on population in the year 1798. The essay basically critiqued English writer and philosopher William Godwin and the French mathematician, economist and philosopher Marie Lean Anotie Condorcet. The title of Malthus essay was: An Essay on the Principle of Population as it affects the Future Improvement of Society, with Remarks on the Speculation of Mr. Godwin, M. Condorcet and others. This very work of Thomas Malthus had become a landmark in the history of population studies and also has become one of the most controversial books of current times. The work has attracted both criticism and appreciation from various scholars. The year 1798 has become benchmark for the study of population doctrines and down the years all views on population were classified as Pre-Malthusian, Malthusian, Anti-Malthusian and Neo- Malthusian. Malthus constituted the premises and views of Godwin and Condorcet. Condorcet was a French Revolutionary of war and was sentenced to death. Condorcet wrote his famous treatise on the history of human progress from its beginning to its immanent culmination in human perfection while he was hiding in a student's house. Condorcet optimist views were on this disappearance of inequalities of wealth, of education, opportunity and sex. He argued that there would be no hostilities between nation and raced and people speaking the same language everywhere. Condorcet said people would have gathered unimagined knowledge for which production and marketing would be able to conquer diseases. And in the rational age to come, men would recognize their obligation to those not yet born and to the general wellbeing of the society for which in those circumstances, a limit could be set up to the population other than by premature death of a portion of those born.

When Condorcet went to hiding in the year 1793, another scholar named William Godwin of England published his work titled 'Enquiry Concerning Political Justice', Godwin had the view that 30 minutes work every day would suffice the needs of society. Scientific advancement would make the society perfect with abundance and which will also bring an end to overpopulation. Godwin declared that with time because of this prophecy, there would be no war, no crime, no disease, no hostility, and no administration of justice and there will be a good society.

To reject the ideas of both Condorcet and Godwin, Malthus wrote the essay which directed towards the misery caused by population growth. Malthus formulated that the tendency of population growth has led to human misery and has placed several obstacles in the path of human progress. In the year 1803, Malthus published the second edition of his essay, which was directed more towards substantial statistical data for supporting different virus and he proposed that the preventive check for rapid population growth is moral constraint. Later he published five more editions of the essay after studying and gathering data about population from various sources (Malthus, 1798).

2.3 Malthusian Theory of Population

Thomas Malthus began his theory with two main premises:

- First, that to sustain life on earth, living beings is dependent on food. Therefore for survival of human beings food becomes the priority.
- Secondly the passion between men and women is essential and this would exist forever.

After holding the view that power of population is greater than the power in earth to produce subsistence for man, unchecked and rise in population increases in the phase of geometric ratio. Whereas product of subsistence like food increases in arithmetic ratio and this increase in ratio shows that population power has immensity as compared to subsistence.

Malthus puts forth that when the means of subsistence increases, population also increases. This can only be regulated by only powerful and obvious checks. These checks and the checks which repress the superior power of population and its effects on a level with the means of subsistence, are all resolvable into moral restraint, vice and misery. Malthus wanted to investigate the natural increase in population if left unchecked and the increasing rate for subsistence could be increased. And based on this Malthus proposed that population increases in twice the rate every twenty five years, and thus this resembles an increase in geometrical rate. On contrary, even under suitable conditions, food such as agricultural production increase in equal quantity in each 25 years which resembles an increase in arithmetic ratio. Thus the series for growth seems: for human population: 1,24,8,16,32,128,256…..

For subsistence such as food: 1,2,3,4,5,6,7,8,9. Therefore the series representation of population with comparisons for two years is 256 is to 9 ..... where 256- population increase in 25 years and 9- subsistence.

Thomas Malthus noticed that to stop population growth, there are operation powerful checks. The first of the powerful checks is known as preventive check to as an appropriate behaviour as it becomes absolutely necessity for the operation to balance man and food. The second of the powerful check is called- voluntary checks which are vice and moral restraint based on man's reasoning faculties. Malthus explained that assistance from marriage either for a definite time period or permanently and restricting from sexual relations represents a good moral restraint. According to him vice was described as prevention of the birth of children. The positive checks according to Malthus had an impact on human life which limited life span. These are tough living conditions arising from severe labour, poverty, insufficient food and clothes, lack of proper nourishment of children, spreading of disease, infanticide, famine and plague. Malthus categorised these positive checks into two catogries, First as caused by natural forces which he labeled as exclusively misery, second the effects that mankind brought of its own such as wars.

Malthus believed that laws which render facilities for the poor are poor laws and ill conceived. And poverty could be eradicated by the poor themselves by delaying marriage. He wanted to abolish the laws for the poor. In England poor laws was implemented under which the poor and desirable were provided support by the local community or perish. Prior to that charity was provided by a fund gathered through taxes from the general population. Malthus said that this law led to overpopulation, high child birth among the poor causing imbalance in the food- population order. Malthus argued that the poor shall be advocated the free use of small uncultivated plots of land rather than receiving donations. Further these laws for supporting the poor were removed by the Reform Bill in 1834 for which Malthus played an important role.

The essay of Malthus was in limelight and in discussion among the intellectuals and it led to discussion and controversy while some had supported and welcomed his work as one of the most important work related to population.

Figure 1. Thomas Robert Malthus

Malthus has drawn criticism for the following reasons:

- He wrongly insisted on limiting the amount of land available. The 19th-century agricultural revolution produced a dramatic rise in agricultural output through the use of chemical fertilizers, crop rotation, livestock quality improvement, and plant and animal variety selection. Thus, Malthus' dire predictions proved to be untrue.
- Malthus miscalculated the importance of industrialization. The more flavorful and dependable forms of transportation that let colonial empires obtain more raw materials, exploitable land supplies, and new markets for manufactured commodities were not considered in later advances.
- It was difficult for him to understand the idea of widespread usage of contraception because of his religious convictions.
- The ratios pertaining to population expansion (geometric ratio) and subsistence strategy (arithmetic ratio) had a tenuous basis and were never empirically verified. Malthus's prediction that the population will double in 25 years was mostly supported by the evidence of questionable American records. He had left out the role of immigration almost entirely.
- One argument made against Malthus was that, despite the fact that the phenomenon of differential fertility had begun to take effect at that point, he failed to make a clear distinction between fecundity—the physiological capacity to reproduce—and fertility—the actual reproductive performance measured in terms of live births.

2.4 Optimum Theory of Population

The relationship between population and resources forms the basis of the optimal population hypothesis. English economist Edwin Cannan (1861–1935) is recognized for having invented the concept of "optimum population." The idea behind this concept dates back to the writings of Karl Winkelblech, a German professor who lived from 1810 to 1865. In his discussions of population theory and policy, Winkelblech divided the world's countries into three groups according to population size: under-populated, over-populated, and normal, or having a population that allows for the highest possible level of productivity.

Cannan stressed that the "optimum population" is the best possible population and that "at every given period, the population which can exist on a certain length of land, consistent with the maximum productiveness of industry at that time, is definite." The idea of the economic optimum has been broadened by some authors to include power, defense, natural resource conservation, optimal family size, overall well-being, health, and other spiritual, cultural, and artistic dimensions (Robbins, 1927).

One interpretation of this phrase is "to mean the size of the population that results in the highest level of economic welfare, level of living, real income, and, in some cases, employment," or "to mean the highest productivity as measured in various ways" or "to mean the highest per capita income."

However, the majority of writers claimed that the main problem with optimum population theory was the economic optimum, and the idea that a population should be the ideal size for greatest productivity gradually gained traction. However, further occurrences forced a critical reassessment of this idea.

Criticism

- This idea has faced opposition for a number of reasons. Its practical use has been questioned by a number of authors who contend that it is impossible to identify an ideal population in the sense of an optimum location. In actuality, estimates of a nation's ideal population have just recently been attempted. The most suitable criterion for choosing the ideal population should be people's average lifespan.

- The life expectancy of a population represents the maximum possible balance between population and resources.
- Raised doubt on the concept's applicability in real-world situations, pointing out how challenging it is to determine the ideal population size in any given location. The idea of the ideal population has come under fire for being essentially static and neglecting the dynamic nature of trade, social structure, technology, and resources, among other factors.

2.5 Demographic Transition Theory

The most widely accepted theory to explain the rise in human population is the demographic transition theory. The only factors influencing changes in the global population over time are variations in fertility and mortality rates. The world population changes over time as a result of adding people who were born during the period and deleting people who died during it.

First introduced by Warren S. Thompson in 1929 and Frank W. Notestein in 1945, the demographic transition idea was later developed by Kingsley Davis in 1963. The hypothesis states that there are four stages of change in mortality and fertility as a result of societal modernization. Demographic transition explains how a nation's birth and death rates might shift from high to low in response to economic development. As a nation gets more industrialized, it goes through a transitional period where birth rates stay high but mortality rates decline. Consequently, the population is growing quickly. This change can be divided into four phases (Kirk, 1996).

Stage 1 - The pretransitional or pre-industrialization stage

It lasted for thousands of years, during which the planet experienced steady population expansion together with high rates of birth and death. Both a high fertility a high variable mortality rate is seen. Throughout this era, there were phases of natural increase and decline due to the relative instability of death rates, but over the longer term, population size changed relatively little.

Stage- 2- Transitional stage

The world went through a period of transition around 1700. The initial effect of modernization and industrialization was a reduction in mortality,

which caused countries all over the world to shift. This intermediate period saw a sharp rise in population because fertility stayed high even after mortality had decreased. At this time, the rate of population growth was robust. Examples of modern countries are Guatemala, Iraq, and several nations in Sub-Saharan Africa.

Stage 3- Post-industrial stage

During this phase, population growth decreased due to lower birth and death rates. During this time, fertility started to decline. These days, two such nations are Malaysia and India.

Stage 4 Incipient decline

Population expansion is only caused by increases in infertility, as evidenced by the post-World War II baby boom in the United States. Nonetheless, throughout this phase, there are slight variations in fertility. There will be both natural gains and declines as a result of these changes. The term "incipient" is used since it is impossible to foresee when fertility may decline. Brazil, Germany, and Japan all exhibit the early stages of the downturn.

The demographic transition theory, in contrast to most other population theories, was based on real data from European nations. These nations saw a shift in their population composition, moving from high birth and high death rates to low birth and low death rates. Not a scientific theory with verifiable hypotheses, but a generalization of the historical sequence of changes in vital rates, such birth and death rates, is what the concept represents. The idea is based on early studies by Landry and Thompson.

Later, Notestein and Blacker refined it in the middle of the 1940s. The hypothesis gained far greater significance when it became apparent how applicable it was to less developed areas. Even though the demographic transition hypothesis' conclusions had never been empirically verified, until the 1970s it was generally acknowledged as a comprehensive explanation of changes in population behavior.

Landry might have been the first scholar to look for several demographic regimes connected to productivity in 1909. He distinguished between the primitive, intermediate, and modern regimes. Under the archaic system, birth rates stay constant at a very high level, though not necessarily at

their biological maximum, and are untouched by social and economic influences. But in the intermediate regime, economic factors start to affect fertility rates, mostly because people wait to get married as they grow conscious of certain standards of living and work to uphold them. Ultimately, in the modern period, the birth rate declines regardless of economic conditions, and it becomes the norm due to changes in people's expectations and perspectives on their standard of living.

