METHODOLOGY

2014 Public Affairs Pulse Survey

Prepared by Princeton Survey Research Associates International
for the Public Affairs Council

SUMMARY

The 2014 Public Affairs Pulse survey, sponsored by the Public Affairs Council, obtained telephone interviews with a nationally representative sample of 1,609 adults living in the United States. Interviews were conducted via landline (n_{LL}=802) and cell phone (n_C=807, including 424 without a landline phone). The survey was conducted by Princeton Survey Research Associates International (PSRAI). The interviews were administered in English and Spanish by Braun Research Inc. and Princeton Data Source LLC from June 16 to 29, 2014. Statistical results are weighted to correct known demographic discrepancies. The margin of sampling error for the complete set of weighted data is ±2.9 percentage points.

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

DESIGN AND DATA COLLECTION PROCEDURES

Sample Design

A combination of landline and cellular random digit dial (RDD) samples was used to represent all adults in the United States who have access to either a landline or cellular telephone. Both samples were provided by Survey Sampling International LLC (SSI) according to PSRAI specifications.

Numbers for the landline sample were drawn with equal probabilities from active blocks (area code + exchange + two-digit block number) that contained three or more residential directory listings. The cellular sample was not list-assisted but was drawn through a systematic sampling from dedicated wireless 100-blocks and shared-service 100-blocks with no directory-listed landline numbers.

Contact Procedures

Interviews were conducted June 16-29, 2014. As many as five attempts were made to contact every sampled landline telephone number, and as many as three attempts were made to all sampled cell phone numbers. Sample was released for interviewing in replicates, which are representative subsamples of the larger sample. Using replicates to control the release of sample ensures that complete call procedures are followed for the entire sample. Calls were staggered over times of day and days of the week to maximize the chance of making contact with potential respondents. Interviewing was spread as

evenly as possible across the days in field. Each telephone number was called at least one time during the day in an attempt to complete an interview.

For the landline sample, interviewers asked to speak with the youngest adult male or female currently at home, based on a random rotation. If no male/female was available, interviewers asked to speak with the youngest adult of the other gender. This systematic respondent selection technique has been shown to produce samples that closely mirror the population in terms of age and gender when combined with cell interviewing.

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.

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 sample was weighted to match national adult general population parameters. A two-stage weighting procedure was used to weight this dual-frame sample.

The first stage of weighting corrected for different probabilities of selection associated with the number of adults in each household and each respondent's telephone usage patterns.[1] This weighting also adjusts for the overlapping landline and cell sample frames and the relative sizes of each frame and each sample.

The first-stage weight for the ith case can be expressed as:

$$WT_i = \left[\left(\frac{S_{LL}}{F_{LL}} \times \frac{1}{AD_i} \times LL_i \right) + \left(\frac{S_{CP}}{F_{CP}} \times CP_i \right) - \left(\frac{S_{LL}}{F_{LL}} \times \frac{1}{AD_i} \times LL_i \times \frac{S_{CP}}{F_{CP}} \times CP_i \right) \right]^{-1}$$

where S_{LL} = the size of the landline sample
F_{LL} = the size of the landline sample frame
S_{CP} = the size of the cell sample
F_{CP} = the size of the cell sample frame
AD_i = Number of adults in household i
LL_i=1 if respondent has a landline phone, otherwise LL=0
CP_i=1 if respondent has a cell phone, otherwise CP=0

---

[1] i.e., whether respondents have only a landline telephone, only a cell phone or both kinds of telephone.

The second stage of weighting balances sample demographics to population parameters. The sample is balanced by form to match national population parameters for sex, age, education, race, Hispanic origin, region (U.S. Census definitions), population density and telephone usage. The Hispanic origin was split out based on nativity; U.S. born and non-U.S. born. The basic weighting parameters came from the U.S. Census Bureau's 2012 American Community Survey data.[2] The population density parameter was derived from Census 2010 data. The telephone usage parameter came from an analysis of the January-June 2013 National Health Interview Survey.[3]

Weighting was accomplished using Sample Balancing, a special iterative sample weighting program that simultaneously balances the distributions of all variables using a statistical technique called the *Deming Algorithm*. 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 the demographic characteristics of the national population. Table 1 compares weighted and unweighted sample distributions to population parameters.

---

[2] ACS analysis was based on all adults excluding those living in institutional group quarters (GCs).
[3] Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, January-June 2013. National Center for Health Statistics, December 2013.

