

Methods Core Workshop: Week 5

Samples and surveys



Non-Probability Sampling *(Babbie, Chapter 7)*

Nonprobability sampling techniques include **relying on available subjects**, **informants**, **purposive** or **judgmental** sampling, **snowball** sampling, and **quota** sampling.

Purposive (judgmental) sampling: the units to be observed are selected on the basis of the researcher's judgment about which ones will be the most useful or representative.

Snowball sampling: often employed in field research. Each person interviewed may be asked to suggest additional people for interviewing.

Quota sampling: units are selected into a sample on the basis of prespecified characteristics, to mirror the population under study.

Informant: someone who is well versed in the social phenomenon that you wish to study and who is willing to tell you what they know about it.

Class Discussion: What are some of the benefits and drawbacks of non-probability sampling?

Probability Sampling (*Babbie, Ch 7*)

Probability-sampling methods provide an excellent way of selecting **representative** samples from large, **known populations**.

These methods counter the problems of **conscious and unconscious sampling** bias by giving each element in the population a known probability of selection.

Random selection is often a key element in probability sampling.

There will always be some degree of **sampling error**.

By predicting the distribution of samples with respect to the target parameter, we can **estimate the amount of sampling error** expected in a given sample.

Probability Sampling (*Babbie, Ch 7*)

Sampling Frame:

A **sampling frame** is a list or quasi list of the members of a population.

A sample's **representativeness** depends directly on the extent to which a sampling frame **contains the members of the total population** that the sample is intended to represent.

Probability Sampling (*Babbie, Ch 7*)

Sampling Designs:

Simple random sampling.

Systematic sampling involves the selection of every k th member from a sampling frame. This method is more practical than simple random sampling; with a few exceptions, it is functionally equivalent.

Stratification, the process of grouping the members of a population into relatively homogeneous strata before sampling, improves the representativeness of a sample by reducing the degree of sampling error.

Multistage cluster sampling is a relatively complex sampling technique that frequently is used when a list of all the members of a population does not exist.

Class Discussion: What are some of the benefits and drawbacks of probability sampling?

Group Discussion: What sampling method would you use to investigate this research question?

- **Research Question:** How does trust in media shape the process of opinion formation?
- **Hypothesis:** Deteriorating trust in media is an important and understudied factor shaping trajectories of opinion formation.
- **Research Method:** Interviews with voters living in three states in the US midwest. These interviews aim to capture participants' trust in media, information gathering practices, and political opinions before the pandemic, as well as during periods of uncertainty and partisan division during the pandemic.

What sampling method would you use?

What sampling method did the author use? *(Ternullo, 2022)*

“During the first phase of data collection in summer 2019, I spent four to six weeks in each community, living with residents, observing political and civic activities, and recruiting participants.

To do so, I used a variety of methods. I met people through community organizations, Facebook groups, and flyers, as well as in coffee shops, the YMCA, the public library, and at community events.

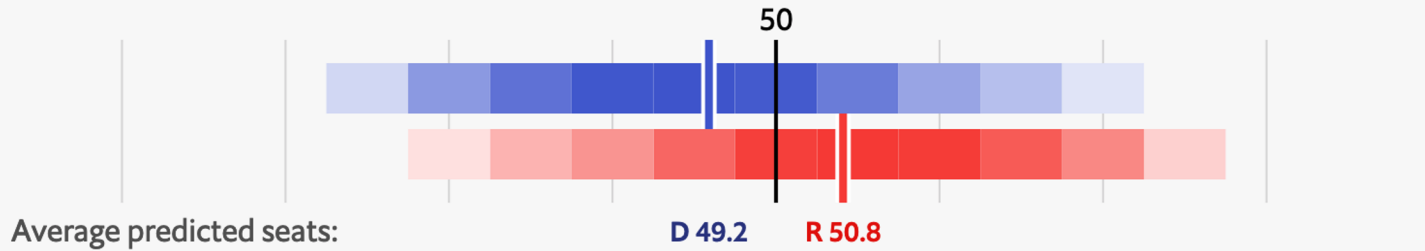
I also recruited through **snowball sampling**, targeting people who fulfilled certain characteristics. I **sampled purposively** with two objectives. First, I sought **sufficient variation in gender, age, occupation, education, partisan affiliation, and political knowledge**; second, I sought to recruit **similar samples in each community** for the sake of comparison.”