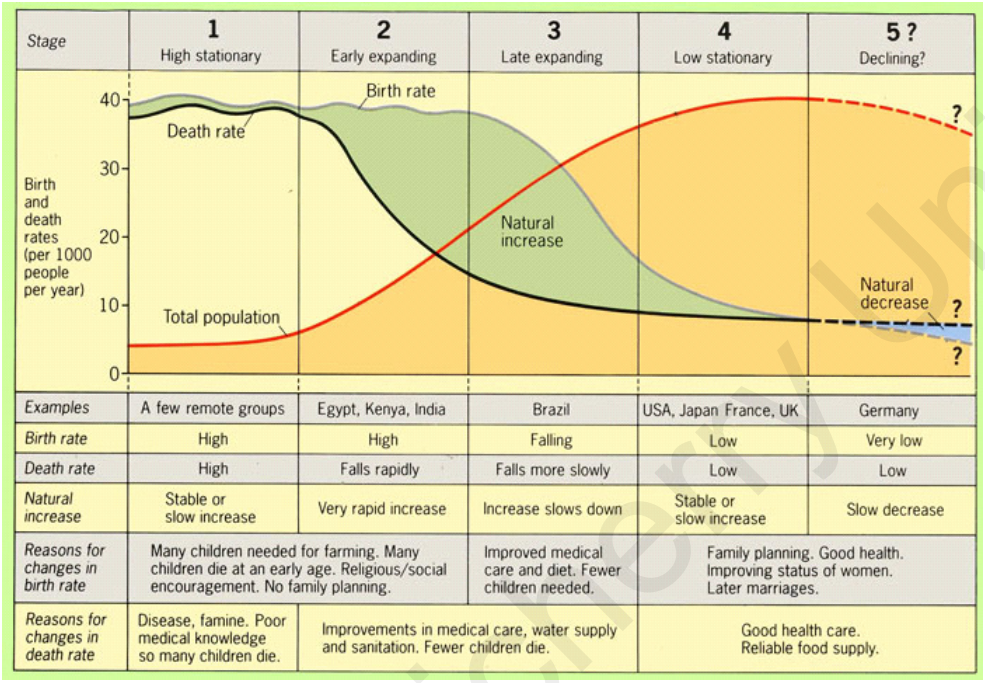

Figure 2. Demographic transition model

Similar to this, in 1929 Warren Thompson proposed the three groups of countries below, which broadly correspond to three stages of demographic transition, in an attempt to create a typology to capture the shift from a stage of high fertility and mortality rates to a stage of low fertility and mortality rates.

- He put nations with uncontrolled death rates and exceptionally high fertility rates in the first category. Future growth will be quick because death rates seem to be stabilizing at a faster rate than fertility rates.
- The nations he placed in the second group were those whose rates of death and fertility had started to drop, especially among particular demographics. Nonetheless, the decline in mortality outpaced the decline in fertility rates, suggesting that the population growth rate is still accelerating.

- The third group included nations whose birth rates were fast declining, which indicated a slowdown in population expansion.

Notestein classified populations into three categories based on where they were in the demographic evolution process.

Study Box 2

The Malthusian idea has been a topic of controversy to this day. His thesis has been defended by economists like J.S. Mill and J.M. Keynes, while others—sociologists in particular—have argued against it. They claimed that the pervasive poverty and suffering of the working class was caused by erroneous social structures rather than an unchangeable rule of nature, as suggested by Malthus. Karl Marx went one step farther and contended that the amassing of wealth by capitalists and its unequal distribution were the main causes of famine. The population has no bearing on it. The structure of the economy and society affects population. The inherent and unavoidable characteristics of the capitalism system are the overpopulation and resource scarcity issues identified by Malthus. Due to a dramatic decline in birth rates in industrialized (western) nations during the 1930s Great Depression, the views of Malthus underwent some changes. Some people believed that humans will go extinct. Plans to provide families with an allowance for each kid born were put out in an attempt to incentivize families to have more children. Following World War II, there was a notable increase in the birth rate, particularly in developing countries such as Bangladesh, Africa, and India. The goal of birth control programs was to limit the population and end famine.

During his lifetime, the Malthusian concept became widely accepted despite the critiques. His theories had a significant impact on public policy, demographers, Charles Darwin's evolutionary biologists, and classical and neoclassical economics.

Learning Activity 2.1

Before you read this chapter, did you think that food scarcity was the major reason for world hunger today? Why do you think a belief in food scarcity is so common among Indians?

2.6 Summery

- Malthus published his most famous work, his essay on population in the year 1798
- Thomas Malthus began his theory with two main premises: First, that to sustain life on earth, living beings is dependent on food. Therefore for survival of human beings food becomes the priority. Secondly the passion between men and women is essential and this would exist forever.
- Thomas Malthus noticed that to stop population growth, there are operation powerful checks. The first of the powerful checks is known as preventive check to as an appropriate behaviour as it becomes absolutely necessity for the operation to balance man and food. The second of the powerful check is called- voluntary checks which are vice and moral restraint based on man's reasoning faculties.
- Cannan stressed that the "optimum population" is the best possible population and that "at every given period, the population which can exist on a certain length of land, consistent with the maximum productiveness of industry at that time, is definite."
- Demographic transition explains how a nation's birth and death rates might shift from high to low in response to economic development. As a nation gets more industrialized, it goes through a transitional period where birth rates stay high but mortality rates decline.

2.7 Self Assessment Questions

1. What is the Malthusian Theory of Population?
2. What is the importance of Malthusian theory?
3. What is a positive check on the population? What is the basic arguments of Optimum Population Theory?
4. What are the phases of population growth?

2.8 References

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UNIT – III

Lesson 3.1 - World Population

Structure

Objectives

Through this chapter the learners would know and understand the situation of the population of our world and its dynamics across regions.

3.1 Introduction

The study of world population is crucial for understanding the dynamics, challenges, and opportunities shaping our global society. As the human population continues to grow and evolve, it impacts every facet of life, from social, economic, and environmental dimensions to political and cultural landscapes. This chapter provides an overview of the world population, its distribution, trends, and key factors influencing its dynamics. In 1977 the population of world is recorded at 4129 million or 4.13 billion. Tracking back to 1974, the population of the world was 3890 million. And in the year 1955, the world birth rate according to the population reference bureau, USA it was 30 per thousand populations while death rate was 12 per thousand population.

The population according to demographic situation of the world from 1950 to 1974 is stated as follows:

From the following table it is observed that out of the total pertinence of population that is 57% people lived in Asia (in 1974) on 20% of the surface area. While, 71 % of the population had lived in a surface area of 51%. From this we have come to know that the most densely populated area in Asia and Europe. Japan is the mostly populated country and the most densely populated sub regions of the world are Europe and Middle South Asia. Asia has become the most populated region as compared to other region.

3.2 The Demographic Structure in the Developed and Developing Nations

The majority of the world's countries have experienced extremely fast demographic change recently, which is typical of the center stages of a secular process known as the demographic transition. A period of high population expansion is ushered in during this transition by drops in birth rates, which are followed by falls in mortality rates. This change typically occurs at the same time that an agrarian society begins to give way to an industrial one. Population growth, defined as the difference between the birth and death rates in the absence of migration, is almost negative prior to the start of the transition since high mortality rates almost balance the high birth rates characteristic of pre-industrial agricultural civilizations. After the transition is complete, population growth is almost nil again since, in the most industrialized countries, both the birth and death rates have dropped to very low levels.

There is a fast shift in the population during the interim transition period, which is divided into two periods. The population grows faster during the first phase as the birth rate stays high and the mortality rate falls. The growth rate decreases (but stays positive) in the second phase as a result of a drop in the birth rate. Usually, the full change takes over a century to finish, and at the conclusion, there is a significantly higher population.

Over the majority of the 20th century, population growth surged, reaching the midpoint of the transition in the 1980s, and has now started to significantly slow down. We are still on the steepest portion of this growth curve today, with about 75 million more people joining

the global population year between 1971 and 2016. The stages at which modern societies are going through their demographic transitions differ greatly. The following summarizes the main changes in population size, fertility, and mortality throughout these shifts. The century between 1950 and 2050, which encompasses the time of greatest worldwide population change, is the subject of the study. The primary data source is the United Nations World Population Assessment from 2006, which offers forecasts for the years 2005 to 2050 along with estimates for the years 1950 to 2005 (United Nations 2007).

Figure 1. Population size estimates, 1900–2005 and projections 2005–2050. High, medium and low variants.

Table 1: Population estimates (1950–2005) and projections (2005–2050), by region. Adapted from United Nations (2007).

Regions	Population In Billions			Percentage increase	
	1950	2005	2050	1950-2005	2005-2050
Africa	0.22	0.92	2.00	311	117
Sub-Saharan	0.18	0.77	1.76	327	129
Asia	1.41	3.94	5.27	179	34
Latin America	0.17	0.56	0.77	233	38
Europe	0.55	0.73	0.66	33	-9
Northern America	0.17	0.33	0.45	94	34
South	1.72	5.30	7.95	208	50
North	0.81	1.22	1.25	49	2
World	2.54	6.51	9.19	157	41

Source. United Nations 2007

From table 1 it is seen that the world population increased by 2.7 billion people from 6.5 billion in 2005 to an estimated 9.2 billion in 2050. From 5.3 to 7.9 billion between 2005 and 2050, almost all of this projected expansion will take place in the "South"—that is, Africa, Asia (except from

Japan, Australia, and New Zealand), and Latin America. On the other hand, the population of the "North" (Europe, North America, Japan, Australia, and New Zealand) is expected to stay almost constant between 2005 and 2050, increasing somewhat from 1.22 to 1.25 billion. The later stage of the North's transition in comparison to the South is reflected in the tendencies that differ between these two global areas.

Death rates started to drop in the nineteenth century in the newly economically developed portions of the world, or the North, signaling the start of the global demographic shift. Early in the twentieth century, there were significant drops in birth rates. These changes are now essentially finished. Table 1 indicates that there will be a divergence in trends between 2005 and 2050 for the two major North American regions: Europe will see a reduction from 0.73 to 0.66 billion, whereas North America will see an increase from 0.33 to 0.45 billion. As a result of declining birth rates relative to mortality rates, a number of nations in Europe (like Russia) and East Asia (like Japan) are really experiencing severe population reductions.

Asia, Latin America, and Africa had and are now undergoing population shifts that began later. Asia accounted for over half of the world's population in 2005 with 3.94 billion people, and by 2050, it is predicted to have grown to 5.27 billion people, an increase of 34%. Africa's population of 0.92 billion in 2005 is expected to more than double to 2.0 billion by 2050, making it the region experiencing by far the fastest relative increase. Asia-Pacific's growth path is expected to mirror that of Latin America, which has the smallest population among the South American regions, with 0.56 billion in 2005.

The fact that sub-Saharan Africa, the region with the worst AIDS pandemic, is seeing population increase may come as a surprise. Despite the fact that this outbreak has killed a great deal of people, population growth is still occurring since the disease is not spreading and the birth rate is predicted to continue to be greater than the high mortality rate going forward. (UNAIDS 2007; Bongaarts et al. 2008).

One way to evaluate the demographic impact of the pandemic is to compare the conventional UN population estimate (which takes the epidemic's effect into account) with an alternative hypothetical prediction that does not include AIDS mortality (United Nations 2007). The former estimates 1.76 billion people living in sub-Saharan Africa in 2050, whereas the latter places that number at 1.95 billion.

The 0.2 billion difference in 2050 between these forecasts with and without the pandemic is attributed to both the lack of AIDS-related descendants and AIDS-related fatalities. Notwithstanding the significant effects of the AIDS pandemic, these forecasts indicate that sub-Saharan Africa's population will increase by one billion people between 2005 and 2050. In reality, no nation's population is predicted to shrink because of high AIDS mortality between 2005 and 2050. According to United Nations estimates from 2007, most populations in sub-Saharan Africa will be more than double, others will treble, and Nigeria's population is anticipated to quadruple by 2050.

