SEX RATIO : TYPES, MEASUREMENT AND DETERMINANTS

INTRODUCTION

Sex ratio is used to describe the number of females per thousand of males. Certain countries compute it as number of males to females. Separate data for males and females are important for various types of planning and for the analysis of other demographic characteristics such as fertility, mortality, mobility, marital status, occupational structure etc. The balance in the number of the two is very significant as both the two sexes play contrasting and complementary roles in the economy and society. Any imbalance between the two will lead to serious consequences in the society at large. Data on sex composition can be easily gathered at the time of census.

TYPES OF SEX RATIO

I Primary Sex Ratio
II Secondary Sex Ratio
III Tertiary Sex Ratio
IV Quarternary Sex Ratio ASR
or
Adult Sex Ratio (Sex Ratio after the 60yrs or 55yrs)

Primary Sex Ratio (PSR)

is the ratio of males to females in a population. The primary sex ratio is the ratio at the time of conception. It is determined from the male and female frequency in abortions, miscarriages and still births along with their live birth records. Instead of expected ratio of 1:1, there is a deviation i.e 1.6 males : 1 female.

Why PSR is different from 1:1, remains a subject of speculation even in genetics.

There are three different possibilities / reasons for this ratio.

(i) The environment of female duct may be less favourable to the survival of X sperm than that of Y sperm.

(ii) Y sperm may be intrinsically more capable of reaching the egg than X sperm.

(iii) The egg may react more readily to the approach of a Y sperm than to that of a X sperm so that the fusion of egg and sperm would be due to preferential or selective fertilization.

Other factors for variable PSR are blood groups of parents, psychological factors, nutritional factors etc.

Secondary Sex Ratio (SSR)

Is the ratio of males to females at time of birth.

It is easily to determine, but it does not account for disproportionate embryonic or foetal mortality.

It is also known as Natural Sex Ratio.

More males are born than the females in case of all the mammals including human beings and in all areas of the world.

Factors which determine SSR are:

(i) Genetic, (ii) Differential mortality rates of male & female babies.

No ~~doubt~~ doubt male are more in number as compare to female babies borth but at the same time it is a proven fact that more male babies die / eliminate at the time of birth. It is due to greater weakness of males. Female sex is biologically more strong

(iii) Age of the parents — with increasing age of the father, the potentiality of given birth to male baby declines

Tertiary Sex Ratio (TSR)

The sex ratio of a population at the time of enumeration (eg census). It varies from country

to county and also calculated differently in different countries. At regional level great variation in tertiary sex ratio are there which can be attributed to various socio-economic, environmental and natural factors.

As per the latest census of India, TSR was 940 females per thousand males in 2011 while it was 933 in 2001. Now India is matching experiencing an increasing trend in sex ratio which is a healthy population characteristic.

TSR is determined by three basic determinants including the sex ratio at birth, sex ratio at death and sex ratio of migrants.

(i) There is an excess of males at the time of birth in nearly all countries of the world, and it ranges between 105 males : 100 females and 107 males : 100 females.

(ii) More males die before birth than females

(iii) Nutritional value of diet affects sex ratio.

(iv) Working status of Women has its own role to play.

(v) Literacy level of both the sexes. As a country advances, its literacy rate improves and it leads to an improvement in the sex ratio in favour of females.

(vi) Patriachal society – desire for male child forces illiterate or even literate females for illegal abortions.

(vii) Matriachal system: As the case of Kerala where females outnumber males, same thing we can observe in En states of India.

(viii) Economic Development :– In economically developed countries both the sexes are equally cared for, their mortality rate

is same, thus they have balanced sex ratio.

(ix) Neglect of females at all stages of life in backward societies leads to low sex ratio, as in certain regions of India

(x) Migration is sex selective, males are more migratory than females, this also effects tertiary sex ratio. E.g Pb, Haryana, U.P exhibit low sex ratio because of male out-migration reason may be economic or any other.

(xi) War eliminates more males than females

Measurement of Sex Ratio

India: Sex ratio is calculated in terms of **number of females per 1000 males**

$$\frac{P_f}{P_m} \times 1000$$

P_f – Total females
P_m – Total Males

At present (2011) it is 940 females per 1000 males. In certain states, it is below countries average sex ratio (i.e 940) in other it is above countries average. Statewise there are variations which can be attributed to various factors discussed earlier.

Russia –

$$\frac{P_m}{P_t} \times 100$$

P_m – Male pop.
P_t – Total Pop.

or it is expressed in percentage of male or female population.

$$\frac{P_f}{P_t} \times 100 \quad \text{(Percentage of females)}$$

U.S.A — Sex ratio is expressed in terms of no. of males per 100 females and is calculated as:

$$\frac{P_m}{P_f} \times 100$$

Most of the countries follow the method as suggested by UNO i.e No. of males per 100 females. The sex ratio for the entire world population is 101 males to 100 females (2018)

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