Do you agree with this approach? What are the benefits/drawbacks?

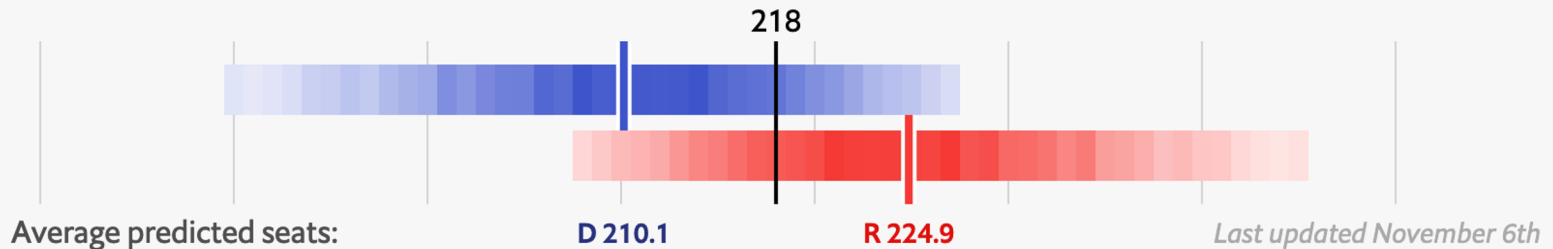
What method might we use to create a prediction of the outcome of the US midterm elections?

The Economist

→ **Senate** The race for the Senate is very close



→ **House** The Republicans are likely to gain a majority in the House

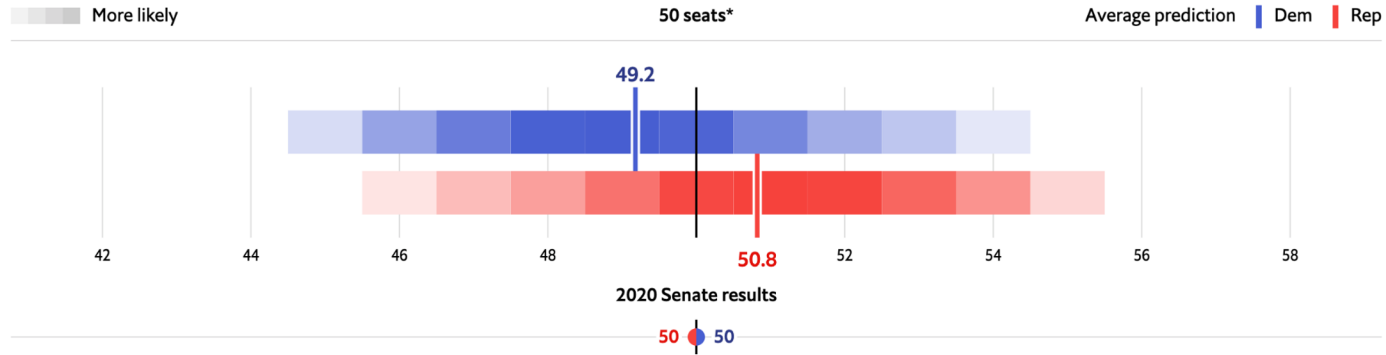


Last updated November 6th

Why is the Central Limit Theorem useful here?

Simulated Senate seats won

Each day, we run 10,000 simulated elections based on polling, demographics, fundraising and historical results. These statistics reflect the outcomes of those simulated elections.



