

# Sampling II

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# Housekeeping

- Send me your research questions if you havent already
- Homework 2 is due next week
- Make sure to sign the **attendance** sheet!

- Weighted sampling: <https://youtu.be/sonXfzE1hvo?t=76g>
- Sampling error:  
<https://www.youtube.com/watch?v=uGuWrPFStdg>
- Class exercise: <https://www.khanacademy.org/math/math-for-fun-and-glory/math-warmup/random-sample-warmup/e/random-sample-warmup>
- Clustered and stratified sampling (follow me to the white board)
- Non-random sampling (convenience and voluntary sampling (white board))

# Steps to Experimental Design: Pick Question

- Find topic of interest (wicked problem)
- Do research and identify theoretical or methodological gaps in literature
- Based on research, come up w/ tame question
- Identify independent variable and dependent variables

# Steps to Experimental Design: Choose Theory

- Through research, identify all potential theories that could explain relationship b/w DV and IV
- Pick one theory you think is most compelling
- Structure your understanding of your research question from lens of this theory

# Steps to Experimental Design: Select Hypotheses

- First, conceptualize constructs in research question
- Then, identify Hypotheses (null and alternative) based on theory

# Steps to Experimental Design: Research Design

- Operationalize IV and DV
- Select measurements for IV and DV
- Structure your understanding of your research question from lens of this theory
- Choose method type: true, quasi, or natural experiment
- Choose type of statistical analysis (ANOVA, Linear Regression, Difference of Means, etc.)



# Steps to Experimental Design: Data Collection

- Identify population, sample, and sampling method
- Randomize and draw sample
- Structure your understanding of your research question from lens of this theory
- Choose method type: true, quasi, or natural experiment
- Choose type of statistical analysis (ANOVA, Linear Regression, Difference of Means, etc.)

# Must justify choices for the following:

- Operationalization (not your conceptualization)
- Type of method (Why experiment as opposed to observational study?)
- Form of analysis (regression vs. difference of means test vs historical process tracing vs comparative case study, etc.)
- Data (Random? Representative?)
- These justifications must be made at the time each issue is discussed in the text of your research proposal