

Module 6b – Intro to Confidence Intervals

[Review Against All Odds: Unit 22](#) (Sampling Distributions)

[Review Against All Odds: Unit 24](#) (Confidence Intervals)

Confidence Intervals

- Still dealing with quantitative/continuous variables
- Questions: How well do our sample results reflect the population? How accurate are we?
- In addition to the average, a confidence interval includes a “confidence level” and a “margin of error”

Confidence Levels

- We can choose the level of confidence we want to reflect:
 - Typical confidence levels: 90%, 95%, and 99%

$$\bar{x} \pm z \frac{s}{\sqrt{n}}$$

Confidence level	Z value
90%	1.65
95%	1.96
99%	2.58

← We can round this to 2.0

Confidence Interval Formulas

90% Confidence Interval Formula

$$\bar{X} \pm 1.645 * \frac{s}{\sqrt{n}}$$

Confidence
Level

Sample
Mean

95% Confidence Interval Formula

$$\bar{X} \pm 1.96 * \frac{s}{\sqrt{n}}$$

Standard
Error

Margin
of Error

99% Confidence Interval Formula

$$\bar{X} \pm 2.576 * \frac{s}{\sqrt{n}}$$