



Better Surveys, Better Data

A Practical Guide for Researchers

4/22/2026

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Responsible for some of the nation's largest and most relied-upon studies, informing countless policies and programs.

The General Social Survey



National Survey of **Early Care & Education**



AmeriSpeak

AmeriSpeak is the only U.S. multi-client household panel to utilize in-person recruiting, the gold standard survey modality for response rates and representativeness of the U.S. population. Our mission *and practice* is deep transparency and institutionalization of best practices for valid and reliable survey science.

Get Your Research Right

Objectives

01 Surveys from a process perspective

02 Surveys from a quality perspective

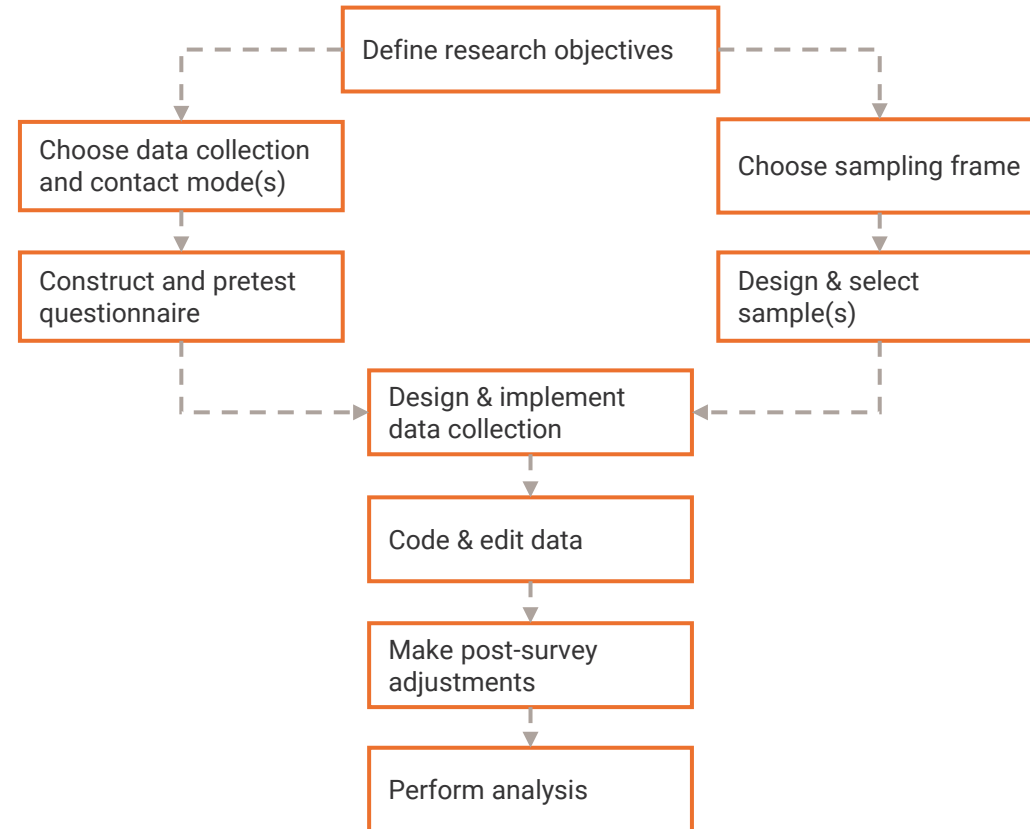
03 Key Survey Design Decisions

04 AmeriSpeak in Action



Surveys from a Process Perspective

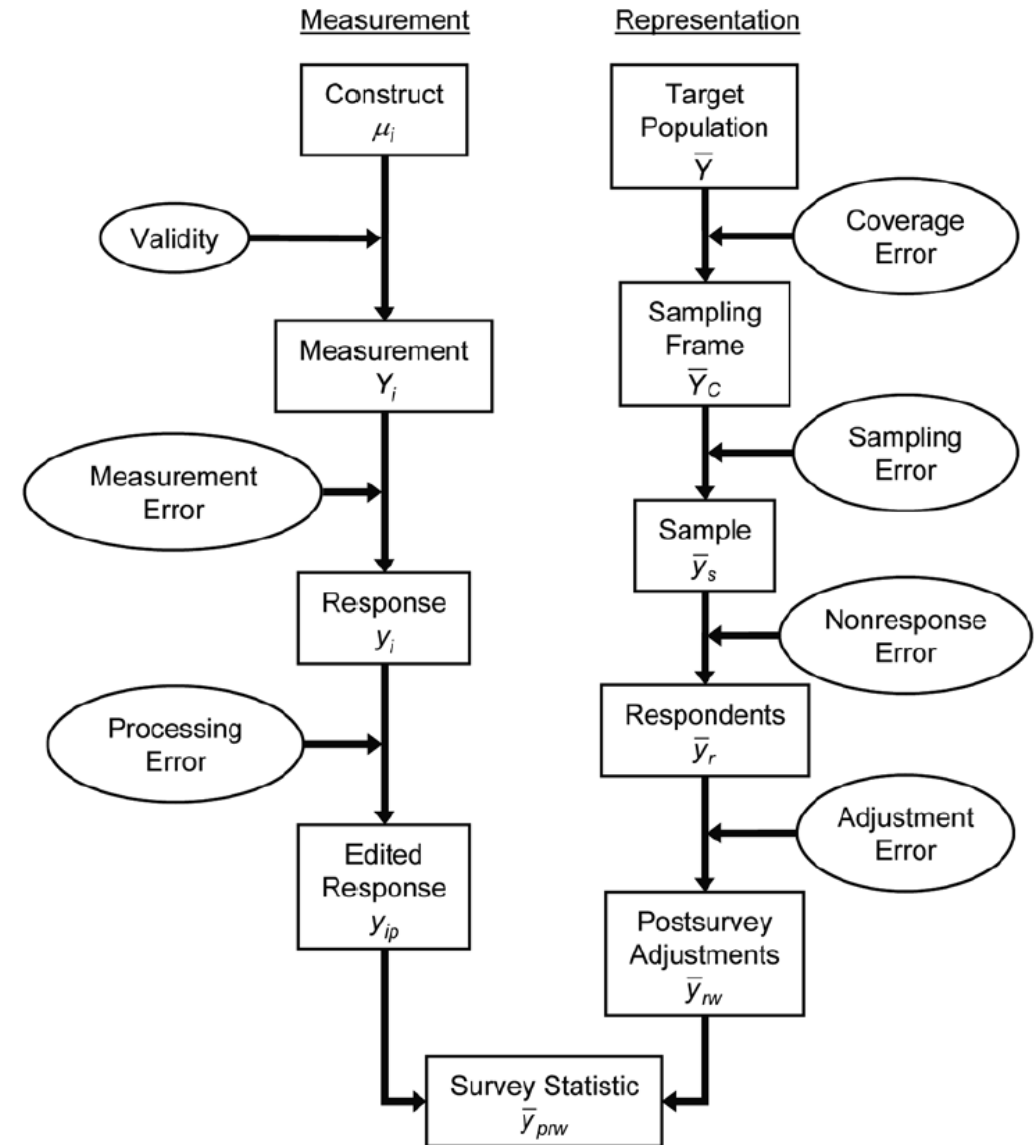
Survey Process from start to finish



Surveys from a Quality Perspective

Total Survey Error (TSE) Framework

- Survey error=deviation of what is desired from what is attained
 - Error of non-observation
 - Error of observation
- Goal is to reduce total survey error given cost constraints, or reduce costs for a given level of quality/error



