

Benchmark and Attrition Report for the ANES 2016 Time Series Study
ANES Technical Report
January 27, 2022

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Acknowledgments: This report was funded by the National Science Foundation by grants to Stanford University and the University of Michigan (grant nos. SES-1444910 and SES-1444721, respectively). The ANES principal investigators were Ted Brader (Michigan) and Shanto Iyengar (Stanford). Findings and recommendations in this report reflect the views of the authors alone.

Benchmark and Attrition Report for the ANES 2016 Time Series Study

This report compares estimates from the American National Election Studies (ANES) 2016 Time Series Study to benchmark population statistics to evaluate how accurately the ANES sample represents the target population. The report also compares the sample composition of the pre-election and post-election waves of the ANES to show how attrition affects the accuracy of representation. We conclude with brief recommendations for ANES data collection practices.

The ANES 2016 Time Series Study

The ANES 2016 Time Series Study was a national probability-based sample survey with separate “face-to-face” (FtF) and Internet components. The FtF component of the study used a clustered probability sample of residential addresses in the 48 contiguous states and District of Columbia. Professional interviewers traveled to sampled addresses to randomly select one adult U.S. citizen household member and interview the selected person using computer-aided personal interviewing (CAPI). The Internet component of the study used a non-clustered probability sample of residential addresses in all 50 states and the District of Columbia. The selected addresses were recruited by mail to complete questionnaires on the Internet. For comprehensive documentation of the study’s procedures, see DeBell et al. (2018a).

Methods and Data in this Report

We present “benchmark” statistics, which are estimates of population statistics from authoritative sources that are assumed accurate, alongside two sets of estimates from the ANES:

- *Unweighted* results are provided for reference, but they are not indicators of the accuracy of ANES estimates because proper survey data analysis will use the weights.
- *Weighted* estimates include weighting adjustments for the survey design and to minimize differences between the sample and the population. The weights for this study were developed to force correspondence with the benchmarks for cross-classifications of age and sex, race/ethnicity and educational attainment, marital status and sex, race/ethnicity and census region, nation of birth, and home tenure by metropolitan status.

Data. ANES data presented in this report are based on the September 4, 2019 version of the ANES 2016 Time Series Study dataset (ANES 2019). Our primary source of benchmark statistics is the Current Population Survey (CPS) from November 2016 (Census Bureau 2016a). Home tenure statistics come from the March 2016 CPS (Census Bureau 2016b). Voter turnout statistics come from the United States Elections Project (McDonald 2018) and are based on the total number of counted ballots as a percentage of the voting-eligible population. Presidential vote statistics come from official election results.

Sampling errors. In a sample of the size and design used in the face-to-face component of the 2016 ANES, random sampling errors of about 1 to 3 percentage points are expected. For example, in the face-to-face component of the ANES 2016 Time Series, the sampling error of the estimate for the proportion of the population that voted is 1.53 percentage points. (Of course, other sampling errors may be larger or smaller than this, but most are in the range of 1 to 3

points.) This corresponds to a 95 percent confidence interval (or so-called margin of error) of 3.00 percentage points; most random errors will be within this margin of the true population value. Most errors exceeding 3 percentage points will have a cause other than random sampling error. Specification errors are assumed to be minimal for the constructs used in benchmark comparisons, and the benchmarks are assumed to be correct, so most errors exceeding 3 percentage points are probably attributable to problems with measurement, nonresponse, coverage, data processing, weighting, or a combination of these.

The Internet component of the study has a larger sample size and smaller design effects than the FtF component, so random sampling errors for the Internet component of the sample typically are about 1 percentage point. Difference from benchmarks that exceed 2 percentage points are probably attributable to causes other than sampling error.

ANES sampling errors are calculated using jackknife replicate weights. CPS sampling errors are calculated using generalized variance estimation.

ANES weighting methods. The ANES dataset is weighted to match the Current Population Survey (CPS) results for age (18-39, 40-59, 60+) by sex (male or female), educational attainment (less than high school, or high school graduate) by race/ethnicity (Black, Hispanic, or other), marital status (married, single, or other) by sex, race/ethnicity by geographic region (NE, Midwest, S, or W), nativity (US-born or foreign-born), and home tenure (rented or not rented) by metropolitan status (urban or not urban). Therefore, small (as opposed to larger) differences between weighted ANES estimates and the benchmarks for these variables are an effect of weighting, unless the unweighted differences were also small. Small differences from these benchmarks remain after weighting, rather than differences of 0.0, mainly because weighting categories did not correspond to the categories reported here. For example, weighting by age was done using three age groups of 18-39, 40-59, and 60 and older, while we report benchmark comparisons using 6 categories. Another possible source of very small differences (perhaps 0.1 percentage point) is that, for weighting, missing values due to item nonresponse were imputed before raking, but for the benchmark results, missing data were excluded listwise. The study's methodology report has more information about ANES weights (DeBell et al. 2018a).

Benchmark Results

Table 1A shows benchmarks and face-to-face ANES results for selected characteristics for which ANES estimates and benchmarks have been considered comparably measured. Table 1B shows benchmarks with web ANES results. (Also see *Notes on Benchmark Tables*, p. 11.)

In the FtF sample, after weighting, ANES over-represents the population with incomes below \$25,000 (5.1 points). It under-represents those with incomes of \$100,000 or more (3.3 points, although this difference is not statistically significant at the traditional $p < .05$ threshold). It over-represents 3-person households (3.8 points) and over-represents the unemployed (2.8 points). Home tenure shows an error of 9.0 points, with too few owners and too many renters/other. The largest error is for voter turnout, where ANES over-estimates the turnout rate by 18.1 points (78.3 compared to 60.2). Other differences are less than 3.0 percentage points, and most of these other differences are not statistically significant.

Table 1A. Comparison of population benchmarks to ANES 2016 TS estimates: Face-to-face sample

