Statistics

Lecture 26

Feb 19-8:47 AM

CNN claims that 40% of voters are in support of accepting gift from other countries to the politicians.

$P = .4$ claim

H_0

In a survey of 545 voters, 38% of them had same views.

$n = 545$

$\hat{P} = .38$

$\Rightarrow x = n\hat{P} = 545(.38)$

$= 207.1$

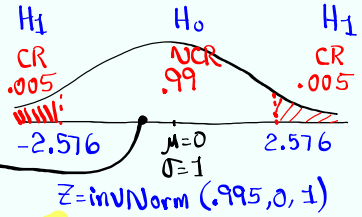
≈ 208

Use $\alpha = .01$ to test the claim.

$H_0: P = .4$ claim

$H_1: P \neq .4$ TTT

CV Z TTT $\alpha = .01$



CTS $Z = -.874$

P-Value $P = .382$ ✓

1-PropZTest

$Z = \text{invNorm}(.995, 0, 1)$

CTS is in NCR

P-Value $> \alpha$

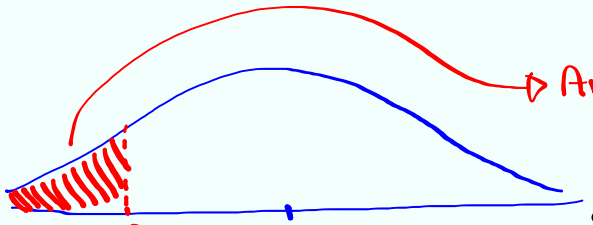
H_0 Valid → Valid claim

H_1 invalid

FTR the claim

May 21-1:49 PM

CTS $z = -.874$ TTT Find p-value.



Area · 2 = P-Value

2 · normalcdf(-E99, -.874, 0, 1)

$\approx$ .382

May 21-2:00 PM

The College bookstore claims that the mean Price of all new textbooks are less than $125.

$\mu < 125$ claim

H_1

I randomly selected 12 new textbooks, their mean price was $120 with Standard deviation of $15.

$n = 12$, $\bar{x} = 120$, $s = 15$

Test the claim. No $\alpha \rightarrow \alpha = .05$

$H_0: \mu \geq 125$

$H_1: \mu < 125$ claim, LTT

σ unknown

Case II

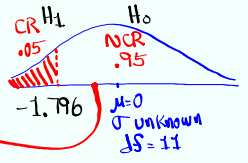
CV t LTT $\alpha = .05$

$df = n - 1 = 11$

CTS $t = -1.155$

P-value $P = .136$

T-Test



$t = invT(.05, 11)$

CTS is in NCR

P-value $> \alpha$

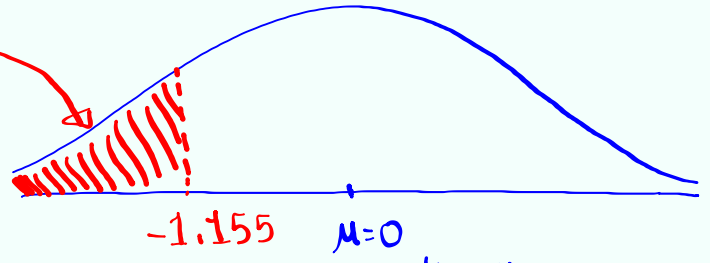
H_0 Valid

H_1 invalid $\rightarrow$ Invalid claim $\Rightarrow$ Reject the claim

May 21-2:03 PM

CTS $t = -1.155$ $df = 11$ LTT

Find P-Value



$tcdf(-E99, -1.155, 11) \approx \boxed{.136}$

May 21-2:17 PM