PSC 400
SYRACUSE UNIVERSITY

DATA ANALYTICS FOR POLITICAL SCIENCE

EXTENSIONS TO MULTIPLE REGRESSION

ASSIGNMENTS

- Data Analysis Memo 3 was due on Friday
- Problem Set 4 due on Friday

SURVEY

- cces_week9.csv
  - age
  - female (1 if female, 0 otherwise)
  - nohighschool (1 if no high school degree, 0 otherwise)
  - collegeorhigher (1 if college attendance, 0 otherwise)
  - nonwhite (1 if not white, 0 if white)
  - married (1 if married, 0 otherwise)
  - employed (1 if employed full-time or part-time, 0 otherwise)
  - republican (1 if R, 0 if not)
  - democrat (1 if D, 0 if not)
  - Independent (1 if I, 0 if not)
  - partisanship (factor variable)
  - impeach (1 if supports Trump impeachment, 0 if not)
  - votereg (1 if registered to vote, 0 otherwise)

CATEGORICAL VARIABLE

- DV: Registered to vote or not
- IV: Gender
  - Male, Female
  - Categorical variable

CATEGORICAL VARIABLE

- Pr(Registered) = 0.93 - 0.06 * female
  - What is the predicted probability that a woman is registered?

CATEGORICAL VARIABLE

- Pr(Registered) = 0.93 - 0.06 * female
  - What is the predicted probability that a woman is registered?
  - 0.93 - 0.06 * 1 = 0.87

CATEGORICAL VARIABLE

- Pr(Registered) = 0.93 - 0.06 * female
  - What is the predicted probability that a man is registered?

CATEGORICAL VARIABLE

- Pr(Registered) = 0.93 - 0.06 * female
  - What is the predicted probability that a man is registered?
  - 0.93 - 0.06 * 0 = 0.93

CATEGORICAL VARIABLE

- DV: Registered to vote or not
- IV: Partisanship
  - Democrat, Republican, Independent
  - Categorical variable

CATEGORICAL VARIABLE

- Pr(Registered) = 0.9425 - 0.0617 * Independent - 0.0004 * Republican
  - What is the predicted probability that a Republican is registered?

CATEGORICAL VARIABLE

- Pr(Registered) = 0.9425 - 0.0617 * Independent - 0.0004 * Republican
  - What is the predicted probability that a Republican is registered?
  - 0.9425 - 0.0617 * 0 - 0.0004 * 1 = 0.9421

CATEGORICAL VARIABLE

- Pr(Registered) = 0.9425 - 0.0617 * Independent - 0.0004 * Republican
  - What is the predicted probability that an Independent is registered?

CATEGORICAL VARIABLE

- Pr(Registered) = 0.9425 - 0.0617 * Independent - 0.0004 * Republican
  - What is the predicted probability that an Independent is registered?
  - 0.9425 - 0.0617 * 1 - 0.0004 * 0 = 0.8808

CATEGORICAL VARIABLE

- Pr(Registered) = 0.9425 - 0.0617 * Independent - 0.0004 * Republican
  - What is the predicted probability that a Democrat is registered?

CATEGORICAL VARIABLE

- Pr(Registered) = 0.9425 - 0.0617 * Independent - 0.0004 * Republican
  - What is the predicted probability that a Democrat is registered?
  - 0.9425 - 0.0617 * 0 - 0.0004 * 0 = 0.9425

CATEGORICAL VARIABLE

- Pr(Registered) = 0.8808 + 0.0617 * Democrat + 0.0612 * Republican
  - What is the predicted probability that a Democrat is registered?

CATEGORICAL VARIABLE

- Pr(Registered) = 0.8808 + 0.0617 * Democrat + 0.0612 * Republican
  - What is the predicted probability that a Democrat is registered?
  - 0.8808 + 0.0617 * 1 + 0.0612 * 0 = 0.9425

EXAMPLE

- What is the effect of age on whether respondents are registered to vote or not?

EXAMPLE

- What is the effect of age on whether respondents supports impeachment or not?

EXAMPLE

- What is the effect of partisanship on whether respondents supports impeachment or not?
  - ie. what is the predicted probability of supporting impeachment for a Democrat, a Republican, and an Independent (all else equal)?

EXAMPLE

- What is the effect of age among Democrats, among Republicans, and among Independents?
  - ie. interaction of partisanship with age