

16/9/25

Correlation Comparison

Definition:-

* Correlation analysis deals with the association between two or more variables.

* If two or more quantities to varied in sympathy to the moments in, tended to be accompanied by corresponding moments in the others than they are said to be correlated.

* Correlation is an analysis of the co-variation between two or more variables.

Types of Correlation

* Correlation is described or classified several different phases ways.

1. Positive or Negative.
2. Simple, Partial & Multiple.
3. Linear & non-Linear.

Positive & Negative Correlation.

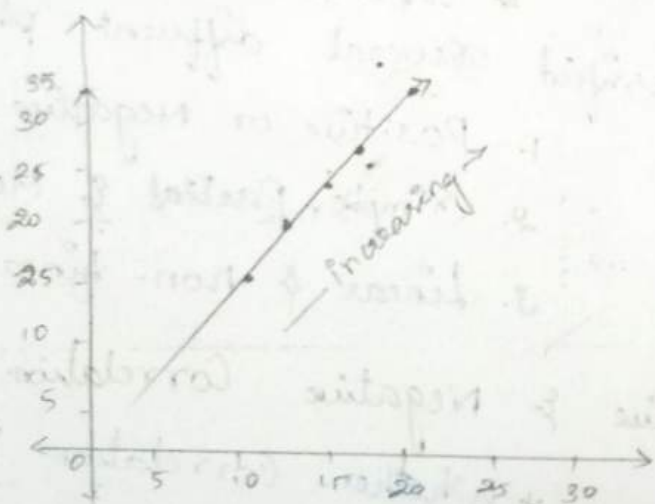
* Whether correlation is positive or negative would depend upon the direction of change of the variables.

* If both variables are varying in the same direction that is if as one variable is increasing than the other.

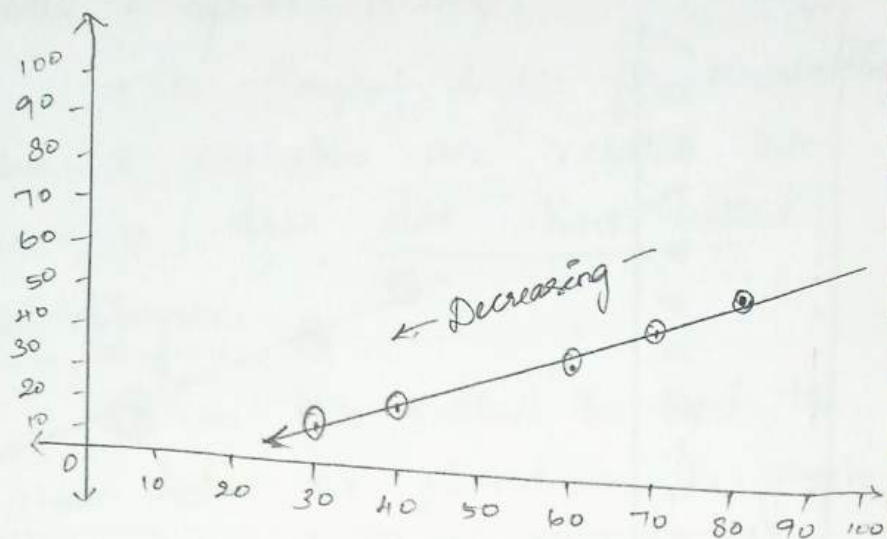
- On an average is also increasing the
 or if as one variable is decreasing the
 other, on an average is also decreasing the
 correlation is said to be positive. On the
 other hand the variables are varying in
 opposite direction that is as one variable
 is increasing the other is decreasing or
 vice-versa, correlation is said to be
 negative.

eg:- Perfect +ve
 1. Positive Correlation, ($r = 1$)