Democrats win majority in
43 out of 100 simulations

Predicted to win **45–54 seats**



Republicans win majority in
57 out of 100 simulations

Predicted to win **46–55 seats**

*The vice president, Kamala Harris, breaks 50-50 ties for the Democrats
Predicted range covers 95% of simulations

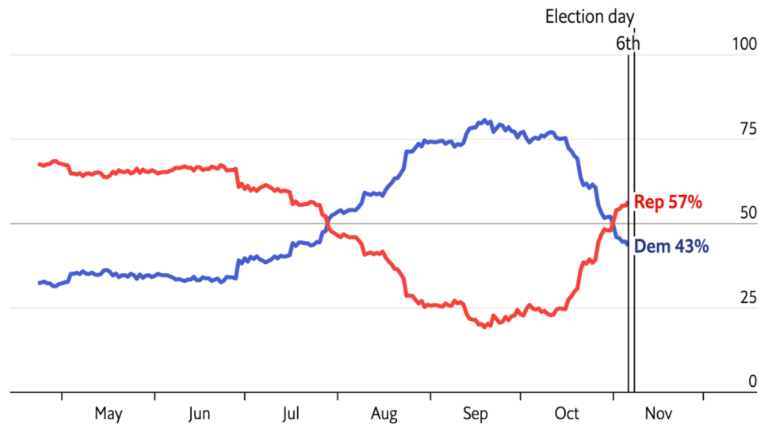
Central Limit Theorem

The distribution of sample means approximates a normal distribution as the sample size gets larger, regardless of the population's distribution.

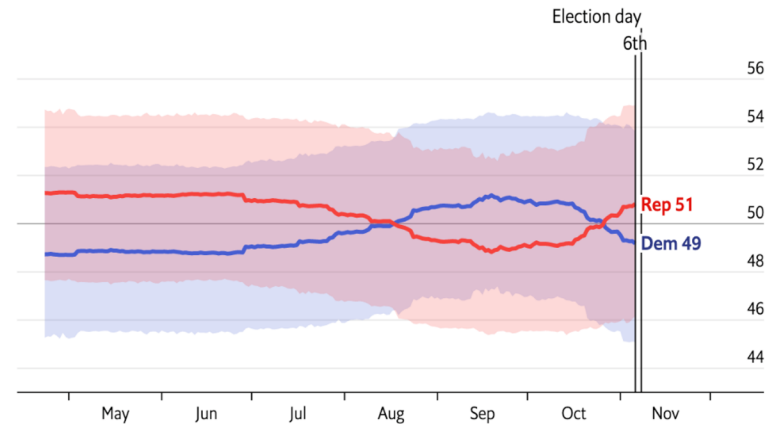
Senate forecasts over time

The Democrats face strong headwinds in trying to keep control of the Senate. The president's party typically loses seats in midterm elections. Pessimism about the economy will not help them either. However, in key races Republicans have nominated potentially unelectable fringe candidates. Moreover, the Supreme Court's decision to permit tighter abortion restrictions has energised Democratic voters.

Chance of winning a majority



Forecast number of seats



Sources: Clerk of the House of Representatives; Congressional Quarterly; MIT Election Lab; VoteView; Gary Jacobson; Ballotpedia; Daily Kos Elections; OurCampaigns; state election records; Corwin Smidt; American National Election Studies; Polidata; RealClearPolitics; DC Political Report; FiveThirtyEight; US Election Atlas; Huffington Post Pollster; Congressional District Religiosity Dataset; American Community Survey; United States Census; Wikipedia; Database on Ideology, Money in Politics, and Elections; Carl Klarner; Federal Election Commission; Joseph Bafumi; Roper Centre; *The Economist*

Questions?

Bibliography

Ternullo, Stephanie. "'I'm Not Sure What to Believe': Media Distrust and Opinion Formation during the COVID-19 Pandemic." *American Political Science Review* (2022): 1-14.

The Economist. "America's Midterm Elections." (2022) <https://www.economist.com/mid-terms-2022>

The Economist. "How the Senate Forecast Works." (2022) <https://www.economist.com/interactive/us-midterms-2022/forecast/senate/how-this-works>