ADVANCED STATISTICS

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COEFFICIENT OF CORRELATION

Correlation may be defined as a tendency towards interrelation variation and the **Coefficient of correction** is a measure of such a tendency, i.e., the degree to which the two variables are interrelated is measured by a coefficient which is called the Coefficient of correlation. It gives the degree of correlation.

Defination : The relationship between two variables such that a change in one variable results in a positive or negative change in the other variable and also a greater change. In one variable results in corresponding greater or smaller change in the other variable is known as **correlation**.

The coefficient of correlation between the two variables x, y is generally denoted by r or r_{xy} or p(x, y)

Merits and Limitations of Coefficient of Correlation

- Coefficient of correlation r doesnot give any idea about the existence of cause and efforts relationship between the variables. It is possible that a high value of r is obtained althrough none of them seem to be directly affecting the other. Hence, any interpretation of r should be done very carefully.
- It is only a measure of the degree of linear relationship between two variables. If the relationship is not linear, the calculation of r does not have any meaning.
- Its value is Unduly affected by extreme items.
- If the data are not uniformly spread in the relevant quadrants the value of r may give a misleading interpretation of the degree of relationship between the two variables. For example, if there are some values having concentration around a point in first quadrant and there is similar type of concentration in third concentration, the value of r will be very high although there may be no linear relation between the variables.

TYPES OF CORRELATION

- Positive and Negative
- Simple and Multiple
- Partial and Total
- Linear and Non- linear