

## DEFINITION:

**Bar graphs** are the pictorial representation of data (generally grouped), in the form of vertical or horizontal rectangular bars, where the length of bars are proportional to the measure of data. They are also known as bar charts. Bar graphs are one of the means of **data handling** in statistics.

The collection, presentation, analysis, organization, and interpretation of observations of data are known as statistics. The statistical data can be represented by various methods such as tables, bar graphs, pie charts, histograms, frequency polygons, etc. In this article, let us discuss what is a bar chart, different types of bar graphs, uses, and solved examples.

## What is Bar Graph?

The pictorial representation of grouped data, in the form of vertical or horizontal rectangular bars, where the lengths of the bars are equivalent to the measure of data, are known as bar graphs or bar charts.

The bars drawn are of uniform width, and the variable quantity is represented on one of the axes. Also, the measure of the variable is depicted on the other axes. The heights or the lengths of the bars denote the value of the variable, and these graphs are also used to compare certain quantities. The frequency distribution tables can be easily represented using bar charts which simplify the calculations and understanding of data.

The three major attributes of bar graphs are:

- The bar graph helps to compare the different sets of data among different groups easily.
- It shows the relationship using two axes, in which the categories are on one axis and the discrete values are on the other axis.
- The graph shows the major changes in data over time.

## What Constitutes a Bar Graph?

Following are the many parts of a bar graph:

- Vertical axis
- Horizontal axis
- The bar graph's title informs the reader of its purpose.
- The title of the horizontal axis indicates the information that is shown there.
- The title of the vertical axis indicates the data it is used to display.
- The categories on the particular axis indicate what each bar represents.
- The bar graph's scale demonstrates how numbers are used in the data. It is a system of markings spaced at specific intervals that aid in object measurement. For instance, the scale of a graph may be stated as 1 unit = 10 fruits

## Types of Bar Graphs

The bar graphs can be vertical or horizontal. The primary feature of any bar graph is its length or height. If the length of the bar graph is more, then the values are greater than any given data.

Bar graphs normally show categorical and numeric variables arranged in class intervals. They consist of an axis and a series of labelled horizontal or vertical bars. The bars represent frequencies of distinctive values of a variable or commonly the distinct values themselves. The number of values on the x-axis of a bar graph or the y-axis of a column graph is called the scale.

The types of bar charts are as follows:

1. Vertical bar chart
2. Horizontal bar chart

Even though the graph can be plotted using horizontally or vertically, the most usual type of bar graph used is the vertical bar graph. The orientation of the x-axis and y-axis are changed depending on the type of vertical and horizontal bar chart. Apart from the vertical and horizontal bar graph, the two different types of bar charts are:

- Grouped Bar Graph
- Stacked Bar Graph

## Properties of Bar Graph

Some of the important properties of a bar graph are as follows:

- All the bars should have a common base.
- Each column in the bar graph should have equal width.
- The height of the bar should correspond to the data value.
- The distance between each bar should be the same.

## Applications of Bar Graphs

Bar graphs are used to match things between different groups or to trace changes over time. Yet, when trying to estimate change over time, bar graphs are most suitable when the changes are bigger.

Bar charts possess a discrete domain of divisions and are normally scaled so that all the data can fit on the graph. When there is no regular order of the divisions being matched, bars on the chart may be organized in any order. Bar charts organized from the highest to the lowest number are called **Pareto charts**

## Advantages and Disadvantages of Bar Chart

### **Advantages:**

- Bar graph summarises the large set of data in simple visual form.
- It displays each category of data in the frequency distribution.
- It clarifies the trend of data better than the table.
- It helps in estimating the key values at a glance.

### **Disadvantages:**

- Sometimes, the bar graph fails to reveal the patterns, cause, effects, etc.
- It can be easily manipulated to yield fake information.