Characteristic	Benchmarks		ANES respondents (unweighted)		Difference (CPS-ANES unweighted)		ANES respondents (weighted)		Difference (CPS-ANES weighted)	
	Percent ^a	s.e. ^b	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
Age										
18-29	20.9	0.13	16.7	1.10	4.2 *	1.10	21.0	0.91	-0.1	0.92
30-39	16.0	0.12	17.3	1.11	-1.3	1.12	15.8	0.90	0.2	0.91
40-49	15.7	0.12	15.0	1.05	0.8	1.06	15.6	0.94	0.1	0.95
50-59	18.0	0.13	18.4	1.14	-0.4	1.15	20.0	1.22	-2.0	1.22
60-69	15.5	0.12	17.0	1.10	-1.4	1.11	14.7	0.69	0.9	0.70
70 or older	13.8	0.11	15.7	1.07	-1.9	1.07	12.9	0.83	0.9	0.84
Sex										
Male	48.0	0.18	47.5	1.47	0.5	1.48	47.8	0.29	0.2	0.34
Female	52.0	0.17	52.5	1.47	-0.5	1.48	52.2	0.29	-0.2	0.34
Education										
Less than HS cred.	9.1	0.07	9.0	0.84	0.0	0.84	9.2	0.02	-0.1	0.08
HS credential	29.2	0.12	22.0	1.21	7.2 *	1.21	28.8	0.32	0.4	0.34
Some college/AA degree	29.8	0.12	33.1	1.37	-3.3 *	1.38	29.3	1.78	0.5	1.78
Bachelor's degree	20.7	0.10	22.6	1.22	-1.9	1.23	20.4	1.64	0.2	1.64
Graduate degree	11.2	0.08	13.3	0.99	-2.1 *	0.99	12.2	1.30	-1.0	1.30
Race/ethnicity										
White non-Hispanic	68.9	0.15	67.7	1.36	1.2	1.37	69.0	1.13	0.0	1.14
Black non-Hispanic	12.3	0.13	10.1	0.88	2.2 *	0.89	11.4	0.43	0.9	0.45
Hispanic	11.9	0.12	14.4	1.02	-2.5 *	1.03	12.0	0.03	-0.1	0.13
Other non-Hispanic	6.9	0.10	7.8	0.78	-0.9	0.79	7.6	1.09	-0.7	1.09
Marital Status										
Married	54.4	0.21	50.3	1.46	4.1 *	1.47	54.7	0.50	-0.3	0.54
Prev married	17.4	0.16	26.0	1.28	-8.6 *	1.29	17.2	0.49	0.2	0.52
Never married	28.2	0.19	23.7	1.24	4.5 *	1.25	28.2	0.08	0.0	0.20
Income										
Under \$25,000	18.9	0.14	26.0	1.29	-7.2 *	1.29	24.0	1.64	-5.1 *	1.65
\$25,000-\$49,999	23.6	0.16	23.3	1.24	0.4	1.25	21.8	1.20	1.8	1.21
\$50,000-\$99,999	31.4	0.17	30.4	1.35	1.1	1.36	31.5	1.47	0.0	1.48
\$100,000 or more	26.1	0.16	20.3	1.18	5.7 *	1.19	22.8	1.81	3.3	1.81
Household size (adults+children)										
1 person	15.2	0.12	26.4	1.28	-11.2 *	1.29	14.3	0.94	0.9	0.95
2 people	35.8	0.16	31.6	1.35	4.3 *	1.36	33.4	1.55	2.4	1.56
3 people	18.8	0.13	19.0	1.14	-0.2	1.15	22.6	1.66	-3.8 *	1.66
4 people	16.5	0.12	12.8	0.97	3.7 *	0.98	16.5	1.53	0.0	1.53
5 people or more	13.7	0.11	10.3	0.88	3.4 *	0.89	13.2	1.15	0.5	1.16
Home tenure										
Own	69.7	0.15	59.8	1.43	9.9 *	1.44	60.7	1.01	9.0 *	1.02
Rent/Other	30.3	0.15	40.2	1.43	-9.9 *	1.44	39.3	1.01	-9.0 *	1.02
Region										
Northeast	17.9	0.13	14.2	1.02	3.6 *	1.03	17.9	0.13	0.0	0.19
Midwest	22.0	0.14	22.7	1.22	-0.7	1.23	22.2	0.04	-0.2	0.15
South	37.6	0.17	41.4	1.43	-3.8 *	1.44	37.9	0.06	-0.3	0.18
West	22.6	0.15	21.7	1.20	0.9	1.21	22.1	0.04	0.5 *	0.15
Employment										
Employed	61.1	0.20	59.7	1.43	1.4	1.44	61.0	2.05	0.1	2.06
Unemployed	2.8	0.07	5.4	0.66	-2.7 *	0.66	5.6	0.73	-2.8 *	0.74
Not in labor force	36.1	0.19	34.9	1.39	1.2	1.40	33.4	1.89	2.7	1.90
Nativity										
Born in U.S.	90.2	0.10	91.3	0.82	-1.2	0.83	91.6	0.38	-1.4 *	0.39
Not born in U.S.	9.8	0.11	8.7	0.82	1.2	0.83	8.4	0.38	1.4 *	0.39
Voter turnout 2016^{c,d}										
Voted	60.2	0.00	79.0	1.25	-18.8 *	1.25	78.3	1.53	-18.1 *	1.53
Did not vote	39.8	0.00	21.0	1.25	18.8 *	1.25	21.7	1.53	18.1 *	1.53
Vote choice 2016										
Trump	46.1	0.00	44.4	1.75	1.7	1.75	43.7	2.18	2.4	2.18
Clinton	48.2	0.00	47.6	1.76	0.6	1.76	48.0	2.19	0.2	2.19
Other	5.7	0.00	7.9	0.95	-2.2 *	0.95	8.3	1.18	-2.6 *	1.18

See Notes on Benchmark Tables, p. 11. * denotes $p < .05$.

Table 1B shows that in the Internet sample, after weighting, ANES under-represents the population age 70 and older (3.4 points) and those with a bachelor's degree (3.1 points). It over-represents those with incomes below \$25,000 (3.6 points) and under-represents those with incomes in the \$25,000-\$49,999 range (3.2 points). ANES has too few respondents from 1-person households (3.6 points) and too many from 4-person households (3.2 points). Employment status shows too many unemployed (7.9 percent compared to a benchmark of 2.8) and too few not in the labor force (32.4 compared to a benchmark of 36.1). Home tenure shows an error of 9.4 points, with too few owners and too many renters/other. The largest error is for voter turnout, where ANES over-estimates the turnout rate by 15.1 points (75.3 compared to 60.2). Other differences are less than 3.0 percentage points, and most of these are not statistically significant.

Benchmark Discussion

Errors in estimates of voter turnout, home tenure, and unemployment status are large in both modes. Other, smaller errors were more common in the web sample.

Turnout errors are part of a long-standing problem of turnout over-estimation in surveys. Nearly all surveys exhibit this bias, and major studies such as CPS, the General Social Survey, and ANES usually over-estimate turnout by at least 10 points (DeBell et al. 2020). Turnout over-estimation is mainly attributable to respondents reporting that they voted when they really did not (measurement bias) and to voters having a higher survey response rate than non-voters (non-response bias); lesser contributors to turnout error include a panel conditioning effect, where the pre-election survey experience increases voter turnout among ANES participants, and panel attrition, where voters are more likely to complete the post-election survey than non-voters are (DeBell et al. 2020; Jackman and Spahn 2019; cf. Ansolabehere and Hersh 2012). Turnout errors of 18 and 15 points in the face-to-face and web modes, respectively, compare to historical average errors of 11 points for the Current Population Survey, 13 points for the General Social Survey, and 17 points for ANES in the period 1976 through 2008 (DeBell et al. 2020).

Home tenure errors are large in both modes (9 points), despite home tenure being a weighting factor. Weighting was based on two categories, (1) rent and (2) own or other, while current benchmarks combine "other" with "rent." Because the face-to-face and web estimates were based not only on data collected in different modes but on data drawn from samples that were independently drawn and recruited to the study using different methods, it appears less likely that the difference from the CPS is caused by nonresponse error. The ANES home tenure question is not identical to the CPS question, and this question wording difference may be the cause of the error. The questions were as follows:

ANES: Do you pay rent for your home, make monthly mortgage payments for your home, own your home outright with no payments due, or have some other living arrangement?

CPS: Are your living quarters owned or being bought by a household member, rented for cash, occupied without payment of cash rent?

