Class 11th | ECONOMICS

प्रारंभ BATCH

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

LECTURE - 1

INTRODUCTION

- The word Statistics seems to have been derived from the Latin word 'Status' or the Italian word 'Statista' or the German word 'Statistic' or the Greek word 'Statistique', each of which means a political state.
- The word 'Statistics' conveys different meanings to different people. Some people regard statistics as data, facts or measurements, while others believe it to be the study of figures.

INTRODUCTION

The views commonly held about statistics are numerous, but often incomplete. For example:

1. For a cricket fan: Statistics refers to numerical information or data relating to the runs scored by a cricketer;

2. For an Environmentalist: Statistics refers to information on the quantity of pollution or other harmful gases in the atmosphere;

3. For the weather department: Statistics consists of information about minimum and maximum temperature, timings of sunrise, etc.

INTRODUCTION

The average person perceives statistics as a column of figures, various types of graphs, tables and charts showing the changes in different types of data.

- In the early years, scope of statistics was primarily limited to collection of data for determining the economic and social conditions of the people living in different parts of the country.
- But with the passage of time, the scope of statistics widened. For some time, statistics was regarded as a branch of economics, but now, it has become a full-fledged independent subject.
- In the present times, Statistics is not only a science of the state, but it also includes, all types of quantitative analysis.

MEANING OF STATISTICS

It is not easy to define statistics in a precise manner. Statistics has been defined differently by different authors from time to time, emphasizing precisely the meaning, scope and limitations of the subject. Some authorities have defined Statistics as statistical data (Plural Sense), whereas others as statistical methods (Singular Sense).

IN PLURAL SENSE

It means a collection of numerical facts.

(Numerical information)

IN SINGULAR SENSE

Statistics deal with the collection, presentation, analysis and interpretation of the quantitative information.

(Methods of dealing with information)

MEANING OF STATISTICS

Statistics as Numerical Set of Data (Plural Sense)

In its plural sense, Statistics is defined by different authors: in or meseng dress

- In the words of A. L. Bowley, "Statistics are numerical statements of facts in any department of enquiry placed in relation to each other".
- In the words of Yule and Kendall, "By statistics we mean quantitative data affected to a marked extent by multiplicity of causes."

The most comprehensive and exhaustive definition of statistics has been given by Prof. Horace Secrist. According to him

"In the plural sense, Statistics refers to aggregates of facts, affected to a marked extent by multiplicity of causes, numerically expressed, enumerated or estimated according to reasonable standards of accuracy, collected in a systematic manner for predetermined purpose and placed in relation to each other".

For example, data relating to aggregate percentage of 5 Toppers of XIth class of a school.

17 ⟶ 50

MEANING OF STATISTICS

Statistics as Numerical Set of Data (Plural Sense)

Statistics as used in plural sense, must possess the following characteristics:

- **Aggregates of Facts**

  Statistics are a number of facts. Single and isolated figures are no statistics as such figures cannot be compared and no conclusions can be drawn from them.

  For example, a single age of 30 years is not a statistics, but a series relating to the ages of a group of persons will be called statistics.

Bunny

30 year ✗

67 year ✓

India life Expectancy

MEANING OF STATISTICS

NOTE

A single figure, of course, can be called statistics when it is represented as an average or as a sum of various observations. For example, average marks (say, 75) in a class, will be called statistics. It must be noted that all Statistics are expressed in numbers, but all numbers are not Statistics. It is only the aggregate number of facts that is called Statistics.

MEANING OF STATISTICS

Statistics as Numerical Set of Data (Plural Sense)

- **Affected by multiplicity of causes**

Numerical figures (data) are influenced by a variety of factors. It is not an easy job to study the effects of any one factor separately by ignoring other factors.

For example, Statistics of production of a crop, say rice is affected by the rainfall, fertilizer, seeds, method of cultivation, etc. It is not possible to study separately the effect of each of these forces on the production of rice.

Lagaan ① Rain
② Pest Attack
Cricket ③
④ Flood

MEANING OF STATISTICS

IQ Test Score

Statistics as Numerical Set of Data (Plural Sense)

- **Statistics are numerically expressed**

The statistical approach to a subject is numerical. So, any facts, to be called statistics, must be numerically or quantitatively expressed.

- For example, Isha is taller than Mollie and Ananya, will not be called statistics. However, if the same facts are expressed in numbers (like, Isha: 162 cm; Mollie: 157 cm; Ananya: 145 cm), we will call them statistics.
- Qualitative characteristics like intelligence, beauty, honesty, etc, cannot be included in statistics unless they are quantified by assigning certain score as a quantitative measure of assessment.

Ram 52 yrs old

kanahiya 40 yrs old

MEANING OF STATISTICS

Statistics as Numerical Set of Data (Plural Sense)

- **Statistics should be collected with reasonable standard of accuracy**

In statistics, data is collected with reasonable standard of accuracy.

- A high degree of accuracy, as observed in accountancy or mathematics, is not insisted upon in statistics, because mass of data is involved.
- The process of generalisation can be achieved with a reasonable standard of accuracy only.

