Quadrant II – Notes

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Meaning of Birth Rate

- Birth rate is defined as the number of children born per thousand persons in a year.
- It is the number of individuals born in a population in a given amount of time.
- Human birth rate is stated as the number of individuals born per year per 1000 in the population.

Methods of Estimation of birth rate in India:

i. **Crude Birth Rate (CBR)**

ii. **General Fertility Rate (GFR)**

iii. **Age Specific Fertility Rate (ASFR)**

iv. **Total Fertility Rate (TFR)**

v. **Gross Reproduction Rate (GRR)**

i. **Crude Birth Rate (CBR)**

According to Barclay, "The Crude Birth Rate is a ratio of total registered live birth to the total population, also in some specific year, also multiplied by 1,000."

CBR= Total number of children who took birth in a year/ Mid-year total population X 1000

CBR= B/P X K

- Where CBR= Crude Birth Rate.
- B= Total number of births registered during the calendar year
- P= Total Population at the middle of the year,
- K= 1000

ii. **General Fertility Rate**

- This rate is the number of birth per 1,000 women of reproductive ages .
- According to Thompson and Lewis "the General Fertility Rate denotes the number of births per thousand of women of child bearing age."
- It uses the number of women of child bearing age in a population as a base for the calculation of a birth rate rather than the total population
- It is an improvement over crude birth rate because in it only population of reproductive age group is taken into consideration.
- General fertility rate does not take into consideration the whole population of the country but female population of reproductive age group only becomes its basis.
- The formula to calculate GFR
- GFR= Total number of live births in a year/ Mid-year population of the women in reproduction age group X 1000

- This rate is more refined than crude birth rate because in that in addition to eliminating the influence of differences in size between population it also eliminates the effect of certain compositional differences which might exist in the populations being compared.

- It is possible to eliminate the influence of any differences in the proportion of males and females in the population.

- This rate can give very good results when people regularly register deaths and births and enumeration of population process is satisfactory.

iii. Age Specific Fertility Rate

- According to Thompson and Lewis, "Age Specific Birth Rates for any year are obtained by dividing the number of births to the mothers of each age in that year by the number of women of this age in the population at that date and multiplying this figure by 1,000".

- Under this system women of reproductive sub-age groups are divided and rate for each sub-group is separately found out.

- It is essential because fertility rate among men and women of different sub-age groups is always different and this must be taken into consideration while finding out fertility rate.

4. Total Fertility Rate

- It is an estimate of the total number of children a cohort of 1000 women would bear if they all went through their reproductive years exposed to the age specific fertility rates in effect at a particular time.

- This method also takes into consideration age of the father as well.

- Total fertility rate can be calculated as = TFR= S (bi/pi) K

- bi= Number of live births registered during the year to mother of age (i) where (i) is an interval of one year

- pi- is the mid-year population of women of the same age.

- K= 1,000

- S= Summation

5. Gross Reproduction Rate:

- After Total Fertility Rate comes Gross Reproduction Rate.

- It is restricted to the number of female children.

- The value of gross reproduction rate is about ½ of the total fertility rate

- It indicates the number of daughters each woman can bear by the time her reproductive period is over, if she continues to have children according to a particular schedule of age specific fertility rates, throughout her reproductive period.

- In this all the girls are included no matter what is their year of birth with the presumption that all will enter reproductive age and will also become mothers and as well complete the whole of reproduction.

- This rate can be found out by multiplying total fertility by the percentage of all births that are female births.

- If the product is 1000 or more , it means that 1000 or more daughters are being born by each 1000 women of child bearing age.

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