X	10	12	15	18	20
Y	15	20	22	25	31



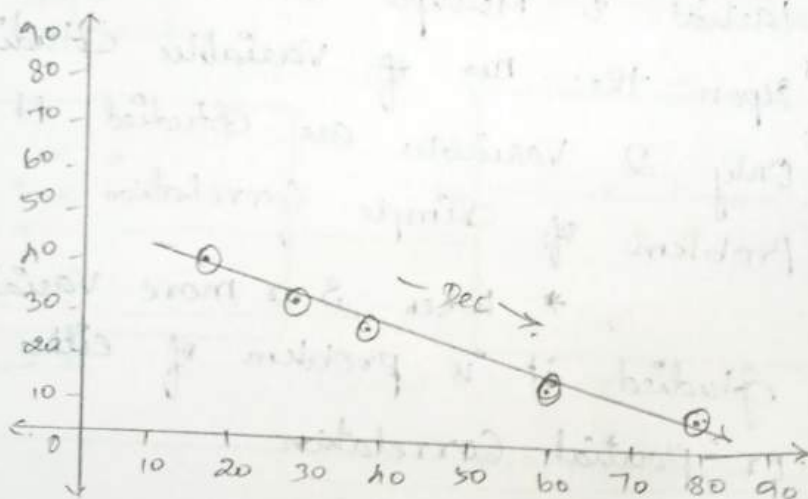
X	80	70	60	40	30
Y	55	44	36	20	10



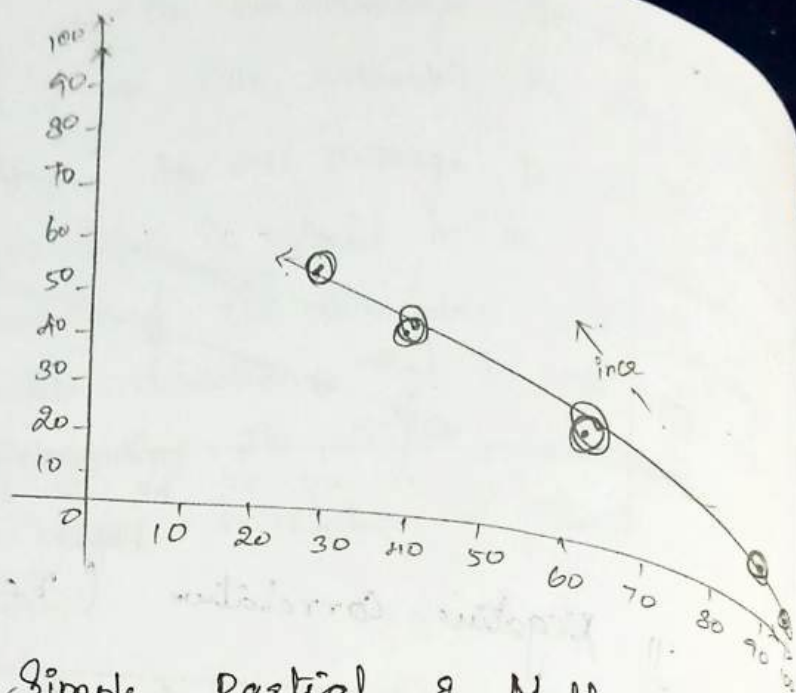
Perfect -ve.

II. Negative Correlation ($r = -1$)

X	20	30	40	60	80	→ increasing
Y	40	30	22	15	10	→ Decreasing



X	100	90	60	40	30
Y	10	20	30	40	50



② Simple, Partial & Multiple Correlation

* The distinction between Simple Partial & Multiple correlation is based upon the no. of variables studied. When only 2 variables are studied it is a problem of Simple Correlation.

* When 3 or more variables are studied it is a problem of either multiple or partial correlation.

③ Methods of Correlation

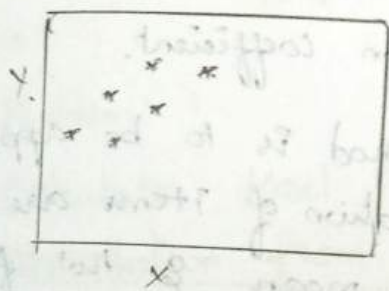
- ① Scatter diagram
- ② Graphic Method.
- ③ Karl Pearson's Correlation of Coefficient
- ④ Concurrent Deviation method
- ⑤ Method of Least Squares

① Scatter Diagram. Method.

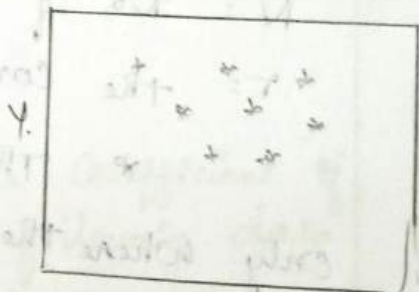
* The simplest device for ascertaining whether 2 variables are related is to prepare a dot chart called Scatter diagram

* When this method is used the given data are plotted on the graph paper or simply scatter plot in the form of dots. that is for each pair of X, Y values we put a dot & thus obtained as many point as no. of observations

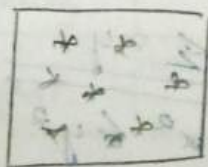
High degree of +ve correlation



High degree of negative correlation



No correlation



($r = 0$)