

Example **workew.sav**

X = hourly wage rate (€)

Y = Workew Status

1 = Union worker

2 = Non-union worker

$$S_{SPSS} = 0.465 \quad S = \frac{13}{\sqrt{15 \cdot 14}} \cdot 0.465 = 0.417$$

$$K_{SPSS} = 0.165 \quad K = \frac{13 \cdot 12}{224} \cdot 0.165 + 3 \cdot \frac{14}{16} = 2.740$$

p-value Shapiro-Wilk = 0.651

rate of union workers is Normally distributed.

$$S_{SPSS} = -0.230$$

$$K_{SPSS} = 0.074$$

p-value Lilliefors test ≈ 0.2

p-value Shapiro-Wilk = 0.860

rate of non-union workers is Normally distributed.

p-value Levene-Test = 0.526

homogeneity of the variances

p-value t-test = 0.005

significant difference in the mean wage rate for union and non-union workers

One-sided t-Test

average rate union workers = 17,5367

average rate non-union w. = 15,36

H_0 : The mean wage rate of union workers is not larger than the mean wage rate of non-union workers

H_1 : The mean wage rate of union workers is larger than the mean wage rate of non-union workers

Rejection of $H_0 \Leftrightarrow p\text{-value (one-sided)} \leq 0,05$

$$p\text{-value one-sided} = \frac{0,005}{2} = 0,0025$$

this means that the mean wage rate of union workers is significantly larger than the mean wage rate of non-union workers.