Table 1B. Comparison of population benchmarks to ANES 2016 TS estimates: Web sample

Characteristic	Benchmarks		ANES respondents (unweighted)		Difference (CPS-ANES unweighted)		ANES respondents (weighted)		Difference (CPS-ANES weighted)	
	Percent ^a	s.e. ^b	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
Age										
18-29	20.9	0.13	15.3	0.66	5.6 *	0.67	20.3	0.60	0.6	0.61
30-39	16.0	0.12	18.7	0.71	-2.7 *	0.72	17.2	0.59	-1.2	0.61
40-49	15.7	0.12	14.9	0.65	0.8	0.66	15.6	0.57	0.2	0.59
50-59	18.0	0.13	19.0	0.72	-1.0	0.73	20.8	0.62	-2.8 *	0.63
60-69	15.5	0.12	19.1	0.72	-3.6 *	0.73	15.7	0.55	-0.2	0.56
70 or older	13.8	0.11	12.9	0.61	0.9	0.62	10.4	0.54	3.4 *	0.56
Sex										
Male	48.0	0.18	47.0	0.90	1.0	0.92	48.2	0.09	-0.1	0.20
Female	52.0	0.17	53.0	0.90	-1.0	0.92	51.8	0.09	0.1	0.19
Education										
Less than HS cred.	9.1	0.07	5.8	0.42	3.3 *	0.43	9.1	0.09	0.0	0.11
HS credential	29.2	0.12	18.2	0.70	11.0 *	0.71	29.0	0.19	0.3	0.22
Some college/AA degree	29.8	0.12	36.3	0.87	-6.5 *	0.88	31.5	0.64	-1.6 *	0.65
Bachelor's degree	20.7	0.10	22.6	0.76	-1.9 *	0.76	17.6	0.56	3.1 *	0.57
Graduate degree	11.2	0.08	17.1	0.68	-6.0 *	0.69	12.8	0.48	-1.7 *	0.49
Race/ethnicity										
White non-Hispanic	68.9	0.15	73.2	0.80	-4.3 *	0.81	69.3	0.46	-0.3	0.48
Black non-Hispanic	12.3	0.13	9.1	0.52	3.2 *	0.54	10.7	0.30	1.6 *	0.33
Hispanic	11.9	0.12	9.2	0.52	2.7 *	0.54	11.9	0.06	0.0	0.14
Other non-Hispanic	6.9	0.10	8.5	0.50	-1.6 *	0.51	8.2	0.51	-1.3 *	0.52
Marital Status										
Married	54.4	0.21	53.7	0.90	0.7	0.92	54.3	0.25	0.1	0.33
Prev married	17.4	0.16	21.5	0.74	-4.1 *	0.76	17.5	0.26	-0.1	0.30
Never married	28.2	0.19	24.8	0.78	3.4 *	0.80	28.2	0.06	0.0	0.20
Income										
Under \$25,000	18.9	0.14	21.8	0.75	-2.9 *	0.77	22.4	0.83	-3.6 *	0.84
\$25,000-\$49,999	23.6	0.16	21.0	0.74	2.6 *	0.76	20.4	0.78	3.2 *	0.80
\$50,000-\$99,999	31.4	0.17	31.5	0.85	0.0	0.87	30.9	1.07	0.5	1.08
\$100,000 or more	26.1	0.16	25.7	0.80	0.3	0.82	26.2	0.82	-0.2	0.84
Household size (adults+children)										
1 person	15.2	0.12	22.4	0.75	-7.2 *	0.76	11.6	0.44	3.6 *	0.45
2 people	35.8	0.16	37.2	0.87	-1.3	0.89	34.8	1.07	1.0	1.08
3 people	18.8	0.13	16.2	0.66	2.6 *	0.68	20.0	0.86	-1.2	0.87
4 people	16.5	0.12	15.0	0.64	1.5 *	0.66	19.7	0.84	-3.2 *	0.85
5 people or more	13.7	0.11	9.2	0.52	4.4 *	0.53	13.9	0.87	-0.2	0.87
Home tenure										
Own	69.7	0.15	63.3	0.87	6.4 *	0.88	60.3	0.63	9.4 *	0.65
Rent/Other	30.3	0.15	36.7	0.87	-6.4 *	0.88	39.7	0.63	-9.4 *	0.65
Region										
Northeast	17.9	0.13	17.2	0.68	0.7	0.69	17.9	0.00	0.0	0.13
Midwest	22.0	0.14	23.7	0.77	-1.7 *	0.78	22.0	0.00	0.0	0.14
South	37.6	0.17	37.0	0.87	0.6	0.88	37.6	0.00	0.0	0.17
West	22.6	0.15	22.1	0.75	0.4	0.76	22.6	0.00	0.0	0.15
Employment										
Employed	61.1	0.20	59.9	0.88	1.2	0.91	59.7	1.05	1.4	1.07
Unemployed	2.8	0.07	6.7	0.45	-3.9 *	0.45	7.9	0.62	-5.1 *	0.62
Not in labor force	36.1	0.19	33.4	0.85	2.7 *	0.87	32.4	0.89	3.7 *	0.91
Nativity										
Born in U.S.	90.2	0.10	89.8	0.55	0.4	0.56	91.5	0.12	-1.4 *	0.16
Not born in U.S.	9.8	0.11	10.2	0.55	-0.4	0.56	8.5	0.12	1.4 *	0.17
Voter turnout 2016 ^{c,d}										
Voted	60.2	0.00	78.3	0.81	-18.1 *	0.81	75.3	1.06	-15.1 *	1.06
Did not vote	39.8	0.00	21.7	0.81	18.1 *	0.81	24.7	1.06	15.1 *	1.06
Vote choice 2016										
Trump	46.1	0.00	44.4	1.12	1.7	1.12	44.0	1.34	2.1	1.34
Clinton	48.2	0.00	48.7	1.12	-0.5	1.12	49.4	1.32	-1.2	1.32
Other	5.7	0.00	6.9	0.57	-1.2 *	0.57	6.6	0.65	-0.9	0.65

See Notes on Benchmark Tables, p. 11. * denotes $p < .05$.

Unemployment. Both modes over-estimate the prevalence of unemployment. Unemployment is over-estimated by a factor of 2 in the face-to-face study (5.6 percent in ANES compared to 2.8 percent in the CPS benchmark), and to an even greater degree in the Web mode (7.9 compared to 2.8).¹ The unemployment estimate from the CPS is based on a long and complex series of questions about labor force status. The ANES estimate is based on a different series of labor force questions, and it seems likely that differences in questionnaire design may contribute to the error. In other words, the ANES estimate may not be strictly comparable to the CPS estimate.

Other errors. In the FtF mode, the over-representation of the population in the lowest income category is notable. It is possible that monetary incentives for survey participation contributed to this error, but this is speculation. In the Internet modes, several relatively small errors in the distributions of age, education, income, and household size persisted after weighting. Estimated support for Trump and Clinton was within sampling error of actual election results, but slightly under-estimated Trump's support (by 2.1 points) and over-estimated Clinton's (by 1.2 points).

Attrition

Apart from voter turnout and presidential candidate choice, all of the estimates in the preceding benchmark discussion were based on responses to the pre-election interview. This section discusses the magnitude and importance of attrition in the post-election survey. It describes the differences between re-interview respondents and non-respondents (Table 2A and 2B), analyzes the factors associated with post-election non-response (Table 3A and 3B), and examines the effects of attrition on the accuracy of the estimates (Table 4A and 4B). These tables appear in the Attrition Tables section, below (pp. 13-22), as they are large and would disrupt the flow of text.

The face-to-face survey interviewed 1,180 people before the election. All were invited to a second interview after the election, of whom 1,058 responded and 122 did not respond, for a re-interview rate of 90 percent. The web survey interviewed 3,090 people before the election, of whom 2,590 responded to the post-election survey, for a re-interview rate of 84 percent.

