Survey and Pre-quiz   Overview   Why do we study statistics?   Descriptive Statistics   Graphical Look at Correlation   Graphical Look

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POLS3316 - Statistics for Political Science Lecture 2: Introduction to Probability and Statistics

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Overview

1 Survey and Pre-quiz

2 Overview

3 Why do we study statistics?

4 Descriptive Statistics
   - The basics

5 Graphical Look at Correlation

6 Graphical Look at OLS Regression

7 Lab Prep for Wednesday

- You have 20 minutes
- Please be sure to answer the survey type questions
- Don't spend too long struggling on math problems
- For the longer/tougher math problems, writing up the formula is sufficient for credit to show you know it

- Why are we interested in probability and statistics?
- Quiz and R Studio Cloud Examples
    - Descriptive statistics
    - Probability
    - Correlations (graphical)
    - Regression

Survey and Pre-quiz Overview **Why do we study statistics?** Descriptive Statistics Graphical Look at Correlation Graphical Look

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What are we after?

- We want to answer questions about data
- We want to understand cause and effect

How do probability and statistics help?

- Humans make bad judgments just looking at data
- Statistics help us make better judgments
- Probability helps us model randomness
- Statistics and probability help us make sense of a random world

Survey and Pre-quiz Overview Why do we study statistics? **Descriptive Statistics** Graphical Look at Correlation Graphical Look
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The basics

Descriptive Stats

- Minimums
- Maximum
- Range
- Quartiles
- Percentiles

Survey and Pre-quiz | Overview | Why do we study statistics? | **Descriptive Statistics** | Graphical Look at Correlation | Graphical Look

The basics

Measures of Central Tendency

- Mean
- Median
- Mode

Survey and Pre-quiz Overview Why do we study statistics? **Descriptive Statistics** Graphical Look at Correlation Graphical Look
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The basics

Measures of variation/dispersion

- Variance
- Standard Deviation
- Covariance

R Studio Cloud

- scatterplot
- mean drawn through plot
- connect the dots
- regression line

R Studio Cloud

What you should do!

- Sign up for Posit Cloud
- Sign up for Github *
- Install Git *
- Install R *
- Install R Studio Desktop *
- Setup R Studio to work with Git/Github *
- Clone the class Github Repository *

Questions

Survey and Pre-quiz
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Overview
○

Why do we study statistics?
○○

Descriptive Statistics
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Graphical Look at Correlation
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Graphical Look

The End