

CLASS NOTES

Class:

XI

Topic: GRAPHIC PRESENTATION

Subject: ECONOMICS - STATISTICS FOR ECONOMICS

Apart from diagrams, Graphic presentation is another way of the presentation of data and information. Usually, [graphs](#) are used to present time series and [frequency](#) distributions. The graphic presentation of data and information offers a quick and simple way of understanding the features and drawing comparisons. Further, it is an effective analytical tool and a graph can help us in finding the mode, median, etc.

General Rules for Graphic Presentation of Data and Information

Suitable Title – Ensure that you give a suitable title to the graph which clearly indicates the subject for which you are presenting it.

Unit of Measurement – Clearly state the unit of measurement below the title.

Suitable Scale – Choose a suitable scale so that you can represent the entire data in an accurate manner.

Index – Include a brief index which explains the different colors and shades, [lines](#) and designs that you have used in the graph. Also, include a scale of interpretation for better understanding.

Data Sources – Wherever possible, include the sources of information at the bottom of the graph.

Keep it Simple – You should construct a graph which even a layman (without any exposure in the areas of statistics or mathematics) can understand.

Neat – A graph is a visual aid for the presentation of data and information.

Therefore, you must keep it neat and attractive. Choose the right size, right lettering, and appropriate lines, colors, dashes, etc.

Merits of a Graph

- 1) The graph presents data in a manner which is easier to understand.
- 2) It allows us to present statistical data in an attractive manner as compared to tables. Users can understand the main features, trends, and fluctuations of the data at a glance.
- 3) A graph saves time.
- 4) It allows the viewer to compare data relating to two different time-periods or regions.
- 5) The viewer does not require prior knowledge of mathematics or statistics to understand a graph.

6) We can use a graph to locate the mode, median, and mean values of the data.

7) It is useful in forecasting, interpolation, and extrapolation of data.

Types of Graphs

Graphs are of two types:

1. Time Series graphs
2. Frequency Distribution graphs

Time Series Graphs

In a time series graph, time is the most important factor and the variable is related to time. It helps in the understanding and analysis of the changes in the variable at a different point of time. Many statisticians and businessmen use these graphs because they are easy to understand and also because they offer complex information in a simple manner.

Major steps in the construction of a time series graph:

- Represent time on the X-axis and the value of the variable on the Y-axis.
- Start the Y-value with zero and devise a suitable scale which helps you present the whole data in the given space.
- Plot the values of the variable and join different point with a straight line.
- You can plot multiple variables through different lines.

Frequency Distribution graphs

Data is expressed in terms of an item or class intervals. The class limits or mid-values are taken along the X-axis and the frequencies along the Y-axis.

The various frequency distribution graphs are:

1. Line Frequency Graph

2.Histogram

3.frequency polygon

4. frequency curve

5. ogive

Line Graph

You can use a line graph to summarize how two pieces of information are related and how they vary with each other.

Histogram

A histogram is a graph of a grouped frequency distribution. In a histogram, we plot the class intervals on the X-axis and their respective frequencies on the Y-axis. Further, we create a rectangle on each class interval with its height proportional to the frequency density of the class.

Frequency Polygon or Histogram

A frequency polygon or a Histogram is another way of representing a frequency distribution on a graph. You draw a frequency polygon by joining the midpoints of the upper widths of the adjacent rectangles of the histogram with straight lines.

Frequency Curve

When you join the verticals of a polygon using a smooth curve, then the resulting figure is a Frequency Curve. As the number of observations increase, we need to accommodate more classes. Therefore, the width of each class reduces. In such a scenario, the variable tends to become continuous and the frequency polygon starts taking the shape of a frequency curve.

Cumulative Frequency Curve or Ogive

A cumulative frequency curve or Ogive is the graphical representation of a cumulative frequency distribution. Since a cumulative frequency is either of a 'less than' or a 'more than' type, Ogives are of two types too – 'less than ogive' and 'more than ogive'.

Question

1. If diagrams are easy and simple to understand, how are they different from tables?

Ans. Following points highlight the difference between tabulation and diagrammatic presentation of data:

- (i.) Tables leave no long lasting impact on mind of the reader whereas diagrams do have this feature.
- (ii) Diagrams are more attractive than tables.
- (iii) Diagrams have limited use than tables as tables have the capacity to give more detailed information than diagram.
- (vi) Diagrams represent only approximation whereas tables do give precise information about the data.