[Frequently Asked Questions]

Economic Inequality

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Frequently Asked Questions

Q1. What is meant by economic inequality and how can we define inequality?

A1. The concept of economic inequality pertains to the unequal distribution of economic goods among different percentile groups of population.

Debraj Ray (1998), describes that at the intrinsic level, "economic inequality is the fundamental disparity that permits one individual certain material choices while denying another individual those very same choices".

According to *A. K. Sen*, Inequality is said to exist when, "there is more deprivation in community A than in community B in terms of their respective standards of minimum needs".

Q2. Which are the criteria for measurement of inequality?

A2. The four principles/criteria for measurement of inequality are:

- **Anonymity principle:** It does not matter who is earning the income.
- **Population principle:** Population size does not matter, only the proportions of the population that earn different levels of income.
- **Relative income principle:** Only relative income should matter, not the absolute ones.
- **Dalton principle:** If one income distribution can be achieved from another by constructing a sequence of regressive transfers, then the former distribution must be deemed more unequal than the latter.

Q3. What is meant by Functional Distribution of Income?

A3. Functional distribution is the share of national income received by each factor of production. That is, the share of wages, interest, rent and profit in the distribution of national income is called the functional distribution of income.

Q4. What is meant by Personal Distribution of Income?

A4. The personal distribution pertains to the ways in which households receive their total incomes.

For instance, one household may be earning wages from employment but may also be the owner of a piece of land from which it earns a contractual income by renting it on contract farming.

Q5. What is the formula for range as a measure of inequality?

A5. It is the difference between the incomes of the rich and the poor divided by mean of the income distribution. (Note that when we divide it by the mean, it represents the average range of difference between the rich and the poor and at the same time becomes independent of the units in which income is measured.)

Range (R) $= \frac{1}{\mu} (ym - y1)$

Where,

y_m = highest income class

y_1 = lowest income class

μ = mean of income distribution which is given as,

$\mu = \frac{1}{n} \sum_{j=1}^{m} njyj$

where,

1 to m are the income classes in the entire distribution

n_j = total number of individuals in income class j

y_j = the income of the income class j.

Q6. What are the Kuznets' Ratios?

A6. Simon Kuznets gave these ratios to explain the proportion of total income share received by the richest 10% and the poorest 20% or 40%.

In a way these ratios serve as a means to express the Lorenz curve.

Q7. How is Mean Absolute Deviation explained as a measure of inequality?

A7. According to this measure, the average distance of actual incomes from the mean income is considered to be inequality.

$$M_d = \frac{1}{\mu n} \sum_{j=1}^{m} nj \, |yj - \mu|$$

We take sum of all the individual income deviations from the mean income and divide it by total income.

Modulated values are taken to avoid the negative differences.

(Total income can also be taken as μn , that is, average income multiplied by number of persons)

Q8. How does the coefficient of variation measure inequality?

A8. If larger weight is assigned to the deviations from the mean then any regressive transfer on any one side of the mean will also have a significant impact on the deviation values.

Hence, if we square the deviations, this weight automatically increases and any regressive transfer even on any one side of the mean will be reflected.

The measure of Standard Deviation does this.

$S_d \sqrt{\sum_{i=1}^{m} \frac{nj}{n}(y1-\mu)^2}$

The coefficient of variation is then given as

CV= $\frac{1}{\mu}\sqrt{\sum_{i=1}^{m} \frac{nj}{n}(y1-\mu)^2}$

Q9. What is the Gini Coeffiecient?

A9. The Gini coefficient is a widely used measure of in equality. It takes the difference between all pairs of incomes and simply totals the absolute differences.

It thus expresses inequality as a sum of income differences between all conceivable pairs of incomes.

(All such differences are divided by n^2 because, when all such pairs are added, there are n^2 such pairs.)

Gini Coefficient (G) = $\frac{1}{2n^2\mu}\sum_{j=1}^{m}\sum_{k=1}^{m} njnk\,|yj-yk|$

The differences are modulated to avoid the negative differences.

Q10. What is the Gini ratio?

A10. The Gini ratio measures the area of inequality under the Lorenz curve. It is expressed as,

The area between the line of perfect equality and the Lorenz curve ÷ The total area under the line of equality.

- If Gini ratio is close to 1 it shows high inequality.
- If Gini ratio is exactly 1 it shows perfect inequality.
- If Gini ratio is close to 0 it shows very low inequality.

If Gini ratio exactly 0 it shows there is 0 or no inequality.