

Example - A two-side hypothesis test

Problem

Eight analysts provided forecasts of earnings per share of a particular corporation. The estimated mean and standard deviations follow:

$$\bar{x} = 12.6 \quad s = 2.12 \quad n = 8$$

Test at the 5% level $H_0 : \mu = 12$.

Solution

The null and alternative hypotheses are:

$$H_0 : \mu = 12$$

$$H_1 : \mu \neq 12$$

The value of the t-statistic is:

$$t = \frac{12.6 - 12}{2.12/\sqrt{8}} = 0.8$$

The value of t from the Student-t table is :

$$t_{n-1, \frac{\alpha}{2}} = t_{7, 0.025} = 2.365$$

Recall that the rejection criterion for a two tailed test is:

$$|t| \geq t_{\nu, \frac{\alpha}{2}}$$

Clearly, in this case,

$$|t| \not\geq t_{\nu, \frac{\alpha}{2}}$$

Conclusion: H_0 is not rejected. The implication is that there not enough statistical evidence against the population mean being \$12.