SPRING 2023
TENNESSEE STATEWIDE
POLL

Submitted to: CSDI at Vanderbilt University

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SUMMARY

The Center for the Study of Democratic Institutions (CSDI) at Vanderbilt University regularly conducts public opinion polls of Tennessee registered voters to provide non-partisan, scientifically-based public opinion data. Each year, the Vanderbilt Poll conducts at least two statewide surveys, one prior to the start of the legislative season and one at its conclusion. These polls provide point-in-time data to find out what registered voters in Tennessee think about national, state, and local public policy issues.

The Tennessee Poll Spring 2023 obtained telephone interviews with a representative sample of 1,003 registered voters, ages 18 or older, living in Tennessee. Telephone interviews were conducted by landline (502) and cell phone (501, including 435 without a landline phone). Interviews were done in English from April 19-23, 2023. Statistical results are weighted to correct known demographic discrepancies. The margin of sampling error for the complete set of weighted data is ± 3.6 percentage points.

Details on the design, execution and analysis of the survey are discussed below.

QUESTIONNAIRE DEVELOPMENT

The questionnaire was developed by the Principal Investigators at the Center for the Study of Democratic Institutions (CSDI) at Vanderbilt in consultation with the SSRS project team. Prior to the field period, SSRS programmed the study into Forsta Plus (formerly known as Confirmit) Computer Assisted Telephone Interviewing (CATI) software. Extensive checking of the program was conducted to ensure that skip patterns and sample splits followed the design of the questionnaire.

SAMPLE DESIGN

The target population for this poll was Tennessee registered voters ages 18 or older. SSRS used a registration-based sampling (RBS) approach. RBS samples were procured from Aristotle, one of the major providers of voter list samples. Samples were provided according to SSRS specifications.

The sample frame was split into four strata based on age: [1] 18-29; [2] 30-44; [3] 45-64; [4] 65+. Samples were drawn within stratum regardless of whether they had a phone number appended. Records that had no phone number were sent to Dynata to get cell phone and landline numbers appended. The following table shows how much sample was released in each stratum after the Dynata phone append.

Table 1: Sample Released

Stratum	Landline	Cell
18-29	12,827	11,195
30-44	8,805	22,059
45-64	13,059	14,298
65+	10,258	3,761
Total	44,949	51,313

The sample size for this poll was n=1,003 interviews. Overall, 50% of respondents were reached via landline and 50% of respondents were reached via cellular telephone.

CONTACT PROCEDURES AND DATA PROCESSING

Contact Procedures

For respondent selection for landline sample, interviews were conducted with the youngest adult male/female, ages 18 or older, who was at home based on a random rotation. For the cellular sample, interviews were conducted with the person who answered the phone. Interviewers verified that the person was an adult and in a safe place before administering the survey. For both landline and cell samples, after an adult was on the phone, geographic eligibility and current voter registration status were determined prior to accepting the respondent into the survey.

Survey Administration

The field period for this study was April 19-23, 2023. All interviews were completed in English using the CATI system. The CATI system ensured that questions followed logical skip patterns and that complete dispositions of all call attempts were recorded.

CATI interviewers received written materials about the survey instrument and received formal training for this particular project. The written materials were provided prior to commencement of data collection and included an annotated questionnaire that contained information about the goals of the study, detailed explanations about why questions were being asked, the meaning and pronunciation of key terms or names, potential obstacles to overcome in getting good answers to questions, and respondent problems that could be anticipated ahead of time, as well as strategies for addressing the potential problems.

Interviewer training was conducted before the study was launched. Interviewers were given instructions to help them maximize response rates and ensure accurate data collection.

To maximize survey response, SSRS enacted the following procedures during the field period:

- As many as five (5) attempts were made to contact every sampled telephone number.
- Calls were staggered over times of day and days of the week to maximize the chance of making contact with potential respondents. At least one daytime call was conducted if necessary.
- Interviewers explained the purpose of the study and its importance.
- Respondents were offered the option of scheduling a call-back at their convenience.
- Specially trained interviewers contacted numbers where the initial call resulted in respondents hanging up the phone.

