1 Review

Question	point estimate	parameter of interest	expected value of the sampling distribution	variance of the sampling distribution	standard error	confidence interval
single proportion	$\hat{p}$	p	p	$\frac{p(1-p)}{n}$	$\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$	$\hat{p} \pm z^* \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$
difference of two proportion	$\hat{p}_1 - \hat{p}_2$	$p_1 - p_2$	$p_1 - p_2$	$\frac{p_1(1-p_1)}{n_1} + \frac{p_2(1-p_2)}{n_2}$	$\sqrt{\frac{\hat{p}_1(1-\hat{p}_1)}{n_1} + \frac{\hat{p}_2(1-\hat{p}_2)}{n_2}}$	$(\hat{p}_1 - \hat{p}_2) \pm z^* \sqrt{\frac{\hat{p}_1(1-\hat{p}_1)}{n_1} + \frac{\hat{p}_2(1-\hat{p}_2)}{n_2}}$
single mean (dependent samples, paired data)	$\bar{x}$	μ	μ	$\frac{\sigma^2}{n}$	$\frac{s}{\sqrt{n}}$	$\bar{x} \pm t^*_{df} \frac{s}{\sqrt{n}}$
difference of two means	$\bar{x}_1 - \bar{x}_2$	$\mu_1 - \mu_2$	$\mu_1 - \mu_2$	$\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}$	$\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$	$(\bar{x}_1 - \bar{x}_2) \pm t^*_{df} \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$

y = mx+b

y = b0

Notation

Residuals

Correlation

Guess the correlation game

R code for fitting a regression line Ordinary Least Squares Regression

Interpretation R^2

Multiple regression with indicator variable

significance

Model comparison

broom