SOC 4015/5050: Lecture 06 Equations

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Standard Error

$$\sigma_{\bar{X}} = \frac{\sigma_x}{\sqrt{n}} \tag{1}$$

Z-Score for Sample Means

$$z = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}} \tag{2}$$

Simple Power Analysis

$$\left(\frac{1.96\sigma}{\Delta} \right)^2 \tag{3}$$

Use any of the two-tailed critical values' z-scores depending on how wide you want your interval.

Predictive Interval

$$(\mu - 1.96\sigma, \mu + 1.96\sigma) \tag{4}$$

Use any of the two-tailed critical values' z-scores depending on how wide you want your interval.

Predictive Interval for Sample Mean

$$\left(\mu - 1.96\frac{\sigma}{\sqrt{n}}, \mu + 1.96\frac{\sigma}{\sqrt{n}} \right) \tag{5}$$

Use any of the two-tailed critical values' z-scores depending on how wide you want your interval.

Confidence Interval for Sample Mean

$$\left(\bar{x} - 1.96\frac{\sigma}{\sqrt{n}}, \bar{x} + 1.96\frac{\sigma}{\sqrt{n}} \right) \tag{6}$$

Use any of the two-tailed critical values' z-scores depending on how wide you want your interval.