

Biostatistics

Lecture 8

Prepared by Dr. Ibrahim AL-Jaafari

Correlation Analysis

- Correlation analysis is used to study the relationship between two continuous variables, the values of the correlation coefficient may lie between (+1 & -1).

+1 means a perfect positive relationship,

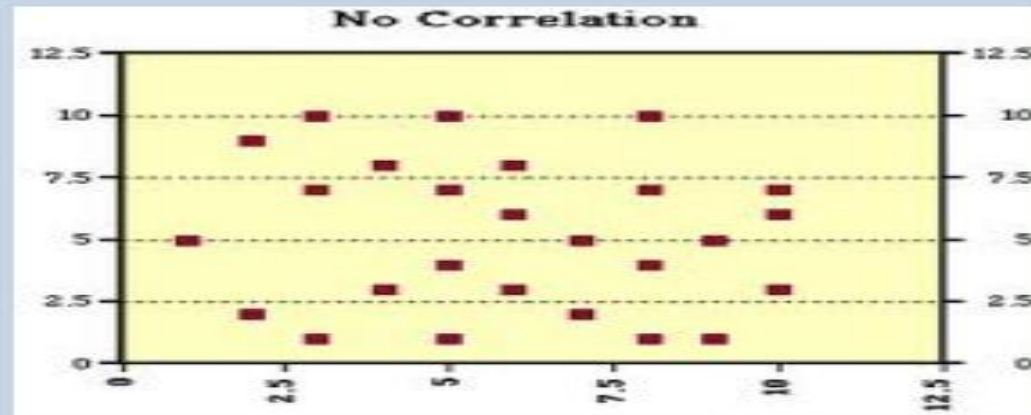
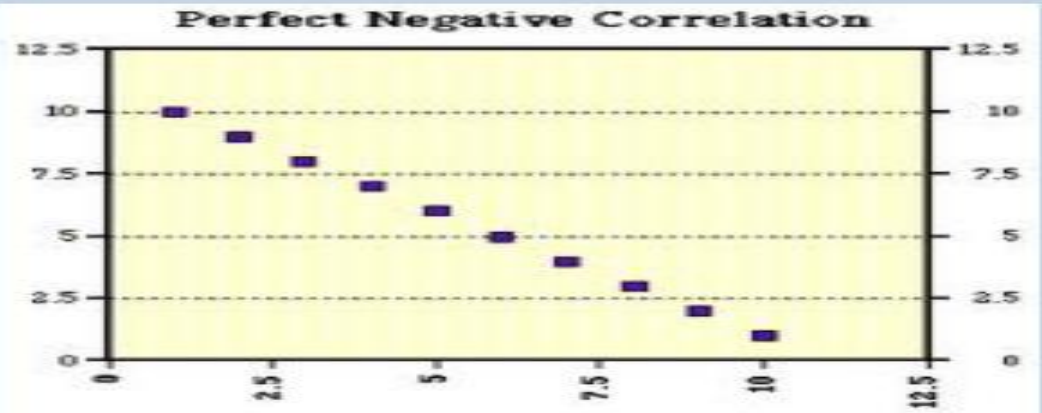
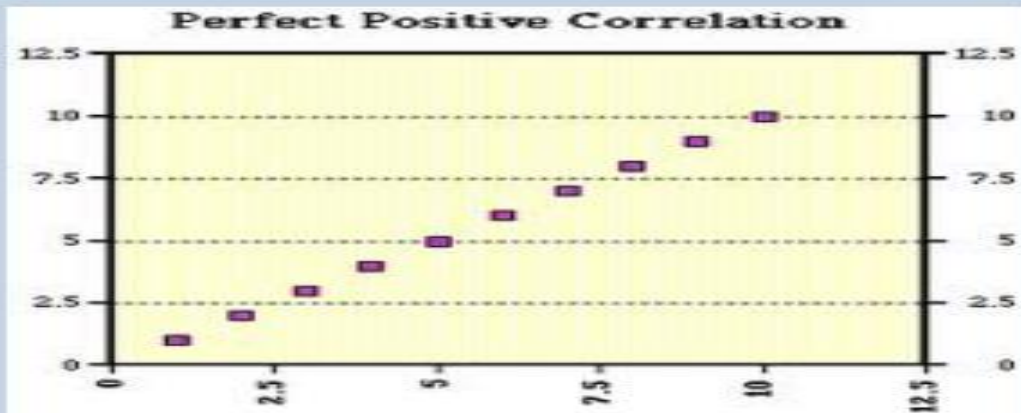
0.00 means no relationship

-1 means a perfect negative relationship.

Correlation Analysis

- A positive sign indicates a high value on one variable tend to score high on the other.
- A negative sign indicates a high value on one variable tend to score low on the other.

Correlation Analysis



Correlation Analysis

- **Correlation Measures**

1-) **Pearson** : It is a parametric test, it can be used to describe the relationship between two continuous variables.

2-) **Spearman rho** : It is a nonparametric test, it can be used to describe the relationship between two ordinal variables.

3-) **Kendall's Tau** : It is a nonparametric test and similar to spearman rho.

Correlation Analysis

Correlation is denoted by (r)

Coefficient of determination (R^2) : The correlation coefficient squared is a measure of the variation explained in Y by X variable.

Correlation Analysis

- **Correlation Coefficient Categories**

0.00 to 0.25 just little correlation

0.26 to 0.49 Low correlation

0.50 to 0.69 Moderate correlation

0.70 to 0.89 High correlation

0.90 to 1.00 very high correlation

Reference

- Prem S. Mann 1998, *Introductory Statistics*, 7th edn, New York, USA.

Good Luck for All Students

- Please do not hesitate to contact me if you have any questions.
- Dr. Ibrahim AL-Jaafari
- www.Alghamdi-Biostatistics.com
- **Email.** Bio-stat@Hotmail.com
- Mobile Number : 0553777925

سبحان الله وبحمده سبحان الله العظيم

ذكر الله أعظم ما في الوجود ،، لعل الله يرحمنا بعلم تعلمناه في الحياة
الدنيا

أستغفر الله