In general, population growth rates in the developing world have accelerated throughout transitions, compared to historical observations in the North. Peak growth rates in recent decades have surpassed 4% annually in certain developing nations (like Kenya and Uganda), meaning that the population has doubled in only 20 years. These kinds of growth were extremely uncommon in affluent nations outside of periods of significant immigration. The fast population growth in these predominantly traditional civilizations may be attributed to two factors: the post-World War II dissemination of medical technology (such as vaccinations and antibiotics), which resulted in very swift reductions in mortality rates, and a relatively delayed drop in birth rates.

Table 2: Ten largest countries by population size in 1995(estimate) and 2050 (medium projection). Adapted from United Nations (2007).

	1995		**2050**	
Rank	**Country**	**Population Size (In millions)**	**Country**	**Projected Population (in millions)**
1	China	1313	India	165
2	India	1134	China	140
3	United States of America	300	United States of America	40
4	Indonesia	226	Indonesia	29
5	Brazil	187	Pakistan	29
6	Pakistan	158	Nigeria	28
7	Bangladesh	153	Brazil	25

	1995		2050	
Rank	**Country**	**Population Size (In millions)**	**Country**	**Projected Population (in millions)**
8	Russian Federation	144	Bangladesh	25
9	Nigeria	141	D.R. Congo	18
10	Japan	128	Ethiopia	18

Table 2 shows the population sizes of the ten largest nations in 2005 and in 2050. China (1.31 billion) and India (1.13 billion) combined accounted for about half of the South's total population in 2005, making them by far the largest nations. Six Asian nations and one each from Latin America and Africa make up the top 10.

The population of India is predicted to surpass that of China by 2050, and Ethiopia and the Democratic Republic of the Congo will have risen to the top 10, displacing Russia and Japan.

3.3 Population Distribution Across Regions

The world population is not evenly distributed across geographical regions. As of the latest estimates, the majority of the global population resides in Asia, followed by Africa, Europe, Latin America, and North America. Within each continent, population distribution varies widely, with some areas densely populated and others sparsely populated. Urbanization is also a significant trend, with an increasing proportion of people living in cities rather than rural areas.

3.4 Population Trends

The world population has been experiencing unprecedented growth over the past few centuries. From an estimated 1 billion people in the early 1800s, the global population surpassed 7 billion in 2011 and continues to increase. However, the rate of growth has been gradually slowing down due to factors such as declining fertility rates, improvements in healthcare and sanitation, and socioeconomic development.

3.5 Key Factors Influencing Population Dynamics

The worldwide birth rate is higher than the global mortality rate, which causes the world's population to grow annually. For instance, between 2000 and 2005, the population grew at a rate of 1.17 percent year, or the difference between the birth rate of 2.03 percent and the mortality rate of 0.86 percent. Migration has an impact on population increase at the national level as well, but it is often a small element for the regional population aggregates utilized in this research, therefore it won't be covered in depth.

Individuals' levels of fertility and mortality, in turn, largely determine the yearly birth and death rates of populations. The most popular measure of fertility is the total fertility rate (TFR), which is the number of children a woman would have at the end of her reproductive potential if she had the age-specific fertility rates that were common in a certain year. A common way to calculate mortality is to use the life expectancy (LE) at birth, which is the average number of years a baby would live in a given year if age-specific death rates were to be applied.

3.6 Several Factors Contribute to the Dynamics of the World Population:

Fertility Rates: Fertility rates, or the average number of children born to women during their reproductive years, play a significant role in population growth. Countries with high fertility rates tend to have faster-growing populations, while those with low fertility rates may experience population stagnation or decline.

Figure 2 shows the fertility rates by region for the years 1950–2050 based on previous estimates and future forecasts from the UN. The total fertility rates in the South were high and essentially constant in the 1950s, averaging around six births per woman. This high rate of fertility is a reflection of the nearly complete lack of birth control that existed for millennia prior to the mid-1900s. Asia and Latin America had roughly synchronous declines in fertility in the late 1960s. Africa, on the other hand, has barely seen any changes in reproductive patterns. Fertility rates in 2000–2005 varied greatly between areas due to these differing historical trends, with as many as 5 births per woman (bpw) in Africa and 2.5 bpw in Asia and Latin America. Early in the 1950s, the North's average fertility was already low; it has now dropped to 2.0 bpw in North America and 1.4 bpw in Europe.

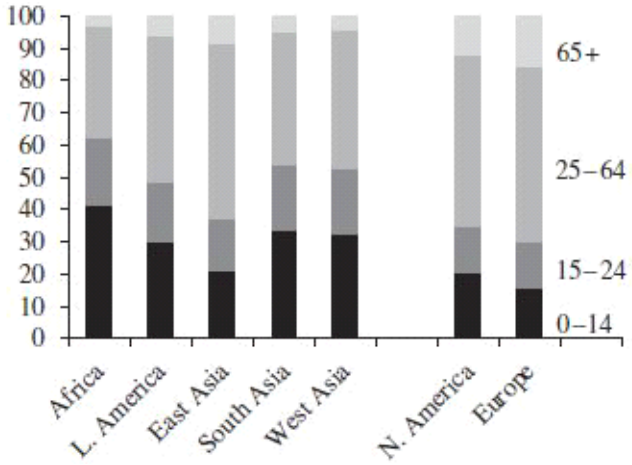
By historical standards, the average fertility in the South has dropped dramatically during the last 50 years, from 6 to 3 bpw. Two things are primarily responsible for this reproductive revolution. First, when the expense of raising children climbed and child survival increased, parents' ideal family size decreased. Second, the involvement of the government was crucial. In China, this manifested as an oppressive and divisive one-child policy, while family planning became optional in the majority of other nations.

These programs' objective is to make contraceptives more accessible and affordable for women who wish to restrict their childbearing by providing information about them and access to them.

According to UN estimates for the South, the TFR will ultimately rise to and then gradually decline below the so-called "replacement" level across all areas. Replacement fertility, which is slightly higher than 2 bpw, is the point at which, without changes in migration and death, each generation simply replaces the one before it, meaning that there is no population increase. Population reduction results over time from below-replacement fertility. Figure 2 makes this clear: by 2020, the TFRs in Latin America and Asia are predicted to approach replacement levels. Due to the continent's poorer socioeconomic development, replacement fertility is predicted to occur far more slowly in Africa. Thus, high fertility will continue to be a major factor in this region's population expansion in the future. On the other hand, the North's already low fertility is predicted to stay below replacement and will no longer be the primary driver of population expansion.

Mortality Rates: Mortality rates, particularly infant and child mortality rates, affect population growth by influencing life expectancy. Improvements in healthcare, nutrition, and sanitation have led to lower mortality rates in many parts of the world, contributing to population growth. Over the previous few decades, mortality rates have also altered significantly (figure 3). LE improved remarkably in the South, with an average of 64 years in 2000–2005 compared to 41 years in 1950–1955. Asia lagged after Latin America by a few years, and by the early 2000s, both regions had death rates comparable to those that prevailed in the North during the 1970s. Africa had the greatest fatality rate, and the AIDS crisis caused advancements in LE to halt in the 1990s. Africa's LE, therefore, was still much lower than that of Asia (68) and Latin America (72) at 52 years in 2000–2005.

Figure 3: Trends in LE by region.



Source: (Bongaarts,2009)

The UN projects future LEs based on the assumption that all areas would continue to develop over time. Despite the growing difficulties of reaching increments as countries reach ever higher levels of LE, the North is predicted to reach 82 years in 2050. Africa is predicted to keep lagging behind the rest of the world, partly due to the continent's ongoing HIV/AIDS crisis, while Asia and Latin America are predicted to keep catching up to the North.

It should be highlighted that the UN's predictions on future changes in mortality and fertility lack a solid theoretical foundation. Rather, the UN depends on empirical patterns in previous histories of nations that have finished their transitions, mostly in the North, where fertility decreased to around replacement levels and LE grows gradually. This is a reasonable method, but it regrettably allows for possible errors in the results of the projections.

Migration: Migration, both internal and international, also impacts population dynamics. Migration can either increase or decrease the population of a region, depending on the direction and scale of migration flows.

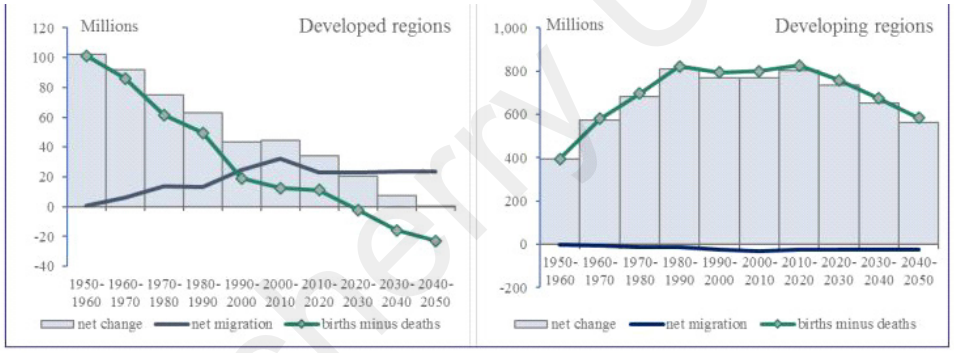
Migration has a significant impact on population increase. Positive net migration has resulted in consistent population growth in developed regions since the 1950s. The amount of net migration to the developed areas rose from 0.3 million to 3.1 million year during 1950–1970 and 2000–2010. But between 2010 and 2015, the net influx of migrants decreased to around 2.2 million people per year. In the developed regions, migration

has been the main driver of population expansion since the 1990s. After 2020, migration is expected to be the only factor contributing to population growth in the developed areas.

Because there will be insufficient net migrant influx to offset the excess of deaths over births, it is anticipated that by 2050 the population of the developed areas would begin to fall considerably. In the emerging regions, outmigration is anticipated to have little effect on population increase.

In fact, it is anticipated that the comparatively minor yet harmful impact of net migration will be dwarfed for the next several decades by the high rates of childbearing in the developing world.

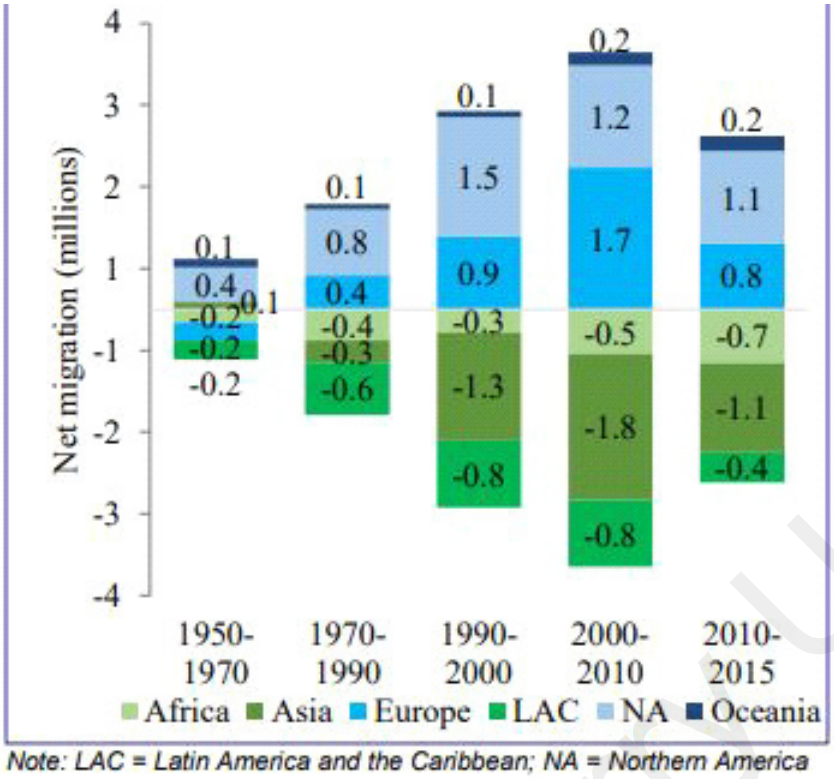
Figure 4: Population change in developed and developing regions, 1950- 2050



Source: (United Nations Publications, 2017)

The net number of migrants entering Europe and North America has decreased since 2010. The biggest decline in net migration occurred in Europe, where net inflows decreased by half between 2000 and 2010—from 1.7 million year to 0.8 million annually between 2010 and 2015. While being steady for Oceania, the net influx of migrants to Northern America fell by 0.1 million annually. Simultaneously, net outflows from Asia (-39%) and Latin America and the Caribbean (-50%) likewise saw a significant decline. Over the period of 2010 to 2015, net outmigration grew in only one region: Africa (+40%).