Survey Errors

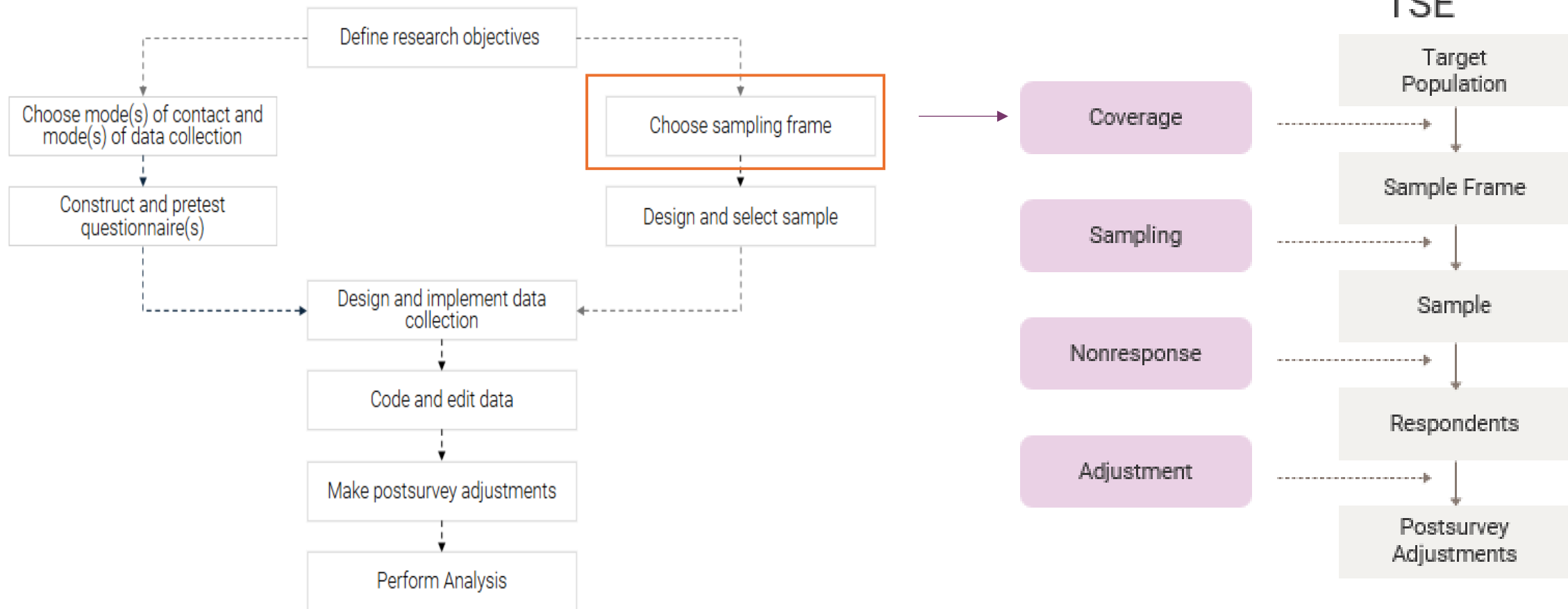
Coverage
Error

Sampling
Error

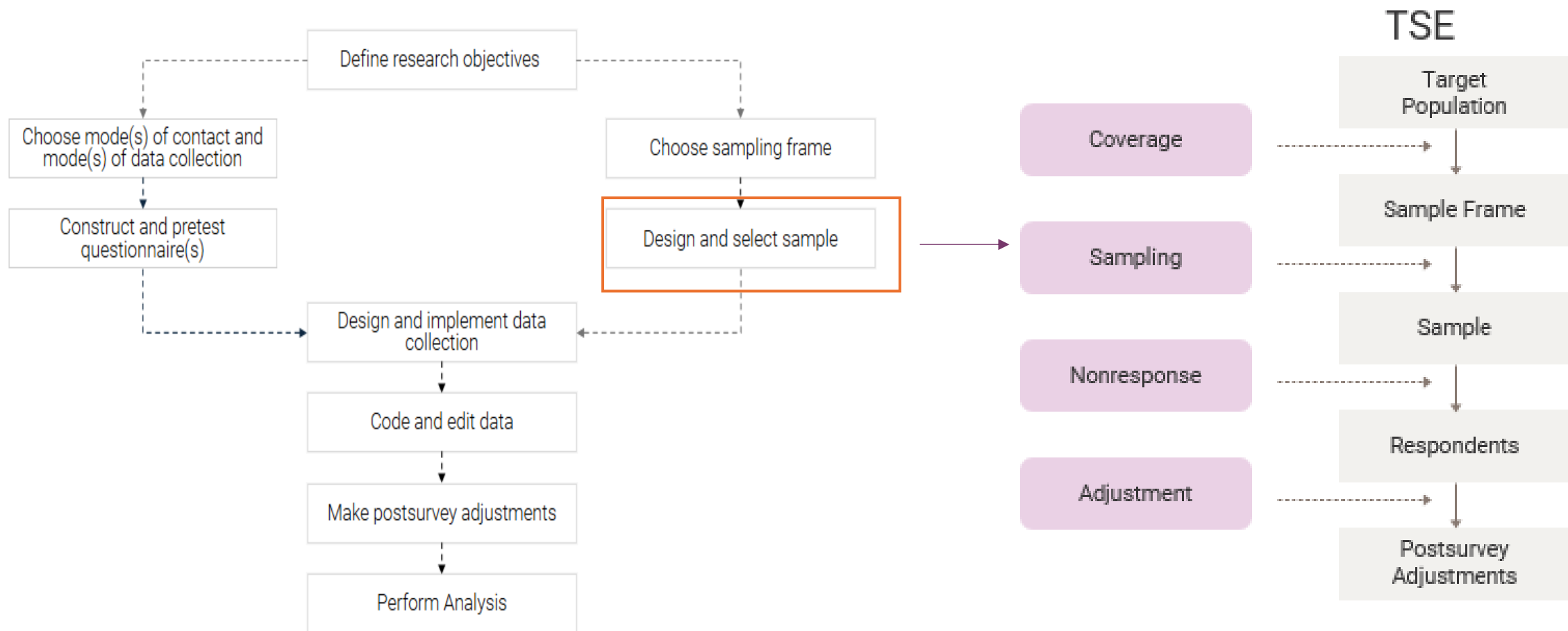
Non-response
Error

Adjustment
Error

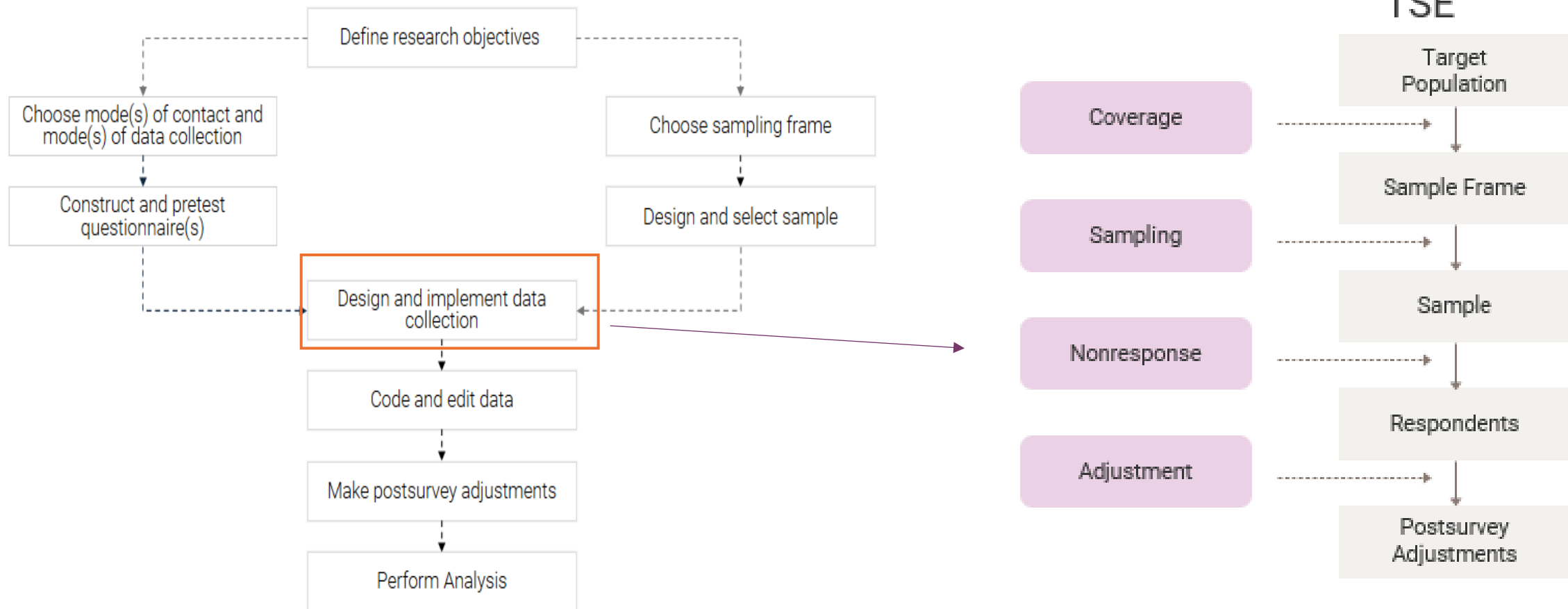
Be explicit about who is expected to be studied and who is expected to be included in data



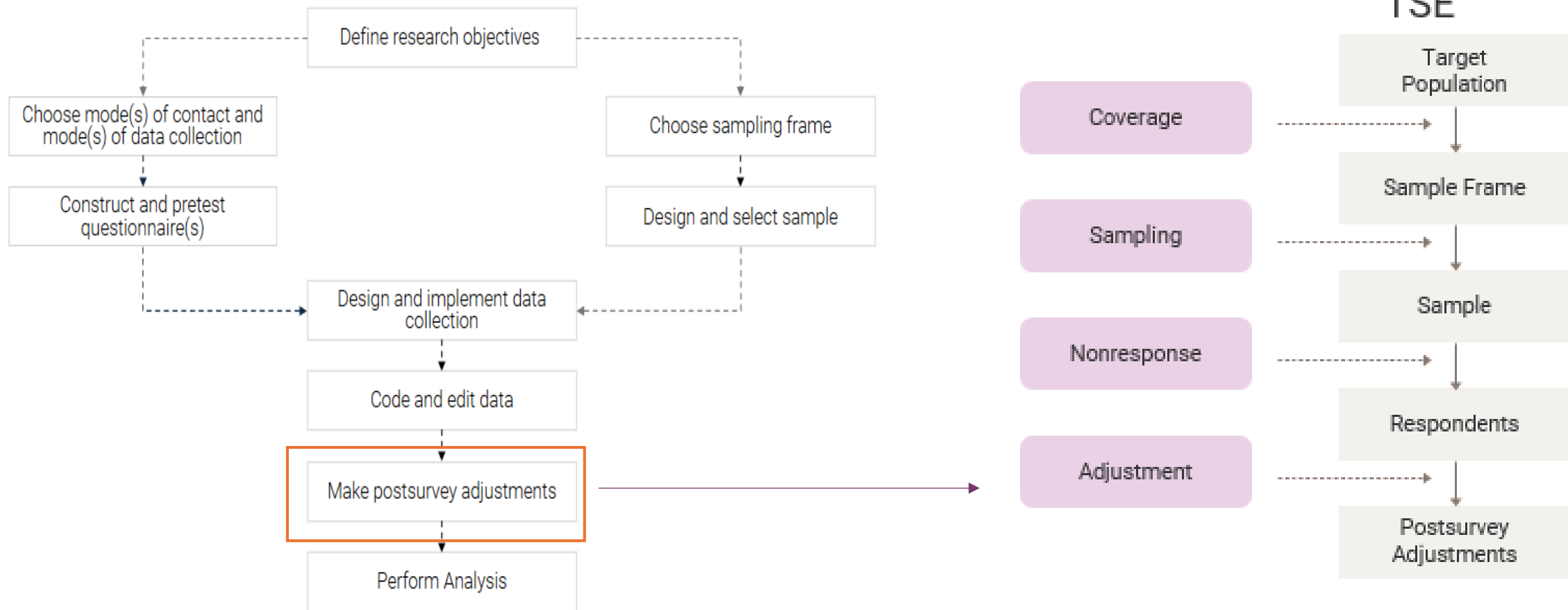
Be explicit about whether probability or nonprobability samples are used and provide details on sampling procedures



Be explicit about who is included in data and provide detailed information on how data are collected/generated



Provide detailed information on adjustment procedures



Design decisions to reduce non-observation errors

Coverage
Error

Solution:

Improved
sampling
frame

Sampling
Error

Solution:

Improved
sampling
efficiency

Non-response
Error

Solution:

Multimode
designs to reduce
non-response
error

Adjustment
Error

Solution:

