PSC 400
SYRACUSE UNIVERSITY

DATA ANALYTICS FOR POLITICAL SCIENCE

ESTIMATING CAUSAL EFFECTS WITH OBSERVATIONAL DATA

SOLUTIONS

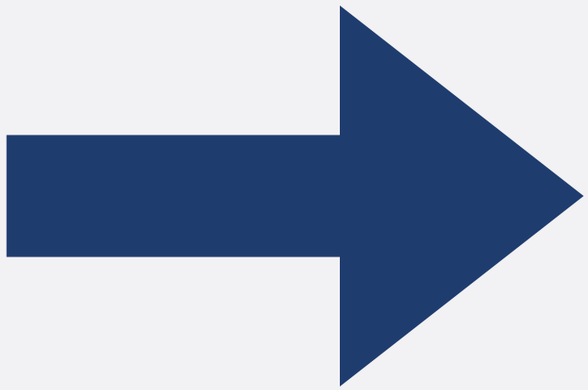
- Solutions to problem sets are/will be posted on Blackboard
- If you want me to discuss them in class, let me know

UA_PRECINCTS.CSV

variable	description
russian_tv	identifies precincts that receive Russian TV: 1=there is reception or 0=there is no reception
pro_russian	vote share received in the precinct by pro-Russian parties in the 2014 Ukrainian parliamentary election (in percentages)
prior_pro_russian	vote share received in the precinct by pro-Russian parties in the 2012 Ukrainian parliamentary election (in percentages)
within_25km	identifies precincts that are within 25 kilometers of the Russian border: 1=it is within 25 kilometers of the border or 0=it is not within 25 kilometers of the border

RUSSIA AND UKRAINE

Receiving Russian TV



Change in Pro-Russian Voting Behavior

- Compute difference-in-means
- Estimate regression

RUSSIA AND UKRAINE

Living within
25km of border

Receiving
Russian TV

Pro-Russian
Voting Behavior

- Estimate regression of effect of Russian TV, controlling for living near border

IMMIG.CSV

Name	Description
`age`	Age (in years)
`female`	`1` indicates female; `0` indicates male
`employed`	`1` indicates employed; `0` indicates unemployed
`nontech.whitcol`	`1` indicates non-tech white-collar work (e.g., law)
`tech.whitcol`	`1` indicates high-technology work
`expl.prejud`	Explicit negative stereotypes about Indians (continuous scale, 0-1)
`impl.prejud`	Implicit bias against Indian Americans (continuous scale, 0-1)
`h1bvis.supp`	Support for increasing H-1B visas (5-point scale, 0-1)
`indimm.supp`	Support for increasing Indian immigration (5-point scale, 0-1)

- DV: Support for more H1B visas (h1bvis.supp)
  - From 0=decrease a great deal to 1=increase a great deal
- Main IV: Implicit bias against Indian Americans (impl.prejud)
  - From 0=low implicit prejudice to 1=high implicit prejudice

IMMIGRATION ATTITUDES

- Immig. Supp. = α + β_1 * Impl. Prej. + β_2 * Female

IMMIGRATION ATTITUDES

- Immig. Supp. = $\alpha + \beta_1 * \text{Impl. Prej.} + \beta_2 * \text{Female} + \beta_3 * \text{Employed} + \beta_4 * \text{Age} + \varepsilon$

EXERCISE

- Load Quality of Government data
- Create variable: Difference in literacy between men and women
  - wdi_litradm and wdi_litradf
- Run regression:
  - DV: Literacy rate difference
  - IV: Polity score (p_polity2)
- Add additional controls to regression
  - Expenditure on education as % of GDP (wdi_expedu)
  - Government effectiveness (wbgi_gee)
- Bonus: Plot predicted value of DV as a function of polity score
  - Set wdi_expedu and wbgi_gee to their means

PREVIEW

- Uncertainty, confidence intervals
- Extensions to regression
- Then: exploration
  - Text as Data
  - Network Data
  - Spatial Data (Maps)
  - Webscraping