Figure 4: Average annual net migration by region, 1950-2015



Source: (United Nations Publications, 2017)

Migration in Europe is only going to somewhat offset the anticipated oversupply of deaths over births between 2015 and 2050. By 2050, there are expected to be 57 million more deaths than births in Europe. However, it is predicted that the population reduction would be kept to a minimum of 25 million people with a net intake of around 32 million migrants between 2015 and 2050. Between 2030 and 2040, net migration is anticipated to take over as the primary factor driving population expansion in Northern America. Over time, net migration will contribute more and more to population increase in Oceania. In the near future, negative net migration is not expected to have a substantial impact on the total population size in Africa, Asia, Latin America, or the Caribbean.

In 2050, the population of emerging countries would have increased and that of developed regions would have decreased in the absence of migration. It is estimated that in the absence of migration, the combined populations of Northern America and Oceania would be 13% lower in 2050 than they would be if present migration trends persisted. This gap would be equivalent to 6% in Europe. Conversely, it is estimated that in the absence of migration, populations in Africa and Asia would increase by

1%, and populations in Latin America and the Caribbean would increase by 2%.

Between 2010 and 2015, there were net inflows of migrants into 80 nations or regions and net outflows of migrants from 120 countries or territories. The United States of America, Germany, Turkey, Saudi Arabia, and Lebanon were the top five countries with a net inflow of migrants between 2010 and 2015; the top five countries with a net outflow of migrants were the Syrian Arab Republic, India, Bangladesh, China, and Pakistan. Due to armed conflict, an estimated 4.2 million individuals fled the Syrian Arab Republic between 2010 and 2015. The majority of Syrian refugees are taken in by neighboring nations, which results in large net migration figures into Jordan (+975,000), Lebanon (+1.3 million), and Turkey (+1.6 million).

Urbanization: The ongoing trend of urbanization, with more people moving from rural to urban areas, has profound implications for population distribution and resource management. Urban areas tend to have higher population densities and different consumption patterns compared to rural areas.

3.7 Population Challenges

While population growth presents opportunities for economic development and innovation, it also poses several challenges:

Resource Depletion: Rapid population growth can strain natural resources such as water, land, and energy, leading to environmental degradation and resource depletion.

Food Security: Meeting the food demands of a growing population is a significant challenge, particularly in regions with limited agricultural resources and infrastructure.

Urbanization Issues: Urban areas face challenges such as housing shortages, inadequate infrastructure, pollution, and social inequalities, which can negatively impact the quality of life for residents.

Healthcare and Education: Providing healthcare, education, and other essential services to a growing population requires substantial investment in infrastructure and human capital.

3.8 Conclusion

The world population is a complex and dynamic phenomenon shaped by various social, economic, environmental, and demographic factors. Understanding population trends, distribution patterns, and challenges is essential for policymakers, researchers, and practitioners working towards sustainable development and improved quality of life for all global citizens. As we navigate the complexities of population dynamics in the 21st century, addressing issues such as inequality, environmental sustainability, and social justice will be paramount in shaping a more equitable and prosperous future for humanity.

3.9 Summery

- The study of world population is crucial for understanding the dynamics, challenges, and opportunities shaping our global society.
- Asia has become the most populated region as compared to other region
- The world population is not evenly distributed across geographical regions.
- Population growth rates in the developing world have accelerated throughout transitions, compared to historical observations.
- The rate of growth has been gradually slowing down due to factors such as declining fertility rates, improvements in healthcare and sanitation, and socioeconomic development.

3.10 Self Assessment Questions

1. Mention the names of areas where population density is low?
2. Who are emigrants?
3. What is density of population?
4. What are the causes for rapid population growth in the world?

3.11 References

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UNIT – IV

Lesson 4.1 - Population Profile of India

Structure

Objectives

In this Unit, the learners would know about the population profile of India. The learners would be able to know about the current and historical situation of Indian population. When India gained its freedom in 1947, the country was thought to have 350 million citizens. As a result, at that time it was the fifth most populated nation on Earth. A decrease in infant mortality rates and advancements in healthcare and sanitation had contributed to the population's fast growth in the decades preceding independence.

4.1 Introduction

Populations are dynamic, meaning their size changes over time. Most countries are experiencing population growth. Population growth is mostly driven by lower mortality rates and increased life expectancy. Human population growth is mostly driven by technological and medical advancements. Population expansion significantly impacts individuals' living standards. Population growth is a major worry for India and other countries. This module explores population increase in India via various socio cultural perspectives. Aside from that, population expansion might have an adverse effect on a country's development.

India has the world's second-largest population, behind China. India's land area is only 2.4% of the global total, but its population accounts for

almost 16.85% of the total population. In 2001, India made up 19.96% of developing nations' estimated population (5.18 billion). The data shows a significant population pressure on the country's land resources. India's current national revenue is less than 1.2% of global income, highlighting the worrying position in the country. The population of India was 1,210 crore, according to the 2001 census. According to the 1901 census, the nation had a population of 23.83 crore.

This is concerning, especially given the weak economic development. However, the population of the country has not grown at a uniform rate. This is clear from the population figures shown in the table below. According to Census 2011, the country's population is 1210.19 million, with 623.72 million (51.54%) men and 586.46 million (48.46%) women.

Table 4.1: Population of India (1901-2006)

Census Year	Population in Crore	Average Annual Growth Rate	Density of Population
1901	23.83	8.18	77
1951	36.10	1.25	117
1961	43.91	1.96	142
1971	54.82	2.22	178
1981	68.33	2.20	216
1991	84.63	2.14	274
2001	102.90	1.93	324
2006*	111.20	1.60	351

Source: (Sekher, 2012)

4.2 Rate of Population Growth

Since Independence, death rates have decreased significantly due to increased medical services and disease management. The death rate is significantly higher than projected in 1950.

The planning committee and census commissioner anticipated a continuation of the 1941-51 patterns in 1951-61. In 1951-61, the population

growth rate was around 1.96 percent. The planners were surprised. The administration was deeply concerned about this unanticipated development. During 1961-71, population growth was 2.2% per year, which was greater than the previous decade.

According to the 1981 census, population growth rates in the 1970s were similar to those in the 1960s. The 1991 census predicted a considerable drop in population growth. The government's response to its family planning program was unsuccessful. According to the Registrar General's demographic predictions for 1996-2016, population growth is expected to slow to 1.84 percent annually in the 1990s. However, these forecasts proved to be inaccurate. According to the 2001 census, population growth averaged 1.93 percent per year in the 1990s. Currently, the country is in the second stage of demographic transition.

In India the first activity on census took place on 1871, and it repeated for the next ten years. Therefore studies on population distribution were possible for the last two centuries in India. Widely known scholars of Sociology, Kingsley Davis took account of the archaeological records and derived the estimates of population size in India during the ancient, medieval and the early medieval periods, which is from the starting of the Christian era to 1871. Kingsley Davis has laid the foundation for the scholarly work on the growth of population in India.

4.3 Population Growth up to 1600 A.D

High Density of population has remained a legacy in India with thickly settled population. Certain anthropological excavation reveals that from 4th millennium BC, the population

India has been noted for its high population from ancient times. Excavations at Harappa and Mohenjo-Daro show that India had a complex civilization with densely inhabited towns as early as the third and fourth millennia B.C. The first Indian kingdom, established by Chandraragupta Maurya over three centuries before Christ, maintained a regular army of over 700,000 soldiers. Maintaining such a vast army likely needed a large population.

Moreland, a well-known historian, estimates that India had a population of around 100 million in 1600 A.D. Estimating population number from 1660-1870 is challenging due to limited documented data. Since 1871, a robust foundation for analyzing India's population has been established.

Actual counts may not be reliable due to changes in census technique and coverage of additional regions.

In 1867-1871, the population was 203.4 million, but the accurate figure is 255.2 million.' India's population increased by 9.4 percent between 1881 and 1891, compared to 0.9 percent between 1867 and 1881 (adjusted figures). From 1867-1871 until 1504, the population expanded at erratic rates. Disasters like famines and epidemics resulted in high death rates, contributing to ups and downs. A terrible famine occurred between 1876 and 1877. Between 1891 and 1901, there were several devastating famines and a plague epidemic.

Between 1901 and 1971, the Indian subcontinent was divided into two countries: India and Pakistan, leading to geographical changes.

(1) Prior to 1921, population growth was unpredictable. Between 1911 to 1921, there was a period of negative growth, followed by periods of modest development.

(2) Since 1921, each decade has seen a rise in the total population.

(3) Since 1921, the decennial growth rate has risen. Compound rates have also altered. India's population has increased rapidly since 1951.

In 1971, the population was 548 million, making up 15% of the global population but just 2.4% of total land area. In the 1971 Census, India's population density was 178 persons per square kilometer.

On March 1, 1977, the Expert Committee on Population Projections projected India's population at 616.5 million. The population was predicted to reach 658 million in 1981.

In 1971, the birth rate was 36.8 per thousand inhabitants, with a mortality rate of 14.9 per thousand. This resulted in a growth rate of 22.0 per thousand, or 2.2 percent, according to the Registrar Estimates General's Sample Registration Scheme data. In 1974, the birth and death rates were 34.5 and 14.5 per thousand, respectively, indicating a growth rate of 20.0 per thousand, or 2.0 percent.

India, like many other countries, has made significant progress from the early days of evolution, when high levels of fertility were necessary for species survival due to famines, accidents, sickness, infections, and fighting. Over time, there has been a significant increase in life expectancy

and a decrease in mortality due to improved resilience to sickness and natural disasters. Despite efforts to reduce fertility through societal norms and government initiatives, the increasing number of reproductive-age women has led to a high number of births annually.

4.4 Current Population Growth in India

In the early 1900s, India had a population of around 238.4 million. Over the past century, the population has more than quadrupled to 1,210,854,977 in 2011, with 623,724,248 men and 586,469,174 women. During the first half of the 20th century, India's population grew by 1.5 times, whereas in the later half, it climbed by three times. The table below shows India's population rise by decade from 1901 to 2011. During the first half of the 20th century, India's population rose by 1.5 times, whereas in the second half, it increased by three times. The table below shows India's population growth by decade from 1901-2011. India is the world's second most populous country, accounting for almost 17% of the world's population yet only 2.4% of its surface area. In 2011, India's population was approximately equal to that of the United States, Indonesia, Brazil, Pakistan, Bangladesh, and Japan, with 1214.3 million people.

Uttar Pradesh is the most populous state, accounting for approximately 200 million people (16%), based on the 2011 census.

Maharashtra and Bihar, accounting for 9% of the overall population, now have more than 100 million people. There are currently about 10 million people living in twenty states and union territories. However, five states and union territories have not reached a population of one million. The maps below show the population distribution based on tentative totals of 1210.2 million.

