

§10.1: Two Sample Hypothesis Test for Proportions

Skills:

- Conduct a test of significance for the difference between two population proportions

Hypothesis Test

$$H_0: p_1 = p_2$$

$$H_a: p_1 \neq p_2$$

Conditions

- Random Samples or Assignment
- 10% condition

- $$\left. \begin{array}{l} n_1 \hat{p} \\ n_1 (1 - \hat{p}) \\ n_2 \hat{p} \\ n_2 (1 - \hat{p}) \end{array} \right\} \geq 10$$

Hypothesis Test (continued)

The test statistic:

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

Calculate p -value the same as before.

Write the concluding paragraph just like before.

Example

In a sample of 250 female college students, 200 were receiving financial aid.

In a sample of 300 male college students, 180 were receiving financial aid.

Do the data provide evidence of a gender difference in the percent receiving financial aid?
