**Correlation**

**Correlation** describes the strength and direction of a relationship between two variables

It describes how change in one variable is associated with change in another variable.

**Range of values**

Correlation coefficient (r) lies between -1 and 1

* -1 is a perfect negative linear relationship (if one increases another decreases)
* +1 is perfect positive linear relationship(if one variable increases the other increases proportionally)
* 0 no linear relationship

**Types of correlation**

1. Positive

One variable increases other variable also increases. Range =0 <r<=1

1. Negative

One variable increase the other variable also decreases. Range -1<=r<0

1. Zero

No linear Relationship exists between the variable Range r=0

1. Linear

The relationship between variables can be represented by a straight line

1. Non linear

The relationship between variables forms a curve

**Pearson’s correlation coefficient** – measures the strength and direction of linear relationship between two continuous variable

**Spearman’s Rank correlation coefficient**

Measures the strength and direction of a Monotonic relationship (increasing/ decreasing ) between two variables.