Comparison of post-election respondents and non-respondents

Table 2A (see pp. 13-14) compares the characteristics of post-election respondents (pre & post completers) to those who responded only to the pre (i.e., cases of post-election attrition), for the face-to-face sample. The small number of attrition cases (122) makes differences difficult to detect. For example, among those who responded to the post-election survey, 15 percent were age 40-49, compared to 26 percent among those who attrited, but this 11 point difference is not significant at the $p < .05$ level. Attrition cases were less likely to have been never married, and had a smaller average household size, were more likely to be strong Republicans, gave lower average ratings to the pre-election interviewer ($p=.054$) and interview, and were rated by

¹ Note that our benchmark unemployment estimate of 2.8 percent is not an estimate of the nation's "unemployment rate." It is an estimate of the percentage of U.S. adult citizens who are unemployed. The "unemployment rate" is defined differently, as the percentage of the U.S. labor force that is unemployed, and its denominator excludes those who are not in the labor force, such as retirees, homemakers, and full-time students, and includes non-citizens.

interviewers as less cooperative and less interested during the pre-election interview. They were also less likely to have received the escalated \$100 incentive for the pre-election interview.

Table 2B (pp. 15-16) makes the same comparison for the web sample. The larger sample and larger number of attrition cases makes more differences detectable. Attrition cases were less likely to have bachelor's or graduate degrees, less likely to be white, more likely to be in the other-non-Hispanic race-ethnicity category, and more likely to have been married. Attrition cases also were less likely to have been born in the U.S., were less likely to have internet access at home, were more likely to be politically independent, less likely to find it easy to get online, took a slightly higher average number of mailings to obtain a survey response, and came from households that were, on average, larger. Oddly, they were more likely to have received a \$20 prepaid incentive and less likely to have received a \$10 prepaid incentive (based on random assignment), compared to non-attrition cases.

Attrition models

Table 3A (p. 17) models post-election interview completion status for the face-to-face sample. With the model's controls in place, the significant predictors of post-election response are having a bachelor's degree, U.S. nativity, the respondent's rating of the pre-election interview, the interviewer's rating of the respondent's interest in the pre-election interview, and receiving a \$100 pre-election incentive (which was the maximum incentive, offered to initial non-respondents).

Table 3B (p. 18) applies the same modeling to interview completion status for the web sample. Significant predictors of post-election response are having a graduate degree, being "Other non-Hispanic," ease of access to the Internet, the number of mailings sent, and receiving an \$80 pre-election incentive (the maximum incentive).

These models indicate the presence of some attrition bias in both samples, including educational attainment and effects of higher incentive payments.

Differences between the pre-election and post-election respondents

Attrition may cause differences between the characteristics of the pre-election and post-election samples, either due to random or systematic processes of non-response. Table 4A (pp. 19-20) compares results from the full sample (the pre-election sample) to the pre & post completers (the post-election sample after attrition) for the face-to-face sample. Nearly all differences are less than 1 percentage point and none are statistically significant. Attrition effects in the face-to-face sample appear negligible.

Table 4B (pp. 21-22) makes the same comparison for the web sample. Again, nearly all differences are less than 1 percentage point, none are statistically significant, and attrition effects appear negligible.

In both the face-to-face and web samples, although attrition bias exists, as shown by the attrition models that identified predictors of post-election non-response, rates of attrition were low enough that attrition effects mostly are of no consequence for the characteristics examined here.

It is worth noting that we cannot examine attrition effects on one of the survey's key outcome variables, presidential vote choice, because these data are usually not available for attrition cases.

The survey's other key outcome variable is voter turnout. Based on so-called "validated vote" data (Enamorado et al. 2018), the estimated turnout rate for the entire face-to-face sample was 66.6 percent; for the respondents who completed the post-election survey, it was 67.6 percent. The (rounded, non-significant) difference of 1.1 percentage points is attrition bias. In the web sample, the full sample's estimated turnout rate of 62.6 percent compares to the post-election rate of 64.0 percent, for an attrition bias of 1.4 percentage points (not significant). These differences, while not statistically significant, compare to DeBell et al. (2020) estimating attrition bias ranging from 0.0 to 2.3 percentage points and averaging 1.0 point in the ANES for the years 1952 through 2008, and Jackman and Spahn (2019) estimating a combined nonresponse effect on turnout, including initial nonresponse as well as attrition, of 4 points in ANES 2012. This is to say the effects of panel attrition on the estimates of voter turnout may inflate the turnout estimates, but only to a relatively small degree.

Conclusions & Recommendations

Several of these findings are worth emphasizing and have implications for future ANES data collection:

- The 2016 face-to-face sample differs from the population in terms of income distribution, over-representing lower incomes and under-representing upper incomes.
 - Recommendation: Further study is warranted to identify the cause of these errors and to determine if, when field resources such as interviewer time are scarce, they should be directed at upper-income sample areas rather than lower-income sample areas.
- The turnout error is large in both modes even by ANES's historically poor standard of performance, at 18.1 points face-to-face and 15.1 points online.
 - Recommendation: in the online sample, the turnout error could be reduced with a sequential mixed-mode approach in which non-responding cases are sent a paper questionnaire (DeBell et al. 2019).
- Benchmark comparisons reveal that both modes over-represent the unemployed, which may be a result of unemployed people being easier to interview or may be affected by the ANES employment questions differing from those on the benchmark CPS survey. Both modes also under-represent home owners, which may also result from measurement error compared to the CPS.
 - Recommendation: the ANES 2016 employment and home tenure questions should be changed to make them more comparable to benchmarks (and this was done in ANES 2020).

- Other, smaller benchmark errors were more common in the web sample than the face-to-face sample, suggesting that the face-to-face sample represents the population somewhat more accurately than the web-interviewed sample does.
 - Recommendation: continue face-to-face data collection for maximal sample quality.

- Panel attrition in both modes is biased by factors including respondent education and incentive payments, but the attrition rate is low enough in both modes that attrition effects are negligible for all characteristics we examined. The most notable attrition effect may be for estimates of voter turnout, but these are still on the order of 1 percentage point.
 - Recommendation: although panel attrition is not a major contributor to survey error, maintain maximum re-interview efforts to deliver maximum panel sample size.

Notes on Benchmark Tables

In Tables 1A and 1B, all analyses use jackknife replicate weights to compute ANES sampling errors. Sampling errors do not apply to the voter turnout and choice benchmarks because these are not survey estimates. An asterisk (*) indicates $p < .05$ for differences between groups.

In Table 1A, ANES 2016 TS weighted estimates use the Pre weight for the FtF sample (*V160101f*), except for voter turnout, which uses the Post weight (*V160201f*). In Table 1B, ANES 2016 TS weighted estimates use the Pre weight for the Web sample (*V160101w*), except for voter turnout, which uses the Post weight (*V160201w*). Respondent $n = 1180$ and 3090 for Tables 1A and 1B, respectively.

Table 1A & 1B footnotes:

^a Population benchmarks are derived from the November 2016 CPS, except for home tenure, which is derived from the March 2016 CPS.

^b Population base is from page G-12 of <https://www2.census.gov/programs-surveys/cps/techdocs/cpsmar16.pdf> adjusted by .93 for US citizens.

