

METHODOLOGY REPORT: 2020 PEW PHILADELPHIA POLL

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Project Overview

SSRS conducted the data collection for The Pew Charitable Trusts' 2020 Pew Philadelphia Poll. The goal of this study was to better understand what residents think about Philadelphia and how they feel about important public policy issues and current events facing the city.

The 2020 Pew Philadelphia Poll used a mixed-mode online and mail survey design. A total of 1,025 Philadelphia residents completed the survey, with 662 completing via web and 363 completing via mail. Data collection was conducted in English and Spanish from July 27 to Aug. 24, 2020, and respondents had the option to complete the survey in English or Spanish. Statistical results are weighted to correct known demographic discrepancies. The total sample design effect for this survey is 1.88, and the margin of sampling error for the complete set of weighted data is plus or minus 4.2 percentage points.

Details on the sampling, questionnaire design, data collection, processing, and weighting are discussed below.

Sample Design

Target Population

The target population for this study was noninstitutionalized adults ages 18 or older living in Philadelphia County, Pennsylvania. Samples were provided according to SSRS specifications.

Sampling Frame

The sampling frame used was the United States Postal Service Computerized Delivery Sequence File (CDSF), which contains information on all addresses that the USPS services. A simple random sample of Philadelphia County addresses were selected from the CDSF; Hispanic surname flags were appended to the address-based sample (ABS) in order to be able to customize mailings as outlined below. In total, the number of people mailed was 11,111.

Given previous experience, SSRS anticipated that hard-to-reach demographic groups such as Hispanics and African Americans would participate in the study at a lower rate. To account for the anticipated lower response from these groups, SSRS used a five-strata design based on varying degrees of concentration of African Americans. Strata with higher concentrations of African Americans were given a slightly higher sampling fraction than other strata to combat the anticipated lower response from African Americans and Hispanics. The probability of selection is accounted for in the base weights within the final weighted data.

Table 1 shows the sample stratification that was used.

Table 1: Sample Stratification Plan

Stratum	Universe Distribution	ACS 2012-16 African American Incidence	ACS 2012-16 Hispanic Incidence	2020 Survey Sampling Rate
1. 86% or more AA	20.1%	94.3%	1.6%	29.1%
2. 47.9% to <86% AA	19.3%	69.5%	9.6%	23.2%
3. 18% to <47.9% AA	18.6%	31.4%	26.2%	22.4%
4. 4.9% to <18% AA	20.7%	11.1%	17.7%	15.0%
5. 0% to <4.9% AA	21.4%	1.8%	13.5%	10.3%
Total	100.0%			100.0%

Notes: In the Stratum column, the numbers describe the percentage of the overall population that is African American (AA). In the Universe Distribution column, the percentages appear to add up to 100.1%. But 100.0% is correct, due to rounding.

Questionnaire/Letter Design and Formatting

Questionnaire Design

Pew developed the questionnaire for this study. And SSRS reviewed the questionnaire primarily to identify problems in the instrument that might increase respondent burden, cause respondents to refuse or terminate the interview, create problems with respondent comprehension, or pose practical challenges for a hard-copy questionnaire, such as complex skip patterns. Once the questionnaire was finalized, SSRS then translated the instrument into Spanish.

Letter and Postcard Design

Pew researchers, in consultation with SSRS, developed the text for the study invitation letter, reminder postcard, and nonresponder follow-up cover letter. SSRS translated these materials into Spanish and formatted the letters and postcards to prepare them for mailing. SSRS sent Pew the final postcard and letters for approval before printing and mailing the materials to contacts.

Survey Formatting

SSRS was responsible for formatting the questionnaire into a self-administered paper instrument. SSRS focused on clarity of format for any skip logic and for overall comprehension of the questionnaire. Efforts were made in the design to (1) encourage cooperation by offering an easy-to-read, easy-to-manuever hard

copy and (2) reduce the potential for confusion and thereby produce the most accurate data. SSRS formatted the survey in Word and then worked with our professional printing service. Paper surveys were printed in both English and Spanish and were sent to Pew for approval before materials were printed and mailed to contacts.

Pretest

Prior to live phone data collection, SSRS conducted a pretest of the questionnaire on July 15, 2020. SSRS completed 25 pretest interviews via landline for the 2020 Pew Philadelphia Poll, using a prescreened sample from its omnibus surveys of previously identified respondents who lived in Philadelphia. Recordings of completed interviews were shared with the Pew team for review after respondents' personally identifiable information (PII) was removed. SSRS also provided a detailed pretest memo on the findings.

Programming

Before the field period, SSRS programmed the study into its ConfrmIt platform for web administration in both English and Spanish. The program was optimized for administration via smartphone or other handheld mobile devices.

