

Correlation-regression using SPSS

Scatter plot: Graph/Legacy dialogs/(Scatter/dot)/SimpleScatter/Define/ put the appropriate variables into the windows X and Y.

Fit a line into the graphs: double click into the figure, then Elements/Fit line/OK, close the new windows).

Calculation the coefficient of correlation and preparing a scatterplot with a line:

Analyse/Regression/Curve estimation, put the appropriate variables into the windows Dependent and Independent, Display ANOVA table.

Problems

Open SPSS and open a data file feed out by the students! (Data:E/Data/Biostat=quest03en.sav) or QUEST2010.sav.

1. Examine the relationship of the body height (x) and body mass(y) . Prepare a scatterplot.
 - a. What is the direction of the relationship?
 - b. Is the relationship linear ?
 - c. Is the fit good?

If the fit is linear, find the value of the coefficient of correlation and the equation of the regression line.

- d. $r=$
 - e. $r^2=$
 - f. Equation of the line:
2. Examine the relationship of the body height (x) and ideal body height (y) . Prepare a scatterplot..
 - a. Is the relationship linear ?
 - b. Is the fit good?

If the fit is linear, find the value of the coefficient of correlation and the equation of the regression line.

- c. $r=$
 - d. $r^2=$
 - e. Equation of the line:
3. Examine the relationship of age (x) and body mass (y) . Prepare a scatterplot.
 - a. Is the relationship linear ?
 - b. Is the fit good?

If the fit is linear, find the value of the coefficient of correlation and the equation of the regression line.

- c. $r=$
 - d. $r^2=$
 - e. Equation of the line:
4. Find other continuous variables in the data set and examine their relationship.
 - a. Is the relationship linear ?
 - b. Is the fit good?

If the fit is linear, find the value of the coefficient of correlation and the equation of the regression line.

- c. $r=$
- d. $r^2=$
- e. Equation of the line:

Nonlinear relationships

1. Type in the following data. Examine the relationship between x and y , then between x and $\log y$!

Calculate $\ln y$, and examine the relationship between x and $\ln y$!

x : idő (óra)	y	$\log_{10} y$	$\ln y$
1	184.33	2.27	
4	87.63	1.94	
8	33.05	1.52	
12	9.30	.97	
24	2.80	.45	

Give the equation of the relationship!

2. Open the file clinchem2049.sav and run the appropriate program for regression!

Logarithmic scale (10 based)

Analyse/regression/Curve estimation/ PCSK9 ->Independent, lgLDLapoBPR -> Dependent, Models: linear,

Display ANOVA table

Equation:

r :

r^2 :

Logarithmic scale (e based)

Analyse/regression/Curve estimation/ PCSK9 ->Independent, lnLDLapoBPR -> Dependent, Models: linear,

Display ANOVA table

Equation:

r :

r^2 :

Linear scale:

Analyse/regression/Curve estimation/ PCSK9 ->Independent, LDLapoBPR -> Dependent, Models:

logarithmic, Display ANOVA table

Equation:

r :

r^2 :