4.5 Summery

- India has the world's second-largest population, behind China. India's land area is only 2.4% of the global total, but its population accounts for almost 16.85% of the total population.
- Since Independence, death rates have decreased significantly due to increased medical services and disease management.
- High Density of population has remained a legacy in India with thickly settled population.

4.6 Self Assessment Questions

1. How has the demographic profile of India evolved over the past decades?

4.7 References

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UNIT – V

Lesson 5.1 - Population Dynamics

Structure

Objectives

In this Unit, the learners would know about the Population dynamics associated with Fertility, Mortality and migration of India and also the causes that have lead to population growth in India and the results of this population explosion.

5.1 Introduction

Population dynamics encompass the intricate interplay of fertility, mortality, and migration, which collectively shape the size, structure, and distribution of populations over time. Understanding these components is critical for policymakers, demographers, and social scientists as they address the challenges and opportunities arising from population changes.

This year, in 2024 India became the world's most populous country, surpassing China. According to the United Nations World Population Prospects, India's population is expected to exceed 1.4 billion by 2023, a significant milestone since 1950. Since then, India's population has grown by nearly 1 billion and is expected to reach 1.7 billion by 2064, according to the UN's medium prediction. The high variant scenario predicts a population of more than 2 billion by 2064.

India's huge and youthful population presents a chance to boost economic growth, prompting the question of whether the country can capitalize on this demographic dividend. More than 40% of India's population is under 25, with a median age of 28, compared to 39 in China. India's population is not aging as quickly as other nations, with just 7% over 65, compared to 14% in China and 18% in the US. This trend is expected to continue. According to the UN's medium variation prediction, the percentage of Indians aged 65 and older is predicted to stay below 20% until 2063. Most crucially, India's working-age population presently accounts for more than 60% of the total population and is expected to peak at nearly 65% by 2036. This demographic dividend provides huge chances for growth and development, with India poised to become a major economic powerhouse. India's ability to exploit its expanding population to boost GDP development depends on factors such as population growth rate and employment rates among working age individuals. Furthermore, auxiliary issues like as investment, governance, and the development of human capital are expected to play an important role in this environment. The predicted increase in the working-age population will be concentrated in many of India's poorest states.

5.2 Fertility

Thompson and Lewis (1965) define fertility as the reproductive performance of individuals or groups of women. They went on to say that women's fertility has long been a major worry for everyone. Fertility simply means the incidence of live births. It influences every element of human life. Analyzing fertility levels, trends, and differentials is crucial for addressing the growing gap between population growth and economic resources, as well as promoting effective political administration and sustainable development for all segments of society. Population dynamics are significantly influenced by fertility, death, and migration rates.

- ***Measurements of fertility***

Demographers and population geographers have developed and applied a variety of fertility metrics. Fertility is measured using many methods, including crude birth rate (CBR), general fertility rates (GFR), age-specific fertility rates (ASFR), total fertility rate (TFR), and gross reproductive replacement. Crude birth rate is the number of live births per thousand people in a year. It is primitive since it takes into account the whole population rather than the reproductive population. The fertility

ratio, also known as the child-women ratio, measures the number of children (0-4 years) per thousand reproductive-aged women. General fertility is a refined estimate of the number of live births per thousand women in the reproductive age period (15-49 years).

To account for changes within this reproductive group, age-specific fertility rates are utilized instead. Age-specific fertility rates are the number of live births per thousand women in a specified age group (for example, 25-29 years). The total fertility rate is a more useful cross-sectional measure. The average number of live births a woman has during her reproductive life, based on age-specific fertility rates. Reproductive replacement refers to the number of live births of girls per 1,000 females in the reproductive age group. The Census of India data includes information on CBR and child-women ratios. SRS (Sample Registration System) and NHFS (National Health and Family Survey) surveys offer more detailed and frequent information on age-specific fertility rates, total fertility rates, and other fertility measures. However, these two sources may provide different values for a given time and location.

India's National Population Policy (2000) aimed to lower total fertility to 2.1 children by 2010, while current rates remain higher. The CBR, CFR, and GPR all show equal levels of fertility because they are all fertility metrics. Fertility numbers vary significantly among states. Fertility rates are highest in Bihar (3.3), Uttar Pradesh (3.1), Madhya Pradesh (2.8), Rajasthan (2.6), Jharkhand (2.6), and Chhattisgarh (2.5). However, in many states, TFR is lower than RR, indicating reproductive replacement below 1.0.

Delhi (0.7), Andhra Pradesh (0.8), Himachal Pradesh (0.8), Jammu and Kashmir (0.8), West Bengal (0.8), Tamil Nadu (0.8), Telangana (0.8), Kerala (0.8), Maharashtra (0.8), Punjab (0.8), Odisha (0.9), and Karnataka (0.9) are the states surveyed. According to the National Family and Health Survey 4 (2015-16), India's CBR and TFR are 19 and 2.18, respectively, which are somewhat lower than the SRS statistics. However, fertility levels at the national and state levels are similar in both sources.

- ***Levels of fertility at the current times***

The SRS report of 2016 reflects the current levels of fertility at National and State levels on the basis of different measures of fertility . As per this report crude birth rate in India is 20.4 live births per thousand persons and general fertility rate is 74.4 live births per thousand females in reproductive

age group. As per the prevailing age specific fertility rate on an average a woman gives birth to 2.3 children and it represents total fertility rate. The gross reproductive rate is 1.1 and it means that one woman in reproductive age group gives birth to 1.1 girls.

Fertility, or the rate at which women in a population give birth, is a primary driver of population growth. Fertility rates are influenced by a complex array of factors, including cultural norms, economic conditions, education, access to healthcare, and government policies.

1. Cultural and Social Influences: Cultural norms significantly impact fertility rates. Societies valuing large families may encourage higher birth rates, while those with a preference for smaller families tend to have lower fertility rates. Social factors such as the status of women and family planning practices also play crucial roles.
2. Economic Conditions: Economic stability and development often correlate with declining fertility rates. As countries industrialize and urbanize, the cost of raising children increases, and parents may opt for fewer children. Conversely, in agrarian economies, children can be seen as economic assets, contributing to higher fertility rates.
3. Education and Empowerment: Education, particularly of women, is a critical determinant of fertility. Higher educational attainment is associated with delayed childbearing and reduced fertility rates. Empowerment through education enables women to make informed reproductive choices.
4. Healthcare and Family Planning: Access to healthcare and family planning services allows individuals to control the number and spacing of their children. Contraceptive availability and reproductive health services are essential for reducing unintended pregnancies and lowering fertility rates.

5.3 Mortality

Mortality is the incidence of death within a population, directly affects population size and structure. Mortality rates are influenced by factors such as healthcare quality, nutrition, sanitation, and public health initiatives.

1. Healthcare Quality: Advances in medical technology and healthcare services have significantly reduced mortality rates, particularly in developed countries. Vaccinations, antibiotics, and improved surgical techniques have extended life expectancy.

2. Nutrition and Sanitation: Adequate nutrition and access to clean water and sanitation are fundamental to reducing mortality. Malnutrition and waterborne diseases remain significant causes of death in many developing regions.
3. Public Health Initiatives: Programs targeting specific health issues, such as malaria, HIV/AIDS, and tuberculosis, have successfully reduced mortality rates in various parts of the world. Immunization campaigns and maternal health programs are particularly effective in lowering infant and maternal mortality.
4. Aging Population: As mortality rates decline and life expectancy increases, populations age. This demographic shift poses challenges, including the need for enhanced healthcare services for the elderly and potential economic impacts due to a shrinking workforce.

➢ ***Mortality Trends in Colonial India***

The demographic history of colonial India may be divided into two phases: from the first official census in 1871 to 1921, and from 1921 to 1951. During the first phase, population growth was either negative or small, with significant decadal oscillations. The second phase saw gradual but stable increase. Between 1921-31, the yearly population growth rate was less than 1%, but by 1951, it had climbed to over 2% (Guha, 1991). Population increase is mostly driven by significant mortality reductions, not fertility or migration. High newborn and child mortality may have contributed to the country's high fertility rates in certain regions. Some suggest that migration contributed to the spread of illnesses (Klein, 1989).

Mortality in British India was unusually high between 1872 and 1921. Between 1881 and 1920, males had an average life expectancy of 25.3 years and females had an average of 25.6 years, indicating high mortality rates in the late 19th and early 20th centuries. Infant mortality rates in the country topped 200, with significant volatility (see to Figure 11.1). At older ages, mortality variation was minimal despite its high level. Infant mortality made up the majority of the total mortality rate. According to Bhat (1989), India's high death rate in the late 19th and early 20th centuries was mostly due to adult mortality. Adult mortality rates varied greatly between north and south India. Malaria was more prevalent in the United Provinces, which might result in a high degree of death. In Bombay, little rain, harvest failure, and agricultural difficulties led to high death rates. Famine-related food shortages contributed significantly to the high death rate in Bombay.

Compared to other provinces, Madras saw fewer diseases and natural dangers during 1871-1921. Guilmoto (1992) reported that considerable mortality continued in several sections of the province throughout time.

Mills (1986) reports that the 1918-19 influenza outbreak killed roughly 17 million people, or around 5% of the total population. The plague outbreak claimed more than 12 million lives between 1894 and 1934. According to Klein (1989), India accounted for almost 95% of all deaths during the plague outbreak. Between 1872 and 1921, plague and influenza pandemics claimed around 28 million deaths, accounting for 4.5% of overall mortality. During the 18th and 19th centuries, smallpox was widespread in India, causing about one-third of all deaths. Vaccination was introduced in 1802, but its influence became apparent only during the 1880's (Ramachandran and Mutatkar, 2001).

Official Mortality Rates for Individual Diseases in India, 1922–41 (per 1,000)

Disease/ Mortality rate	**1922**	**1927**	**1932**	**1937**	**1941**	**Average 1921-1941**
Cholera	0.3	1.3	0.2	0.4	0.8	0.7
Smallpox	0.2	0.5	0.2	0.2	0.2	0.3
Plague	0.3	0.2	0.2	0.1	0.1	0.4
Diarrhoea	0.7	0.9	0.8	1	0.9	0.9
Respiratory Diseases	1.2	1.5	1.5	1.8	1.6	1.6

Source: (Navaneetham & Krishnakumar, 2020)

- ***Mortality Trends since Independence***

Following independence, mortality fell sharply. India's crude mortality rate decreased from 32 per 1,000 inhabitants in the mid-1940s to 21 by the mid-1960s. Between 1951–1961 and 1971–1981, life expectancy at birth increased by approximately 14 years. According to Bhat (1987), female adults saw a remarkably quick drop in mortality during this period, despite overall disadvantages for women.

During independence, communicable illnesses were a leading cause of mortality in the country. Recognizing this reality, the government initiated several health programs to control or eradicate illnesses. In 1953, when the National Malaria Control Programme was launched, there were 75 million cases of malaria and around 8 lakh fatalities each year. Malaria cases decreased to half a lakh in 1961. During the late 1950s, smallpox caused over 15,000 fatalities. By the end of the 1970s, smallpox had been eliminated in most sections of the country. During this time, the government suppressed cholera by improving access to healthy water and sanitation. Cholera deaths decreased from over 20 lakhs (2 million) in the 1940s to less than 150,000 between 1959 and 1968. The national tuberculosis control program, implemented in 1962, helped reduce tuberculosis (TB) deaths, albeit not totally (Visaria, 2004). By the end of the 1970s, communicable illnesses had been well managed thanks to these and other health efforts that improved public health. The subsequent years saw a significant decrease in death rates.

