

POLS3316 - Statistics for Political Science

Lecture 2: Introduction to Probability and Statistics

Tom Hanna

University of Houston

tlhanna@uh.edu

July 9, 2022

Overview

- 1 Survey and Pre-quiz
- 2 Why do we study statistics?
- 3 Descriptive Statistics
 - The basics
 - Quiz problems
- 4 Basic Probability and Frequency Distributions
 - Quiz Problems
- 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

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

Descriptive Stats

- Minimums
- Maximum
- Range
- Quartiles
- Percentiles

Measures of Central Tendency

- Mean
- Median
- Mode

Measures of variation/dispersion

- Variance
- Standard Deviation

R Studio Cloud

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

R Studio Cloud

What you should do!

Questions

The End