MEANING OF STATISTICS

NOTE

Statistics should be enumerated or estimated according to a reasonable standard of accuracy. Enumeration involves actual counting of the heads, whereas estimation is not the actual counting, but an observation. For example, when we say that 60 students were present in the class, we are enumerating the number of students present in the class. But when a news channel says that there are 5,000 people in a rally, then the news channel is simply estimating the number of people.

Andaza

MEANING OF STATISTICS

Statistics as Numerical Set of Data (Plural Sense)

- **Statistics are collected for a pre-determined purpose**

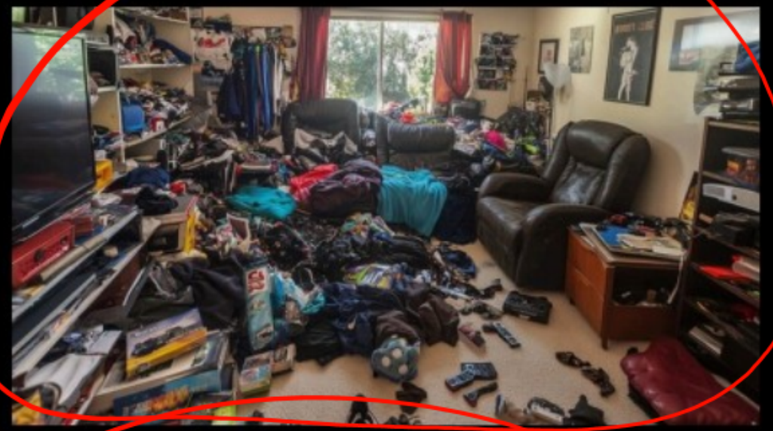
The purpose of collecting statistical data must be decided in advance, otherwise usefulness of the data collected would be negligible. Data collected in an unsystematic manner and without complete awareness of the purpose will be confusing and cannot be made on the basis of valid conclusions.

MEANING OF STATISTICS

Statistics as Numerical Set of Data (Plural Sense)

- **Statistics are collected in a Systematic Manner**

For accuracy or reliability of data, the figures should be collected in a systematic manner. If the figures are collected in a haphazard manner, the reliability of such data will deteriorate. So, before collecting data, suitable plan for their collection should be prepared.



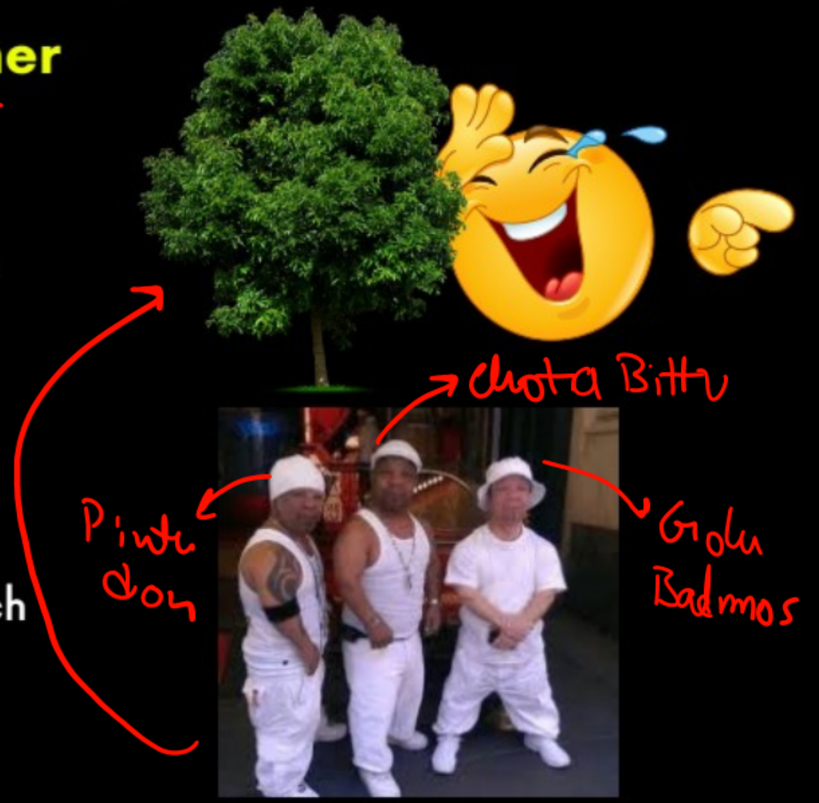
MEANING OF STATISTICS

Statistics as Numerical Set of Data (Plural Sense)

- **Statistics should be placed in relation to each other**

Collection of statistical data is generally done with the motive to compare.

- If the figures collected are not comparable, then they lose a large part of their significance. So, they should be comparable with respect to different periods, areas, commodities, etc.
- For the purpose of comparison, it is necessary that data must be homogeneous (uniform or identical). For example, it would be meaningless to compare the heights of men both with heights of trees because these figures are of a heterogeneous character. Such figures do not come under the category of statistics.



Designed by Trisha 💖

Economics mein asa kiya nahi hai!