After the 1970s, India's mortality rate decreased and life expectancy grew for both men and women in all states, both rural and urban. Females had greater improvements in life expectancy than males. Between 1971 and 2001, male and female life expectancy increased by 11.2 and 14.5 years in rural regions, and 7.2 and 9.8 years in urban areas. However, these improvements were below the United Nations' (1982) criterion for a particular mortality level. Life expectancy at birth differs significantly between rural and urban areas. In 1997-2001, females in urban areas lived an average of seven years longer than their rural counterparts, while urban males lived five years longer than rural males. While the rural-urban difference in life expectancy at birth has narrowed over time, significant differences still exist between rural and urban areas.

During the 1980s, life expectancy at birth increased rapidly across all states, but slowed in the 1990s. Kerala was projected to have slower development in life expectancy at birth due to its already high level. This was not the situation in many other Indian states, including Uttar Pradesh and Bihar. Surprisingly, life expectancy at birth did not increase at the projected rate in numerous states where it was low. Many states, particularly in India's north, had slow gains in life expectancy. Life expectancy in these states has not increased, regardless of gender. These states have fallen behind the southern states due to weak progress in improving life expectancy at birth. Similarly, urban regions in Andhra

Pradesh, Assam, Gujarat, Madhya Pradesh, Orissa, and Uttar Pradesh have had less improvement in life expectancy at birth over the reference period. Kerala has always been in the forefront of improving life expectancy, with the exception of urban males. In 1970-75, the life expectancy of urban men in Kerala was lower than in Haryana, Himachal Pradesh, and Karnataka, but it increased and reached higher levels in 1997-2001.

Demographers predict a global convergence of countries toward low mortality and fertility, resulting in a longer life expectancy at birth. According to the logic of convergence, high-mortality nations will see quick increases in life expectancy at birth, whereas low-mortality countries would see slower gains. Reduced child mortality was projected to reduce higher mortality in the former nations, but an increase in chronic illnesses would make it harder in the later. However, the assumption of global convergence in population health status is not assured due to rising variability among nations (McMichael et al., 2004).

5.4 Migration

Migration, the movement of people across regions or countries, affects population dynamics by altering population size, composition, and distribution. Migration can be voluntary or forced, driven by economic, social, political, or environmental factors.

Migration has existed from the dawn of human history. During the early stages of history, geographical obstacles were critical in providing chances for migration. Due to poor transportation and linguistic abilities, migration was restricted to small distances. However, in the early nineteenth century, only state boundary crossings were documented, and movement within a state was not recorded as migration. Nowadays, migration is driven by technical advancements, industrialization, and urbanization, and is made easier by modern transportation. According to the Indian Census, a person is deemed a migrant if his or her place of birth differs from the location where he or she is being counted. It has gradually widened the divide between agricultural and non-agriculture sectors, rural and urban areas, employment, and labor turnover. Despite infrastructure challenges, metropolises continue to draw huge numbers of migrants seeking economic opportunity. Migrants are drawn to big cities by the proximity of infrastructural facilities such as transportation and housing.

In the 2011 census, 455 million people were migrants based on their last place of residence, accounting for almost 37% of the country's overall population. This statistic represents a rise of around 44% from 2001 (314 million) and 97% from 1991 (231 million). High population density, a labor force surplus, high employment rates, low incomes, dissatisfaction with housing, demand for higher education, rural-urban wage differentials, distance between village and city, land ownership pattern, and prior migration patterns have all been identified as major determinants of migration. Migration is one of the three essential components of population expansion in every location, and it has a significant impact on people's economic and social situations.

The Indian Constitution guarantees citizens the freedom to live and work anywhere they want in the country. Several economic, social, cultural, and political aspects influence the choice to relocate. The impact of these elements varies with time and geography. For economic, political, and cultural factors influencing it Understanding population increase is challenging due to its unexpected nature. The analysis of migratory patterns is crucial for policy planning. This research aims to provide an update on migration trends in India using census data from 1991, 2001, and 2011.

- ***Causes of Migration***

Until 1971, information on the cause for migration was not gathered in Indian censuses. Since 1981, the census has collected information on migration reasons from individuals who indicated a different location of last residence than where they were enumerated. In 1981, the reasons for migration were divided into five categories: work, education, family movement, marriage, and others. The 1991 census expanded the breadth of data by adding categorization categories for business and natural disasters such floods and droughts. Other categories include movements owing to circumstances such as relocation, retirement, and natural disasters that are not covered by work, business, education, family, or marriage.

- Urbanisation: Urbanization has led to significant internal migration. Urbanization rates have an impact on pay disparities between rural and urban populations. Increased labor demand in metropolitan areas can lead to higher pay and migration. According to Kundu (2012), rural residents are drawn to cities for greater work opportunities, higher salaries, and access to healthcare and

education. People are drawn to cities due to causes such as lack of work opportunities, poor income, drought, and limited access to medical and educational resources.

- Marriage: Marriage is a significant social element influencing migration. Girls must relocate to their in-laws' homes. As a result, India's female population is forced to migrate, either locally or vast distances. In 2011, around 49.35% of persons relocated upon marriage.
- Employment

Many people travel from rural to urban regions for work opportunities in industry, trade, transportation, and services. Rural locations sometimes lack job opportunities for their residents. Rural communities lack job opportunities, even from small-scale and cottage enterprises. In 2011, 10.22% of migrants relocated for employment purposes.

- Education

  Rural communities sometimes lack educational facilities, leading to migration to metropolitan areas for higher education. After completing their schooling, many individuals choose to reside in cities to find work. In the 2011 census, around 1.77 percent of persons relocated for schooling.

- Lack of security

  Political instability and interethnic clashes cause people to leave their homes. Many individuals have left Jammu & Kashmir and Assam owing to poor living circumstances. Short-term migration is common for those seeking better recreational and healthcare possibilities.

- ***Pull and Push factors***

  Migration is influenced by two primary factors: push and pull. Poverty, a lack of labor opportunities, unemployment and underdevelopment, a terrible economic position, a lack of opportunity, the exhaustion of natural resources and natural catastrophes, a scarcity of cultivated land, unequal land distribution, low agricultural productivity, and so on are some of the push factors. Pull factors that entice migrants to a destination place include job and education opportunities, higher income, amenities, and better working conditions. Millions of people relocated from rural regions to cities like Kolkata, Mumbai, and Delhi. The population shift has

led in terrible living conditions such as slums, a lack of adequate water and sanitation, overcrowding, increasing crime, women's insecurity, sexual abuse, and exposure to infections including AIDS.

The types of migration are discussed below

1. Economic Migration: Individuals often migrate in search of better economic opportunities. Labor migration can alleviate unemployment in the home country and address labor shortages in the destination country. Remittances sent by migrants can significantly impact the economy of their home country.
2. Social and Family Migration: Social factors, such as family reunification, marriage, and education, also drive migration. Family-based migration policies enable family members to join relatives who have already migrated, fostering social cohesion and support networks.
3. Political and Forced Migration: Political instability, conflict, and persecution lead to forced migration and refugee flows. Refugees and asylum seekers flee their home countries to escape violence, human rights abuses, and political repression.
4. Environmental Migration: Environmental changes, including natural disasters and climate change, can force people to migrate. Rising sea levels, desertification, and extreme weather events displace populations, creating environmental refugees.

➢ **Interconnections and Implications**

The interplay between fertility, mortality, and migration shapes demographic trends and has profound implications for society. For instance, low fertility rates combined with increased life expectancy can lead to population aging, necessitating adjustments in social security systems, healthcare provision, and labor markets. Conversely, high fertility rates in developing regions can strain resources and impede economic development.

Migration serves as a dynamic factor balancing regional demographic disparities. It can mitigate the effects of aging in developed countries while alleviating population pressure in developing regions. However, migration also poses challenges, including integration, social cohesion, and policy coordination.

In conclusion, understanding population dynamics through the lenses of fertility, mortality, and migration is essential for addressing global demographic challenges. Policymakers must consider these factors holistically to develop sustainable solutions that promote economic growth, social stability, and equitable development. By fostering conditions that support healthy, educated, and mobile populations, societies can better navigate the complexities of population change and harness its potential benefits.

Summary

- This year, India became the world's most populous country, surpassing China.
- According to the United Nations World Population Prospects, India's population is expected to exceed 1.4 billion by 2023.
- Between 1881 and 1920, males had an average life expectancy of 25.3 years and females had an average of 25.6 years, indicating high mortality rates in the late 19th and early 20th centuries.
- Migration is influenced by two primary factors: push and pull.

5.5 Population Growth in India

Population growth in India is driven by various factors and has wide-ranging consequences. Here's an overview:

Causes of Population Growth in India

1. High Birth Rate -India has a traditionally high fertility rate. Despite some decline, it remains higher than the global average.
2. Declining Mortality Rate -Improvements in healthcare, sanitation, and nutrition have reduced the mortality rate, leading to a higher survival rate of infants and longer life expectancy.
3. Early Marriage - Early marriage is prevalent in many parts of India, leading to longer reproductive periods for women and more children over their lifetime.
4. Cultural Factors - Cultural and religious norms favoring large families and the preference for male children contribute to higher birth rates.
5. Lack of Access to Contraception - Limited access to family planning services and contraception, especially in rural areas, leads to higher

fertility rates.

6. Economic Factors - In many rural and impoverished areas, children are viewed as assets who can contribute to the household income, encouraging larger families.

Consequences of Population Growth in India

1. Economic Strain - Rapid population growth puts pressure on the economy, straining resources and infrastructure, and often leads to higher unemployment rates
2. Environmental Degradation - Increased demand for resources leads to deforestation, loss of biodiversity, water scarcity, and pollution.
3. Urbanization and Overcrowding - Rapid population growth leads to urban migration, resulting in overcrowded cities, inadequate housing, and strain on urban infrastructure.
4. Pressure on Agricultural Land- More people require more food, putting pressure on agricultural land, leading to over-farming and reduced soil fertility.
5. Healthcare Challenges- A larger population means more demand for healthcare services, which can be overwhelming and lead to inadequate medical care and public health crises.
6. Education System Overload - The education system struggles to accommodate the growing number of students, often resulting in lower quality of education and higher dropout rates.
7. Social and Political Issues - High population density can exacerbate social tensions, lead to increased competition for resources, and influence political dynamics and governance.

Addressing the Challenges

To manage population growth effectively, India needs to adopt a multifaceted approach that includes:

1. Enhanced Family Planning Programs - Expanding access to contraception and reproductive health services.
2. Education and Empowerment - Increasing education levels, particularly among women, and promoting gender equality to delay marriage and childbirth
3. Economic Development- Fostering economic development to

provide better job opportunities and reduce the economic need for large families.

4. Healthcare Improvements - Continuing to improve healthcare infrastructure to reduce infant and maternal mortality rates and increase life expectancy.
5. Sustainable Development Practices - Implementing sustainable practices to balance resource use with population growth.

Addressing these factors can help India manage its population growth and mitigate the associated consequences, leading to a more sustainable future.

5.6 Summery

- Population dynamics encompass the intricate interplay of fertility, mortality, and migration, which collectively shape the size, structure, and distribution of populations over time.
- This year, in 2024 India became the world's most populous country, surpassing China.
- Fertility is measured using many methods, including crude birth rate (CBR), general fertility rates (GFR), age-specific fertility rates (ASFR), total fertility rate (TFR), and gross reproductive replacement.
- During independence, communicable illnesses were a leading cause of mortality in the country.

5.7 Self Assessment Questions

1. What problems does overpopulation create?
2. What do you mean by fertility, mortality and migration?

5.8 References

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UNIT – VI

Lesson 6.1 - Population Policy

Structure

Objectives

Through this chapter the learner would know the different aspects of population policies in India and would also learn the features of the policies.

