

Univariate and Bivariate Analysis of Data

1. Univariate Data

This type of data consists of only one variable. The analysis of univariate data is thus the simplest form of analysis since the information deals with only one quantity that changes. It does not deal with causes or relationships and the main purpose of the analysis is to describe the data and find patterns that exist within it.

The example of a univariate data can be height.

Height (in cm)	164	165	169.5	170	173	180	185
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Suppose that the heights of seven students of a class are recorded, there is only one variable that is height and it is not dealing with any cause or relationship. The description of patterns found in this type of data can be made by drawing conclusions using central tendency measures (mean, median and mode), dispersion or spread of data (range, minimum, maximum, quartiles, variance and standard deviation) and by using frequency distribution tables, histograms, pie charts, frequency polygon and bar charts.

2. Bivariate Data

This type of data involves **two different variables**. The analysis of this type of data deals with causes and relationships and the analysis is done to find out the relationship among the two variables.

Example of bivariate data can be temperature and ice cream sales in summer season.

Temperature (in Celsius)	Ice Cream Sales
20	2000
25	2500
35	4500
43	7800

Suppose the temperature and ice cream sales are the two variables of a bivariate data. Here, the relationship is visible from the table that temperature and sales are directly proportional to each other and thus related because as the temperature increases, the sales also increase.

Thus bivariate data analysis involves comparisons, relationships, causes and explanations. These variables are often plotted on X and Y axis on the graph for better understanding of data and one of these variables is independent while the other is dependent.