Frequently Asked Questions

1. What do you mean by central tendency?

Answer: A measure of central tendency is a single value that tries to describe a set of data by identifying the central position within that set of data.

2. Define central Tendency?

Answer: By Professor Bowely, "It is statistical constant which enable us to comprehend in a single effort the significance of the whole".

OR

By Simpson and Kafka, "A measure of central tendency is a typical value around which other figures congregate".

3. What are the various measures of central tendency?

Answer: Various measures of central tendency are:

- Mean
 - o Arithmetic Mean
 - o Geometric Mean
 - Harmonic Mean
- Median
- Mode
- 4. Write a note on Arithmetic Mean?

Answer: It is the most important, and commonly used, measure of central tendency. The arithmetic mean or mean of a set of numbers is the sum of the numbers, divided by the total number of numbers. Formula is $-\frac{\sum x}{x}$.

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- 5. What is Mode?

Answer: The most frequently occurring variable of the series is known as mode. The variable which is repeated maximum number of times in the series will be the mode of the series.

6. Explain Median.

Answer: The median refers to the middle value of a set of data arranged in either ascending or descending order. It is a value which divides the series into two equal parts. 50% of observations are above the median and 50% are below it. To find the median, the data points must first be sorted into either ascending or descending numerical order.

The *position* of the median value can then be calculated using the following formula: N+1/2.

7. What are the advantages of median?

Answer: Advantages are:

- It is easy to understand and calculate
- Median is not influenced by extreme values
- It is rigidly defined
- · Median can be used with non-numerical data
- 8. Give two disadvantages of mode.

Answer: Disadvantages are:

- Mode cannot be determined always
- Mode Is not capable of algebraic treatment
- 9. In which condition mean, median and mode have the same values?

Answer: When there is only one mode and distribution is fairly symmetrical the three measures (as well as others to be discussed) will have similar values.

10. What is meant by harmonic mean?

Answer: Harmonic mean is the reciprocal of the arithmetic average of the reciprocal of the values of its various items.

11. What are the advantages of arithmetic mean?

Answer: Advantages are:

- · Easy to understand and calculate
- Takes all data values into account
- Relatively stable
- Useful for algebraic treatment

12. What are the properties of central tendency?

Answer: Properties of central tendency are:

- It should be rigidly defined
- It should be easy to understand and calculate
- It should be based on all observations of the data
- It should be suitable to further mathematical treatment

- · It should be least affected by fluctuation of sampling
- It should be least affected by extreme values
- 13. What are the disadvantages of arithmetic mean?

Answer: Disadvantages are:

- Influenced by extreme values
- Not useful in qualitative data analysis
- Effective only if the distribution of the variable is normal
- · Value of mean cannot be calculated without assumption
- 14. What is Geometric mean?

Answer: Geometric mean is defined as 'n'th root of the product of 'n' observations.

15. What are percentiles? What would be the percentile for individual and discrete series?

Answer: Percentile divides the series into 100 parts. For any series, there are 99 percentile. Percentile is denoted by P. It ranges from P1 to P99.

Percentile for Individual and Discrete Series are:

P1 = Size of the (N+1/100)th item.

P50 = Size of the 50(N+1/100)th item

P80 = Size of the 80(N+1/100)th item

P99 = Size of the 99(N+1/100)th item

In case of discrete series cumulative frequency has to be calculated to determine percentile.