Data Processing and Integration

Prior to running cross-tabulations, data were cleaned and checked using standard procedures. This program establishes editing parameters to locate any errors. Minimal back-coding was conducted for RACE and self-reported county. No other coding was done for open-end responses.

WEIGHTING AND ANALYSIS

Weighting is generally used in survey analysis to compensate for sample designs and patterns of non-response that might bias results. The weighting ensures that the demographic profile of the sample matches the profile of the target population. The data was weighted to match Tennessee registered voter parameters.

The sample was weighted in two stages. The first stage of the weighting was the application of a base weight to account for different selection probabilities across sample strata. In the second stage of weighting, sample demographics were matched to population parameters.

Base weight

The sample frame was divided into 16 strata based on the region (East, Nashville, Central, Memphis) and age (18-29, 30-44, 45-64, 65+) of each sample record. The sample was disproportionately allocated across strata to try and compensate for the lower response typically seen among younger voters while also controlling the regional distribution of the sample.

The base weight of each respondent i is $BW_i = P_i/p_i$ where P_i is the proportion of the sample frame in stratum i and p_i is the proportion of interviews conducted in stratum i.

Post-Stratification

With the base weight applied, the data were weighted to balance the demographic profile of the sample to the target population parameters.

Missing data in the raking variables were imputed using hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. Hot decking was done using an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handing Missing Data' (Myers, 2011).

Weighting was accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure.[1]

[1] https://community.ibm.com/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=17fd2f0b-7555-6ccd-c00c-5388b082161b&forceDialog=0

Data were weighted to distributions of: sex, age, race, education, and region. The following table shows the data sources used for calibration totals.

Table 2: Calibration Variable Sources

Dimensions	Source
Sex Age Education Race	November 2020 Current Population Survey Voting and Registration Supplement[2]
Region	2017-2021 American Community Survey 5-Year Estimates[3]

Weights were trimmed at the 2nd and 98th percentiles to prevent individual interviews from having too much influence on survey-derived estimates. The table below compares unweighted and weighted sample distributions to target population benchmarks.

[2]Sarah Flood, Miriam King, Renae Rodgers, Steven Ruggles and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2020. https://doi.org/10.18128/D030.V7.0

[3]Steven Ruggles, Sarah Flood, Matthew Sobek, Danika Brockman, Grace Cooper, Stephanie Richards, and Megan Schouweiler. IPUMS USA: Version 13.0 [dataset]. Minneapolis, MN: IPUMS, 2023. https://doi.org/10.18128/D010.V13.0

Table 3: Population Parameters and Weighted and Unweighted Total Sample Distributions

Category	Values	Parameter	Unweighted	Weighted
Sex	Male	47.2%	47.2%	47.0%
	Female	52.8%	52.8%	53.0%
Age	18-29	18.0%	7.2%	17.0%
	30-34	5.8%	4.7%	5.9%
	35-44	16.5%	14.5%	16.7%
	45-54	16.4%	15.5%	16.6%
	55-64	19.4%	19.2%	19.7%
	65+	23.8%	38.8%	24.1%
Education	HS grad or less	37.6%	29.8%	37.3%
	Some college	25.7%	20.4%	25.6%
	College+	36.6%	49.8%	37.1%
Race/Ethnicity	White, not Hispanic	78.2%	82.7%	78.5%
	Other	21.8%	17.3%	21.5%
Region	East (Region 1)	36.8%	35.3%	36.9%
	Nashville Area (Region 2)	24.2%	25.5%	24.1%
	Central (Region 3)	20.6%	20.7%	20.9%
	Memphis/West (Region 4)	18.4%	18.5%	18.2%

Effects of Sample Design on Statistical Analysis

Post-data collection statistical adjustments require analysis procedures that reflect departures from simple random sampling. SSRS calculates the effects of these design features so that an appropriate adjustment can be incorporated into tests of statistical significance when using these data. The so-called "design effect" or *deff* represents the loss in statistical efficiency that results from a disproportionate sample design and systematic non-response. The total sample design effect for this survey is 1.33.

