ssrs opinion panel

methods report

Gun Owner Survey May 2022

Prepared for Jennifer Dineen

Prepared by:

Seth Brohinsky

James Noack

June 2, 2022

AAPOR Transparency Initiative
AMERICAN ASSOCIATION FOR PUBLIC OPINION RESEARCH

Table of Contents

Overview

The University of Connecticut and Johns Hopkins University engaged SSRS to conduct the 2022 Gun Owner Survey via the SSRS Opinion Panel among U.S. adults age 18 and older and Ipsos KnowledgePanel among an oversample of Missouri gun owners or households with a gun. Data collection was conducted from April 21 – May 13, 2022 among a sample of 2,007 SSRS Opinion Panel respondents and 150 Ipsos KnowledgePanel Missouri gun owners or households with a gun.

The survey was conducted via web (2,132) and telephone (25) in English (2,045) and Spanish (112). Data were weighted to represent the target population of U.S. adults ages 18 or older. The margin of sampling error for the complete set of weighted data is ± 3.1 percentage points. The oversample of Missouri gun owners was weighted to accurately reflect the correct proportion of the adult population.

This report provides information about the sampling procedures and the methods used to collect, process, and weight the data for this study.

Sample Design

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. Additionally, the SSRS Opinion Panel has recruited some hard-to-reach demographic groups via RDD telephone sample.[1]

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.

Ipsos KnowledgePanel members are randomly recruited through probability-based sampling, and households are provided with access to the Internet and hardware if needed.

Ipsos recruits panel members by using address-based sampling (ABS) methods (previously Ipsos relied on random-digit dialing [RDD] methods). For this purpose, Ipsos relies on the latest version of the Delivery Sequence File (DSF) from the USPS to select address-based samples that are nationally representative of all households. By taking advantage of a host of ancillary data that are appended to each address, Ipsos use stratified random sampling to ensure the geodemographic composition of our panel members mimic those of the adult population in the U.S.[2]

[1] Prior to July 2019, the SSRS Opinion Panel was recruited entirely from RDD sample.

[2] Fahimi, M. and D. Kulp (2009). "Address-Based Sampling – Alternatives for Surveys That Require Contacts with Representative Samples of Households." Quirk's Marketing Research Review, May 2009.

Survey Sampling

The sample drawn for this study were SSRS Opinion Panelists who are U.S. adults ages 18 or older. Sample drawn was stratified by age, gender, race and ethnicity, education, Census region, party identification, gun ownership and preferred survey language to ensure adequate representation of each demographic group.

The oversample of Missouri gun owners or households with a gun was drawn from the Ipsos KnowledgePanel, a probability-based web panel designed to be representative of the United States.

Questionnaire Design

The questionnaire was developed by the University of Connecticut and Johns Hopkins University in consultation with the SSRS project team. SSRS reviewed the questionnaire primarily to identify potential problems in the instrument that might increase respondent burden, cause respondents to refuse or terminate the survey, create problems with respondent comprehension, or pose practical challenges for mode-specific administration such as complex skip patterns.

Data Collection

Web Contact Procedures: SSRS Opinion Panel

A "soft launch" inviting a limited number of panelists to participate was conducted on April 21, 2022. Soft launch data was checked to ensure functionality of the program and administration length of the survey were within the scope of work. After checking soft launch data to ensure that all questionnaire content and skip patterns were correct, additional sample was released to ensure the final sample met the study goals.

Web panelists were emailed an invitation to complete the survey online. The email for each respondent included a unique password-embedded link. All panelists who did not respond to the email invitation received up to two reminder emails, and panelists who had opted into receiving text messages from the SSRS Opinion Panel received two text message reminders.

Table 1: SSRS Opinion Panel Email/SMS Schedule:

Touchpoint	Date
Soft Launch Email	4/21/2022
Full Launch Email	4/25/2022
1st Reminder Email & SMS Reminder	4/30/2022
2nd Reminder Email	5/6/2022
3rd Reminder Email	5/10/2022

In appreciation for their participation, SSRS Opinion panelists received post-paid compensation in the form of an electronic gift card, sent via email immediately after completion of the survey.