Tested
weighting
adjustment
methods

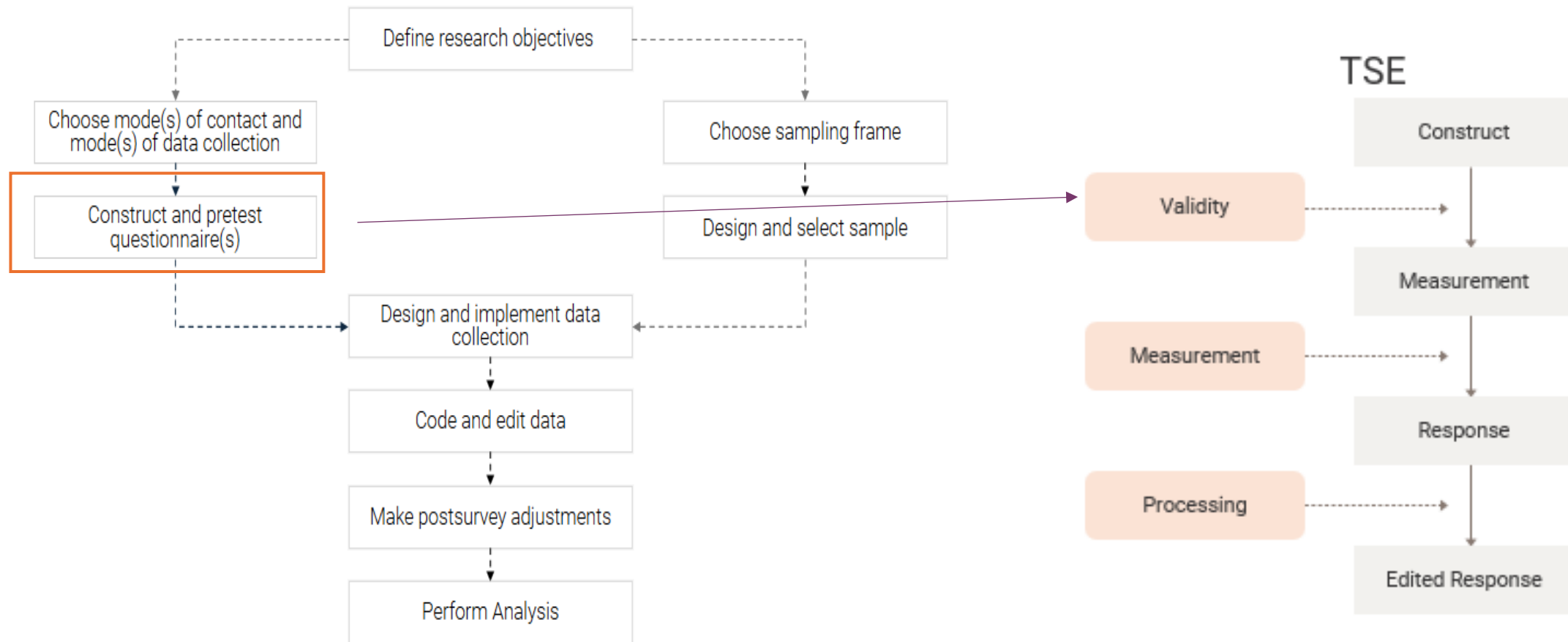
Survey Errors

Validity

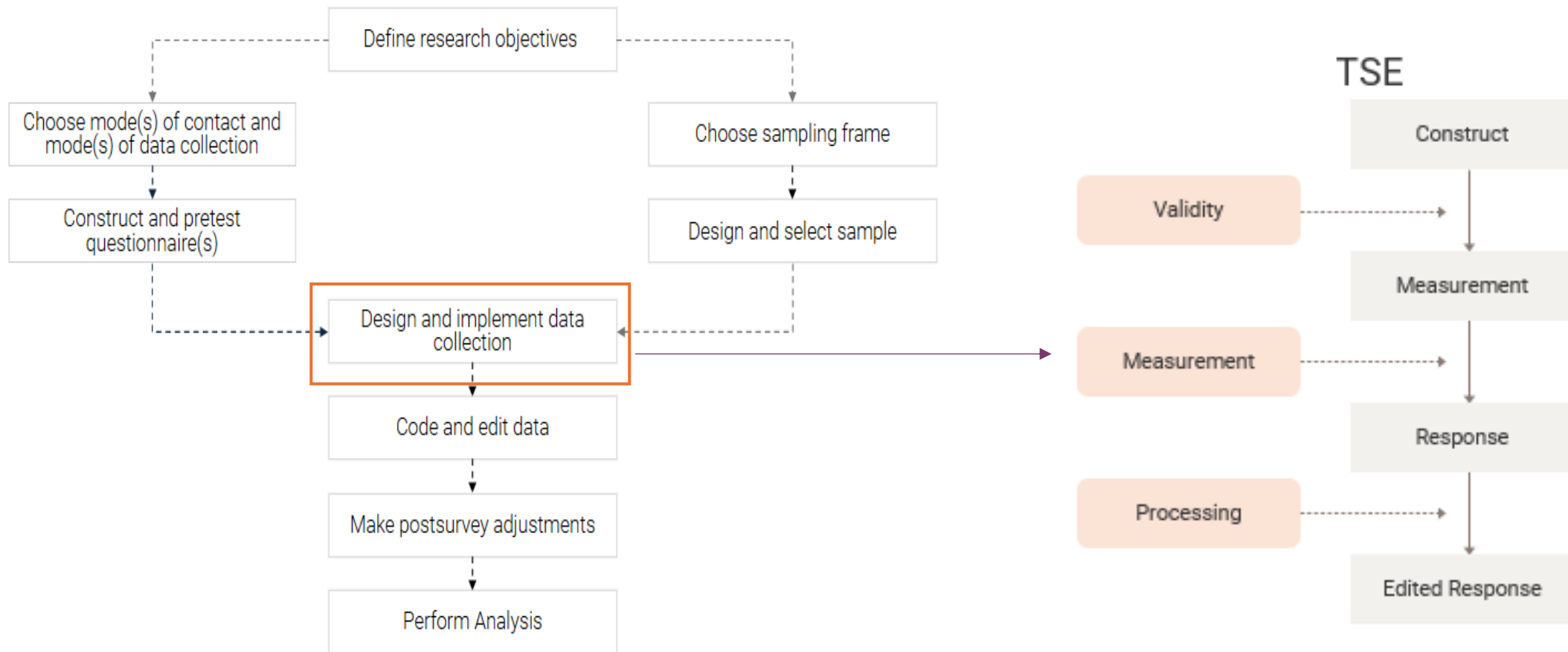
Measurement
Error

Processing
Error

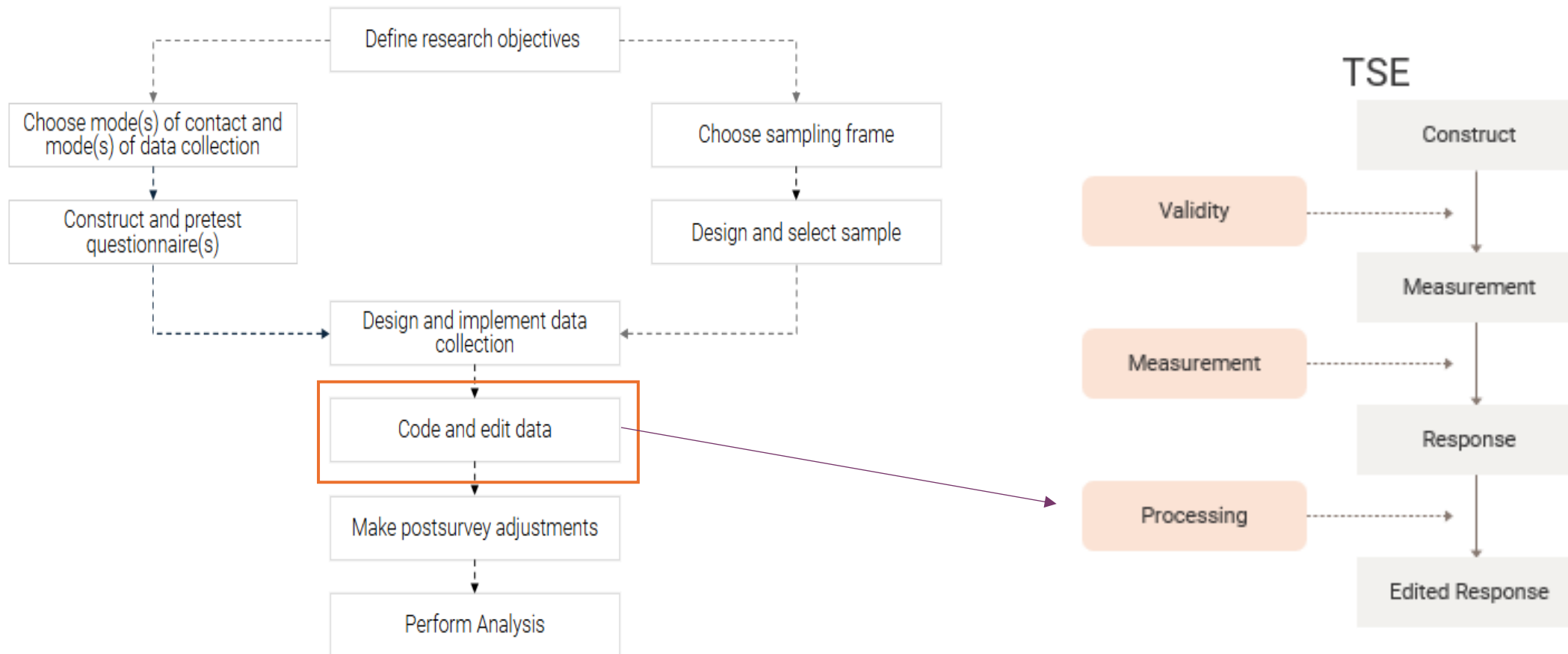
Provide detailed information on measurement (e.g., questionnaires, model/make of equipment/sensors etc) and assessment of measurement



Provide detailed information on data generation process



Provide detailed information on data coding and editing process including tools/algorithms used



Design decisions to reduce observation errors

Validity

Solution:

Extensive question evaluation and testing

Measurement Error

Solution:

Rigorous data collection procedures

Processing Error

Solution:

Extensive quality control procedures

Methodology ensures accuracy, reliability, and validity by providing a clear plan for data collection and analysis.

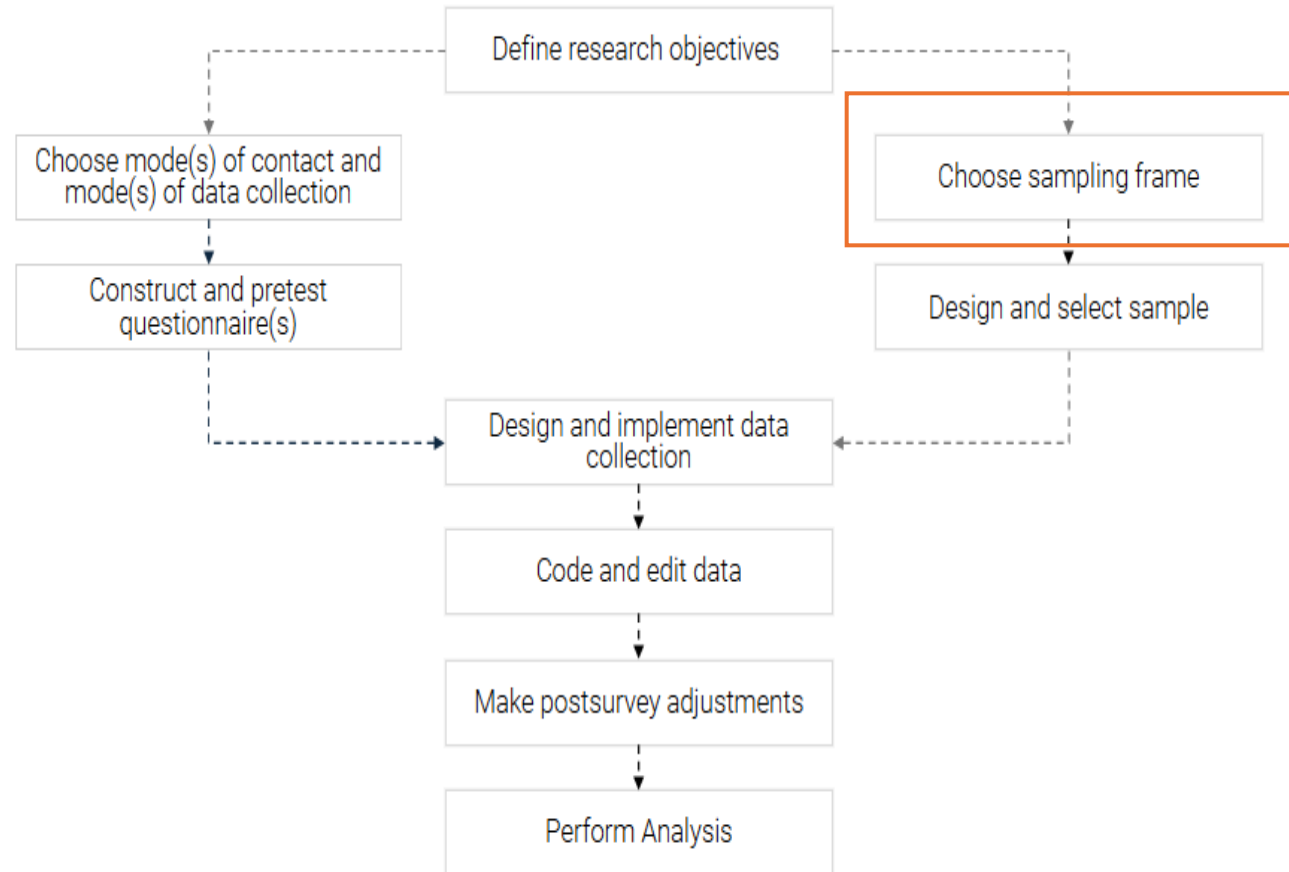
A sound methodology:

- Prevents errors like sampling bias
- Keeps research aligned with its original objectives
- Builds trust in findings by making the process transparent
- Leads to actionable insights that support decision-making



Key Survey Decisions

1. Choose a sampling frame to maximize coverage of your target population



Sampling Frames



Delivery Sequence File (DSF)/Common Data Set (CDS)

USPS Computerized Delivery Sequence File covers about ~91% of addresses, notably missing drop points, simplified addresses and others.



Cellphone

Coverage is 98%, but with call screening and spam filtering there are unknown systematic errors, low response rate and very high costs.