The *b* parameters used in the *s.e.* calculations for CPS estimates are taken from Tables 4, 5, and 9 in the document <https://www2.census.gov/programs-surveys/cps/techdocs/cpsmar16.pdf>

^c Voter turnout benchmark is from the the VEP Total Ballots Counted estimate from the United States Elections Project 2016 November General Election Turnout Rates:

<http://www.electproject.org/2016g>

^d For the ANES estimate of “Did not vote,” we included respondents who were registered but did not vote and respondents who were not registered. The denominator for the benchmark turnout estimate is an estimate of the number of people eligible to vote, which excludes noncitizens and ineligible felons. The denominator includes eligible overseas citizens. The denominator for the ANES turnout estimate excludes noncitizens but does not screen for ineligible felons. It is limited to people living in the United States. Voting estimates used Post completers only.

Attrition Tables

Tables 2A, 2B, 3A, 3B, 4A, and 4B follow.

Table 2A. Comparison of Pre+Post completers to Pre-only Attrition cases, ANES 2016 TS FTF respondents

Characteristic	Pre+Post completers		Pre-only (Attrition cases)		Difference	
	Value	s.e.	Value	s.e.	Value	s.e.
Age						
18-29	21.7%	1.01	14.0%	3.77	-7.68	3.90
30-39	16.3%	1.04	10.6%	3.40	-5.71	3.56
40-49	14.6%	1.08	25.7%	4.93	11.10 *	5.05
50-59	19.6%	1.36	24.1%	4.84	4.51	5.03
60-69	14.9%	0.79	12.4%	2.93	-2.48	3.04
70 or older	12.8%	0.96	13.1%	2.43	0.26	2.61
<i>Mean (cont)</i>	<i>47.51</i>	<i>0.31</i>	<i>49.66</i>	<i>1.54</i>	<i>-2.15</i>	<i>1.57</i>
Sex						
Male	47.7%	0.60	49.2%	4.75	1.51	4.78
Female	52.3%	0.60	50.8%	4.75	-0.02	4.78
Education						
Less than HS cred.	8.6%	0.46	14.4%	4.61	5.72	4.63
HS credential	28.6%	0.51	31.2%	4.14	2.65	4.17
Some college/AA degree	29.2%	1.94	30.7%	3.51	1.46	4.01
Bachelor's degree	21.0%	1.67	15.2%	3.28	-5.74	3.68
Graduate degree	12.6%	1.40	8.5%	1.99	-4.09	2.43
Race/ethnicity						
White non-Hispanic	69.1%	1.33	67.8%	4.72	-1.34	4.90
Black non-Hispanic	11.5%	0.59	10.7%	4.27	-0.82	4.31
Hispanic	12.0%	0.33	12.2%	3.05	0.20	3.07
Other non-Hispanic	7.4%	1.15	9.4%	2.45	1.96	2.71
Marital Status						
Married	53.8%	0.67	63.5%	5.49	9.73	5.53
Prev married	16.9%	0.68	19.7%	4.84	2.82	4.89
Never married	29.3%	0.29	16.8%	2.74	-12.55 *	2.76
Income						
Under \$25,000	23.6%	1.62	27.2%	5.21	3.56	5.45
\$25,000-\$49,999	22.2%	1.36	18.3%	4.03	-3.91	4.25
\$50,000-\$99,999	31.7%	1.62	29.1%	5.06	-2.58	5.31
\$100,000 or more	22.5%	1.95	25.4%	4.35	2.93	4.77
Household size						
1 U.S. citizen adult	19.8%	1.21	22.9%	3.48	3.05	3.69
2 U.S. citizen adults	53.1%	1.99	61.1%	4.80	8.04	5.20
3 U.S. citizen adults	18.3%	1.49	11.4%	2.60	-6.92 *	3.00
4 U.S. citizen adults	7.3%	1.42	4.6%	2.50	-2.67	2.88
5 or more U.S. citizen adults	1.5%	0.65	0.0%	0.00	-1.50 *	0.65
<i>Mean (cont)</i>	<i>2.19</i>	<i>0.04</i>	<i>1.98</i>	<i>0.07</i>	<i>0.21 *</i>	<i>0.08</i>
Home tenure						
Own	59.8%	1.17	69.0%	3.91	9.21 *	4.08
Rent/Other	40.2%	1.17	31.0%	3.91	-9.21 *	4.08
Region						
Northeast	18.1%	0.44	15.5%	4.79	-2.65	4.81
Midwest	22.0%	0.61	23.9%	5.89	1.88	5.93
South	37.1%	0.49	45.2%	5.26	8.10	5.28
West	22.8%	0.41	15.5%	4.03	-7.33	4.05
Employment						
Employed	60.9%	2.15	62.1%	4.66	1.18	5.13
Unemployed	5.2%	0.84	9.5%	4.25	4.31	4.33
Not in labor force	33.9%	2.18	28.4%	3.66	-5.49	4.26
Nativity						
Born in U.S.	92.1%	0.43	87.1%	3.23	-4.94	3.26
Not born in U.S.	7.9%	0.43	12.9%	3.23	4.94	3.26
Internet access						
Access at home	89.5%	1.12	89.7%	2.66	0.22	2.88
No access at home	10.5%	1.12	10.3%	2.66	-0.22	2.88

Table continues.

Table 2A. Comparison of Pre+Post completers to Pre-only Attrition cases, ANES 2016 TS FTF respondents --continued