Extensive checks of the program were conducted to ensure that skip patterns followed the questionnaire's design. The web program was checked on multiple devices, including desktop computers and handheld mobile devices, and on different web browsers, to ensure consistent and optimized visualization across devices and browsers.

SSRS generated unique survey passwords that were assigned and provided via mail to potential respondents, who then accessed the web survey directly using those passwords. This also gave respondents the ability to return to their survey later if they chose to suspend their interview.

Data Collection

A sequential web-mail mixed-mode methodology was used to conduct interviews for this study. Data collection was conducted in English and Spanish. Sixty-five percent of the surveys were completed via web, while 35% were completed via mail.

All selected sample records received a one-page, single-sided study invitation letter, which was printed on Pew stationery and addressed to "Philadelphia Area Resident." For records flagged with a Hispanic surname, the letter was printed double-sided, with one side in English and the other in Spanish.

The text of this letter, developed in collaboration with Pew researchers, included a short web link for the survey and a PIN to access the online survey. The invitation letter included a \$1 cash pre-incentive and offered a \$10 payment upon completion of the survey via a virtual gift card code. The \$10 payment was disbursed immediately after completion of the web survey.

Two days after the invitation letter was mailed, a reminder postcard was sent to all contacts. The purpose of this mailing was to remind potential respondents to reply to the initial mailing. The postcard did not contain the survey web link or the target respondent's PIN.

A week and a half after the study invitation letters were mailed, questionnaire packets were sent to nonresponders via first-class mail. This mail option ensured that we were able to reach respondents who do not have internet access or were unable to complete the survey online.

This mailing was sent in a 6x9 envelope and contained:

- A personalized reminder letter printed in color on Pew stationery, explaining the nature of the survey.
- One eight-page questionnaire booklet in English or, for records flagged with a Hispanic surname, two eight-page questionnaire booklets (one in English and one in Spanish).
- A postage-paid business reply envelope.

For respondents completing the survey via mail instead of web, the promised \$10 postpaid honorarium was provided as a check mailed after receipt and verification of completion of the mail questionnaire.

Table 2 shows the contact schedule for when each mailing was sent out.

Table 2: Contact Schedule

Date	Mailing
July 27	Invitation letters mailed
July 29	Reminder postcards mailed
Aug. 5	Survey packets mailed

Data Processing and Quality Control

Prior to running cross tabulations, data from both modes were combined and thoroughly cleaned with a computer validation program written by one of SSRS' data processing programmers. This program established editing parameters to locate any errors, including data that did not follow skip patterns, out-of-range values, and errors in data field locations. Coding was completed at Question 5 to sort open-ended responses into previously used codes, when applicable. In addition, SSRS developed codes at this question for answers (e.g., COVID-19 impact) that did not fit into the previously used codes. No additional coding was done for open-ended responses.

After quality control procedures were carried out, SSRS provided a clean, processed, fully labeled, and weighted final SPSS dataset to Pew.

Weighting

Weighting is generally used in survey analysis to compensate for sample designs and patterns of nonresponse that might bias results. Weighting ensures that survey estimates are unbiased and that the demographic profile of the sample matches the profile of the target population. The sample is weighted to be representative of the residential adult population of Philadelphia County.

There are three steps in the weighting process: a base weight to account for the disproportionately stratified sample design, a probability of selection adjustment to account for sampling fractions within households, and a calibration of sample demographics to target population parameters.

Base Weight

The sample frame was divided into five strata based on the incidence of African Americans according to data from the U.S. Census Bureau’s Planning Database.

Table 3 shows the strata definitions.

Table 3: ABS Strata Definitions

Stratum	Incidence of African Americans
1	86% or more
2	47.9% to <86%
3	18% to <47.9%
4	4.9% to <18%
5	0% to <4.9%

The base weight adjusts the distribution of completed interviews, across strata, back to the distribution of the sample frame. The relative probability of selection for each unit i in stratum h is the same, $\pi_{hi} = p_h/P_h$, where p_h is the proportion of completed interviews in stratum h and P_h is the proportion of the sample frame stratum h .¹ The base weight is π_h^{-1} for all interviews in stratum h .

The base weight is then adjusted to account for different probabilities of selection within households. Because only one interview was conducted in each household, adults who live in households with more than one adult have a smaller probability of being selected and will be underrepresented in the sample if a weighting adjustment is not made.

The probability of an adult being sampled from household i is AD_i^{-1} where AD_i is the number of adults in the household. The final adjusted base weight, ABW , is the product of the base weight and the probability of selection adjustment, $ABW_i = \pi_{hi} \times AD_i$.

Calibration

The final stage of the weighting balances the demographic profile of the sample against target population benchmarks.