Prepaid Cellphones

Coverage ~11%, highly systematic. But good for boosting some hard to reach populations

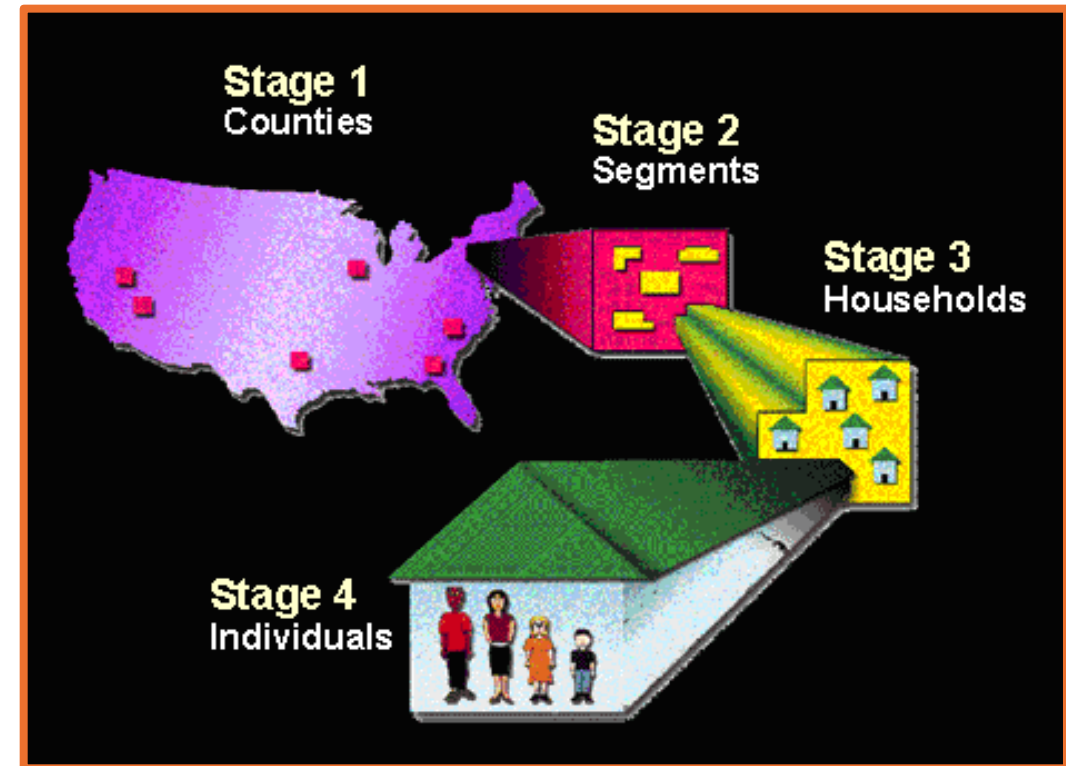


Area Probability, Enhanced (NORC National Frame)

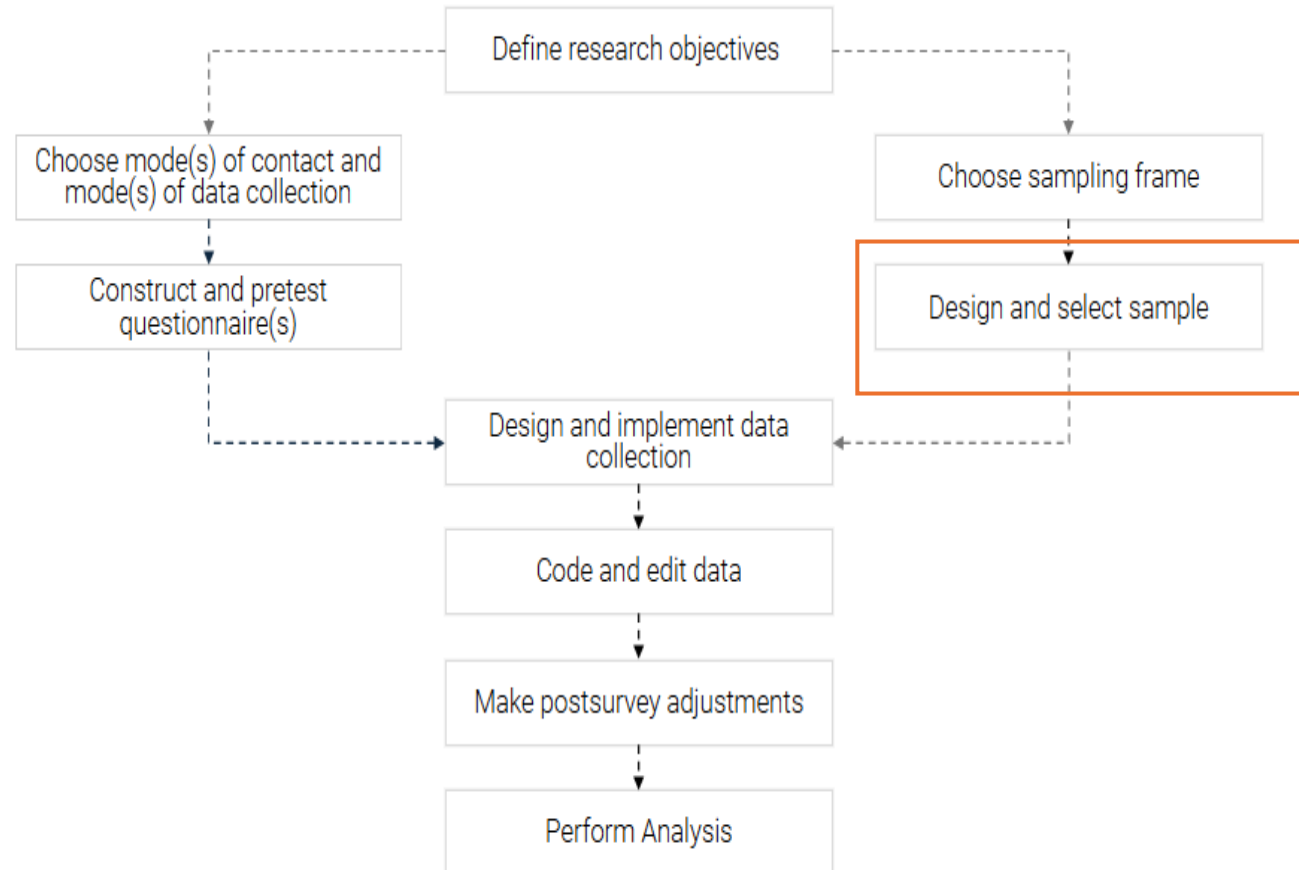
Based on the DSF, but with additional computerized and in-person enumeration to boost coverage to near 100% (~98%).

Uses of the NORC National Frame

- Area probability design based on 126 national frame areas (NFAs).
- 2nd stage selects segments within each NFA (1,917 selected)
- DSF used for addresses; supplemented with in-person enumeration in rural areas to increase coverage to 97%.
- NFAs with at least 1.5 million selected with certainty
- Supplementation with general DSF sample in 2019 to increase representativeness in key states
- Segments with a higher % of young adults and minorities (Hispanic, NH-Black) oversampled
- High Hispanic tracts oversampled



2. Design and select a probability-based sample



Types of Panels: Pros & Cons

	Pros	Cons	Examples
Probability Panels	Representative, generalizable	Higher cost	AmeriSpeak SSRS Knowledge Panel
Non-Probability Panels	Fast, inexpensive	Limited accuracy	Dynata YouGov
Hybrid Panels	Balances cost/rigor	Requires careful methods	Verasight (80% nonprob) Offered by many of the above

Non-Probability Panels: Growing Challenges

Key Sources of Error

- **Volunteer Bias:** Self-selected respondents over-represent highly active participants
- **Professionalization Bias:** Respondents take many surveys per week and even per day, across 4 or more panels
- **Non-Internet Coverage:** ~8% of U.S. population
- **Weighting & Calibration Issues:** Demographic adjustments often fail or worsen estimates.
- **Fraud & Bots:**
 - 10–50% of responses commonly found fraudulent
 - Explosion of human click farms trained to pass filters and checks
 - Explosion of bots to answer questions, using humans first to pass
 - Spoofing technology greatly advanced (residential proxies, purchasing of “clean” IP addresses, etc)

An “Existential Threat” (Insights Association):

- Errors can shift survey estimates by large amounts: 30-40%.
- Mitigation exists, but effectiveness is uncertain and fraudsters are constantly adapting.

Common “Evidence” Against Probability Panels: The Cherry Pick

Myth: Google Trends / Facebook studies did a great job tracking flu trends

Myths

**Myth
Vs
Reality**

Reality

Reality: For a few months...and then they went haywire and have never been as accurate as probability samples since

Common “Evidence” Against Probability Panels

Myth: Probability panels aren't accurate.

Myth: Non-probability panels sometimes do better.

Myth: Response rates are so low that it is no different

Myths

**Myth
Vs
Reality**

Reality

Reality: Probability error is modest compared to opt-in

Reality: Occasional success doesn't predict consistent accuracy across questions or populations.

Reality: Study after study shows low response rate is still far superior

Common “Evidence” Against Probability Panels: The Cherry Pick

Myth: Ann Seltzer significantly missed in 2024

Myths

**Myth
Vs
Reality**

Reality

Reality: Ann Seltzer’s probability polls have been substantially more accurate than EVERY nonprobability poll for over 20 years. 2024 was her unfortunate outlier among a history of being one of the most accurate polls of all time.

Common “Evidence” Against Probability Panels: The Cherry Pick

Myth: In 2016 the LA Times Nonprobability poll called it for Trump and not Clinton

Myths

**Myth
Vs
Reality**

Reality

Reality: Yes! But for the totally wrong reasons and basically dumb luck: Their extreme weighting resulted in dramatically high weights of a few cases (notably the few Blacks who supported Trump), leading to an estimate that was erroneously ~4% more red than blue.

Common “Evidence” Against Probability Panels: The Cherry Pick

Myth: YouGov did the best in 2016

Myths

**Myth
Vs
Reality**

Reality

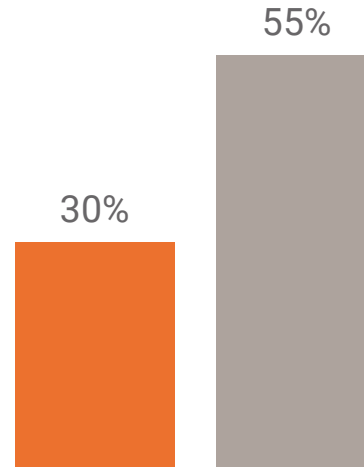
Reality: Yes! But they also were one of the worst in 2020.

Nonprobability does not just have a higher probability for error, but a substantially higher variance of error

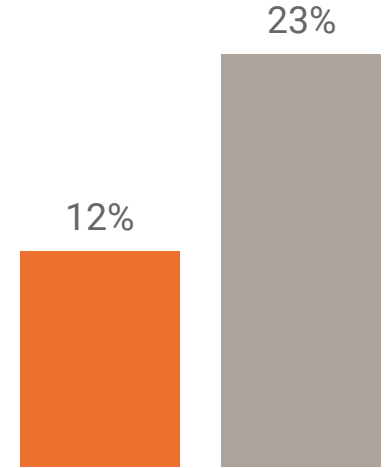
In plain language: when probability is wrong, it is typically by a few points...but nonprobability errors range from a few points to 20 percent or more

Probability Opt-In

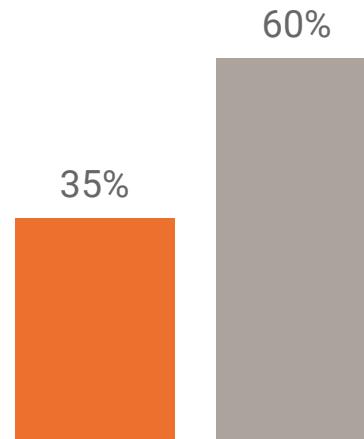
Know Your Representative (Pew)



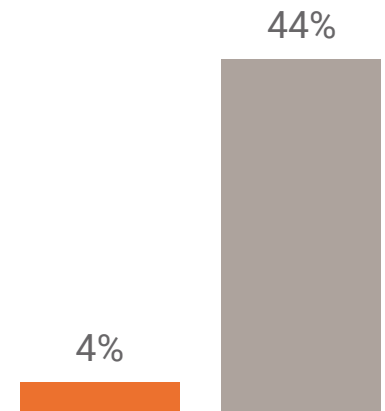
Small Business Owner (Census)



Buy Organic Food (USDA)



Support Forced Gaza Deportation (NORC, Muslims)



Peer-Reviewed/High Quality Research Showing **NonProbability** is Superior

Wang, W., Rothschild, D., Goel, S., & Gelman, A. (2015). Forecasting elections with non-representative polls using MRP. Proceedings of the National Academy of Sciences, 112(38), 10568–10573.

CAVEAT: Xbox poll with hundreds of thousands of cases, utilized extreme weight: In short, not a “real world” application

Rivers, D. (2007/2013). Sampling for Web Surveys (JSM Proceedings and subsequent methods notes).

CAVEAT: Again, the YouGov method has not fared as good a probability in recent elections. Forthcoming research will show serious errors occurring in YouGov samples

Ansolabehere, S., & Schaffner, B. F. (2014). Does Survey Mode Still Matter? Findings from a 2010 Multi-Mode Comparison. Political Analysis, 22(3), 285-303.