SSRS calculates the composite design effect for a sample of size n, with each case having a weight, w, as:[4]

$$deff = \frac{n \sum w^2}{(\sum w)^2}$$

The survey's margin of error is the largest 95% confidence interval for any estimated proportion based on the total sample — the one around 50%. For example, the margin of error for the entire sample is ± 3.6 percentage points. This means that in 95 out of every 100 samples drawn using the same methodology, estimated proportions based on the entire sample will be no more than 3.6 percentage points away from their true values in the population. Margins of error for subgroups will be larger. It is important to remember that sampling fluctuations are only one possible source of error in a survey estimate. Other sources, such

[4] Kish, L. (1992). Weighting for Unequal Pi. Journal of Official Statistics, Vol. 8, No.2, 1992, pp. 183-200.

as respondent selection bias, questionnaire wording, and reporting inaccuracy, may contribute additional error of greater or lesser magnitude.

RESPONSE RATES

Table 4 reports the disposition of all sampled telephone numbers ever dialed from the original telephone number samples. The response rate estimates the fraction of all eligible sample that was ultimately interviewed. Response rates are computed according to American Association for Public Opinion Research standards.[5]

- The response rate for RBS landline was 5.9 percent.
- The response rate for RBS cell was 2.1 percent.

[5] The American Association for Public Opinion Research. 2016. Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys. 9th edition. AAPOR.

Table 4: Sample Disposition

Eligible, Interview (Category 1)	LANDLINE	CELL
Complete	502	501
Eligible, Non-interview (Category 2)		
Refusal and breakoff	90	64
Refusal	17	1
Respondent never available	0	0
Telephone answering device (confirming HH)	0	0
Answering machine household-no message left	0	0
Answering machine household-message left	65	307
Other, non-refusals	0	0
Deceased respondent	0	0
Physically or mentally unable/incompetent	0	0
Language problem	0	0
Miscellaneous	0	0
Unknown eligibility, non-interview (Category 3)		
Always busy	0	0
No answer	7,809	17,273
Answering machine-don't know if household	8,508	19,401
Call blocking	67	623
Technical phone problems	3,970	1
Residential, unknown if eligible respondent	0	0
No screener completed, residential and live contact made	4,286	8,087
No screener completed, residential and no live contact	0	0
Other	0	0
Not eligible (Category 4)		
Fax/data line	254	105
Non-working number	19,253	4,269
Nonresidence	75	317
Business, government office, other organizations	0	0
No eligible respondent	53	364
Quota filled	0	0
Other	0	0
Total sample used	**44,949**	**51,313**
Refusal Rate 3	**88.6%**	**91.0%**
Cooperation Rate 3	**11.2%**	**9.6%**
Contact Rate 3	**12.3%**	**6.3%**
Response Rate 3	**5.9%**	**2.1%**

DELIVERABLES

SSRS delivered to Vanderbilt University:

- Final questionnaire instrument.
- Weighted dataset in SPSS.
- Weighted banners in PDF.
- Topline.
- A detailed methods report.

ABOUT SSRS

SSRS is a full-service survey and market research firm managed by a core of dedicated professionals with advanced degrees in the social sciences. Service offerings include the SSRS Opinion Panel and other Online Solutions, SSRS Business Insights Panel, and SSRS Text Message Panel, as well as custom research programs – all driven by a central commitment to methodological rigor. The SSRS team is renowned for its multimodal approach, as well as its sophisticated and proprietary sample designs. Typical projects for the company include complex strategic, tactical, and public opinion initiatives in the U.S. and in more than 40 countries worldwide. SSRS is research, refined. Visit www.ssrs.com for more information.