To handle missing data among demographic variables used in the calibration, we employ a technique called hot decking. Hot deck imputation randomly replaces the missing values of a respondent with those of another, similar respondent without missing data. We use 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 is accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure. The sample is balanced to match benchmark

¹ For the base weight, we use the distribution of completed interviews rather than the distribution of samples pulled. Therefore, this adjustment also accounts for differential nonresponse across strata.

distributions for the residential population ages 18 or older in Philadelphia derived from 2018 American Community Survey (ACS) data.²

Weights were trimmed to prevent individual interviews from having too much influence on the final results. The use of these weights in statistical analysis ensures that the demographic characteristics of the sample closely approximate those of the target population.

Table 4 compares unweighted and weighted sample distributions with target population parameters.³

Table 4: Weighting Demographics Summary

	Parameter	Unweighted	Weighted
Sex			
Male	45.8%	38.8%	46.1%
Female	54.2%	61.2%	53.9%
Age			
18-24	11.1%	4.8%	10.2%
25-29	13.2%	7.5%	12.3%
30-35	13.0%	12.0%	13.6%
36-49	22.7%	17.9%	22.8%
50-60	16.5%	17.0%	16.6%
61-64	5.9%	7.2%	6.1%
65 or older	17.5%	33.7%	18.3%
Education			
Less than high school grad	13.5%	6.0%	11.8%
High school grad	32.5%	20.7%	31.5%
Some college	23.9%	23.3%	24.2%
College grad or more	30.1%	50.0%	32.5%
Density			
1 (lowest)	27.7%	21.5%	26.2%
2	17.0%	19.0%	17.3%
3	19.2%	18.1%	19.4%
4	17.0%	21.1%	17.6%
5 (highest)	19.2%	20.3%	19.6%
Internet Use			
Yes	87.3%	93.3%	88.2%
No	12.7%	6.7%	11.8%

² University of Minnesota Institute for Social Research and Data Innovation, IPUMS USA (2020), <https://doi.org/10.18128/D010.V10.0>.

³ Table uses imputed percentages.

Table 4: Weighting Demographics Summary (continued)

	Parameter	Unweighted	Weighted
<u>Recoded</u>			
<u>Race/Ethnicity</u>			
White, not Hispanic	37.4%	44.8%	39.2%
Black, not Hispanic	39.4%	36.8%	37.9%
Hispanic	13.2%	7.9%	13.2%
Other, not Hispanic	10.0%	10.5%	9.7%

Effects of Sample Design on Statistical Inference

Specialized sampling designs and 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 this data. The so-called design effect, or *deff*, represents the loss in statistical efficiency that results from a complex sample design and systematic nonresponse. 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 design effect for this survey was 1.88 overall.

The survey's margin of error is the largest 95% confidence interval for any estimated proportion based on the total sample—one around 50%. For example, the margin of error for the total sample is plus or minus 4.2 percentage points. This means that in 95 out of every 100 samples using the same methodology, estimated proportions based on the entire sample will be no more than 4.2 percentage points away from their true values in the population. It is important to remember that sampling fluctuations are only one possible source of error in a survey estimate. Other sources, such as measurement error, may contribute additional errors of greater or lesser magnitude.

⁴ L. Kish, "Weighting for Unequal Pi," *Journal of Official Statistics* 8, no. 2 (1992): 183-200.

Response Rate

Table 5 below reports the disposition of all sampled records from respondents who were contacted. The response rate estimates the share of all eligible people who were ultimately interviewed. Response rates are computed according to American Association for Public Opinion Research standards.⁵ The response rate for this study was 13.5%.

Table 5: Sample Disposition

Disposition	N
1. Complete (I)	1,025
2. Eligible, noninterview (R)	17
Refusal and break-off	17
3. Unknown eligibility, noninterview (UH)	9,586
Nothing ever returned	9,568
Refused, unknown if eligible	18
4. Not eligible, returned (IN)	483
Does not live in Philadelphia	2
Undeliverable	481
Total contacted	11,111
$e=(I+R)/(I+R+IN)$	68.3%
$RR3=I/[I+R+(e*UH)]$	13.5%

Deliverables

SSRS provided the following deliverables to Pew:

- Formatted, clean questionnaires (for both web and mail administration)
- A final, clean, fully labeled, weighted SPSS data file
- Two banners of cross tabulations run on final weighted data
- A final SPSS data file of those who agreed to be re-contacted
- Topline results
- Methodology report

⁵ The American Association for Public Opinion Research, "Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys" (2016), https://www.aapor.org/AAPOR_Main/media/publications/Standard-Definitions20169theditionfinal.pdf.

About SSRS

SSRS is a full-service public opinion research firm managed by a core of industry-leading professionals. SSRS service offerings include the Omnibus Survey, Probability Panel, and other online solutions 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. Please visit ssrs.com for further information.