Web Contact Procedures: Ipsos KnowledgePanel

Once assigned to the survey, KnowledgePanel members received a notification email letting them know the survey is available for them to complete. This email notification contained a direct link to the survey. No login name or password was required.

Automatic email reminders were sent to non-responders on Day 3 of the field period. Ipsos also operates an ongoing modest incentive program to encourage participation and create member loyalty. In appreciation for their participation and upon completion of the survey, qualified respondents received an entry into the KnowledgePanel sweepstakes.

Median web survey length was approximately 16 minutes.

Phone Contact Procedures

For SSRS Opinion Panelists, interviewers asked to speak with the person at that number who is a member of the SSRS Opinion Panel. Interviewers verified that the person was in a safe place before administering the survey.

All interviews were completed in English or Spanish using the Forsta Plus (formerly known as Confirmit) CATI system. The CATI system ensured 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.

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

- As many as ten (10) 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. Daytime calling 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.

All respondents who completed the survey were offered post-paid compensation via a mailed check.

Average phone survey length was approximately 30 minutes.

Programming, Data Processing, and Integration

Programming

Prior to the field period, SSRS programmed the study into its Forsta Plus (formerly known as Confirmit) Web/CATI platform for administration in English or Spanish. Extensive checking of the program was conducted to ensure that skip patterns and sample splits followed the design of the questionnaire.

Additional steps were employed to ensure a quality experience in survey administration regardless of the device utilized by respondents, whether a desktop computer, tablet, or phone. The web program was optimized for administration via smartphone or other mobile handheld devices. The web program was also checked on multiple devices, including desktop computers and handheld mobile devices, and different web browsers to ensure consistent and optimized visualization across devices and web browsers. The web survey was accessed directly by respondents, using their unique survey links with embedded passwords. This also gave them the ability to return to their survey later if they chose to suspend their survey.

Quality Control Checks

For web surveys, quality checks were incorporated into the survey. Respondents who failed the quality checks were not included in the final data set. This included two 'trap' questions, skipping more than 10% of the questions asked, length of interviews (LOI) that were less than 20% of the overall mean LOI[3].

No completed surveys were removed after applying these cleaning standards.

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.

Weighting and Design Effects

Data were weighted to represent adults 18+ in the United States. The data were weighted by first applying a base weight then balancing the demographic profile of the sample to target population parameters.

Base weight (BW)

The base weight was computed differently depending on how the panelist was recruited - from the Omnibus, from ABS recruited with original strata, or from ABS recruited using a geo strata that includes the PID strata.

SSRS Probability Panel sample

The panel base weight was (PBW) computed differently depending on whether the panelist was recruited from the SSRS Omnibus or from ABS.

The base weight for the Omnibus recruits is the original base weight assigned at the time of the original Omnibus interview.

The Omnibus base weight, PBW_{Omni} can be expressed as a function of the size of the landline and cell phone sample frames (F_{LL} and F_{CELL}), the size of the landline and cell phone samples(S_{LL} and S_{CELL}), and the number of adults in each household (AD) as follows.[4]

[3] LOI less than 3 minutes and 12 seconds.
[4] Buskirk, T. D., & Best, J. (2012). Venn Diagrams, Probability 101 and Sampling Weights Computed for Dual Frame Telephone RDD Designs. Journal of Statistics and Mathematics, 15, 3696-3710.

$$PBW_{Omni} = \left((LL \times AD \times S_{LL}/F_{LL}) + (CP \times S_{CELL}/F_{CELL}) - (LL \times AD \times CP \times S_{LL} \times S_{CP}/(F_{LL} \times F_{CP}))\right)^{-1}$$

Where $LL = 1$ if the respondent has a landline phone and $LL = 0$ otherwise and $CP = 1$ if the respondent has a cell phone and $CP = 0$ otherwise.

The base weight for ABS recruits is the product of a sampling weight and a household size adjustment. The sampling weight accounts for selection probabilities of addresses across the 16 ABS strata and also the probability of selection of one adult in each sampled household.