CAVEAT: Another YouGov example, and only showed general comparability, not superiority

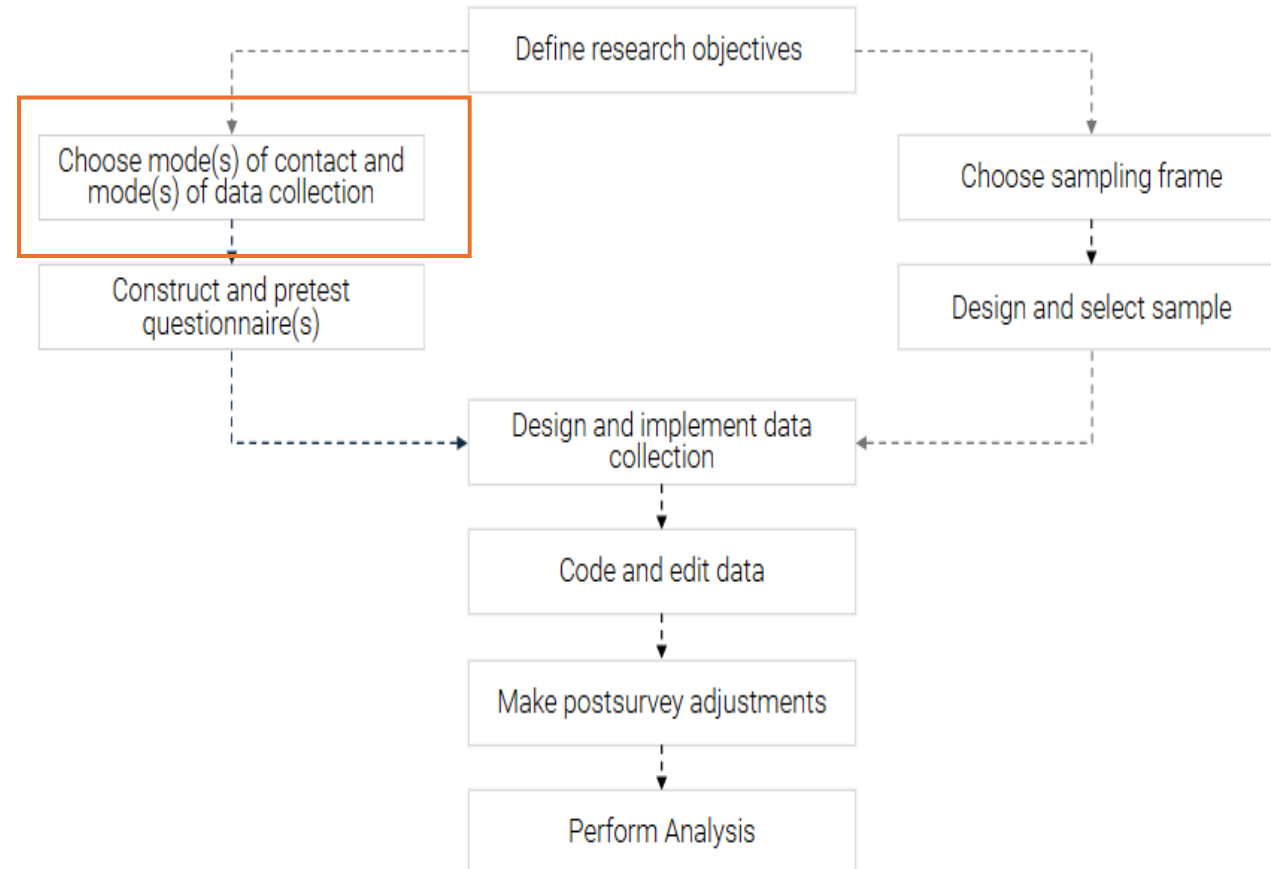
Note: there are studies that show that treatment effects can be comparable between samples in experiments in Mturk, see Weinberg, J. D., Freese, J., & McElhattan, D. (2014); Mullinix, K. J., Leeper, T. J., Druckman, J. N., & Freese, J. (2015); Coppock, A., Leeper, T. J., & Mullinix, K. J. (2018); Boas, T. C., Christenson, D. P., & Glick, D. M. (2020)

Peer-Reviewed/High Quality Research Showing **Probability** is Superior

- West, B. T., Sakshaug, J. W., & Aurelien, G. A. S. (2021).** How Big of a Problem is Analytical Error in Secondary Analyses of Survey Data? *PLOS ONE*, 16(3), e0158120.
- Chang, L., & Krosnick, J. A. (2009).** National surveys via RDD telephone interviewing versus the internet: Comparing sample representativeness and response quality. *Public Opinion Quarterly*, 73(4), 641-678.
- Bradley, V. C., Kuriwaki, S., Isakov, M., Sejdinovic, D., Meng, X. L., & Flaxman, S. (2021).** Unrepresentative big surveys significantly overestimated US vaccine uptake. *Nature*, 600(7890), 695-700.
- Kennedy, C., Mercer, A., Keeter, S., Hatley, N., McGeeney, K., & Gimenez, A. (2016).** Evaluating online nonprobability surveys. *Pew Research Center*.
- Keiding, N., & Louis, T. A. (2016).** Perils and Pitfalls of Self-Selected Surveys. *International Statistical Review*, 84(2), 219–254.
- Mercer, A., Deane, C., & McGeeney, K. (2016).** Why 2016 election polls missed their mark. *Pew Research Center*.
- Elliott, M. N., & Valliant, R. (2017).** Inference for nonprobability samples. *Statistical Science*, 32(2), 249-264.
- Elliott, M. R., & Haviland, A. M. (2022).** Combining Data from Probability and Nonprobability Samples Using Pseudo-Weights. *Survey Methodology*, 48(1), 1-21.
- Dutwin, D., & Buskirk, T. D. (2017).** Apples to oranges or gala versus golden delicious? Comparing data quality of nonprobability internet samples to low response rate probability samples. *Public Opinion Quarterly*, 81(S1), 213-239.
- Schlenger, W. E., & Silver, R. C. (2006).** Web-based methods in terrorism and disaster research. *Journal of Traumatic Stress*, 19(2), 185-193.
- Bethlehem, J. (2010).** Selection bias in web surveys. *International Statistical Review*, 78(2), 161-188.
- Malhotra, Neil, and Jon A. Krosnick. 2007.** "The Effect of Survey Mode and Sampling on Inferences about Political Attitudes and Behavior: Comparing the 2000 and 2004 ANES to Internet Surveys with Nonprobability Samples." *Political Analysis* 15:286–323.
- Chen, Y., Li, P., & Wu, C. (2020).** Doubly robust inference with nonprobability survey samples. *Journal of the American Statistical Association*, 115(532), 2011-2021.
- Schonlau, M., Van Soest, A., Kapteyn, A., & Couper, M. (2009).** Selection Bias in Web Surveys and the Use of Propensity Scores. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 172(4), 641–662.
- Rao, J. N. K. (2021).** On Making Valid Inferences by Integrating Data from Surveys and Other Sources. *Survey Methodology*, 47(1), 1-32.
- Yeager, D. S., Krosnick, J. A., Chang, L., Javitz, H. S., Levendusky, M. S., Simpson, A., & Wang, R. (2011).** Comparing the accuracy of RDD telephone surveys and internet surveys conducted with probability and non-probability samples. *Public Opinion Quarterly*, 75(4), 709-747.
- Tortora, R. D. (2004).** Response trends in a national random digit dial survey: The Gallup Poll experience 1997-2003. *Proceedings of the Section on Survey Research Methods, American Statistical Association*.
- Meng, X.-L. (2021).** The Big Data Paradox: When More Data Can Lead to Less Accurate Inference. *Harvard Data Science Review*, 3(1).
- Kennedy, C., Blumenthal, M., Clement, S., Clinton, J. D., Durand, C., Franklin, C., ... & Witt, G. E. (2018).** An evaluation of the 2016 election polls in the United States. *Public Opinion Quarterly*, 82(1), 1-33.
- Callegaro, Mario, Ana Villar, David Yeager, and Jon Krosnick. 2014.** "A Critical Review of Studies Investigating the Quality of Data Obtained with Online Panels Based on Probability and Nonprobability Samples." *Online Panel Research: A Data Quality Perspective* 23–53. doi:10.1002/9781118763520.ch2
- Sturgis, P., Kuha, J., Baker, N., et al. (2017).** An Experiment in Combining Probability and Nonprobability Samples for Survey Inference. *Public Opinion Quarterly*, 81(4), 1013–1037.
- Pasek, J. (2016).** When will nonprobability surveys mirror probability surveys? Considering types of inference and weighting strategies as criteria for correspondence. *Public Opinion Quarterly*, 80(1), 45-75.
- Cornesse, C., Blom, A. G., Dutwin, D., Krosnick, J. A., De Leeuw, E. D., Legleye, S., ... & Wenz, A. (2020).** A review of conceptual approaches and empirical evidence on probability and nonprobability sample survey research. *Journal of Survey Statistics and Methodology*, 8(1), 4-36.
- Mercer, A., Lau, A., & Kennedy, C. (2018).** For weighting online opt-in samples, what matters most? *Survey Practice*, 11(1).
- Scherpenzeel, A. C., & Das, M. (2010).** "True" Samples of Individuals Versus Convenience Samples? Differences Between Probability-Based and Volunteer Online Panels. In: *Social and Behavioral Research and the Internet* (eds. Das, Ester, & Kaczmirek).

3. Choose mode(s) of contact and data collection to maximize contact and response from your target population

- Implication on measurement and nonresponse error

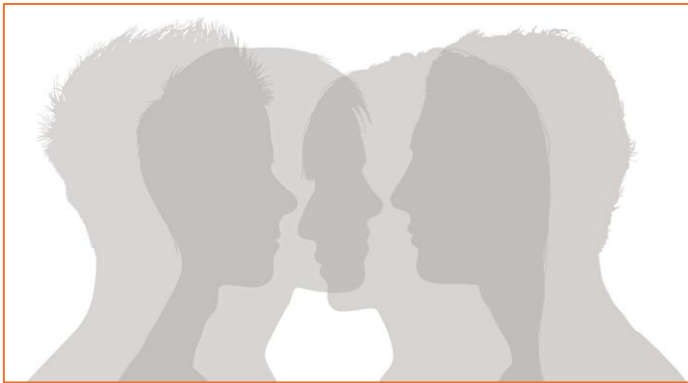


AmeriSpeak uses multiple modes of contact/data collection to maximize reach to all Americans

