Categorical Data

$p =$ population proportion , $\hat{p} =$ sample proportion $\quad SD = \sqrt{\frac{p(1-p)}{n}}$ Use z-distribution

Confidence Interval

$\hat{p}$

STAT TESTS #A
1-PropZInt

$SD = \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$

z = invnorm(area)

CI = ± z * SD + center

$\hat{p}_1 - \hat{p}_2$

STAT TESTS #B
2-PropZInt

SD = $\sqrt{\frac{\hat{p}_1(1-\hat{p}_1)}{n_1} + \frac{\hat{p}_2(1-\hat{p}_2)}{n_2}}$

z = invnorm(area)

CI = ± z * SD + center

Hypothesis Testing

p

STAT TESTS #5
1-PropZTest

$SD = \sqrt{\frac{p(1-p)}{n}}$

z = $\frac{\text{data - center}}{SD}$

pvalue = normalcdf(z, z)

$p_1 - p_2 = 0$

STAT TESTS #6
2-PropZTest

$SD = \sqrt{\frac{p_p(1-p_p)}{n_1} + \frac{p_p(1-p_p)}{n_2}}$

$p_p = \frac{x_1+x_2}{n_1+n_2}$

z = $\frac{\text{data - center}}{SD}$

pvalue = normalcdf(z, z)

Quantitative Data

μ = population mean, $\bar{x}$ = sample mean, σ = population SD, s_x = sample SD

$SD = \sigma$ Use z-distribution OR $SD = \frac{\sigma}{\sqrt{n}}$ Use z-distribution OR $SE = \frac{s_x}{\sqrt{n}}$ Use t-distribution

Confidence Interval

$\bar{x}$

STAT TESTS #8
TInterval

$SD = \frac{s_x}{\sqrt{n}}$

df = $n - 1$

t = invt(area,df) = table

CI = ± t * SD + center

$\overline{x_1} - \overline{x_2}$

STAT TESTS #0
2-SampTInt

$SD = \sqrt{\frac{{s_1}^2}{n_1} + \frac{{s_2}^2}{n_2}}$

df = awful!

Hypothesis Testing

μ

STAT TESTS #2
T-Test

$SD = \frac{s_x}{\sqrt{n}}$

df = $n - 1$

t = $\frac{\text{data - center}}{SD}$

pvalue = tcdf(t, t,df)

$\mu_1 - \mu_2 = 0$

STAT TESTS #4
2-SampTTest

$SD = \sqrt{\frac{{s_1}^2}{n_1} + \frac{{s_2}^2}{n_2}}$

df = awful!