The ABS base weight, PBW_{ABS}, can be expressed as a function of the proportion of the ABS frame in stratum i, P_i, the proportion of the ABS sample that was pulled from stratum i, p_i and the number of adults in household j as follows.

$$PBW_{ABS} = (P_i/p_i) \times AD_{ij}$$

PBW was adjusted to reflect the disproportionate selection of sample from the panel.

IPSOS sample

The base weight for sample from the IPSOS Probability Panel (IBW) was provided by IPSOS.

Final Base Weight

The Base Weight (BW) is the sampling adjustments outlined above:

$$BW_i = \begin{cases} PBW_{Omni}, & Panel\ cases\ recruited\ from\ SSRS\ Omnibus \\ PBW_{ABS}, & Panel\ cases\ recruited\ from\ ABS\ sample \\ IBW, & IPSOS\ sample \end{cases}$$

The base weight was standardized by recruitment source (Omnibus Panel recruit, ABS Panel recruit, and IPSOS sample) and trimmed to produce the final base weight (FBW).

Post-Stratification to Population Benchmarks

Stage two of the weighting balanced the demographic profile of the sample to target population parameters.

To handle missing data among some of the self-reported demographic variables we employ a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response that are present in the entire file. We use 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.

The sample was weighted to match population estimates. The weighting parameters were gender by age, sex by education, age by education, race/ethnicity, education, census region, population density quintile, civic engagement, voter registration status, party ID, and gun ownership.

The gender, age, education, race/ethnicity, internet use, and census region benchmarks were derived from 2021 Current Population Survey (CPS). The civic engagement benchmark was derived from September 2017 Volunteering and Civic Life Supplement data from the Current Population Survey (CPS), which excludes those in the Armed Forces and included non-internet users. The population density came from Census Planning Database 2020. The party ID benchmark was derived from data from National Public Opinion Reference Survey (NPORS) for Pew Research Center - May 29 to Aug 25, 2021. The registered voter benchmark is from Aristotle voter data 2021. The gun ownership benchmark was derived from the full SSRS Online Panel and the RAND State-Level Firearm Ownership Database.

Weights were trimmed at the second and ninety-eighth percentile to prevent individual interviews from having too much influence on the final results.

Table 2 : Weighting Summary

Category	Values	Parameter	Unweighted	Weighted
Sex by Age	Male 18-24	5.7%	1.2%	4.2%
	Male 25-34	9.0%	6.4%	8.8%
	Male 35-44	8.2%	7.3%	8.5%
	Male 45-54	7.7%	6.1%	7.9%
	Male 55-64	7.9%	7.1%	7.9%
	Male 65+	9.9%	10.2%	9.6%
	Female 18-24	5.6%	2.8%	5.1%
	Female 25-34	8.9%	12.2%	9.3%
	Female 35-44	8.4%	14.3%	8.8%
	Female 45-54	8.0%	10.4%	8.4%
	Female 55-64	8.6%	12.1%	9.0%
	Female 65+	12.1%	10.0%	12.4%
Sex by Educ	Male High school grad or less	19.5%	6.6%	17.7%
	Male Some college	12.7%	10.0%	12.2%
	Male College grad +	16.3%	21.6%	17.1%
	Female High school grad or less	18.4%	13.5%	18.3%
	Female Some college	14.4%	19.8%	15.1%
	Female College grad +	18.8%	28.5%	19.7%
Age by Educ	18-34 High school grad or less	11.2%	4.8%	9.7%
	18-34 Some college	9.3%	6.7%	8.6%
	18-34 College grad +	8.8%	11.1%	9.1%
	35-54 High school grad or less	10.9%	7.2%	11.1%
	35-54 Some college	7.9%	10.7%	8.3%
	35-54 College grad +	13.4%	20.2%	14.2%
	55+ High school grad or less	15.8%	8.1%	15.2%

