

2012

PUBLIC AFFAIRS PULSE

Survey

**Americans' Views on Business
In an Election Year**

Survey Methodology

A national survey
commissioned by:



PUBLIC
AFFAIRS
COUNCIL

Conducted by Princeton Survey
Research Associates International

2012 Public Affairs Pulse Survey

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

The 2012 Public Affairs Pulse survey, sponsored by the Public Affairs Council, obtained telephone interviews with a nationally representative sample of 1,750 adults living in the continental United States. Interviews were conducted via landline ($n_{LL}=1,050$) and cell phone ($n_C=700$, including 313 without a landline phone). The survey was conducted by Princeton Survey Research Associates International. The interviews were administered in English and Spanish by Princeton Data Source from June 20 to July 11, 2012. 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 probabilities in proportion to their share of listed telephone households 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 from June 20 to July 11, 2012. As many as five attempts were made to contact every sampled landline telephone number and as many as three for each sampled cell phone number. 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. Cellular respondents were offered a post-paid cash reimbursement for their participation.

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.¹⁸ This weighting also adjusts for the overlapping landline and cell sample frames and the relative sizes of each frame and each sample.

This first-stage weight for the i^{th} case can be expressed as:

Where S_{LL} = size of the landline sample

S_{CP} = size of the cell phone sample

AD_i = number of adults in the household

R = estimated ratio of the landline sample frame to the cell phone sample frame

The equations can be simplified by plugging in the values for $S_{LL} = 1,050$ and $S_{CP} = 700$. Additionally, we will estimate of the ratio of the size of landline sample frame to the cell phone sample frame $R = 0.67$.

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, number of adults in the household 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 a special analysis of the Census Bureau's 2011 Annual Social and Economic Supplement (ASEC) that included all households in the United States. The population density parameter was derived from Census 2000 data. The cell phone usage parameter came from an analysis of the January-June 2011 National Health Interview Survey.¹⁹

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.

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

19 Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, January-June, 2011. National Center for Health Statistics. Dec 2011.

Table 1: Sample Demographics

	Parameter	Unweighted	Weighted	
<u>Gender</u>				
	Male	48.6%	47.4%	48.7%
	Female	51.4%	52.6%	51.3%
<u>Age</u>				
	18-24	12.8%	7.8%	12.6%
	25-34	18.0%	12.0%	16.8%
	35-44	17.2%	11.7%	16.2%
	45-54	19.0%	18.6%	18.8%
	55-64	16.0%	21.5%	15.9%
	65+	17.0%	25.7%	17.2%
<u>Education</u>				
	Less than HS Graduate	13.3%	5.9%	11.1%
	HS Graduate	30.4%	25.6%	29.8%
	Some College/Assoc Degree	28.5%	27.9%	29.0%
	College Graduate	27.8%	39.1%	28.8%
<u>Race/Ethnicity</u>				
	White/not Hispanic	68.0%	71.4%	66.6%
	Black/not Hispanic	11.6%	10.8%	11.3%
	Hisp., born in US	6.6%	4.5%	6.0%
	Hisp., born outside US	7.4%	5.2%	6.9%
	Other/not Hispanic	6.4%	4.9%	6.0%
<u>Region</u>				
	Northeast	18.5%	17.7%	18.4%
	Midwest	21.8%	25.4%	22.3%
	South	37.0%	36.6%	37.3%
	West	22.7%	20.4%	22.0%
<u>County Pop. Density</u>				
	1 - Lowest	20.1%	23.8%	20.6%
	2	20.0%	22.5%	20.6%
	3	20.1%	20.9%	20.1%
	4	20.2%	17.7%	20.0%
	5 - Highest	19.6%	15.2%	18.7%
<u>Household Phone Use</u>				
	LLO	7.6%	7.2%	7.5%
	Dual	59.4%	73.9%	61.1%
	CPO	33.0%	18.9%	31.4%
<u># of adults in HH</u>				
	One	17.0%	25.5%	17.2%
	Two	52.9%	49.3%	51.5%
	Three +	30.1%	22.9%	29.1%

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 1.39.

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% 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% 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 ± 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 ± 3.9 percentage points. It is important to remember that sampling is 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:²⁰

- Contact rate — the proportion of working numbers where a request for interview was made²¹
- 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 10 percent. The response rate for the cellular sample was seven percent.

²⁰ PSRAI's disposition codes and reporting are consistent with the American Association for Public Opinion Research standards.

²¹ 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	
37,676	29,982	Total Numbers Dialed
1,198	400	Non-residential
1,322	205	Computer/Fax
16	----	Cell phone
17,158	10,592	Other not working
5,969	479	Additional projected not working
12,013	18,307	Working numbers
31.9%	61.1%	Working Rate
1,990	160	No Answer / Busy
1,815	7,839	Voice Mail
96	39	Other Non-Contact
8,112	10,269	Contacted numbers
67.5%	56.1%	Contact Rate
1,705	2,687	Callback
5,266	6,238	Refusal
1,141	1,344	Cooperating numbers
14.1%	13.1%	Cooperation Rate
86	77	Language Barrier
----	558	Child's cell phone
1,055	709	Eligible numbers
92.5%	52.8%	Eligibility Rate
5	9	Break-off
1,050	700	Completes
99.5%	98.7%	Completion Rate
9.5%	7.2%	Response Rate
