

§10.1: Comparing Two Proportions

Skills:

- See the theory behind the sampling distribution for the difference of two proportions

Deriving the Sampling Distribution

First: turn two proportions into one

What's the new mean?

What's the new variance?

What shape will it have?

The Sampling Distribution

Center: $\mu_{\hat{p}_1 - \hat{p}_2} = \mu_{\hat{p}_1} - \mu_{\hat{p}_2} = p_1 - p_2$

Spread: $\sigma_{\hat{p}_1 - \hat{p}_2}^2 = \sigma_{\hat{p}_1}^2 + \sigma_{\hat{p}_2}^2 = \frac{p_1(1-p_1)}{n_1} + \frac{p_2(1-p_2)}{n_2}$

Shape: approximately normal, under certain circumstances...