

## Correlation Between Two Quantitative Variables

The data from a study investigating body composition give the body fat percentage (% fat), age and sex for 30 normal adults aged between 23 and 66 years. The data is in the following file: [fatageproj.sav](#) Click on the file to download it to your computer.

### Data Definition:

1. For **age** variable, it is a quantitative variable contain age, in years, recorded from each individual.
2. For **fatpcent** variable, it is a quantitative variable contain fat percentage value recorded from each individual.

### Things to include in your analysis report: Your report should consist of three sections:

1. Make a scatter plot to examine the correlation between the two quantitative variables **age** and **fatpcent**, and answer the followings: (See [Exploratory Data Analysis](#) instruction pages 5 and 6 for instructions on how to produce scatter plot.)
  - 1) describe the correlation between the two variables, (strength and direction)
  
  - 2) identify possible outlier(s) (report the case number), if any, and comment on whether this (or these) outlier(s) should be removed and why.
  
2. Remove outlier(s) that you found in 1. and report the Pearson's correlation coefficient and the p-value from testing whether the correlation is significantly different from zero and 5% level of significant.
  - 1) Pearson's correlation coefficient in SPSS output: \_\_\_\_\_
  - 2)  $p$ -value from testing correlation in SPSS output: \_\_\_\_\_
  - 3) State the null and alternative hypotheses for testing zero correlation and use the  $p$ -value to conclude the test of zero correlation.

$H_0$ :

$H_a$ :

Conclusion:

To produce the Pearson's correlation coefficient and test for zero correlation, in SPSS main menu, click the following menu selections: **Analyze**  $\Rightarrow$  **Correlate**  $\Rightarrow$  **Bivariate ...**, and then select the variables to put in the variable box for calculating the correlation coefficients and tests.