Review of Statistical Concepts

Schedule for Today

- Review (5 PM - 6:15 PM ET)

- Break for 10 minutes

- R Coding (6:25 PM - 7:00 PM ET)

Overview

- A review of what we have covered to date
- Live R coding

Goals

- Strengthen your understanding of the concepts we have covered up until now
- Get some experience coding in R

Broad Topics We Have Covered

- Descriptive Statistics
  - Mean, Variance, Covariance, Correlation
- Inferential Statistics
  - Probability Distributions, Sampling Distributions, Significance Tests
- Simple Linear Regression
  - Model Estimation, Interpretation, Fit Assessment
- Multiple Linear Regression
  - Model Estimation, Interpretation, Fit Assessment

Let's Answer Some Questions!

Take ~5 minutes to write out your questions:

- Send me a message on Zoom (Not anonymous to me)

- Respond to the poll (Anonymous)

Concepts in Descriptive Statistics with One Variable (Univariate Statistics)

- Measures of Central Tendency

  - Mean

  - Median

  - Mode

- Measures of Spread

  - Variance

  - Standard Deviation

Concepts in Descriptive Statistics with Two Variables (Bivariate Statistics)

- Measures of a Linear Relationship Between Two Variables
  - Covariance
  - Correlation

Concepts in Inferential Statistics

- Probability Distributions
  - Normal Distribution
- Sampling Distributions
  - Sampling Variance & Standard Error
- Significance Test
  - Hypotheses
  - P-Value

Concepts in Simple Regression

- Simple Regression Model

- Estimating the Regression Coefficients

  - Intercept & Slope

- Interpreting the Regression Coefficients

- Assessing the Overall fit of the Regression Model

  - R^2

  - Error Variance

Concepts in Multiple Regression

- Multiple Regression Model

- Statistical Control

- Interpreting the Regression Coefficients

  - Partial Regression Coefficient

- Assessing the Overall fit of the Regression Model

  - R & R^2

  - Error Variance