Poli 30D Political Inquiry

Research Design: Building Blocks

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Contact Information

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We have someone to help you every day!

Professor Desposato	M	1330-1500 (Latin American Center)
Shane Xuan	Tu	1600-1800 (SSB332)
Cameron Sells	W	1000-1200 (SSB352)
Kelly Matush	Th	1500-1700 (SSB343)
Julia Clark	F	1200-1400 (SSB326)

Supplemental Materials

Our class oriented

ShaneXuan.com

UCLA SPSS starter kit

`www.ats.ucla.edu/stat/spss/sk/modules_sk.htm`

Princeton data analysis

`http://dss.princeton.edu/training/`

We're moving to a new chapter starting from this week...

Here is the course plan:

- Causality
- Experimental studies

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- Observational studies
- Application: crosstabs

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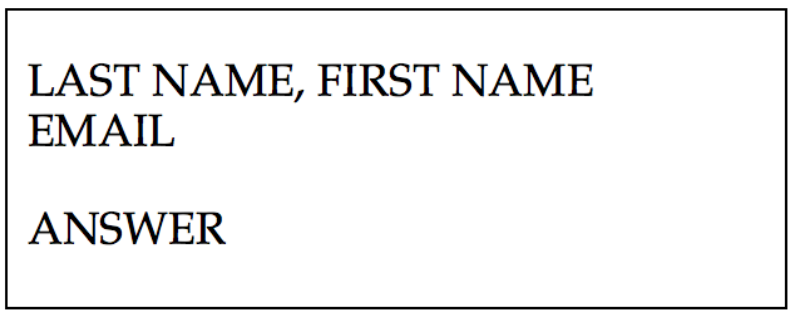
Here is the section plan:

- Building blocks: definitions, causality ...
- Applications: experiments, observational studies, SPSS(!)

Quiz

Before we start moving on, I want to make sure that you understand what we did in the past month:

- Write any hypothesis that interests you
- Again, please have your name and email written



Building blocks

Grammar of the social scientists

1) Population
   - A collection of objects or individuals
2) Sample
   - A (hopefully representative) slice from the population
3) Population parameter (μ, σ^2) is any summary of the population
4) Sample statistic ($\overline{X}$, s^2) is any summary of the sample

Building blocks

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Draw this analogy

$$\mu \rightsquigarrow \text{population}$$

$$\overline{X} \rightsquigarrow \text{sample}$$

Causality

Causality is different from correlation

Suppose the truth is p causes q, then

- $p \to q$ is *direct* causation
- $q \to p$ is *reverse* causation

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When a country's debt rises above 90% of GDP, growth slows.

- debt >90% of GDP $\to$ slow growth
- OR slow growth $\to$ debt >90% of GDP
- Figuring out the right direction is what researchers have been working on

Hypothesis Framing

We expect much more from your hypothesis framing, now that you have learned the definition of causality. Here is the template that you should consider using for your hypothesis:

In a comparison of [units of analysis], those having [one value on the independent variable] will be more likely to have [one value on the dependent variable] than will those having [a different value on the independent variable].

Hypothesis Framing

In a comparison of countries, those having PR electoral systems will be more likely to have higher voter turnout than will those having plurality electoral systems.

- What are the unit of analysis, independent variable, and dependent variable in this hypothesis?
- How to operationalize (*read*: measure) the independent variable and the dependent variable?
- What values can the independent variable take?
- What values can the dependent variable take?
- Discuss: Why is the hypothesis above a good hypothesis?

Research design

We are going to talk about

- Randomized experiment
- Quasi-experiment
- Natural experiment
- Observational study

in next section.

SPSS(!)

- We will hold our second SPSS lab soon
  a) Recoding (wrap up)
  b) Regression
- For today, let's talk about basic statistics & univariate graphs.

SPSS: Frequencies

- Syntax: FREQUENCIES VARIABLES = var
- Example:
  FREQUENCIES VARIABLE = v36
- Output

Party ID Summary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	593	28.9	29.2	29.2
	1	305	14.8	15.0	44.2
	2	351	17.1	17.3	61.4
	3	217	10.6	10.7	72.1
	4	235	11.4	11.6	83.7
	5	155	7.5	7.6	91.3
	6	177	8.6	8.7	100.0
	Total	2033	99.0	100.0	
Missing	System	21	1.0		
Total		2054	100.0		

SPSS: Basic Statistics

- Syntax: FREQUENCIES VARIABLES = var / STATISTICS
- Example:
  FREQUENCIES VARIABLE = v36 / STATISTICS = ALL /
  FORMAT = NOTABLE

SPSS: Basic Statistics

– Output

Statistics

Party ID Summary

N	Valid	2033
	Missing	21
Mean		2.18
Std. Error of Mean		.044
Median		2.00
Mode		0
Std. Deviation		1.983
Variance		3.934
Skewness		.517
Std. Error of Skewness		.054
Kurtosis		-.960
Std. Error of Kurtosis		.109
Range		6
Minimum		0
Maximum		6
Sum		4435

