

B.A. PART-III(SOCIOLOGY)
PAPER-VIII-A(Social Demography)

Topic- Measurements of Fertility
College- MMC,P.U(Department of Sociology)

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➤ **Introduction:**

Based on the type of the data used (vital registration, census and surveys) three different types of measures of fertility may be computed. First is called as period measures for they are related to a particular period and are based on data referring to that period. The vital registration system provides the data for such measures. The second type of measure is linked with reproductive performance of women upto a certain point of time. Data from census and sample survey are used for this calculation. The third type of measures of fertility attempts to measure fertility indirectly on the basis of the age and sex distribution of the population as obtained from a census. Some of the most important and commonly used measures are discussed below:-

- (1) **The Crude Birth Rate:-** “The Crude Birth Rate is the most common index of fertility, and is merely the ratio of the number live births in a period of time, usually one year, to the total population, often at the mid-point of the year. The fraction is invariably multiplied by 1000 or 100”. This is expressed by the following formula:-

$$B \div P \times K$$

Where,

B is the total number of live births during a year,

P is the total population in the middle of that year and

K is 1,000.

So, the Crude Birth Rate of Patna District may be computed as follows:-

Number of live births during 2001 = 34,971

Total mid-year population in 2001 - 47,18,592

So, the Crude Birth Rate during 2001 =

$$34971000 \div 4718592 = 7.41$$

The Crude Birth Rate of 7.41 indicates that in Patna District, there had been 7.41 births per 1000 population during 2001.

(2) **Child-Woman Ratio-** It is measured as the ratio between the numbers of children of the age less than 5 years to the total number of women of reproductive age group multiplied by 1000. Though it is easy method of finding out ratio, it is not very precise as an index of fertility. Its evidence is indirectly derived from the group of survivors, rather than from the number of actual births and thus it is affected by several other factors besides fertility alone.

(3) **General Fertility Rate-** “The GENERAL FERTILITY RATE avoids some of the deficiencies of the Crude birth rate by changing the Denominator from total population to number of adults in the reproductive age-groups - usually only women aged 15-49”.

To calculate General Fertility Rate GFR, we exclude all males from the population, also the women who are not in the child bearing age i.e. girls under the age of 15 and women above the age of 50. This calculation provides figure, which is four to five times as high as the Crude rate in the same population because the women in these ages normally constitute from one-fifth to one-fourth of the total population.

(4) **Age Specific Fertility Rates** -This rate can be defined as the ratio of the number of live births to mothers of a specified age group in the population during a year to the number of mid-year female population in the same age group, multiplied by 1000. Age specific fertility rates are not affected by any variations in age structure and therefore, these rates may be considered to be refined. However, when comparisons between two population groups have to be made, the entire procedure becomes rather cumbersome.

(5) **Total Fertility Rate-** Total fertility rate is the sum of the age specific fertility rates of women in each five year age group from 15 to 44 or 49 years. This rate is a hypothetical rate indicating ‘the total number of children that would ever be born to a (hypothetical) group of women, if the group passed through its reproductive life span with the same birth rates in each year of age’(Communication Action Research Centre, 1964-68).

(6) **Gross Reproduction rate-** Gross reproduction rate 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. It can be computed by summing up all the age specific fertility rates obtained for females children only, multiplying the sum by 5, and finally dividing the product by 1000.

(7) **Net Reproductive Rate (NRR)** :- The characteristics features of this is that it takes into account of the deaths occurring during each five years period as women pass through child bearing years.

This is accomplished by using a life table for females which shows how an original cohort of 1,00,000 girl babies at birth diminishes year after year (or by five year periods) because of deaths. But the calculation of NRR is more difficult and laborious.

➤ **Conclusion:**

Measurement of fertility has become very essential in the face of growing gap between the economic resources and population growth of the globe. There is also the question of political administration of growing population of various sections of the society. The term fertility refers to the actual bearing of children. It is a complex social phenomenon; therefore it is difficult to measure it. There are mathematical measures of fertility in terms of live births. These methods are simple as well as complex and differ in their effectiveness. They also differ in their characteristics and are used in different situations.