

# METHODOLOGY REPORT MATERNAL AND CLIMATE HEALTH SURVEY

Prepared for The Annenberg Public Policy Center  
of the University of Pennsylvania

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## OVERVIEW

The Annenberg Public Policy Center of the University of Pennsylvania (APPC) engaged SSRS to conduct the Maternal and Climate Health Survey. The survey was conducted via the SSRS Opinion Panel as part of series of APPC projects known as the Annenberg Survey of Attitudes on Public Health (ASAPH). The Maternal and Climate Health Survey invited U.S. adults aged 18 and older who completed the first ASAPH survey to participate. Data collection was conducted from August 16-22, 2022, among a sample of 1,621 respondents in English (1,590) and Spanish (31). The web total respondents were 1,574 and there were 47 telephone respondents. Data were weighted to represent the target U.S. adult population.

This report provides information about the sampling procedures and the methods used to collect, process, and weight data for the APPC Maternal and Climate Health Survey.

## QUESTIONNAIRE DESIGN

The questionnaire was developed by APPC in consultation with the SSRS project team. Prior to the field period, SSRS programmed the study into its Forsta Plus (formerly known as Confirmit) platform that allows data to be collected online or through Computer Assisted Telephone Interviewing (CATI). Extensive checking of the program was conducted to ensure that skip patterns and sample splits followed the design of the questionnaire.

## SAMPLE DESIGN: THE SSRS OPINION PANEL

SSRS Opinion Panel members are recruited randomly based on nationally representative ABS (Address Based Sample) design (including Hawaii and Alaska). ABS respondents are randomly sampled by Marketing Systems Group (MSG) through the U.S. Postal Service's Computerized Delivery Sequence File (CDS), a regularly-updated listing of all known addresses in the U.S. For the SSRS Opinion Panel, known business addresses are excluded from the sample frame.<sup>1</sup>

The SSRS Opinion Panel is a multi-mode panel. Internet households participate via web while all non-internet households (including those who have internet but are unwilling to take surveys online) participate via phone.

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<sup>1</sup> Prior to July 2019, the SSRS Opinion Panel was recruited entirely from RDD sample.

# DATA COLLECTION

## Survey Sampling

Sample for the APPC Maternal and Climate Health Survey consisted of n=1,907 SSRS Opinion Panelists who completed the ASAPH Wave 1 survey. The sample for ASAPH Wave 1 was stratified by age, gender, race and ethnicity, education, region, party identification and language to ensure adequate representation of each.

## Survey Administration Procedures

A “soft launch” inviting a limited number of panelists to participate was conducted the morning of August 16, 2022. After checking soft launch data to ensure that all questionnaire content and skip patterns were correct, the remaining sample was released later in the day.

Web panelists were emailed an invitation to complete the survey online. The email for each respondent included a unique passcode-embedded link. All respondents not responding to their first invitation received up to three reminder emails and non-responding panelists who had opted into receiving text messages from the SSRS Opinion Panel received a text message reminder.

In appreciation for their participation, web-panelists received a \$15 incentive in the form of an electronic gift card. Telephone respondents received a \$15 incentive in the form of a mailed check.

Median survey length was 20 minutes online and 37 minutes by phone.

## Quality Control Checks

For web surveys, quality checks were incorporated into the survey. For the APPC Maternal and Climate Health Survey, SSRS built in two closed-ended trap questions to the web version of the program. Respondents who failed the quality checks were not included in the final data set. This included:

1. Respondents who answered two or more trap questions incorrectly (n=0);
2. Respondents with a length of interview (LOI) less than 20% of the overall mean LOI<sup>2</sup> (n=4);
3. Respondents who skipped more than 20% the questions asked<sup>3</sup> (n=0).

A total of N=4 completed surveys were removed (0.2%).<sup>4</sup>

For telephone surveys, interviews are closely monitored by interviewing staff for quality control. In addition, select recordings are reviewed by supervisors to monitor quality and interviewer procedures.

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<sup>2</sup> LOI less than 4.0 minutes.

<sup>3</sup> 93% of respondents answered 100% of questions asked.

<sup>4</sup> Panelists may fail multiple quality control checks, therefore the total number of removals may be less than the cumulative number of failed tests.

## COMPLETION RATE

Table 2 details the survey completion rate for this study.

**Table 2: Completion Rate:**

Touchpoint	Web	Telephone	Overall
Invited to Participate/Total Sample	1,834	73	1,907
Completed <sup>5</sup>	1,574	47	1,621
Survey Completion Rate	86%	64%	85%

## WEIGHTING

Data were weighted to represent the residential adult population of the United States. The data were weighted by applying a base weight and balancing the demographic profile of the sample to target population parameters.

### Base weight (BW)

The base weight for the SSRS Opinion Panel was the final weight from ASAPH Wave 1.

### Raking

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 Handling 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.

Data were weighted to distributions of: sex by age, sex by education, age by education, race/ethnicity, census region, civic engagement, population density, party ID<sup>6</sup>, voter registration, religion, and internet use frequency. The main demographic benchmarks were obtained from the 2021 Current Population Survey (CPS)<sup>7</sup>. The civic engagement benchmark was derived from September 2019 CPS Volunteering and Civic Life

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<sup>5</sup> Excludes cases removed for quality control reasons.

<sup>6</sup> The party ID used in weighting is measured at the time of panel registration, not at the time of this survey.