	55+ Some college	9.9%	12.4%	10.4%
	55+ College grad +	12.8%	18.8%	13.4%
Race/Ethnicity	White, non-Hispanic	62.5%	70.3%	63.7%
	Black, non-Hispanic	12.0%	9.2%	11.8%
	Hispanic, US born	8.4%	8.4%	8.6%
	Hispanic, Foreign born	8.5%	6.7%	8.2%
	Asian, non-Hispanic	6.1%	3.3%	5.3%
	Other, non-Hispanic	2.5%	2.0%	2.5%
Education	Less than high school	9.6%	2.9%	8.1%
	High school grad	28.3%	17.2%	27.9%
	Some college / Assoc Degree	27.1%	29.8%	27.3%
	College grad +	35.0%	50.1%	36.7%
Census Region	Northeast	17.2%	14.8%	17.3%
	Midwest without Missouri	18.8%	20.8%	18.7%
	South without Florida	31.4%	27.7%	31.6%
	Florida	6.9%	8.2%	7.1%
	West	23.9%	20.1%	23.4%
	Missouri	1.8%	8.4%	1.9%
Density	1 Lowest 20%	20.0%	18.7%	19.6%
	2	20.0%	19.5%	19.6%
	3	20.0%	21.9%	20.1%
	4	20.0%	20.4%	20.5%
	5 Highest 20%	20.0%	19.5%	20.2%
Registered Voter	Registered	77.3%	84.4%	78.3%
	Not registered/no response	22.7%	15.6%	21.7%
Gun Ownership	MO Gun HH	1.0%	7.9%	1.1%
	MO Non-gun HH	0.9%	0.5%	0.8%
	Else Gun Owner	24.8%	25.0%	25.5%
	Else Non-gun Owner, gun HH	10.8%	20.7%	11.0%
	Else Non-gun HH	62.5%	45.9%	61.6%
Civic Engagement	Not civically engaged	64.2%	51.9%	63.1%
	Civically engaged	33.9%	39.7%	35.0%
	Missouri	1.9%	8.4%	1.9%
Party ID	Republican	27.1%	24.7%	26.8%
	Democrat	31.6%	35.6%	31.8%
	All Others	41.3%	39.7%	41.5%

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 2.10.

SSRS calculates the composite design effect for a sample of size n, with each case having a weight, w, as:[5]

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

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 ±3.1 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 3.1 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.

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

Sample Disposition and Response Rate

Table 3 details the SSRS Opinion Panel completion and response rates for this study.

Table 3: Opinion Panel Completion Rate/Response Rate:

Completion Rates/Composite Response Rates	Total
Total Sample (Invited to participate)	4467
Screen-outs	3
Total Eligible	4464
Quality control removals	0
Incompletes	164
Quota full	229
Completions*	2007
Incidence/Eligibility rate	99.85%
Survey Completion rate (Completions/Total invited to participate)	44.93%
Survey RR3	44.99%

**Excludes screen-outs or data quality removals that completed the survey.*

Cumulative Response Rate

Cumulative response rate that takes into consideration the response rate for the panel recruitment survey, percent of recruitment survey respondents that agree to join the panel and the panel survey specific RR3 reported above comes to 2.34%.

Table 4: KnowledgePanel Completion Rate/Response Rate:

Table 4 details the Ipsos KnowledgePanel completion and response rates for the oversample of Missouri gun owners or households with a gun.

Completion Rates/Composite Response Rates	Total
Number of Assigned Panelists	623
Study-Specific Average Panel Recruitment Rate (RECR)	9.5%
Study-Specific Average Household Profile Rate (PROR)	60.7%
Study-Specific Average Household Retention Rate (RETR)	72.1%
Number of Total Study Completes	276
Study Completion Rate (COMPR)*	44.3%
Number of Study Break-offs	31
Study Breakoff Rate (BOR)	10.1%
Number of Qualified Completes	150
Study Qualification Rate (QUALR)	54%
Cumulative Response Rate	**2.5%**

Deliverables

Final deliverables for this study were as follows:

- Weighted SPSS data set
- Weighted banner tabulations
- Methods report