Table 1: Sample Demographics

	Parameter	Unweighted	Weighted
Gender			
Male	48.3%	50.6%	49.3%
Female	51.7%	49.4%	50.7%
Age			
18-24	13.1%	10.1%	13.5%
25-34	17.4%	13.0%	16.8%
35-44	17.1%	12.5%	16.7%
45-54	18.5%	15.8%	18.2%
55-64	16.2%	20.9%	16.8%
65+	17.7%	27.7%	18.0%
Education			
HS Graduate or Less	41.4%	30.0%	40.1%
Some College/Assoc Degree	31.6%	27.4%	31.7%
College Graduate	27.0%	42.6%	28.2%
Race/Ethnicity			
White/not Hispanic	66.2%	76.4%	68.1%
Black/not Hispanic	11.5%	9.0%	11.2%
Hisp – U.S. born	7.4%	5.4%	7.2%
Hisp - born outside	7.4%	2.8%	5.8%
Other/not Hispanic	7.5%	6.3%	7.6%
Region			
Northeast	18.2%	17.9%	18.2%
Midwest	21.4%	23.2%	21.7%
South	37.1%	36.8%	36.7%
West	23.3%	22.1%	23.5%
County Pop. Density			
1 - Lowest	19.9%	23.1%	20.5%
2	20.0%	22.0%	20.2%
3	20.1%	18.7%	19.9%
4	20.0%	19.4%	20.0%
5 - Highest	20.0%	16.8%	19.4%
Household Phone Use			
LLO	6.6%	4.4%	5.9%
Dual	52.5%	69.2%	54.2%
CPO	40.9%	26.4%	39.9%

Effects of Sample Design on Statistical Inference

Post-data-collection statistical adjustments require analysis procedures that reflect departures from simple random sampling. PSRAI 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 systematic non-response. The total sample design effect for this survey is 1.37.

PSRAI calculates the composite design effect for a sample of size *n*, with each case having a weight, w_i, as:

$$deff = \frac{n \sum_{i=1}^{n} w_i^{2}}{\left(\sum_{i=1}^{n} w_i \right)^{2}} \qquad \textit{formula 1}$$

In a wide range of situations, the adjusted *standard error* of a statistic should be calculated by multiplying the usual formula by the square root of the design effect ($\sqrt{deff}$). Thus, the formula for computing the 95 percent confidence interval around a percentage is:

$$\hat{p} \pm \left(\sqrt{deff} \times 1.96 \sqrt{\frac{\hat{p}(1-\hat{p})}{n}} \right) \qquad \textit{formula 2}$$

where $\hat{p}$ is the sample estimate and *n* is the unweighted number of sample cases in the group being considered.

The survey's *margin of error* is the largest 95 percent confidence interval for any estimated proportion based on the total sample — the one around 50 percent. For example, the margin of error for the entire sample is ±2.9 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 2.9 percentage points away from their true values in the population. The margin of error for estimates based on form 1 or form 2 respondents is ±4.1 percentage points. 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.

RESPONSE RATE

Table 2 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 respondents in the sample that were ultimately interviewed. At PSRAI, it is calculated by taking the product of three component rates[4]:

- o **Contact rate** — the proportion of working numbers where a request for interview was made[5]
- o **Cooperation rate** — the proportion of contacted numbers where a consent for interview was at least initially obtained, versus those refused
- o **Completion rate** — the proportion of initially cooperating and eligible interviews that were completed

Thus, the response rate for the landline sample was three percent. The response rate for the cellular sample was four percent.

---

[4] PSRAI's disposition codes and reporting are consistent with the American Association for Public Opinion Research standards.
[5] PSRAI assumes that 75 percent of cases that result in a constant disposition of "No answer" or "Busy" are actually not working numbers.

Table 2: Sample Disposition

Landline	Cell	
69,974	47,065	Total Numbers Dialed
3,179	399	Non-residential
336	37	Computer/Fax
0	----	Cell phone
16,719	11,244	Other not working
17,874	668	Additional projected not working
31,866	34,718	Working numbers
45.5%	73.8%	Working Rate
5,958	223	No Answer / Busy
15,072	18,270	Voice Mail
0	8	Other Non-Contact
10,836	16,217	Contacted numbers
34.0%	46.7%	Contact Rate
7,975	9,343	Callback
1,884	5,339	Refusal
977	1,535	Cooperating numbers
9.0%	9.5%	Cooperation Rate
150	150	Language Barrier
----	448	Child's cell phone
827	937	Eligible numbers
84.6%	61.0%	Eligibility Rate
25	130	Break-off
802	807	Completes
97.0%	86.1%	Completion Rate
3.0%	3.8%	Response Rate