<sup>7</sup> Sarah Flood, Miriam King, Renae Rodgers, Steven Ruggles, J. Robert Warren and Michael Westberry. Integrated Public Use Microdata Series, Current Population Survey: Version 9.0 [dataset]. Minneapolis, MN: IPUMS, 2021. <https://doi.org/10.18128/D030.V9.0>.

Supplement data<sup>8</sup> <sup>9</sup>. Population density was derived from Census Planning Database 2020<sup>10</sup>. The registered voter benchmark is from Aristotle Voter Data 2021. The party ID, internet frequency, and religion benchmarks came from NPORS annual dataset released by Pew Research<sup>11</sup>. Weights were trimmed at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles to prevent individual interviews from having too much influence on survey-derived estimates. See Appendix I for a comparison unweighted and weighted sample distributions to target population benchmarks.

## Effects of Sample Design on Statistical Inference

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 1.87.

SSRS calculates the composite design effect for a sample of size  $n$ , with each case having a weight,  $w$ , as:<sup>12</sup>

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

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  $\pm 3.3$  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 3.3 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 as respondent selection bias, questionnaire wording, and reporting inaccuracy, may contribute additional error of greater or lesser magnitude.

## DELIVERABLES

Final deliverables for this study were as follows:

- Weighted SPSS dataset
- Methodology Report

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<sup>8</sup> <https://www.census.gov/programs-surveys/cps/about/supplemental-surveys.html>

<sup>9</sup> Civically engaged respondents are defined as those who have volunteered in the past 12 months or who talk to their neighbors daily.

<sup>10</sup> <https://www.census.gov/topics/research/guidance/planning-databases/2020.html>

<sup>11</sup> <https://www.pewresearch.org/methods/fact-sheet/national-public-opinion-reference-survey-npors/> - May 29 to Aug 25, 2021.

<sup>12</sup> Kish, L. (1992). Weighting for Unequal Pi. *Journal of Official Statistics*, Vol. 8, No.2, 1992, pp. 183-200.

## APPENDIX I: SAMPLE DEMOGRAPHICS

Category	Values	Parameter	Unweighted	Weighted
Sex by age	Male 18-24	5.7%	3.6%	5.4%
	Male 25-34	9.0%	8.5%	9.0%
	Male 35-44	8.2%	8.5%	8.3%
	Male 45-54	7.7%	7.8%	7.9%
	Male 55-64	7.9%	8.0%	7.7%
	Male 65+	9.9%	12.2%	9.8%
	Female 18-24	5.6%	3.7%	5.6%
	Female 25-34	8.9%	11.4%	9.1%
	Female 35-44	8.4%	10.0%	8.6%
	Female 45-54	8.0%	8.1%	8.1%
	Female 55-64	8.6%	8.8%	8.7%
	Female 65+	12.1%	9.6%	11.8%
Sex by education	Male HS grad or less	19.5%	8.1%	18.5%
	Male Some college	12.7%	12.0%	12.9%
	Male College grad +	16.3%	28.4%	16.7%
	Female HS grad or less	18.4%	11.2%	18.3%
	Female Some college	14.4%	15.3%	14.6%
	Female College grad +	18.8%	24.9%	19.1%
Age by education	18-34 HS grad or less	11.2%	4.8%	10.7%
	18-34 Some college	9.3%	6.5%	9.4%
	18-34 College grad +	8.8%	15.9%	9.0%
	35-54 HS grad or less	10.9%	6.3%	11.1%
	35-54 Some college	7.9%	8.8%	8.1%
	35-54 College grad +	13.4%	19.2%	13.7%
	55+ HS grad or less	15.8%	8.3%	15.1%
	55+ Some college	9.9%	11.9%	10.0%
55+ College grad +	12.8%	18.3%	13.0%	

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Category	Values	Parameter	Unweighted	Weighted
Race/ethnicity	White non-Hisp	62.5%	67.1%	62.7%
	Black non-Hisp	12.0%	8.9%	11.9%
	Hispanic, US Born	8.4%	8.3%	8.2%
	Hispanic, Foreign Born	8.5%	4.3%	8.5%
	Asian, non-Hisp	6.1%	9.2%	6.2%
	Other non-Hisp	2.5%	2.2%	2.5%
Census region	Northeast	17.2%	18.9%	17.2%
	Midwest	20.6%	18.6%	20.4%
	South	38.3%	36.6%	38.3%
	West	23.9%	25.9%	24.1%
Civic engagement	Not engaged	67.3%	47.1%	66.8%
	Civically engaged	32.7%	52.9%	33.2%
Population density	1 Lowest 20%	20.0%	17.1%	19.9%
	2	20.0%	20.7%	19.9%
	3	20.0%	19.9%	20.1%
	4	20.0%	21.4%	20.2%
	5 Highest 20%	20.0%	20.8%	19.9%
Party ID (panel)	Rep	27.1%	24.6%	27.0%
	Dem	31.6%	35.1%	31.9%
	Ind/Other	41.3%	40.3%	41.1%
Voter Registration	Registered to vote	77.3%	84.0%	77.9%
	Not registered	22.7%	16.0%	22.1%
Religion	Affiliated	69.0%	73.3%	69.3%
	Not Affiliated	31.0%	26.7%	30.7%
Internet Frequency	Almost constantly	39.9%	42.2%	40.4%
	Several times a day	45.0%	48.6%	45.3%
	About once a day	5.5%	4.7%	5.6%
	Several times a week	3.2%	2.2%	3.1%
	Less often	2.8%	1.5%	2.6%
	Not an internet user	3.7%	0.9%	2.9%