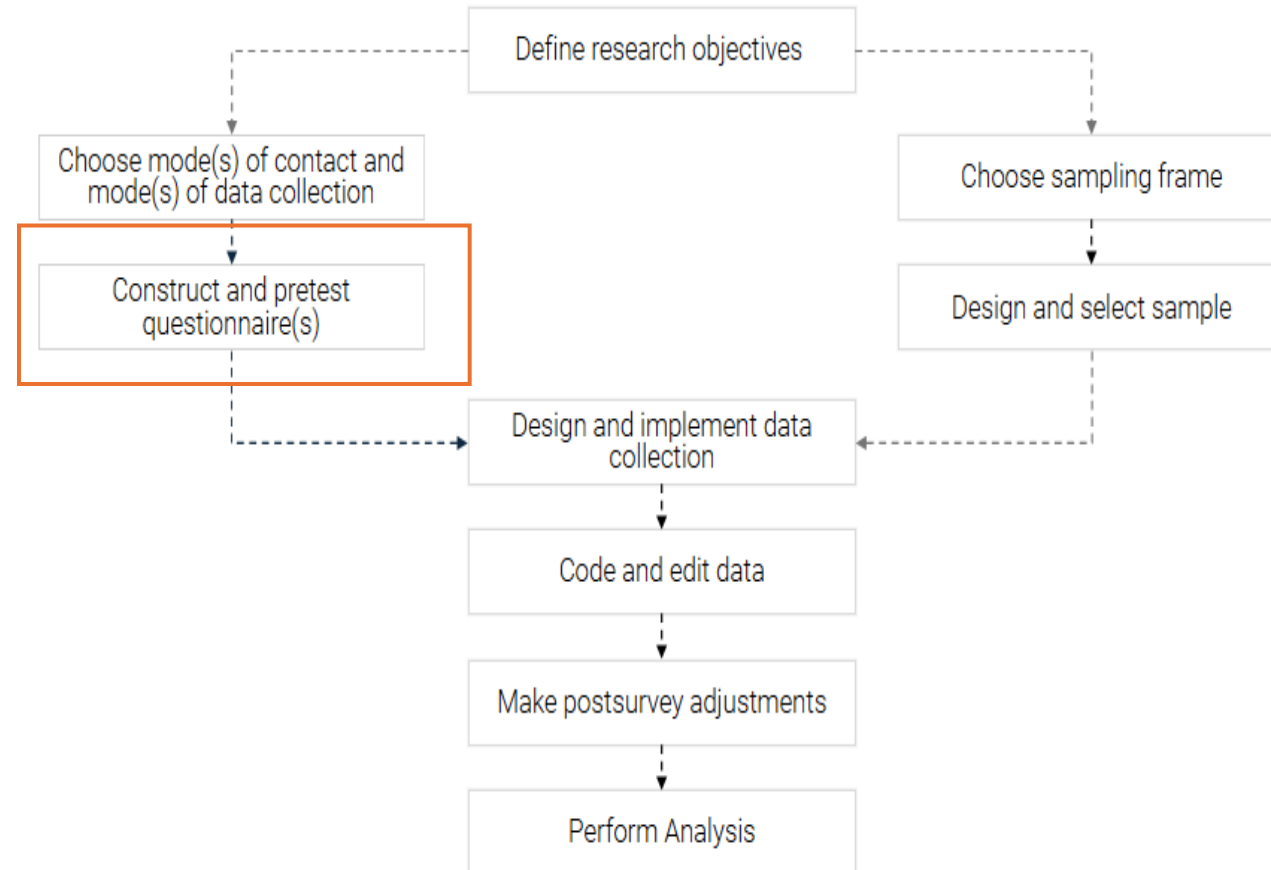
2-STAGE RECRUITMENT

Mail & Phone Contacting

Face-to-Face (F2F) Contacting



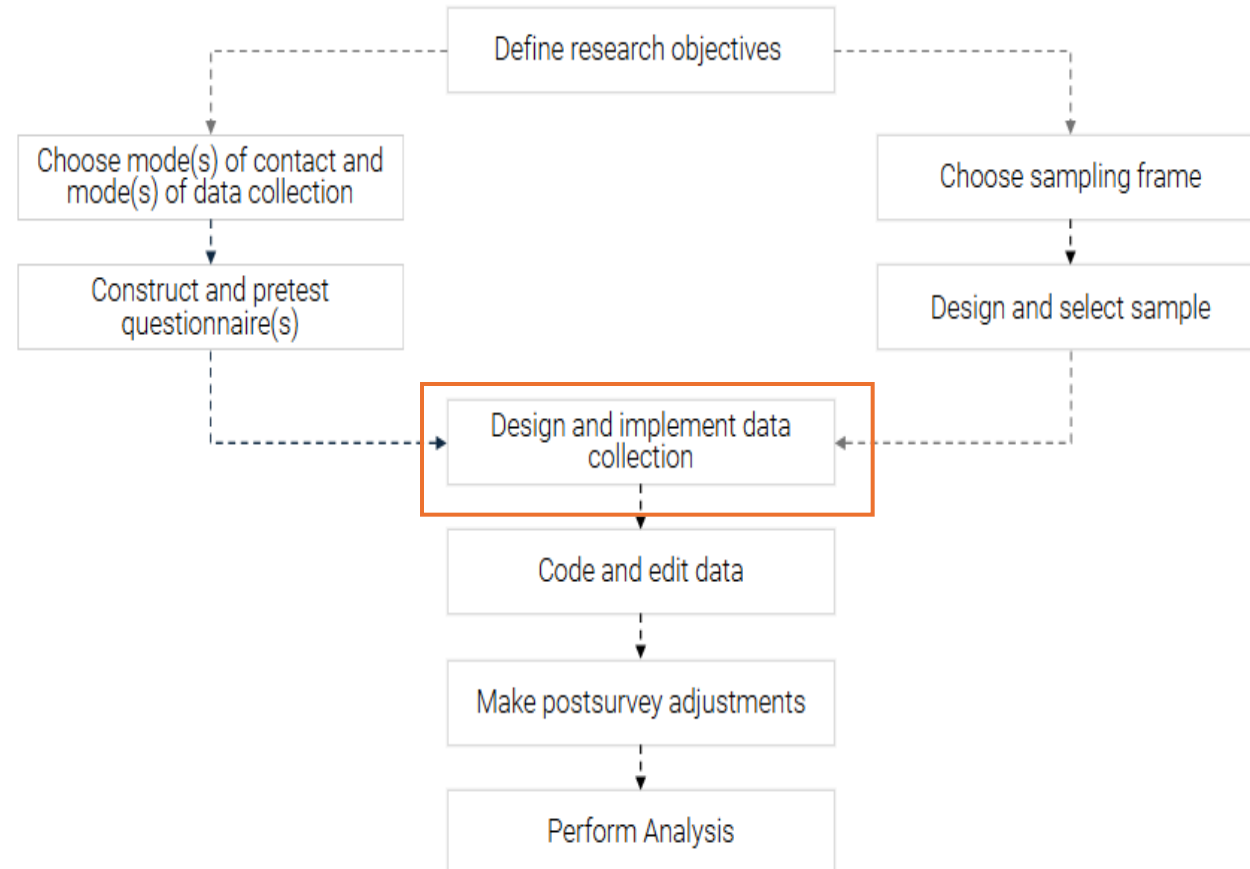
4. Pretest and evaluate your questionnaire



Types of Question Evaluation Methods: Pros & Cons

	Pros	Cons	Examples
Expert methods	Quick turn-around, inexpensive	No involvement of actual respondents	Expert reviews
Lab-based methods	Involving actual respondents	Expensive	Cognitive interviews
Field-based methods	Large data, mimicking actual data collection	Resource heavy	Randomized experiment, pilot testing

5. Design data collection protocol to maximize response rate and reduce survey error

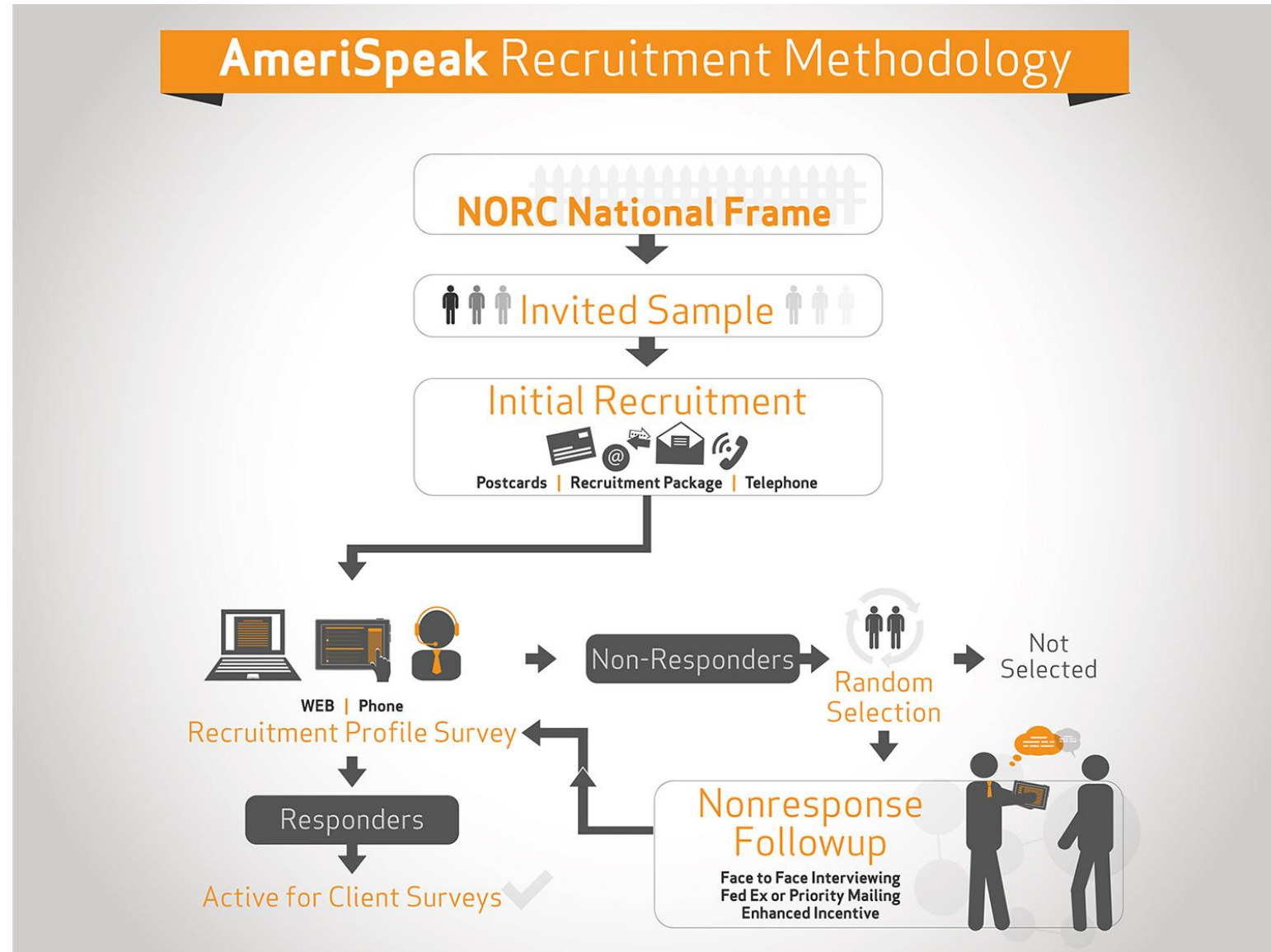


Initial Contact

- **Pre-notification postcard**
- **+5 days, 9 x 12 recruitment packet w/ pre-incentive, study brochure, and privacy policy**
- **+12 days, reminder postcard**
- Call-ins allowed throughout
- +18 days, call-outs to matched telephones

NRFU Contact

- **Federal Express study brochure and enhanced pre-incentive**
- In-person contact



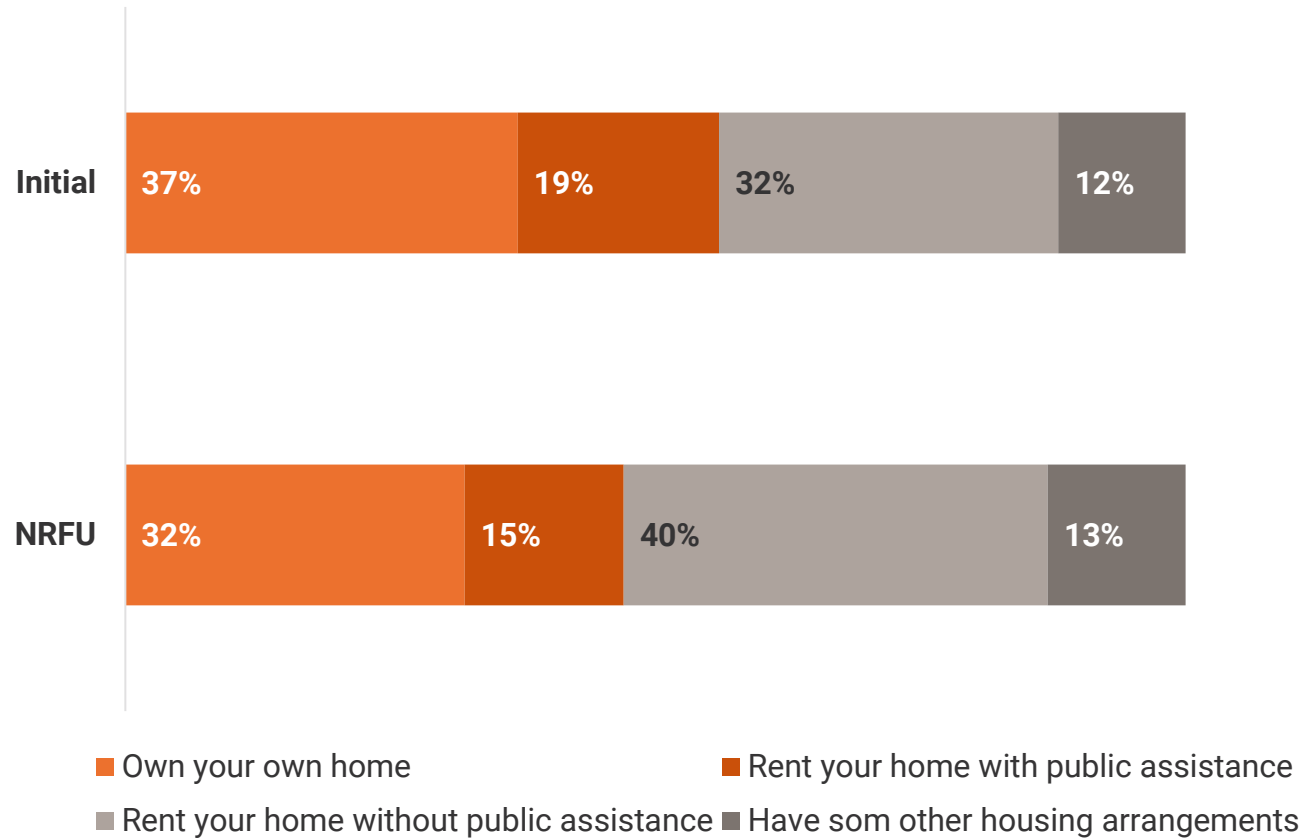
AmeriSpeak has the highest response rate.

