

One-Population Mean Average Hypothesis Test "T-test"

Ex: Test the claim that the population mean average amount of money spent when Coc Stat student eat out is \$11.

Hyp. Test Steps

- 1) Claim, H_0 , H_A , Type of test, choose Sig. level
- 2) Collect Sample data, Check Assumptions
- 3) Use computer software to calculate test Statistic, Critical values, P-value
- 4) Analyze and explain test statistic, P-value, Significance? Sampling Variability?
- 5) Reject H_0 or Fail to reject H_0 ?
- 6) Conclusion

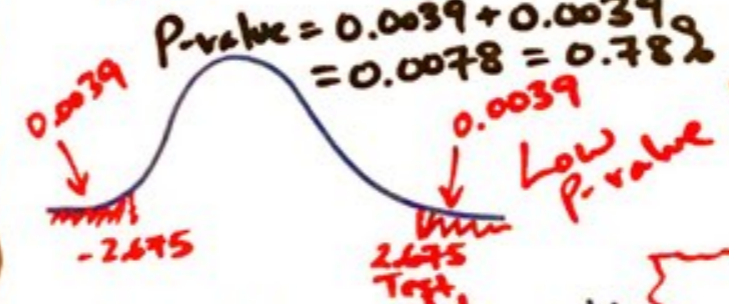
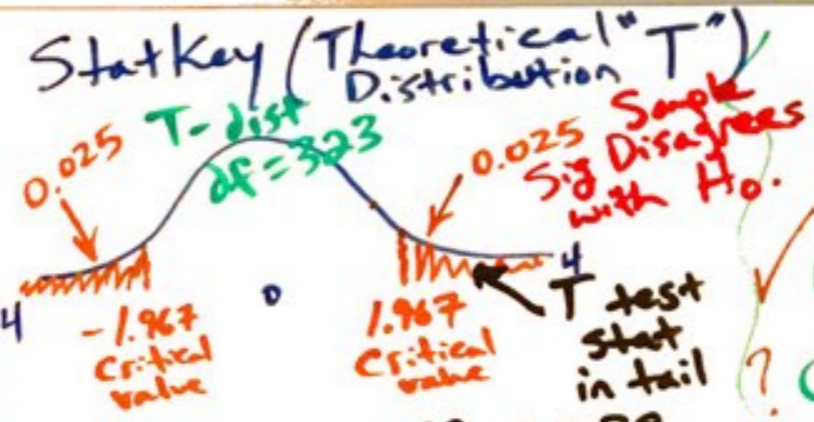
Sample Data $n=324$
 $\bar{x} = 11.898$ $df=323$
 $S = 6.043$ $(n-1)$



$\alpha = 0.05$ 5% signif. level
 $H_0: \mu = 11$ CLAIM
 $H_A: \mu \neq 11$

Two-tailed test
 T-test Stat ≈ 2.675

The sample mean \$11.898 is 2.675 standard errors higher than the population mean \$11.



Unlikely to be Sampling Variability
 P-value < sig level
 Reject H_0

Conclusion (Low P-value) Claim H_0

"There is significant evidence to reject the claim that the pop. mean amount spent when Coc Stat students eat out is \$11."

One-Population Mean Ave Assumptions

- 1) Random Sample or represents pop.
 - 2) Individuals within Sample independent
 - 3) Sample size $n \geq 30$ or sample normal.
- Skewed Right $n=324$

T-test Statistic

$$T = \frac{(\bar{x} - \mu)}{\left(\frac{S}{\sqrt{n}}\right)} = \frac{(11.898 - 11)}{\frac{6.043}{\sqrt{324}}}$$

of Standard errors that the Sample Mean (\bar{x}) is above (+) or below (-) the Population Mean (μ)