

Quantitative Methods for Political Science

Course Introduction
August 28, 2023

Political Science Research

- Can think of political questions as involving value and/or fact:
 - Facts: What is?
 - Example: Does the state of the U.S. economy influence the outcomes of presidential elections?
 - Values: What ought to be?
 - Example: Is it good for democracy for economic perceptions to affect voters?
- But, value related questions often have facts behind them
 - E.g., economic perceptions (e.g., unemployment) do predict election outcomes
- Need to know how to evaluate evidence for certain claims

Quantitative Methods—Big Picture

- In this class, will cover basics of statistical analysis:
 - Describing data and distributions, examining two-way relationships/correlations
 - Inference—how confident can we be that results from a sample generalize to a population?
 - Some discussion of research design—sampling etc.
- Important topics we are not covering in detail:
 - Theory development
 - Measurement
 - How to identify and incorporate control variables
 - Data generation

Steps for Empirical Political Research

1. Identify research question
 - Ideally, interesting and important (substantively and/or theoretically)
2. Measure concepts
 - Conceptual definition
 - Operational definition
 - Variables
3. Describe variables
 - Range, distribution, etc.
4. Survey literature
 - What do we already know (or think we know) in answer to the question?

Steps for Empirical Political Research

5. Develop theoretical argument which answers the question
6. Derive hypotheses
 - Identify Independent and Dependent Variables
7. Design a study to properly test hypotheses
 - Think about “what else” could affect DV
8. Collect data
 - Identify population and sampling strategy
9. Test hypotheses
 - What is the direction of the relationship between IV and DV?
 - How confident can we be that a relationship in the sample means there is a relationship in the population?
 - How big of an effect does IV have on DV?

Course Goals

Three main goals:

1. Make you a better consumer of political research
 - Should help in other classes
2. Give you basic skills in statistics
 - Includes learning to use statistical program R
3. Prepare you for higher level methods classes

Logistics

- Meet here Monday 12:30-3:15
- Lab & Discussion Section Friday 3:00-5:00
 - TA: Harriet Goers
- Grading:
 - 2 Midterms, 1 final—all take-home
 - Homework Problem Sets—most weeks of the semester
- Problem sets, class announcements, lecture notes, etc. will be posted on elms