Key Panel Features	AmeriSpeak	KnowledgePanel	American Trends Panel	Gallup Panel
Sample Frame	NORC National Frame/ABS	ABS, RDD	ABS	ABS, RDD
Household Sample Coverage Rate	97%	~92%	~92%	~92%
AAPOR Panel Recruitment Response Rate	22%	10%	N.P.A.	8%
AAPOR Cumulative Response Rate ⁴	8-15%	~1%	~1%	N.P.A.
Panel Tenure	2–3 years on average	N.P.A.	N.P.A.	N.P.A.
Mode of Data Collection for Client Surveys	Online + phone	Online only	Online only	Mail, online, phone

Note: References for the information are available upon request. “N.P.A.” indicates that NORC was unable to locate this information from public sources.

Panels with in-person follow up track reality much better.

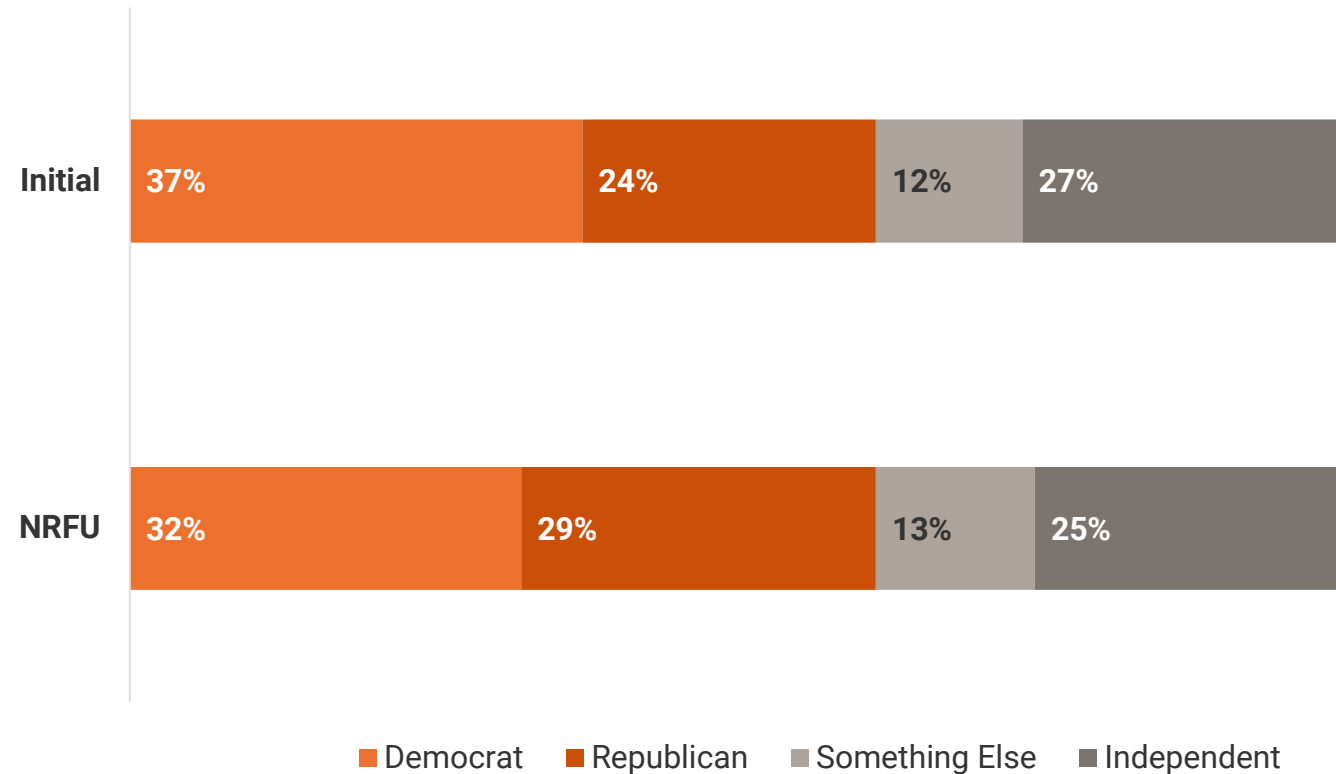
Do you or does someone in your household...



Source: Legal Services Corp. Justice Gap Survey | n=10,480 U.S. adults

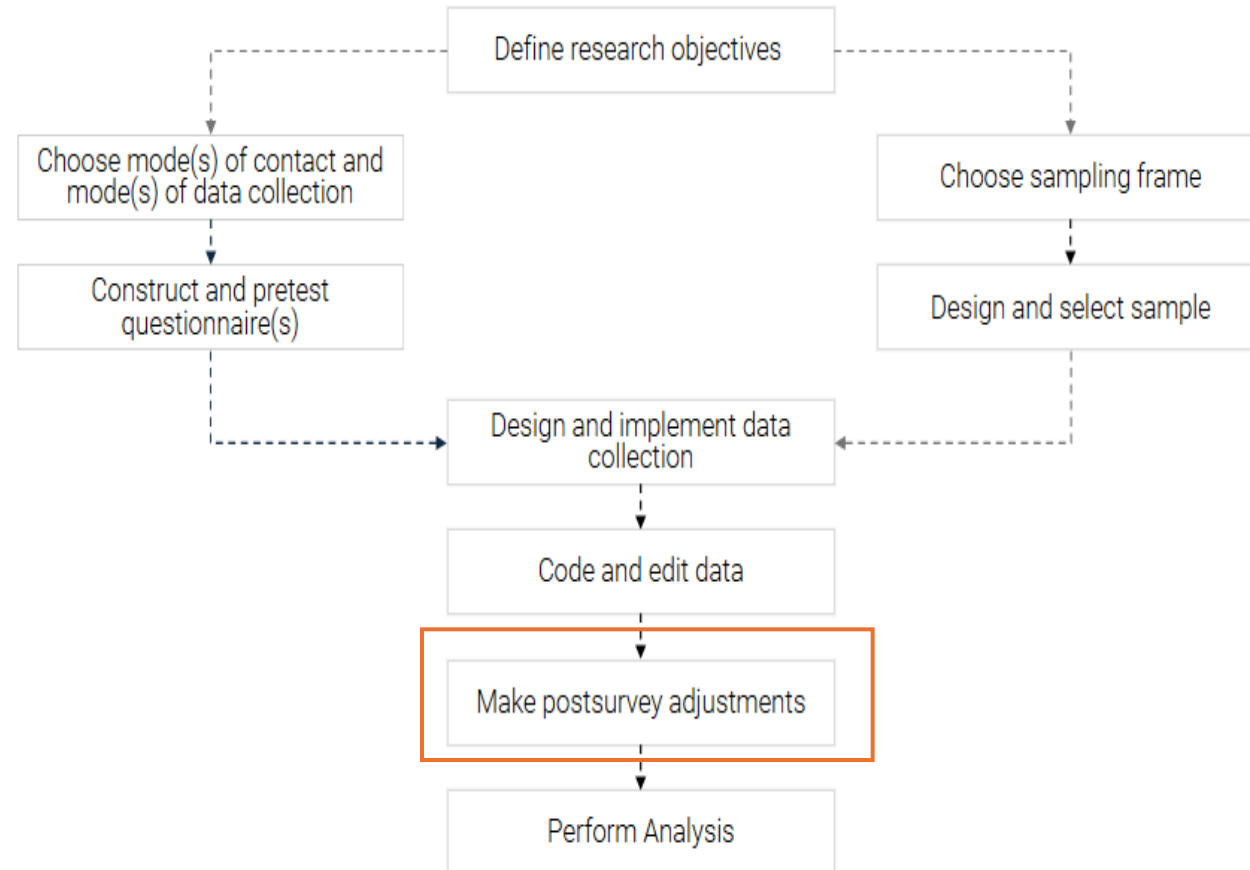
Non-response follow-up captures people who would otherwise be missing, making the data more representative.

Do you consider yourself to be a [Democrat, Republican, Independent] or something else?



Source: AARP Retirement Study | n=9,606 working U.S. adults age 18-64 employed in private sector industries

6. Choose correct weighting adjustment procedures



Weighting Considerations

Weighting panels should be complex, as there are multiple steps and often additional metadata to use to better reduce other errors.



Panel Base Weighting

Designed to ensure equal probability of selection of every sample element



Nonresponse Weighting

Use of frame and other metadata to reduce known systematic errors



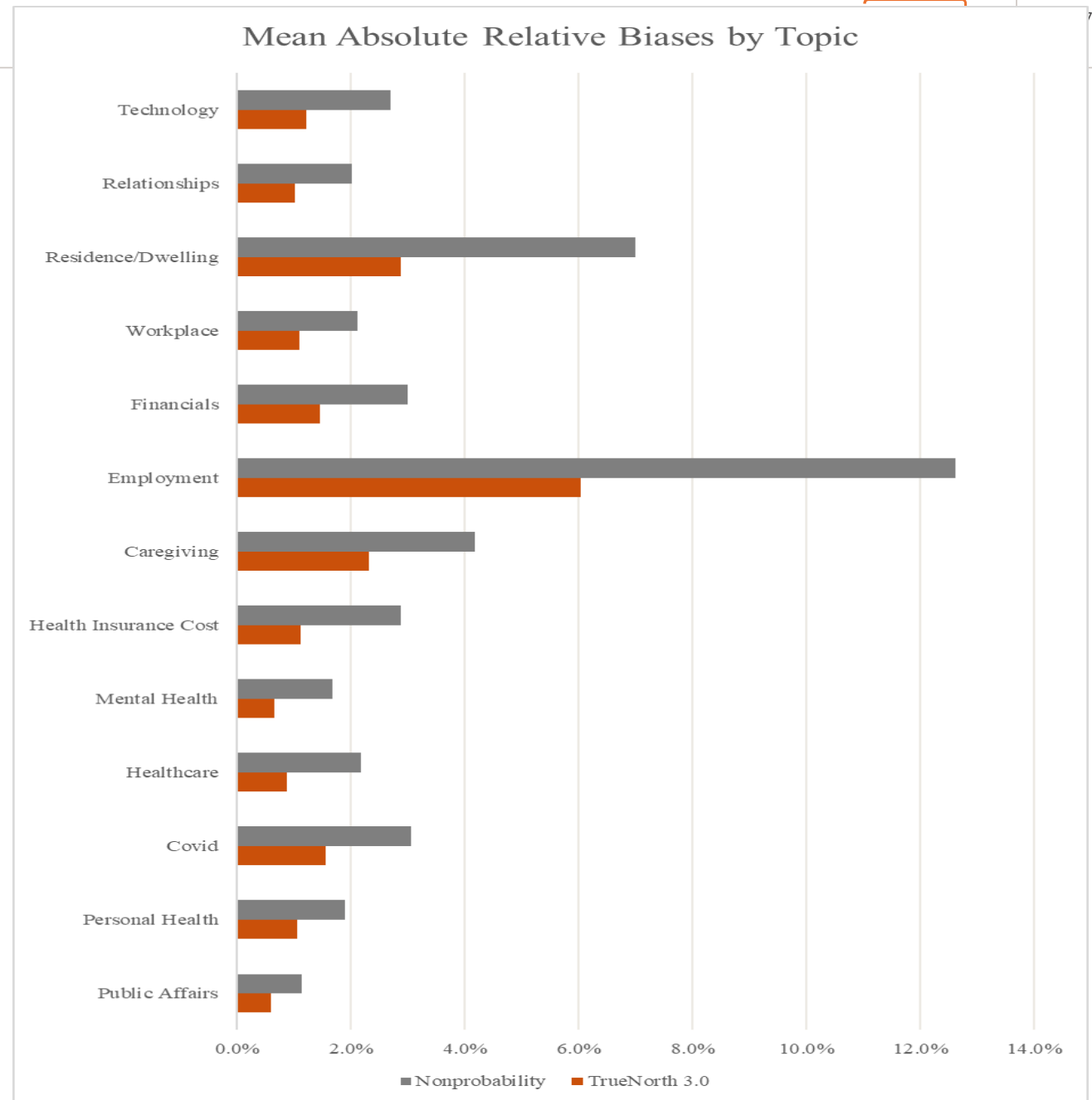
Survey Weighting

Study-specific weighting. Current best practice includes a range of interactive demographic benchmarks, and....(for political surveys)...past vote?!

