APPENDIX 2: METHODOLOGY

2013 Public Affairs Pulse Survey

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for the Public Affairs Council

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SUMMARY

The **2013 Public Affairs Pulse survey**, commissioned by the Public Affairs Council, obtained telephone interviews with a nationally representative sample of 1,604 adults living in the continental United States. Interviews were conducted via landline (n_{LL}=803) and cell phone (n_c=801; including 395 without a landline phone). The survey was conducted by Princeton Survey Research Associates International (PSRAI). The interviews were administered in English and Spanish by Princeton Data Source from May 8-23, 2013. Statistical results are weighted to correct known demographic discrepancies. The margin of sampling error for the complete set of weighted data is ±2.8 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 continental 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 May 8-23, 2013. 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

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.[25] 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.

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[26], 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 White, non-Hispanic subgroup was also balanced on age, education and region.

The basic weighting parameters came from the U.S. Census Bureau's 2011 American Community Survey data.[27] The population density parameter was derived from Census 2010 data. The telephone usage parameter came from an analysis of the January-June 2012 National Health Interview Survey.[28]

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.

Table 1: Sample Demographics

	Parameter	Unweighted	Weighted
Gender			
Male	48.2%	48.3%	48.2%
Female	51.8%	51.7%	51.8%
Age			
18-24	13.2%	9.5%	13.1%
25-34	17.4%	11.2%	16.4%
35-44	17.3%	14.0%	17.2%
45-54	18.9%	18.9%	19.1%
55-64	16.1%	19.8%	16.5%
65+	17.1%	26.6%	17.7%
Education			
HS Graduate or Less	42.3%	33.4%	42.0%
Some College/Assoc Degree	31.3%	28.2%	30.7%
College Graduate	26.4%	38.5%	27.3%
Race/Ethnicity			
White/not Hispanic	66.8%	73.5%	67.5%
Black/not Hispanic	11.6%	9.9%	11.4%
Hisp - US born	7.1%	6.5%	7.1%
Hisp - born outside	7.5%	4.5%	7.2%
Other/not Hispanic	7.0%	5.7%	6.8%
Region			
Northeast	18.3%	16.8%	18.3%
Midwest	21.7%	25.9%	22.1%
South	37.3%	36.3%	37.2%
West	22.7%	21.0%	22.3%
County Pop. Density	**2010**		
1 - Lowest	19.9%	24.8%	20.3%
2	20.0%	20.0%	19.9%
3	20.1%	20.9%	20.5%
4	20.0%	18.3%	19.9%
5 - Highest	20.0%	16.0%	19.4%
Household Phone Use	**Dec '12**		
LLO	7.0%	6.2%	6.7%
Dual	56.2%	69.1%	56.8%
CPO	36.8%	24.6%	36.5%

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 1.30.

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

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

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:

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

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 ±2.8 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 2.8 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 ±4.0 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:[29]

• Contact rate – the proportion of working numbers where a request for interview was made[30]
• Cooperation rate – the proportion of contacted numbers where a consent for interview was at least initially obtained, versus those refused
• Completion rate – the proportion of initially cooperating and eligible interviews that were completed

Thus, the response rate for the landline sample was 7 percent. The response rate for the cellular sample was 8 percent.

Table 2: Sample Disposition

Landline	Cell	–
39994	29000	Total Numbers Dialed
1753	455	Non-residential
1557	109	Computer/Fax
17	0	Cell phone
23352	11013	Other not working
2036	432	Additional projected not working
11280	16991	Working numbers
28.2%	58.6%	Working Rate
679	144	No Answer / Busy
3907	6202	Voice Mail
79	12	Other Non-Contact
6615	10633	Contacted numbers
58.6%	62.6%	Contact Rate
480	2067	Callback
5267	7095	Refusal
868	1471	Cooperating numbers
13.1%	13.8%	Cooperation Rate
37	42	Language Barrier
0	582	Child's cell phone
831	847	Eligible numbers
95.7%	57.6%	Eligibility Rate
28	46	Break-off
803	801	Completes
96.6%	94.6%	Completion Rate
7.4%	8.2%	Response Rate