6.1 Introduction to Population Policies

A policy consists of essential goals and precise means to achieve them. A well-defined collection of means comprises a program. A good policy requires a strong theory that connects the means to the aims. However, in social concerns, judgment regarding the relationship between inputs and outputs or the process is often necessary. Policy requires both scientific evidence (testable hypotheses) and value judgments. A positive population policy aims to cut birth rates and stabilize population growth rate.

Population policy refers to the purposefully created or changed institutional structures and/or particular initiatives that governments use to try and either directly or indirectly affect population change. Population policy is defined by Edwin Driver as any "direct and indirect

measures which, intended or not, may influence the size, distribution, or composition of human population".

Berelson characterizes them as "government actions that are designed to alter population events or that actually do alter them". Population policy refers to government efforts to affect population change through institutional structures, programs, and initiatives.

According to Edwin Driver, population policy encompasses both direct and indirect policies that affect the quantity, distribution, and composition of the human population.

Berelson identified three essential features of any population policy. The first feature is a government action, such as a proclamation of policy, legislation, decrees, or administrative programs. Research may be conducted on population policy of many institutions, including ethnic groups, the United Nations, and religious communities like Roman Catholics and Muslims. A population policy handles population events, which is its second key component. The third aspect encompasses both goals and consequences, i.e. actions that modify population occurrences.

Population policy focuses on fertility, mortality, and migration as the only demographic factors impacted by them. To effectively discuss population policy, it's crucial to consider three key characteristics of population change.

6.2 Policies Influenced by Mortality

Mortality policies, of course, are always aimed at lowering mortality. Following WWII, the World Health Organization created a revolutionary concept of public health and vowed to eliminate sickness. Most countries have national programmes to combat "mass killers" like malaria, smallpox, cholera, and other diseases. Even developing countries have embraced the World. The World Health Organization defines good health as a state of complete physical, mental, and social well-being, not only the absence of sickness or disability. Health-related population programs have led to significant decreases in mortality in emerging nations, regardless of socioeconomic position.

A United Nations report states that no pandemics have occurred since 1918, when influenza killed 25 million people globally.' The United Nations Secretariat reviewed population policies and programs for the 1974 World

Population Conference, stating that all governments have policies to reduce morbidity and mortality. However, no government has considered allowing low survival rates to prevent further morbidity and mortality.

The World Population Plan of Action, adopted in 1974 at the United Nations World Population Conference in Bucharest, focuses only on mortality as the goal. "By 1985, countries with the highest mortality rates should strive for a life expectancy of at least 50 years at birth and an infant mortality rate of fewer than 120 per thousand live births."

6.3 Policies Influenced by Fertilities

Policies aimed at affecting fertility might be pro-natalist or anti-natalist.

Pro natalist policies

A pro-natalist strategy tries to increase birth rates through incentives. Pro-natalist policies have been in place since ancient times, based on high mortality rates and a demographer's belief in the strength and prosperity of large numbers. During the interwar period, Germany, Italy, and Japan saw the peak of expansionist population policies. The objective was achieved through many tactics, including pro-natalist advertising, monetary awards for motherhood, birth control restrictions, emigration controls, "eugenic legislation," and efforts to promote a "clean" population.

Several rich nations have pursued pro-natalist policies in recent years, but each has unique objectives and approaches.

Sweden's strategy prioritizes preserving birth rates but also considering individual welfare and independence.

France's 'Code ded laa Famille' of 1939 specifies pro-natalist policies.

In 1966, Israel enacted a pro-natalist policy, granting financial incentives to big families and restricting induced abortion.

Japan launched programs with demographic ramifications, including the Eugenics Protection Law of 1948, which made abortion freely accessible, and government-sponsored programs promoting contraception.

- ***Anti Natalist Policies***

Anti-natalist strategies aim to minimize the number of births. This can be achieved by family planning education, improved contraceptive

availability, or regulation (such as China's One-Child Policy). Throughout history, individuals with diverse social and political ideas have advocated for anti-natalist legislation. The Greeks valued a healthy population over a large one, and their purpose was to preserve the survival of the fit as citizens. Plato advocated 5,040 people for a city-state with a total population of around 50,000. He wanted it to be large enough to ensure economic self-sufficiency and military defense, but small enough to allow for a constitutional government with active citizen participation. Plato and Aristotle highlighted the significance of population quality. Aristotle supported abortion as a form of birth control and the eugenic abandonment of unfit offspring. To protect the city-state from growing too large, he advocated restricting the number of children any couple may have. In 1798, Malthus's 'An Essay on the Principle of Population as It Affects the Future Improvement of Society' re-emphasized the importance of managing the population. Although the Malthusian concept has been questioned for several reasons, it is important to note that the individual's religious beliefs prevented him from achieving his goals of widespread contraceptive use. Antinatalist policies may be direct or indirect. Certain policies are classed as short-term or long-term.

- ***Direct anti-natalist policies***

Provision of contraceptive services is a crucial direct policy. Providing family planning services and educational programs can cut fertility at the micro-level, leading to a decrease in birth rates.

Liberal Abortion Laws: Abortion legislation liberalization has led to a half of Japan's birth rate in a decade, highlighting its effectiveness in population management. While no country explicitly asserts that liberal abortion laws align with anti-natalist goals, views towards abortion have drastically changed over the past 25 years. In 1975, it was revealed that some rising nations had permissive abortion laws.

Increasing marriage age: Research suggests that women's fertility is impacted by their age at marriage. Those who marry at a young age tend to have children at a younger age, and their progeny do the same. Raising the age at which women marry reduces their reproductive duration and fertility.

- ***Indirect antinatalist policies***

Anti-natalist policies can indirectly reduce fertility by influencing acceptance of contraception, abortion, and higher marriage ages. Bernard

Berelson used the phrase "Beyond Family Planning" to characterize some of these initiatives.

Rogers defines incentives as "direct or indirect payments in cash or in-kind made to an individual, couple, or group to stimulate an overt behavioural change," such as implementing a family planning approach. In family planning programs, incentives can be offered to either the adoptee or the person who persuades them, or both. These incentives may be presented to individuals, groups, or both. They can receive both monetary and non-monetary compensation.

Incentives reward people who utilize or promote family planning, whereas negative incentives penalize those who do not.

Disincentives often include removing rewards or imposing penalties. Singapore exemplifies good social programs for family planning.

In 1958, the policies included the following disincentives:

- Subsidized public housing allocation prioritizes newlywed couples over those with several children.
- Paid maternity leave is not provided after the third child, as per the Employment Act.

- ***Improving Women's Status:***

In traditional communities, women frequently have a poor status. In certain civilizations, bearing children elevates a woman's status, whereas being childless is considered inferior. Women's education is maybe the first step in this approach.

Research indicates that the wife's educational position is often associated with decreased fertility rates. Research in India indicates an unfavorable relationship between women's educational status and fertility rates. Education can boost women's position in their households. Women's progress can promote a marriage that prioritizes communication, solidarity, collaborative decision-making and appropriate authority distribution. Research suggests that this marriage type promotes acceptance of family planning. Women's labor force participation is a key indicator of a country's gender equality. Women who work outside the home are less fertile than those who do not. Women who seek other forms of self-expression and self-development may become dissatisfied with traditional roles of wife and mother, leading to a preference for smaller families.

- ***Socioeconomic development***

Certain social and economic developments can have a significant impact on the population. Demographic transitions in developed and developing countries show a shift from high to low birth and death rates after the stages of declining death rates and high birth rates. This transformation has resulted in social and economic progress. The West saw a shift from a large family system to a compact family structure due to industrialization and urbanization.

- ***Rural communities are becoming more urban***

Residence, whether urban or rural, has been demonstrated to impact reproductive performance. The urban family, sometimes resistant to change, is seen to be more intelligent and exposed to new ideas through mass media and non-familial contacts compared to rural families. Fertility levels vary between urban and rural regions due to inequities. Implementing a unique program to modernize communities and minimize isolation can improve fertility rates.

- ***Social Security***

In traditional homes, having a son is expected to provide for their parents' elderly care. The social security system can provide financial stability and help for families. This system provides monetary or in-kind benefits for specific conditions, including sickness, maternity, and unemployment, job injury, invalidity, old age, and breadwinner's death. These programs aim to provide financial security, medical care, income redistribution, and social justice.

- ***Demographic Education***

Population education is becoming increasingly popular in school curriculum and youth programs. Adults who have received population education are more likely to utilize family planning to limit their family size.

6.4 Policies on Migration

The term "migration policy" is often used yet unclear in its definition. According to the International Organization for Migration's Migration Governance Framework (MiGOF), migration policy encompasses various aspects such as travel, immigration, emigration, nationality, labor markets, economic and social development, industry, commerce, social cohesion,

social services, health, education, law enforcement, foreign policy, trade, and humanitarian issues.

Migration policies include two components: internal migration (inside a country) and international movement (including immigration and emigration). Most states consider internal migration a constitutional privilege, making encouraging internal mobility the sole way for governments to alleviate population pressures. This is especially true for regional disparities in density (per square mile or kilometer). Internal migration is influenced by several factors, including geography, job opportunities, cultural affinity, and more, which might hinder successful attempts.

Many nations are worried about population expansion in metropolitan regions and migration from rural to urban areas, resulting in greater demand for urban services. A United Nations study found that just 10% of less developed countries (98) had strategies to limit migration to metropolitan areas, while none of the more developed need nations (34), did. Only 5 (7%) of 67 nations with "excessive" urban development have plans in place to limit internal migration to these cities.

The remaining 62 (93%) states permitted internal migration from rural regions to urban centers. However, 45 of these states adopted mechanisms to redirect migration into non-metropolitan urban centers rather than restricting it outright. Most countries have clear rules in place for international migration. Governments are passing new legislation to tighten international migration restrictions, limiting both admission and exit from their own nations. To combat "brain drain," countries may ban the departure of highly qualified professionals. India restricts medical practitioners' emigration; however its emigration policy is sometimes unclear.

6.5 Family Planning and Welfare Programmes

In 1952, India launched the world's first national family planning program. Since 1952, the Family Planning Programme has undergone substantial policy and implementation adjustments. In 2000, the National Population Policy (NPP) developed a holistic and target-free approach to fertility reduction, shifting from a clinical approach to one focused on reproductive child health. Investing in family planning can help women achieve their intended family size, avoid undesired and mistimed births, and mitigate the effects of overpopulation.

6.6 Family Planning Programme in India

Family planning programs have progressed tremendously since their inception in 1952. India was the first country to have a national family planning program, therefore planners drew heavily on the experiences of industrialized Western countries with Planned Parenthood organizations. Couples seeking family planning services visited clinics established by the Planned Parenthood Organization. In India, a similar concept known as the clinic model was initially employed. Clearly, the 'clinical technique' imposed its own limits. The method could only reach a small fraction of the people due to the country's socioeconomic and psychological condition. In the early 1960s, the clinic model was replaced by the extension approach.

The extension technique aimed to change people's attitudes, beliefs, and behaviors toward family planning via education. It also involves focusing on the group rather than individuals or couples. This shift in focus was motivated by the idea that a group's intrinsic potential to modify deeply established habits outweighs individual teaching from outsiders. The plan involved identifying and educating key leaders in each group on population-related concerns.

These well-known leaders promoted small family ideals within their respective groupings. Local entities, including Panchayat Samitis and Village Development Committees, were encouraged to participate in family planning programs under the extension approach. We also considered the supply side of family planning strategies. The extended method emphasized social acceptability, awareness of family planning, and simple access to goods and services. Family planning programs have historically prioritized birth control, but have also addressed maternal and child health concerns. However, it was not until the Fifth Five-Year Plan that a clear commitment was made in this area.