TrueNorth combines probability and nonprobability samples

Hybrid weighting utilizing a modelled approach

- leveraging the higher quality of the probability to reduce biases in the nonprobability sample.



AmeriSpeak in Action



AmeriSpeak is a suite of panels serving a range of populations



**State and Local
Panels**



**Prime
Qualitative**



By the Numbers

50K+

**Participating
Households**

(50 States + DC)

2M+

**Client Surveys
Completed**

(Since 2015 thru June 2022)

34%

**Panel Recruitment
Response**

(AAPOR RR3 with Nonresponse
Follow-up)

AmeriSpeak conducts surveys for clients who can't afford to be wrong.

We combine the speed and cost-effectiveness of probability-based panels with a unique approach that captures a true picture of America.

Response Rate

AmeriSpeak knocks on the doors of people who don't respond to our initial outreach. This extra effort gives us an industry-leading recruitment response rate of 34 percent.

Sample Representativeness

Our rigorous recruitment makes AmeriSpeak's panel truly reflective of the entire U.S. population. We survey hard-to-reach segments such as low-income households, young adults, and social and political conservatives.

Survey Consistency

AmeriSpeak has low participant turnover and survey fatigue, with an industry-leading retention of about 85 percent. Respondents are limited to one survey a week, so they're more likely to provide thoughtful answers.

How AmeriSpeak is Different

Recruiting

Only panel to use mail, phone, and door-to-door

Other panels rely on mail/phone and only attain 3-6%

Response Rates

True AAPOR RR3 of 12-25 percent

No other panel exceeds 5%

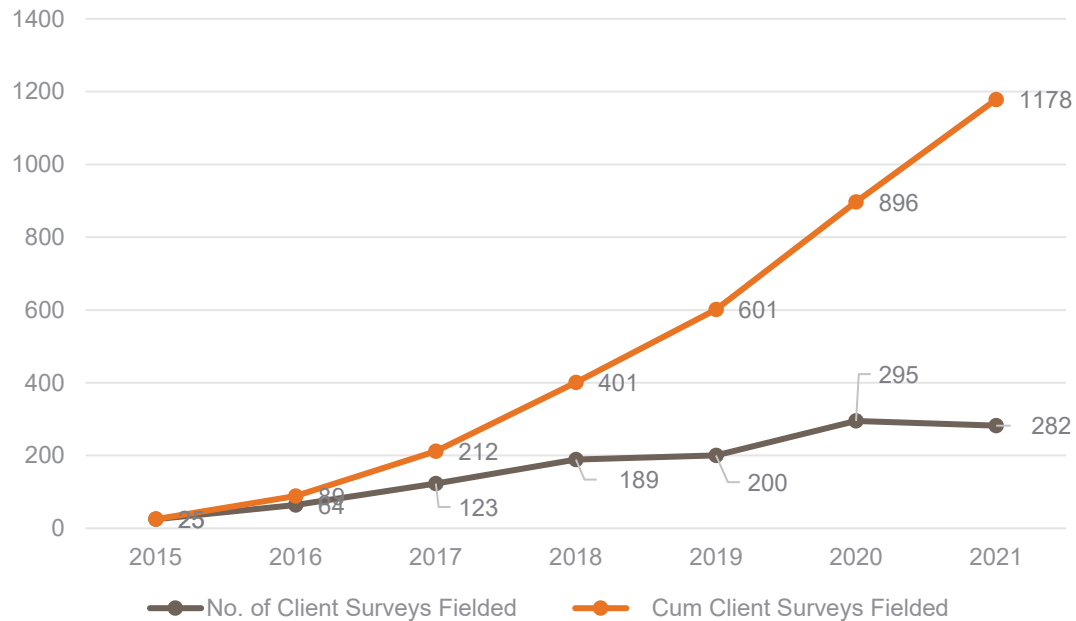
Quality

Structured quality processes

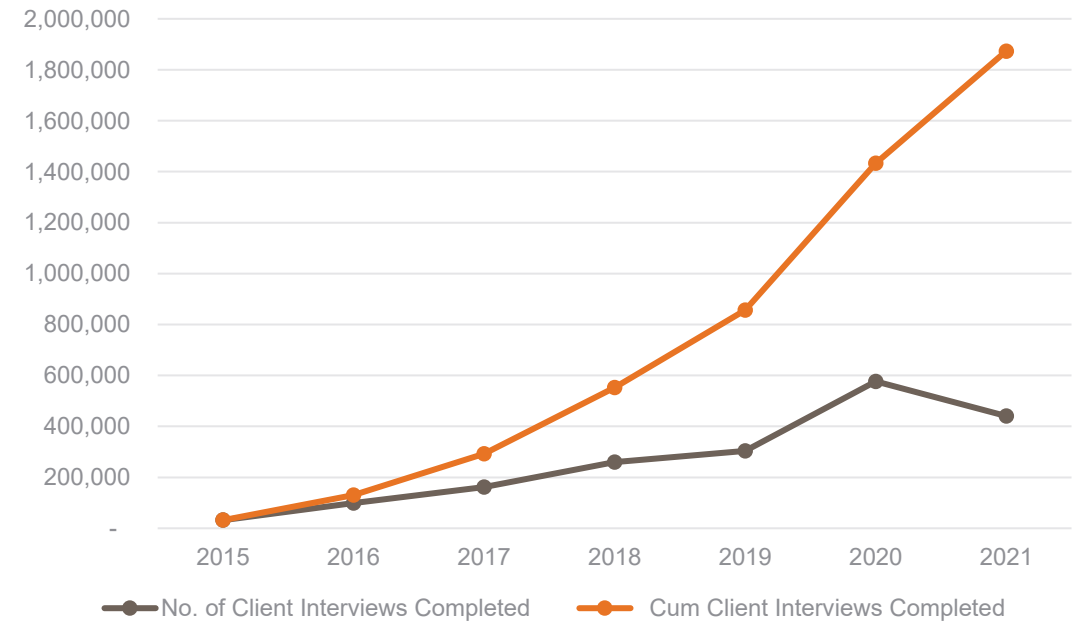
Tools and resources to drive reliability

AmeriSpeak – Now the premier polling infrastructure for probability-based panel surveys in the U.S.

No. AmeriSpeak Client Surveys Fielded



No. Client Survey Interviews Completed



Common Uses of AmeriSpeak

- **Survey representative of US adults**
- **Subgroups of US adults**
- **Longitudinal surveys**
- **Tracking polls**
- **Teen surveys (ages 13-17)**

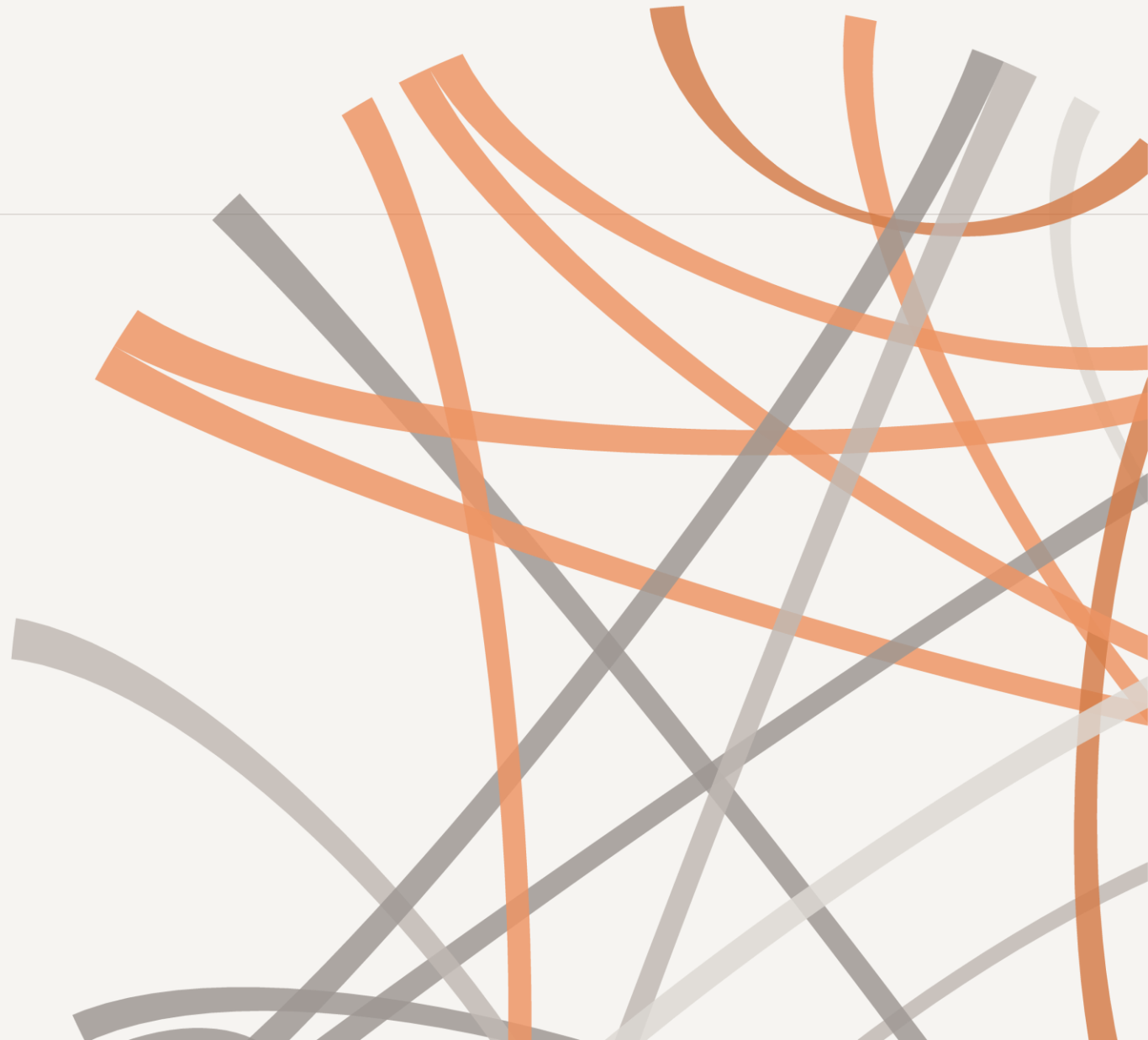
Can I Afford A Probability Sample?

- **TESS Experiments**
- **SESSR Experiments (TESS for religion)**
- **AmeriSpeak Omnibus surveys – pay by the question**

Key Takeaways

- **Methodology matters:** The way we sample and recruit participants shapes the accuracy and reliability of survey findings.
- **Probability-based panels are essential:** They provide the foundation for data that can be generalized to the U.S. population.
- **Recruitment and follow-up improve representation:** Non-response follow-up brings in voices that are often missed, reducing bias.
- **AmeriSpeak demonstrates these principles in action:** A rigorous, probability-based panel powering research that informs policy, academia, and society.

Questions?



Resources & Next Steps

In this presentation

- [AmeriSpeak Overview](#)
- [Center for Panel Survey Sciences publications](#)
- [TESS Proposal Site](#)

Additional Reading

- **ScienceDirect:** [We need to talk about nonprobability samples](#)
- **Pew Research Center:** [Evaluating online nonprobability surveys](#)
- **Cornell University:** [Assessing selection bias in regression coefficients estimated from non-probability samples](#)

Thank you.

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Get Your Research Right