Characteristic	Pre+Post completers		Pre-only (Attrition cases)		Difference	
	Value	s.e.	Value	s.e.	Value	s.e.
Interpersonal trust						
Always	1.4%	0.30	1.1%	0.82	-0.30	0.87
Most of the time	43.5%	1.87	35.1%	3.70	-8.38	4.15
About half the time	24.9%	1.61	36.0%	5.43	11.10	5.66
Some of the time	26.1%	1.90	20.7%	4.23	-5.37	4.63
Never	4.1%	0.56	7.0%	2.96	2.96	3.02
<i>Mean</i>	<i>2.88</i>	<i>0.04</i>	<i>2.97</i>	<i>0.09</i>	<i>-0.10</i>	<i>0.10</i>
Party ID						
Strong Democrat	19.1%	1.45	12.0%	3.14	-7.17 *	3.46
Not very strong Democrat	12.6%	1.26	14.6%	4.82	1.99	4.99
Independent-Democrat	15.2%	1.23	14.6%	3.41	-0.64	3.62
Independent	9.2%	0.65	13.9%	3.74	4.68	3.79
Independent-Republican	16.6%	1.35	11.2%	2.77	-5.46	3.09
Not very strong Republican	12.6%	1.15	9.6%	3.45	-2.99	3.64
Strong Republican	14.6%	1.17	24.2%	4.74	9.60	4.88
Rating of Pre interviewer						
Extremely bad	0.2%	0.10	0.0%	0.00	-0.15	0.10
Moderately bad	0.2%	0.23	0.0%	0.00	-0.23	0.23
A little bad	0.0%	0.02	0.0%	0.00	-0.01	0.02
Neither good nor bad	2.7%	0.79	11.0%	3.37	8.26 *	3.46
A little good	2.1%	0.75	2.2%	2.10	0.09	2.23
Moderately good	14.3%	1.51	13.5%	3.25	-0.78	3.58
Extremely good	77.5%	1.95	69.4%	4.35	-8.11	4.76
Refused	3.0%	0.78	3.9%	1.92	0.93	2.07
<i>Mean</i>	<i>6.70</i>	<i>0.03</i>	<i>6.47</i>	<i>0.11</i>	<i>0.23 *</i>	<i>0.11</i>
Rating of Pre interview						
Disliked a great deal	0.3%	0.14	0.6%	0.57	0.30	0.59
Disliked a moderate amount	1.7%	0.49	4.9%	1.73	3.28	1.80
Disliked a little	0.6%	0.25	1.8%	1.23	1.25	1.25
Neither liked nor disliked	27.7%	1.84	50.9%	5.06	23.19 *	5.39
Liked a little	3.5%	0.84	3.7%	2.22	0.24	2.38
Liked a moderate amount	31.9%	1.88	22.2%	3.57	-9.60 *	4.04
Liked a great deal	31.5%	1.46	11.9%	2.92	-19.56 *	3.26
Refused	3.0%	0.79	3.9%	1.92	0.91	2.07
<i>Mean</i>	<i>5.62</i>	<i>0.05</i>	<i>4.73</i>	<i>0.12</i>	<i>0.88 *</i>	<i>0.13</i>
Field effort for Pre						
Percent "hard-to-get"	39.8%	2.54	33.3%	5.46	-6.50	6.02
Mean number of in-person calls	4.64	0.14	3.97	0.35	0.67	0.38
Refusal in call history	18.4%	1.81	19.6%	4.81	1.19	5.14
Incentive						
Initial incentive offer						
\$25 randomized	15.6%	1.64	12.5%	3.44	-3.07	3.81
\$50 randomized	29.2%	2.38	24.8%	5.08	-4.36	5.61
\$25 non-randomized	55.3%	3.25	62.7%	4.76	7.43	5.76
Incentive paid at Pre						
\$25	37.8%	2.69	53.0%	6.92	15.20 *	7.42
\$50	28.0%	2.26	28.4%	6.62	0.38	6.99
\$100	34.2%	2.24	18.6%	4.37	-15.58 *	4.91
Interview report of R at Pre^a						
Mean cooperative rating	1.27	0.02	1.48	0.08	-0.20 *	0.08
Mean suspicious rating	1.24	0.02	1.20	0.05	0.04	0.06
Mean interested in interview rating	1.94	0.05	2.27	0.09	-0.33 *	0.10
Validated voter turnout 2016, weighted by probability match						
Voted	67.6%	1.59	56.1%	5.10	-11.56 *	5.34
Did not vote	32.4%	1.59	43.9%	5.10	11.56 *	5.34

Note: All analyses use jackknife replicate weights to compute ANES standard errors. All ANES 2016 TS weighted estimates

* p < .05 for difference between pre+post completers compared to attrition cases.

^aHigher values represent: less cooperation, more suspicion, less interest.

Table 2B. Comparison of Pre+Post completers to Pre-only Attrition cases, ANES 2016 TS Web respondents

Characteristic	Pre+Post completers		Pre-only (Attrition cases)		Difference	
	Value	s.e.	Value	s.e.	Value	s.e.
Age						
18-29	20.8%	0.66	17.5%	2.10	-3.29	2.21
30-39	17.2%	0.70	17.2%	1.83	0.06	1.96
40-49	15.4%	0.64	16.4%	1.87	0.94	1.97
50-59	21.4%	0.76	18.0%	1.79	-3.33	1.95
60-69	15.1%	0.63	19.1%	1.92	3.99	2.02
70 or older	10.1%	0.63	11.8%	1.53	1.64	1.65
<i>Mean (cont)</i>	<i>46.91</i>	<i>0.22</i>	<i>48.59</i>	<i>0.82</i>	<i>-1.69 *</i>	<i>0.85</i>
Sex						
Male	48.3%	0.44	47.5%	2.26	-0.73	2.30
Female	51.7%	0.44	52.5%	2.26	0.01	2.30
Education						
Less than HS cred.	8.3%	0.37	13.1%	1.77	4.79 *	1.80
HS credential	28.7%	0.46	30.4%	2.07	1.71	2.12
Some college/AA degree	31.2%	0.76	33.0%	2.06	1.80	2.20
Bachelor's degree	18.3%	0.65	13.7%	1.62	-4.59 *	1.75
Graduate degree	13.4%	0.54	9.7%	1.24	-3.70 *	1.35
Race/ethnicity						
White non-Hispanic	70.6%	0.60	62.5%	2.22	-8.09 *	2.30
Black non-Hispanic	10.9%	0.45	9.9%	1.67	-0.97	1.73
Hispanic	11.3%	0.39	15.0%	1.92	3.70	1.96
Other non-Hispanic	7.3%	0.57	12.6%	1.67	5.35 *	1.76
Marital Status						
Married	53.7%	0.49	57.0%	2.24	3.24	2.29
Prev married	17.1%	0.38	19.2%	1.81	2.10	1.85
Never married	29.1%	0.37	23.8%	1.88	-5.33 *	1.92
Income						
Under \$25,000	22.0%	0.95	24.9%	2.37	2.94	2.55
\$25,000-\$49,999	20.5%	0.86	19.9%	2.13	-0.53	2.30
\$50,000-\$99,999	30.9%	1.20	30.9%	2.39	-0.01	2.67
\$100,000 or more	26.6%	0.93	24.2%	2.06	-2.39	2.27
Household size						
1 U.S. citizen adult	16.0%	0.50	15.9%	1.44	-0.04	1.52
2 U.S. citizen adults	54.5%	1.14	52.1%	2.31	-2.42	2.57
3 U.S. citizen adults	18.9%	1.03	19.9%	2.36	1.00	2.58
4 U.S. citizen adults	9.4%	0.82	8.9%	1.92	-0.49	2.09
5 or more U.S. citizen adults	1.3%	0.36	3.2%	1.21	1.95	1.26
<i>Mean (cont)</i>	<i>2.26</i>	<i>0.02</i>	<i>2.32</i>	<i>0.06</i>	<i>0.06</i>	<i>0.06</i>
Home tenure						
Own	59.5%	0.74	64.8%	2.53	5.31 *	2.64
Rent/Other	40.5%	0.74	35.2%	2.53	-5.31 *	2.64
Region						
Northeast	18.0%	0.31	17.1%	1.57	-0.91	1.60
Midwest	22.6%	0.35	19.1%	1.71	-3.51 *	1.75
South	37.4%	0.41	38.3%	2.09	0.89	2.13
West	22.0%	0.39	25.5%	1.90	3.53	1.94
Employment						
Employed	59.3%	1.09	61.7%	2.70	2.40	2.91
Unemployed	7.7%	0.68	8.9%	1.43	1.27	1.59
Not in labor force	33.0%	0.91	29.3%	2.37	-3.67	2.54
Nativity						
Born in U.S.	92.5%	0.32	86.7%	1.43	-5.83 *	1.47
Not born in U.S.	7.5%	0.32	13.3%	1.43	5.83 *	1.47
Internet access						
Access at home	90.8%	0.66	86.5%	1.75	-4.30 *	1.87
No access at home	9.2%	0.66	13.5%	1.75	4.30 *	1.87

Table continues.

