

Methodology

November 2016 Post-Election Survey

Prepared by Princeton Survey Research Associates International
for the Pew Research Center for the People and the Press

November 2016

SUMMARY

The November 2016 Post-Election Survey, sponsored by the Pew Research Center for the People and the Press, obtained telephone interviews with 1,254 people who voted in the general election. The interviews were conducted in English and Spanish by Princeton Data Source, LLC from November 10-14, 2016. Statistical results are weighted to correct known demographic discrepancies. The margin of sampling error for the complete set of weighted data is ± 3.4 percentage points.

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

DESIGN AND DATA COLLECTION PROCEDURES

Sample Design

Sample for this survey was collected from Pew's August and October Political surveys. All registered voters from both the land line and cell samples were eligible for this callback survey. Sample for the original surveys was drawn using standard *list-assisted random digit dialing* (RDD) methodologies. While a total of 1,328 registered voters was recontacted, only those who said they voted in the election (n=1,254) were kept in the dataset for analysis.

Contact Procedures

Interviews were conducted from November 10-14, 2016. As many as 7 attempts were made to contact every sampled telephone 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. Interviews were conducted with the person who completed the original interview.

Calls were staggered over times of day and days of the week to maximize the chance of making contact with potential respondents. Each number received at least one daytime call in an attempt to find someone at home.

WEIGHTING AND ANALYSIS

Weighting is generally used in survey analysis to compensate for patterns of nonresponse that might bias results. Two stages of weighting were performed on the data. The weight from the original sample datasets was used as a first-stage weight for this project. This first-stage weight corrects for different probabilities of selection and differential non-response associated with the original interview. The sample of all registered voters contacted for this survey was then raked - by form - to match parameters for sex by age, sex by education, age by education, region, race/ethnicity, population density, phone use. The non-Hispanic, white subgroup was also raked to age, education and region. These parameters came from the weighted demographics of registered voters interviewed from the original surveys from which sample was drawn. In addition, a parameter was added to the weighting so that the vote results reported in the survey match the actual popular vote results. Table 1 compares weighted and unweighted total sample distributions to population parameters.

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 target population.

Table 1. Sample Demographics (including non-voters)

	<u>Parameter</u>	<u>Unweighted</u>	<u>Weighted</u>
<u>Gender</u>			
	Male	48.0%	49.4%
	Female	52.0%	50.6%
<u>Age</u>			
	18-24	10.7%	9.4%
	25-34	15.2%	14.5%
	35-44	15.1%	14.6%
	45-54	19.6%	19.8%
	55-64	17.8%	18.8%
	65+	21.6%	22.9%
<u>Education</u>			
	HS Graduate or less	32.7%	32.0%
	Some College/Assoc Degree	34.4%	33.0%
	College Graduate	32.9%	35.0%
<u>Race/Ethnicity</u>			
	White/not Hispanic	73.0%	73.1%
	Black/not Hispanic	11.6%	11.4%
	Hisp - US born	6.3%	6.2%
	Hisp - born outside	2.3%	2.4%
	Other/not Hispanic	6.8%	6.8%
<u>Region</u>			
	Northeast	18.8%	18.7%
	Midwest	23.1%	23.2%
	South	37.7%	37.9%
	West	20.4%	20.3%
<u>County Pop. Density</u>			
	1 - Lowest	19.8%	19.8%
	2	20.7%	20.5%
	3	20.4%	20.4%
	4	20.5%	20.5%
	5 - Highest	18.6%	18.9%

Continued...

Table 1. Sample Demographics (continued)

	<u>Parameter</u>	<u>Unweighted</u>	<u>Weighted</u>
<u>Household Phone Use</u>			
	LLO	4.3%	2.5%
	Dual	50.3%	56.5%
	CPO	45.5%	41.0%
<u>Popular Vote¹</u>			
	Trump	47.3%	42.5%
	Clinton	47.8%	46.8%
	Other/DK	4.9%	10.7%

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 the 1,254 re-contacted voters is 1.47.

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:

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

¹ Popular vote distributions are based on those who said they voted; they do not include non-voters.

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 ± 3.4 percentage points. This means that in 95 out every 100 samples drawn using the same methodology, estimated proportions based on the entire sample will be no more than 3.4 percentage points away from their true values in that population. The margin of error for estimates based on form 1 or form 2 respondents is ± 4.8 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 callback samples. The response rate estimates the fraction of all eligible respondents in the sample that were ultimately interviewed. Response rates are computed according to American Association for Public Opinion Research standards.² The response rate for the landline sample was 49 percent and the response rate for the cell sample was 51 percent.³

² The American Association for Public Opinion Research. 2016. Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys. 9th edition. AAPOR.

³ The original survey response rates for the August survey were 10 percent for the landline sample and 9 percent for the cell sample. The response rates for the October survey were 8 percent for the landline sample and 8 percent for the cell sample.

Table 2. Sample Disposition

<u>Landline</u>	<u>Cell</u>	
4	12	Non-residential/Business (4.500)
0	0	Ported numbers identified before dialing (4.420)
0	0	Cell in landline frame (4.420)
4	12	OF = Out of Frame
22	54	Not working (4.300)
5	1	Computer/fax/modem (4.200)
27	55	NWC = Not working/computer
12	0	NA/Busy all attempts (3.120, 3.130)
0	99	VM not set up/caller out of range (3.100)
0	0	On DNC list - not dialed (3.90)
12	99	UHUO _{NC} = Non-contact, unknown if household/unknown other
140	350	Voice mail (3.140)
3	17	Other non-contact (deaf/disabled/deceased) (3.211)
143	367	UO _{NC} = Non-contact, unknown eligibility
118	341	Refusals (3.211)
17	100	Callbacks (INCLUDE Spanish CBs) (3.211)
135	441	UO _R = Refusal, unknown if eligible
0	0	O = Other (language) (3.211)
0	1	Child's cell phone (4.700)
25	79	Other ineligible (4.700)
25	80	SO = Screen out
56	72	R = Refusal, known eligible (breakoffs and qualified CBs) (2.100)
312	942	I = Completed interviews (1.0)
714	2,068	T = Total numbers sampled

Continued...

Table 2. Sample Disposition (continued)

95.6%	96.6%	$e1 = (I+R+SO+O+UO_R+UO_{NC})/(I+R+SO+O+UO_R+UO_{NC}+OF+NWC)$ - Est. frame eligibility of non-contacts
93.6%	92.7%	$e2 = (I+R)/(I+R+SO)$ - Est. screening eligibility of unscreened contacts
77.4%	76.8%	$CON = [I + R + (e2*[O + UO_R])]/[I + R + (e2*[O + UO_R + UO_{NC}]) + (e1*e2*UHUO_{NC})]$
63.1%	66.2%	$COOP = I/[I + R + (e2*[O + UO_R])]$
48.8%	50.9%	$AAPOR\ RR3 = I/[I+R+[e2*(UO_R+UO_{NC}+O)]+[e1*e2*UHUO_{NC}]] = CON*COOP$