The Fifth Five-Year Plan prioritized mother and child health and nutrition services to improve public acceptance of family planning measures. The country's high newborn and child death rate made it difficult to achieve birth control objectives. This approach aimed to increase the validity of family planning services. The integrated strategy has stayed in place till now.

The scope of family planning operations was expanded to include DPT vaccination for babies and pre-school children, tetanus vaccination for expecting mothers, nutritional anaemia prevention for mothers

and children, and vitamin A deficiency-related blindness prevention in children. The financial allocation for family planning and health care efforts in successive plans highlights the significance of these social programs.

The Multipurpose Workers Scheme was created during the Fifth Five-Year Plan to meet the need for comprehensive health and family planning services. Multipurpose workers were trained to provide first aid, minor medical care, health and family planning services, and nutritional education. To increase accessibility and acceptance among rural communities, female personnel were included in multifunctional roles.

The integrated plan included establishing post-partum centers at medical colleges, district hospitals, and maternity hospitals throughout time. Research indicates that women who visit hospitals for maternity care are more open to learning about family planning.

6.7 Indian Population Policy

With a population of over one billion, India is facing what demographers refer to as a 'population explosion'. A large and rapidly rising population, such as India's, stifles economic progress by reducing natural resource availability, labor supply, and capital formation. To manage a fast growing population, it's crucial to implement effective policies. The effect of population growth on natural resources may be examined in two ways. One approach is to consider solely the country's land area. When looking at resources in a larger context, it's important to consider everything that nature has given to us. When comparing land area and population density, it's important to examine the number of people per square kilometer. In India, this figure has steadily increased from 216 in 1981 to 274 in 1991, reaching 324 in 2001. In 1951, it was 117, therefore it has nearly quadrupled in the previous 40 years. According to the 2011 Census, the population density is 382 individuals per square kilometer. The land-man ratio worsens when population and agricultural land are considered together.

- ***National Population Policy, 1976***

The National Population Policy was launched on April 16, 1976. This contradicted the government's previous population policy. Previously, development and education were acknowledged as key factors in limiting population increase. However, the government's policy focused solely on family planning. Prior to 1976, family planning was totally voluntary, with

the government's participation limited to encouraging acceptance and providing clinical services. The administration abandoned this method in 1976. The report argues that high population expansion hinders economic development and calls for a more proactive strategy to address it. The government's strategy statement emphasized that waiting for education and economic growth to reduce reproduction is not a viable answer. Population growth slows and hinders economic progress. To break the cycle of population increase and time constraints, a national commitment is necessary to address this issue directly. The policy statement restated the government's goal to reduce the birth rate to 25 per thousand by the sixth plan period. Based on previous experience, the government felt that relying solely on voluntary family planning would not achieve this goal. To address the issue, more concrete actions were proposed and implemented. Rising the legal marriage age to 21 years for males and 18 years for females was a positive step, but its execution was questioned from the start.

Introducing population values in education and raising monetary incentives for sterilization are desirable initiatives, but in a conservative society like ours, they are unlikely to significantly impact the effectiveness of family planning efforts. The government collaborated with Zila Parishads, Panchayat Samitis, cooperatives, teachers, workers' organizations, and voluntary organizations, including women's and youth groups. The problematic tactics included drawing on all government agencies to encourage safe reproductive behavior and allowing state legislatures to introduce legislation for compulsory sterilization.

- ***The Family Planning Programme, 1952***

The importance of family planning as a tool for controlling population growth is widely acknowledged, so much so that decision makers in communist nations have abandoned their prejudices against it and become open to the concept of modest family norms. In China, for example, the state has endorsed the one-child policy and has succeeded in lowering the birth rate to 12 per thousand, compared to 21.8 per thousand in India, according to the 2011 Census. China's success in this area is largely due to its widespread usage of contraception. In China, around 85% of married women of childbearing age utilize contraception now.

The following characteristics of the family planning program in this nation demand special attention:

1. Public Information Programme: During the public information

programme, couples of reproductive age discussed the benefits of family planning. This is regarded as vital for developing public awareness, without which no family planning programme will be accepted. The government aims to promote family planning through various media, including as cinema, radio, television, posters, and newspapers. When the notion of family planning captures people's imaginations, they will freely begin implementing it.

2. Rewards and disincentives: The government has implemented a number of initiatives that provide rewards to individuals who support family planning. Cash awards have encouraged people to undergo sterilization, while family planning is entirely optional in this nation. Coercive techniques have been mostly avoided. During the crises, certain extreme measures were used, including forced sterilization. If small cash prizes do not incentivize people to accept family planning, the government can make a policy that prioritizes employment for those who accept small family norms. Additionally, people who oppose family planning may be refused some services.
3. Centers for family planning: Establishing Family Planning Centers is crucial for successful family planning programs. This component of India's projects has received some attention. These centers provide a variety of clinical facilities for family planning. In addition to these healthcare institutions, a substantial number of contraceptive distribution centers should be established in both urban and rural regions.
4. Research: Prioritizing research in demographics, communication, reproductive biology, and fertility control is crucial for effective family planning programs. Underdeveloped nations often overlook this issue, instead relying on more developed country-specific family planning methods. The Indian government recognizes the value of research in maximizing the effectiveness of family planning programs within limited resources.

➢ ***Recent initiatives under family planning programme***

Various schemes like ASHAs provide contraceptives to recipients' doorsteps and ensure birth spacing.

- ➢ Increase spacing methods with the launch of the new method PPIUCD (Post-Partum Intra Uterine Contraceptives Device).
- ➢ Emphasis on Postpartum Family Planning (PPFP) services, with the introduction of PPIUCD and the promotion of minilap as the

primary method of administering sterilization in the form of post-partum sterilisation, to leverage on the large number of patients coming in for institutional delivery under JSY.

- Ensured the delivery of family planning services for both IUCD and sterilization.
- RMNCH Counselors (Reproductive, Maternal, Newborn, and Child Health) are available in high-risk facilities to guarantee that clients visiting the facilities get counseling.
- The Family Planning Division is developing national and state-specific action plans to accomplish the FP 2020 targets. Improving access to volunteer family planning services, supplies, and information can help to reduce unmet needs. Jansankhya Sthirata Kosh/National Population Stabilization Fund uses many population control measures, including Prerna, Santushti, National Helpline, Advocacy, and IEC initiatives.

6.8 Evaluation of the Population Policies

In the preceding study, we have clearly stated the necessity for an inventive population policy to address the current population challenge. Unfortunately, in this nation, the government has not developed such a policy. In India, the government's efforts to reduce fertility rates have largely ignored the importance of education and improving living standards. A greater dependence on the family planning program to achieve this goal in a social climate that is resistant to the program indicates a lack of understanding of the issue. Three main flaws in the government's approach are highlighted below:

- Overemphasis on contraception: According to B.R. Sen, India's population problem is not well recognized. Efforts to limit population increase in the country have historically relied on boosting access to contraception and promoting its usage. Raising the level of living in rural areas has never been considered as a solution to reduce population increase. This will necessitate further developmental initiatives in the rural. In 25 years, Kerala, Tamil Nadu, and Goa in India have reduced birth rates from 35 to about per thousand people. Literacy among women and improved healthcare led to changes in attitudes towards health and family size, resulting in lower birth rates in these states. According to T.N. Krishan's analysis of Kerala-Goa demographics, health and

educational transformations preceded demographic transitions. Most governments have refused to learn from the experiences of these two regions. Coercive methods are inappropriate, notwithstanding the urgent need to limit population increase in this country. People from many backgrounds and views agree that achieving national consensus on population control is necessary. However, there is less consensus on measurements. Many scientists still feel that development is the most effective way to limit population increase. Others want to maintain family planning and development activities. Most Indian demographers and economists who support a strong family planning program oppose the government's coercive techniques implemented in 1976.

- Sterilization: Forced sterilization has been shown to harm people's dignity and be ineffective. During the emergency, Pravin Visaria took a balanced approach to family planning measures, stating that it is premature to implement compulsory sterilization with monetary compensation and group incentives. Sterilization is effective for limiting family size, but incentives and disincentives should be based on the number of children rather than sterilization. In other words, each couple must have the freedom to select their own methods of family planning.
- Shifting Family Planning Approach: The planning process over the last four decades demonstrates unequivocally that the goal of reducing the birth rate to a sustainable level is as difficult as it was two decades ago. Organizational decision-making is often arbitrary, uneducated, and lacks imagination. The family planning programmes was plagued by gaps in decision-making, worsened by a series of mistakes made by successive decision-makers. In the 1950s, the 'clinic method' emerged in response to the planned parenthood movement in Western countries. This method failed because the conditions in India differed significantly from those in Europe and the United States. After determining that the clinic strategy would not help the family planning movement, decision-makers shifted to the "extension approach." The extension strategy originated in the US and was viewed as a solution to a problem, similar to other western policies. After seeing the ineffectiveness of this technique, concerns about human dignity and the right to make decisions about one's own family became less pressing. Officials

considered implementing coercion in family planning programs. As expected, the strategy shifted once more.

The new program was referred to as the "camp approach," which involved enlisting motivated individuals through economic incentives or remuneration. During the emergency, the use of authoritarian measures led to devastating consequences for the family planning movement. Despite its shortcomings, India's family planning program has had an influence in metropolitan areas.

Since the early 1970s, total fertility has dropped in every state. In the late 1990s, the total fertility rate had dropped to 1.8 births in Kerala and 2.0 births in Tamil Nadu. Furthermore, overall fertility rates in Andhra Pradesh, Karnataka, Maharashtra, Punjab, and West Bengal were anticipated to be close to replacement levels. Similar success in the rural areas of Uttar Pradesh, Bihar, Rajasthan, and Madhya Pradesh is difficult to achieve. According to Pravin Visaria, it is challenging to get individuals in rural India to consider the impact of their actions on the larger group or country. Recent developments in India have questioned Visaria's optimism. Visaria ignores the fact that India's ill culture has a deep-seated sex prejudice against women. As a result, prenatal diagnostics such as amniocentesis, which were originally designed to detect genetic problems, are increasingly utilized in this country to determine sex and female foeticide. In India, sex determination tests and abortion of female fetuses have piqued the interest of both educated urbanites and rural illiterates, despite a general lack of enthusiasm for positive family planning. Some sensible individuals in society have expressed opposition to this primitive method of family planning.

Pravin Visaria believes that legislative changes are necessary to reduce the country's overall fertility rate. He specifically advises the following measures:

1. A well-designed program to improve health professionals' effectiveness in convincing clients to change their reproductive behavior.
2. A shift from focusing on specific family planning methods to evaluating the impact on birth and death rates.
3. Implement incentives and disincentives to delay marriage and restrict childbearing.

Adopting these strategies will improve people's reproductive behavior. People will learn about the benefits of having a small family and will deliberately employ one or more methods of family planning to restrict the number of children. This method will, in turn, reduce the family rate. India's population will continue to expand until a strategy to stop it is implemented.

6.9 Summary

- A good policy requires a strong theory that connects the means to the aims.
- Population policy refers to the purposefully created or changed institutional structures and/or particular initiatives that governments use to try and either directly or indirectly affect population change.
- Most countries have national programmes to combat "mass killers" like malaria, smallpox, cholera, and other diseases.
- Introducing population values in education and raising monetary incentives for sterilization are desirable initiatives, but in a conservative society like ours, they are unlikely to significantly impact the effectiveness of family planning efforts.
- The land-man ratio worsens when population and agricultural land are considered together.

6.10 Self Assessment Questions

1. Discuss the different population policies of India after independence

6.11 References

1. Singh, K. (1976). National population policy. NIHAE bulletin, 9(2), 155-160.