Table 2B. Comparison of Pre+Post completers to Pre-only Attrition cases, ANES 2016 TS Web respondents --continued

Characteristic	Pre+Post completers		Pre-only (Attrition cases)		Difference	
	Value	s.e.	Value	s.e.	Value	s.e.
Interpersonal trust						
Always	1.0%	0.26	2.1%	0.77	1.14	0.81
Most of the time	38.8%	1.07	29.4%	2.38	-9.37 *	2.60
About half the time	32.7%	1.22	39.8%	2.25	7.16 *	2.55
Some of the time	22.2%	0.99	23.9%	1.99	1.70	2.22
Never	5.4%	0.55	4.7%	0.98	-0.63	1.13
<i>Mean</i>	<i>2.92</i>	<i>0.02</i>	<i>3.00</i>	<i>0.04</i>	<i>-0.08</i>	<i>0.05</i>
Party ID						
Strong Democrat	22.2%	0.84	22.3%	2.14	0.11	2.30
Not very strong Democrat	14.6%	0.79	11.7%	1.48	-2.97	1.68
Independent-Democrat	9.8%	0.62	7.5%	1.29	-2.36	1.43
Independent	15.4%	0.74	21.3%	2.02	5.91 *	2.15
Independent-Republican	9.6%	0.65	8.4%	1.36	-1.25	1.50
Not very strong Republican	11.8%	0.72	10.7%	1.49	-1.11	1.65
Strong Republican	16.5%	0.87	18.1%	1.85	1.66	2.05
Ease of online access						
Not at all easy	3.1%	0.36	4.1%	0.91	1.00	0.98
A little easy	4.2%	0.50	3.2%	0.85	-0.98	0.99
Moderately easy	11.7%	0.73	19.7%	2.44	7.93 *	2.55
Very easy	17.3%	0.90	22.0%	2.44	4.67	2.60
Extremely easy	63.1%	1.16	49.7%	2.87	-13.46 *	3.09
Refused	0.6%	0.13	1.4%	0.51	0.84	0.53
<i>Mean</i>	<i>4.34</i>	<i>0.03</i>	<i>4.12</i>	<i>0.06</i>	<i>0.22 *</i>	<i>0.06</i>
Field effort						
Percent "hard-to-get"	38.9%	1.20	43.0%	2.53	4.08	2.80
Mean number of mailings	4.72	0.04	5.05	0.09	-0.33 *	0.10
Refusal in call history	0.2%	0.06	0.2%	0.17	0.09	0.19
Incentive						
Initial prepaid incentive						
\$10 randomized	66.6%	1.01	61.1%	2.30	-5.51 *	2.51
\$20 randomized	33.4%	1.01	38.9%	2.30	5.51 *	2.51
Incentive paid at Pre						
\$40	62.4%	1.19	60.7%	2.44	-1.69	2.72
\$80	37.6%	1.19	39.3%	2.44	1.69	2.72
Validated voter turnout 2016, weighted by probability match						
Voted	64.0%	1.06	55.6%	2.58	-8.38 *	2.78
Did not vote	36.0%	1.06	44.4%	2.58	8.38 *	2.78

Note: All analyses use jackknife replicate weights to compute ANES standard errors. All ANES 2016 TS weighted

* $p < .05$ for difference between pre+post completers compared to attrition cases.

Table 3A. Logistic regression predicting completion of ANES 2016 TS post interview, for FTF Rs who completed the Pre

Independent variables	DV: Completing post interview				
	b	s.e.	t	p	Odds Ratio
Age (cont)	-0.21	0.667	-0.31	0.759	0.81
Female	0.04	0.266	0.13	0.895	1.04
Education [ref: High school diploma or less]					
Some college/AA degree	0.17	0.283	0.60	0.551	1.19
Bachelor's degree	0.74	0.364	2.03	0.051	2.10
Graduate degree	0.94	0.579	1.62	0.114	2.56
Race/ethnicity [ref: White non-Hispanic]					
Black non-Hispanic	0.08	0.540	0.15	0.880	1.09
Hispanic	0.08	0.509	0.17	0.869	1.09
Other non-Hispanic	-0.04	0.610	-0.07	0.943	0.96
Marital Status [ref: Married]					
Prev married	0.22	0.578	0.38	0.710	1.24
Never married	0.74	0.347	2.12 *	0.041	2.09
Income (cont)	-0.56	0.624	-0.89	0.378	0.57
Household size of eligible adults (cont)	1.32	0.847	1.56	0.129	3.74
Own home [ref: Rent/Other]	-0.05	0.380	-0.13	0.896	0.95
Region [ref: Northeast]	0.00	0.000			
Midwest	0.03	0.492	0.06	0.953	1.03
South	-0.12	0.435	-0.28	0.778	0.88
West	0.49	0.538	0.91	0.368	1.63
Employment [ref: Employed]					
Unemployed	-0.38	0.779	-0.49	0.626	0.68
Not in labor force	0.33	0.332	0.99	0.329	1.39
Born in U.S.	1.15	0.384	3.01 *	0.005	3.17
Internet access at home	-0.26	0.435	-0.60	0.551	0.77
Party ID (cont)	-0.28	0.491	-0.57	0.574	0.76
Interpersonal trust (cont)	-0.27	0.508	-0.53	0.601	0.76
Interest in following campaigns (cont)	0.01	0.289	0.05	0.961	1.01
R rating of Pre interview (cont)	1.99	0.469	4.25 *	0.000	7.33
Number of in-person calls at Pre (cont, top-coded)	-0.02	0.750	-0.02	0.983	0.98
Incentive initial offer [ref: \$25 randomized]					
\$50 randomized	0.05	0.695	0.07	0.942	1.05
\$25 non-randomized	-0.25	0.453	-0.54	0.592	0.78
Incentive paid at Pre [ref: \$25]					
\$50	0.29	0.722	0.41	0.686	1.34
\$100	1.04	0.372	2.80 *	0.009	2.83
Interviewer rating of R's interest in Pre interview	-0.31	0.151	-2.09 *	0.045	0.73
R's intent to vote at the time of Pre interview ^a	-0.09	0.454	-0.20	0.841	0.91
Validated voter turnout 2016, weighted by probability match	0.66	0.370	1.78	0.085	1.93
Constant	-0.12	1.230	-0.09	0.926	0.89

Note: All ANES 2016 TS weighted estimates use the Pre weight for the FTF sample [V160101f].

Continuous variables have been re-scaled 0-1.

^a Respondents who had already voted early in the Pre were not asked about intent to vote, so these Rs were included with the Rs reporting that it was "extremely likely" that they would vote.

Table 3B. Logistic regression predicting completion of ANES 2016 TS post interview, for Web Rs who completed the Pre

