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Variables, Values, and Hypotheses

Today's Agenda

- Reminders
- Q&A about SPSS
- Review the concepts of Variables & Values, Units of Analysis, and Hypotheses
- Practice Problems

Reminders

- Quiz 1 needs to be completed on Canvas by April 9th-12th
- SPSS Trial Run due April 15th
 - See my website for tutorial (lieselspangler.com/teaching)
- My office hours: Wednesdays from 2-3 and by appointment (<u>calendly.com/lspangler</u>)
 - This week: Thursday 9-10am

SPSS Questions?

Goals of Poli 30

- * We want to teach you the tools and skills to answer research questions in an empirical way.
- * What does it mean to be empirical?

Intuitions v. Hypotheses v. Testable Implications

- Intuition
- Hypothesis
- Testable Implication

Characteristics of Good Hypotheses

- * 1. Hypotheses and Testable Implications require some sort of comparison.
 - * Example: Dogs are loud animals.
 - What's the problem here?

Characteristics of Good Hypotheses

- 2. Include an Independent (Explanatory) Variable and a Dependent (Outcome) Variable.
 - IV= the thing that does the changing (its value is independent of the other values)
 - DV= the thing that changes (its value depends on the other values)

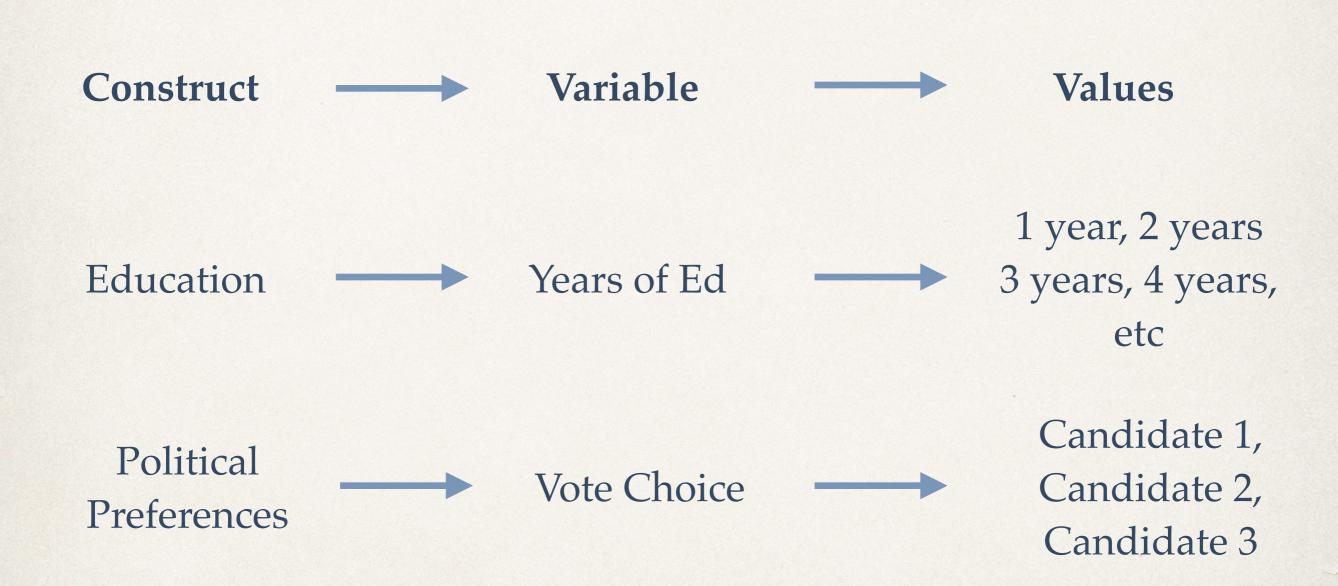
Characteristics of Good Hypotheses

- Other characteristics that Dr. G covers in lecture
 - 3. Is falsifiable.
 - * 4. Is not immediately verifiable (i.e., google can't give you the answer)
 - 5. Clear direction of the relationship between IV and DV
- If you need clarification on these, come to office hours!

Intuitions v. Hypotheses v. Testable Implications

- Intuition:
 - studying helps you earn good grades
- Hypothesis:
 - * Students who study more earn better grads than those who study less.
- Testable Implication:
 - * An individual who studies more than five hours a week for Poli 30 will earn a better grade than an individual who studies less than five hours a week for Poli 30.

Variables & Values



- Hypotheses will likely use constructs or variables
- * Testable Implications will likely use values.

Units of Analysis/Levels of Data

- * For what unit/level are you collecting data? About whom are you collecting data?
- Examples:
 - * Individuals
 - Voters, Politicians, Citizens
 - * Aggregate (Groups of Individuals)
 - Electoral Districts, Counties, U.S. States, Countries

Levels of Data

Example: VOTE TURNOUT

- * Individual-Level Data
- Dataset is a collection of individuals asking, "Did you vote in the last election?"

Individual	Did You Vote in 2012?
1	Y
2	N
3	N
4	Y

- Aggregate-Level Data
- Dataset is a collection of countries with rates of voter turnout (i.e., what percentage of eligible voters came out to vote)

Country	Turnout Rate in 2010
Afghanistan	45.8%
Anguilla	82.07%
Australia	93.22%
Azerbaijan	49.76%

Levels of Data

Example: INCOME

- * Individual-Level Data
- Aggregate-Level Data
- * Dataset is a collection of individuals asking, "How much money did you make last year?"
 - Dataset is a collection of the average income of every county

Individual	Income
1	\$45,908
2	\$108,465
3	\$345,673
4	\$12,820
5	\$1,089,345

County	Income (Per Capita)
San Diego County	\$31,043
Imperial County	\$16,409
Riverside County	\$23,660
Los Angeles County	\$27,987
Orange County	\$34,416

Work through examples on tablet:

Chapter 1, Problems 1, 3, 5, 6, 10