

# Measurement & Inference: Validity, Reliability, and Sampling

Poli30 Week 3

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*April 14, 2020*



# Agenda

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- ❖ Housekeeping Items
- ❖ Inference & Sampling
- ❖ Measurement
  - ❖ Reliability
  - ❖ Validity (Internal and External)
- ❖ Practice with ANES 2016 Codebook



# Housekeeping

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- ❖ Discussion Attendance Survey
  - ❖ Closes by Thursday at 11:59pm.
  - ❖ This week's task...
- ❖ No quiz this week! Just the trial run.
  - ❖ Trial run now due April 17th.



# Inference

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- ❖ One of the primary goals of statistics and research design is to estimate (infer)
  - ❖ a) estimating “true” values of characteristics of a population
  - ❖ b) the presence and size of relationships between variables.
- ❖ In other words, *to test our hypotheses*.
- ❖ This is called “inference”



# Inference and Sampling

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- ❖ If we want to know how many U.S. residents have a bachelor's degree right now, how can we find out?
- ❖ What factors will affect whether we find the right answer?
  - ❖ (Consider the “What’s the Matter with Polling” & “Why 2016 election polls missed their mark” articles)
- ❖ How do we solve these problems?

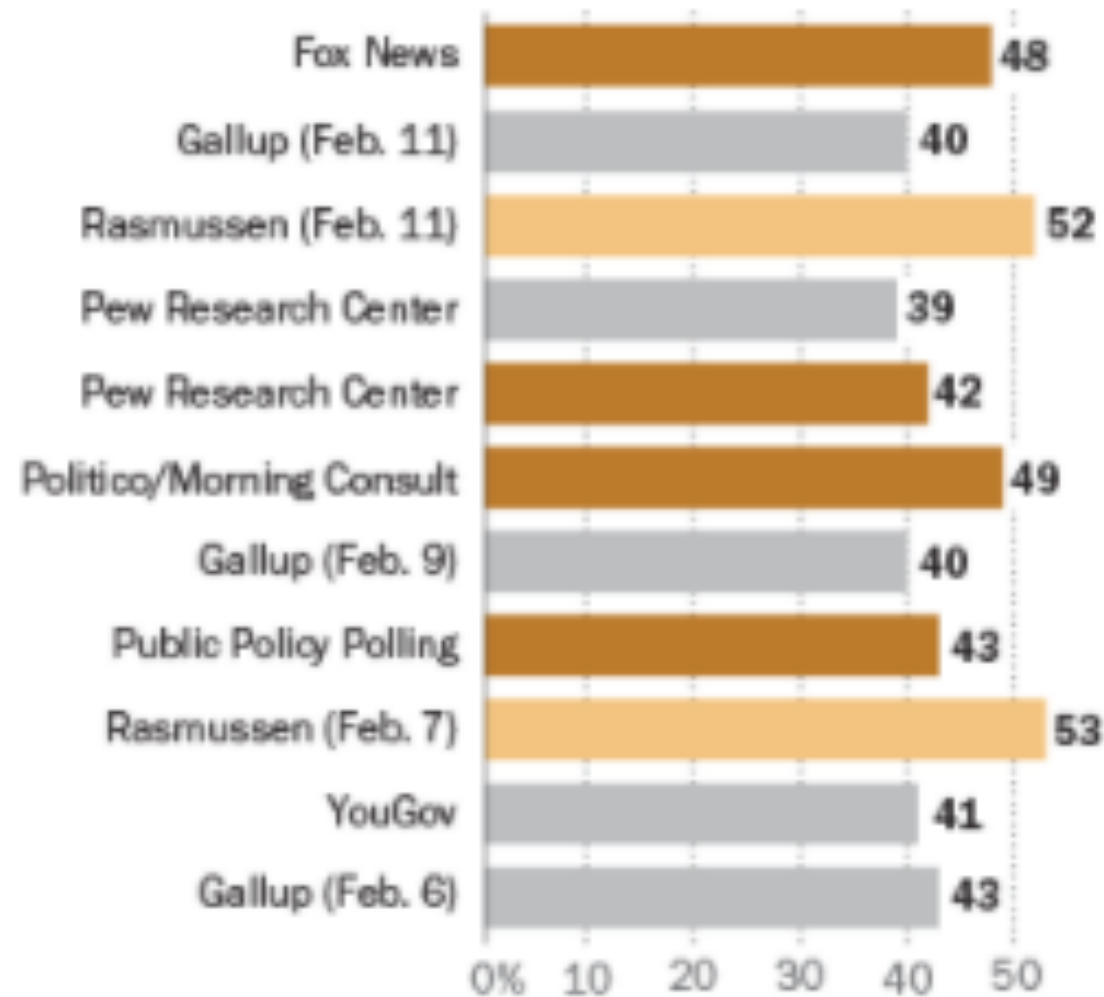


# What does this tell us about sampling?

## President Trump's approval in recent polls varies by population surveyed

*Trump's approval rating among ...*

● All adults (GP)    ● Registered voters (RV)    ● Likely voters (LV)



Source: Surveys conducted between Feb. 5 and Feb. 13, 2017, by Pew Research Center and other polling organizations.

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# Reliability & Validity

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- ❖ **Reliability**...how repeatable / consistent is it?
  - ❖ *Do you get the same results each time?*
- ❖ **Validity**...how closely does what you measure reflect the true value? (internal) and how generalizable is it? (external)
  - ❖ *Are you measuring what you think you're measuring?*



# 2016 Election Polling Validity Issues

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- ❖ What were the issues related to Internal Validity?
- ❖ What were the issues related to External Validity?



Practice with the ANES 2016 Codebook