INTRODUCTION TO DEMOGRAPHY AND POPULATION STUDIES

Course Code: AJU - ECO 381

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OUTLINE

- Over view of population and demography
- Importance and scope of demography
- Components of size , composition and distribution
- Concepts of fertility, mortality and Migration (immigration and emigration)
- The demographic equation
- Sources of demographic data
- Measures of fertility

LEARNING OBJECTIVES

- By the end of this lecture, students should be able to:
- • Define population, demography, and population studies
- • Explain the scope and importance of demography
- • Distinguish between demography and population studies
- • Understand the relationship between demography and other disciplines
- • Identify the three sources of demographic data
- • Evaluate the various measures of fertility

MEANING OF POPULATION

- • Population is the total number of people living in a defined area at a given time
- • Example: Nigeria's population in 2025 is estimated to be 229 million
- • Key features of population: size, distribution, structure, composition

MEANING OF DEMOGRAPHY

- • Scientific or statistical study of the human population. It is the study of three basic processes: fertility, migration, and mortality. These are referred to as the demographic processes.
- • Derived from Greek word: demos (people) + grapho (to describe)
- • Focuses on size, structure, distribution, and changes (births, deaths, migration)
- • John Graunt (1662): Father of Demography an English statistician and demographer . Famous for identifying mortality rates and causes of death, identifying the patterns of population growth and decline and also developing other statistical analysis .

- • Concerned with systematic study of population
- • Early interest: counting people for taxation, military service, and governance
- OTHER PROPONENTS
- • William Petty: Political Arithmetic – applied statistics to governance
- • Thomas Malthus (1798): Malthusian theory of population
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MEANING OF POPULATION STUDIES

- • It is a boarder and interdisciplinary field. It examines demographic trends and their social, economic, political, and environmental causes
- • Demography : is mostly concerned with measurement
- • Population Studies = has a wider analysis

SCOPE OF DEMOGRAPHY

- • Size – total number of people
- • Distribution – where people live (urban/rural)
- • Structure – age, sex, marital, educational, occupational
- • Processes – fertility, mortality, migration
- • Growth and decline of population

IMPORTANCE OF DEMOGRAPHY

- • Economic planning – workforce, employment
- • Social planning – education, health, housing
- • Political relevance – representation, voting
- • Policy formulation – Nigeria's National Population Policy
- • Sustainable development (SDGs)

DEMOGRAPHY AND OTHER DISCIPLINES

- • Economics: labor, savings, consumption
- • Sociology: family, marriage, social change
- • Geography: spatial distribution
- • Public Health: mortality, fertility, pandemics
- • Political Science: governance, voting patterns

DISCUSSION QUESTIONS

- 1. Differentiate between demography and population studies with examples
- 2. Why is demography important for Nigeria's development planning?
- 3. In what ways does demography relate to economics and public health?

SUMMARY

- • Population = total number of people in an area
- • Demography = scientific/statistical study of population
- • Population studies = broader, interdisciplinary field
- • Demography is vital for planning, policy, and development

DEMOGRAPIC EQUATION

The size of a population can change only through the processes of fertility, mortality, and migration. There are only two ways of entering a population– being born or moving into it. There are also two, and only two, ways of leaving a population– dying or moving out of it.

$$P_{t+1} = P_t + B_{t\ tot+1} - D_{t\ tot+1} + I_{t\ tot+1} - E_{t\ tot+1}$$

QUESTIONS

- 1. Why is John Graunt regarded as the father of demography?
- 2. What was the contribution of Thomas Malthus to demographic thought?
- 3. Explain your understanding of the demographic equation

SOURCES AND METHODS OF DEMOGRAPHIC DATA

- • Demography relies on accurate data for planning and policy
- • Three primary sources of data:
- – Population Census
- – Vital Registration
- – Sample Surveys

POPULATION CENSUS

- • Definition: Complete enumeration of the population
- • Characteristics: universality, simultaneity, periodicity
- • Types:
- – De facto: Counted where found
- – De jure: Counted where usually live

CENSUS: PROS & CONS

- Advantages:
- • Comprehensive coverage
- • Provides national benchmark data

- Limitations:
- • Expensive and time-consuming
- • Risk of undercounting or political bias

VITAL REGISTRATION SYSTEM

- • Definition: Continuous recording of vital events
- – Births, deaths, marriages, divorces
- • Importance: fertility, mortality, life expectancy data
- • Limitation: Often incomplete in developing countries

SAMPLE SURVEYS

- Collect data from representative portion of population
- • Examples: DHS, MICS, Labour Force Survey
- Advantages:
- • Less costly, more detailed
- Limitations:
- • Not complete coverage
- • Subject to sampling errors

EVALUATION OF DATA QUALITY

- • Common errors:
  - ➢ coverage errors
  - ➢ content errors
  - ➢ response bias
- • Checking methods:
- – Comparison with past censuses
- – Demographic analysis (life tables, growth rates)

SUMMARY

- Three main sources: census, vital registration, surveys
- • De facto vs de jure census methods
- • Vital registration = continuous but weak in Africa
- • Sample surveys: flexible, detailed but partial
- • Reliable data is key for policy and planning

QUESTIONS

- 1. Differentiate between de facto and de jure census methods
- 2. Why is vital registration important?
- 3. Compare census and sample surveys in terms of advantages and disadvantages

POPULATION DISTRIBUTION

- It refers to the spatial arrangement of people across a given geographical area. It is concerned with where people live and why they live there

MEASURE OF POPULATION DENSITY

- Arithmetic density: This measures is attained by dividing the number of people in a location to the area of land
- Physiological density: This is measured by population divided by arable land
- Agricultural density: It is the number of farmers divided by arable land

PATTERNS OF POPULATION DISTRIBUTION

- Even distribution: mostly rare has to be a planned settlements eg having specific number of people who should reside with specific number of males, female and children
- Clustered distribution: Very common has to do with people concentrating in a certain location as a result of all wanting to stay in the urban region resulting to over population.
- Linear distribution: People living along roads ,or river settlements.

FACTORS AFFECTING THE DISTRIBUTION OF POPULATION

- Physical factors: climate , soil fertility, water availability
- Soci -economic factors: industrialization , employment, trade opportunities
- Political factors : government policies and political stability
- Historical factors: wars , slave trade

MEASURES OF FERTILITY

- Crude fertility rate (CBR)
- General fertility rate (GFR)
- Total fertility rate (TFR)
- Age specific fertility (ASFR)

CRUDE FERTILITY RATE (CBR)

- This refers to the number of live births in a year per 1000 people in the total population
- CBR = Total of live births in a year
    - Total population in the same year X 1000

GENERAL FERTILITY RATE (GFR)

- This is a cross - sectional measurement of fertility which is superior to CBR

- GFR = Total number of births in the population
  - Mid year number of women of child bearing age 15 – 49 X 1000

TOTAL FERTILITY RATE (TFR)

- It refers to the average number of children a woman would have over her life time between the ages of 15 – 49 years of her existence. It is a synthetic measure

- $TFR = \frac{\sum (ASFR \times 5)}{1000}$

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THANK YOU