

Unit-III

Topic-I

Measures and Determinants of Fertility

Fertility:- It is the actual birth performance of a group of women. Fertility may also be defined as the frequency with which the birth occurs in total population.

Fecundity:- The physiological capacity of women to reproduce.

Measures of Fertility

1. Crude Birth Rate (CBR)
2. General Fertility Rate (GFR)
3. General Marital Fertility Rate (GMFR)
4. Age Specific Fertility Rate (ASFR)
5. Total Fertility Rate (TFR)
6. Gross Reproduction Rate (GRR)
7. Net Reproduction Rate (NRR)

1. Gross Birth Rate (GBR)

It is the ratio of total no. of live births to the average population ever lived during a given year and geographical area.

$$GBR = \frac{B}{P} \times 1000$$

B — Total no. of live births in a given year & area

P — Mid year population of the year

This measure is easy to interpret but it is not a fertility rate as it includes all the population whether they are engaged in the process of reproduction or not. (Fertility is confined to certain age-group of males & females)

2. General Fertility Rate (GFR)

Defined as the no. of births per year per thousand mid-year women of the child bearing ages.

$$GFR = \frac{B}{W_{15-49}} \times 1000$$

W₁₅₋₄₉ - Total no. of women of child bearing age 15-49 at the mid point of the year in a given geographical area.

B - Total no. of live births in a given year & area.

Advantages :-

It includes the female population in their reproductive ages only who are actually engaged in the process of reproduction.

It is a useful measure of population projections in a country.

3. General Marital Fertility Rate (GMFR)

It is an overall measure of fertility of married women.

It is the no. of live births per yr. per thousand mid-year married women

$$GMFR = \frac{B}{W_{15-49}^m} \times 1000$$

W_{15-49}^m - Married women of reproductive age-group of 15-49

4. Age Specific Fertility Rate (ASFR)

It is the no. of births per yr. per women in a given age-group in a given yr and geographical area

$$ASFR(x) = \frac{{}_nB_x}{{}_nW_x} \quad (\text{e.g. age-group } 30-45 \text{ yrs})$$

${}_nB_x$ = No. of Births to the Women of age x (group)

${}_nW_x$ = No. of Women aged x at mid year in a given area and yr.

5. Total Fertility Rate (TFR)

No. of children which a woman would bear during her lifetime if she were to bear children throughout her life at the age-specific

fertility rates for given year and if none of them dies before crossing the age of reproduction.

$$TFR = \frac{\sum f_x}{x} \text{ for single year ASFR}$$

$$TFR = 5 \times \sum_{5x} f_x \text{ for 5 year ASFR}$$

for $x = 15, 20, 25, \dots$

In this case $n=5$

6. Gross Reproduction Rate (GRR)

$$GRR = \frac{f_b}{b} \times TFR$$

*
(without experiencing any mortality)

f_b - No. of Female Births

b - Total no. of births

Also known as replacement ratio.

7. Net Reproduction Rate (NRR)

No. of daughters that would be born to a woman during their lifetime if they experience a fixed schedule of ASFR and ASMR
(M - Mortality Rate)

Exercise

- Q1 What is CBR in India at present?
- Q2 GFR — ?
- Q3 TFR — ?
- Q4 What is Replacement Ratio?
- Q5. What is the time span of reproductive age-group?

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- I Biological Determinants
 - II Socio-cultural Determinants
 - III Economic Determinants.

- I 1 Age
- 2 Health and Nutrition
- 3 Environment

1. The reproductive age of women ranges from 15-49.
Early age at marriage leads to high fertility.
In most developed cts people marry late
so fertility rate is low.
2. Poor health and nutrition can reduce fertility.
It also leads to high child mortality rate. But
In less developed countries, those who are
poor in health have high fertility rate
because of low literacy levels.
3. Infertility is quite common these days because
of stressed and polluted environment

II Social Determinants

Social norms differ from society to society
so fertility varies from society to society.

- Particularly average age at marriage.
- Percentage of people never married. These days this practice is quite noticeable in urban society of India.
- Late marriage generally involved less children.
- Age of ~~people~~^{couples} using contraceptives.
- Availability of contraceptives.
- Social attitude towards their use affects fertility rate.

There are sharp differences between more developed and less developed economies as far as effect of social causes affecting fertility are concerned. Population policies play their great role.

- Legalization of abortions in certain nations and illegal abortions are quite common in some countries.
- Preference for male child.

III Economic Determinants

- Inverse relationship between per capita income and fertility. Those who are economically sound, want to raise their standard of living and thus go in for smaller families.
- As a nation moves towards urbanization fertility declines. On the other hand family size is quite large in villages.
- In traditional and agricultural societies children still play economic role and contribute to family wealth, so these societies exhibit high fertility.
- In industrial and post industrial societies cost of ~~bring~~ bringing up of children increases so parents don't want to bear additional children, thus low fertility rate in these sts.

General Factors affecting fertility

- * Status of Women
 - * Marriage and marital disruptions
 - * Sterility
 - * Contraception
 - * Induced abortion
- * Level of Education, especially of Women
- * Employment opportunities to females
- * Type of Residence — Rural/urban
- * Religion
- * Health care facilities.
- * Cost of having children
- * Pressure from Government / population policy. Incentives given by the Govt.
- * Preference for male child
- * Health care of mother and child.
- * Standard of living to be maintained