SPSS: Basic Statistics

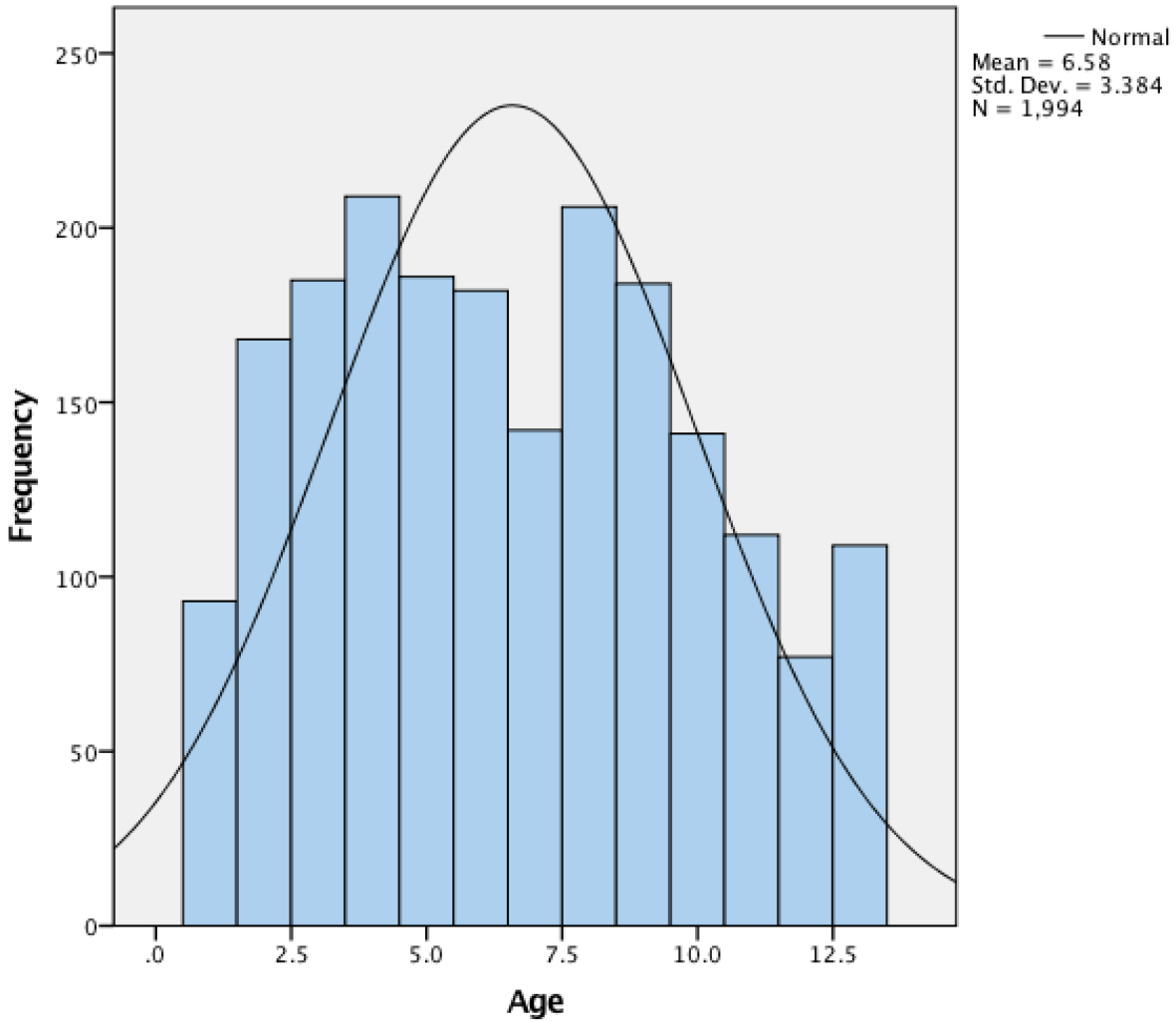
- Syntax: FREQUENCIES VARIABLES = var / STATISTICS
- Example:
  FREQUENCIES VARIABLE = v36 / STATISTICS = ALL /
  FORMAT = NOTABLE
- You can display statistics of interest:
  MEAN; STDDEV; VARIANCE; RANGE; MINIMUM;
  MAXIMUM; MEDIAN; MODE; SUM; SKEWNESS; ...

SPSS: Visualization

- Syntax: GRAPH / figure = var
- Example: GRAPH / HISTOGRAM = v4

SPSS: Visualization

- Output



Next Week

- Experiments (Gerber & Green 2000)
- Observational studies (Diamond 1999)
- Crosstabs (Fowler 2008)
- More on SPSS