Independent variables	DV: Completing post interview				
	b	s.e.	t	p	Odds Ratio
Age (cont)	-0.40	0.387	-1.03	0.303	0.67
Female	0.01	0.125	0.07	0.947	1.01
Education [ref: High school diploma or less]					
Some college/AA degree	-0.07	0.151	-0.44	0.662	0.94
Bachelor's degree	0.21	0.220	0.94	0.352	1.23
Graduate degree	0.38	0.223	1.71	0.090	1.47
Race/ethnicity [ref: White non-Hispanic]					
Black non-Hispanic	0.08	0.241	0.35	0.728	1.09
Hispanic	-0.12	0.203	-0.61	0.545	0.88
Other non-Hispanic	-0.44	0.228	-1.91	0.059	0.65
Marital Status [ref: Married]					
Prev married	0.02	0.159	0.12	0.905	1.02
Never married	0.28	0.169	1.66	0.099	1.33
Income (cont)	0.13	0.271	0.49	0.628	1.14
Household size of eligible adults (cont)	-0.14	0.323	-0.44	0.659	0.87
Own home [ref: Rent/Other]	-0.37	0.178	-2.05 *	0.043	0.69
Region [ref: Northeast]					
Midwest	0.02	0.193	0.08	0.934	1.02
South	-0.12	0.177	-0.67	0.502	0.89
West	-0.31	0.168	-1.87	0.064	0.73
Employment [ref: Employed]					
Unemployed	-0.20	0.231	-0.86	0.394	0.82
Not in labor force	0.31	0.165	1.86	0.065	1.36
Born in U.S.	0.26	0.211	1.22	0.226	1.29
Internet access at home	0.11	0.196	0.57	0.567	1.12
Party ID (cont)	-0.04	0.191	-0.22	0.829	0.96
Interpersonal trust (cont)	-0.37	0.243	-1.53	0.128	0.69
Interest in following campaigns (cont)	0.44	0.172	2.55 *	0.012	1.55
Ease of online access (cont)	0.59	0.254	2.32 *	0.022	1.80
Number of mailings sent in Pre (cont)	-1.17	0.377	-3.11 *	0.002	0.31
Prepaid incentive [ref: \$10 randomized]					
\$20 randomized	-0.22	0.109	-2.02 *	0.046	0.80
Incentive paid at Pre [ref: \$40]					
\$80	0.62	0.179	3.49 *	0.001	1.87
R's intent to vote at the time of Pre interview ^a	-0.09	0.209	-0.45	0.655	0.91
Validated voter turnout 2016, weighted by probability match	0.34	0.138	2.49 *	0.015	1.41
Constant	1.29	0.445	2.89 *	0.005	3.62

Note: All ANES 2016 TS weighted estimates use the Pre weight for the Web sample [V160101w].

Continuous variables have been re-scaled 0-1.

^a Respondents who had already voted early in the Pre were not asked about intent to vote, so these Rs were included with the Rs reporting that it was "extremely likely" that they would vote.

Table 4A. Comparison of full sample estimates to Pre+Post completers, Face-to-face

Characteristic	Full sample		Pre+post completers		Difference	
	Value	s.e.	Value	s.e.	Value	s.e.
Age						
18-29	21.0%	0.91	21.7%	1.01	0.71	1.37
30-39	15.8%	0.90	16.3%	1.04	0.52	1.38
40-49	15.6%	0.94	14.6%	1.08	-1.02	1.44
50-59	20.0%	1.22	19.6%	1.36	-0.41	1.83
60-69	14.7%	0.69	14.9%	0.79	0.23	1.04
70 or older	12.9%	0.83	12.8%	0.96	-0.02	1.27
<i>Mean (cont)</i>	<i>47.70</i>	<i>0.21</i>	<i>47.51</i>	<i>0.31</i>	<i>0.20</i>	<i>0.37</i>
Sex						
Male	47.8%	0.29	47.7%	0.60	-0.14	0.67
Female	52.2%	0.29	52.3%	0.60	0.14	0.67
Education						
Less than HS cred.	9.2%	0.02	8.6%	0.46	-0.53	0.46
HS credential	28.8%	0.32	28.6%	0.51	-0.25	0.61
Some college/AA degree	29.3%	1.78	29.2%	1.94	-0.14	2.63
Bachelor's degree	20.4%	1.64	21.0%	1.67	0.54	2.34
Graduate degree	12.2%	1.30	12.6%	1.40	0.38	1.91
Race/ethnicity						
White non-Hispanic	69.0%	1.13	69.1%	1.33	0.13	1.74
Black non-Hispanic	11.4%	0.43	11.5%	0.59	0.08	0.73
Hispanic	12.0%	0.03	12.0%	0.33	-0.02	0.33
Other non-Hispanic	7.6%	1.09	7.4%	1.15	-0.18	1.58
Marital Status						
Married	54.7%	0.50	53.8%	0.67	-0.90	0.83
Prev married	17.2%	0.49	16.9%	0.68	-0.26	0.84
Never married	28.2%	0.08	29.3%	0.29	1.17 *	0.30
Income						
Under \$25,000	24.0%	1.64	23.6%	1.62	-0.31	2.30
\$25,000-\$49,999	21.8%	1.20	22.2%	1.36	0.34	1.81
\$50,000-\$99,999	31.5%	1.47	31.7%	1.62	0.23	2.19
\$100,000 or more	22.8%	1.81	22.5%	1.95	-0.26	2.66
Household size						
1 U.S. citizen adult	20.1%	1.12	19.8%	1.21	-0.28	1.65
2 U.S. citizen adults	53.8%	1.83	53.1%	1.99	-0.75	2.71
3 U.S. citizen adults	17.7%	1.44	18.3%	1.49	0.64	2.08
4 U.S. citizen adults	7.0%	1.32	7.3%	1.42	0.25	1.94
5 or more U.S. citizen adults	1.4%	0.59	1.5%	0.65	0.14	0.88
<i>Mean (cont)</i>	<i>2.17</i>	<i>0.03</i>	<i>2.19</i>	<i>0.04</i>	<i>-0.02</i>	<i>0.05</i>
Home tenure						
Own	60.7%	1.01	59.8%	1.17	-0.85	1.54
Rent/Other	39.3%	1.01	40.2%	1.17	0.85	1.54
Region						
Northeast	17.9%	0.13	18.1%	0.44	0.25	0.45
Midwest	22.2%	0.04	22.0%	0.61	-0.18	0.61
South	37.9%	0.06	37.1%	0.49	-0.76	0.49
West	22.1%	0.04	22.8%	0.41	0.68	0.41
Employment						
Employed	61.0%	2.05	60.9%	2.15	-0.11	2.97
Unemployed	5.6%	0.73	5.2%	0.84	-0.40	1.12
Not in labor force	33.4%	1.89	33.9%	2.18	0.51	2.89
Nativity						
Born in U.S.	91.6%	0.38	92.1%	0.43	0.46	0.57
Not born in U.S.	8.4%	0.38	7.9%	0.43	-0.46	0.57
Internet access						
Access at home	89.5%	1.06	89.5%	1.12	-0.02	1.55
No access at home	10.5%	1.06	10.5%	1.12	0.02	1.55

Table continues.

Table 4A. Comparison of full sample estimates to Pre+Post completers, Face-to-face -- continued

Characteristic	Full sample		Pre+post completers		Difference	
	Value	s.e.	Value	s.e.	Value	s.e.
Interpersonal trust						
Always	1.3%	0.29	1.4%	0.30	0.03	0.42
Most of the time	42.7%	1.82	43.5%	1.87	0.78	2.61
About half the time	26.0%	1.59	24.9%	1.61	-1.03	2.26
Some of the time	25.6%	1.79	26.1%	1.90	0.50	2.61
Never	4.3%	0.64	4.1%	0.56	-0.27	0.85
<i>Mean</i>	<i>2.89</i>	<i>0.04</i>	<i>2.88</i>	<i>0.04</i>	<i>0.01</i>	<i>0.05</i>
Party ID						
Strong Democrat	18.5%	1.43	19.1%	1.45	0.67	2.04
Not very strong Democrat	12.8%	1.17	12.6%	1.26	-0.19	1.72
Independent-Democrat	15.1%	1.08	15.2%	1.23	0.06	1.64
Independent	9.7%	0.58	9.2%	0.65	-0.44	0.87
Independent-Republican	16.1%	1.33	16.6%	1.35	0.51	1.90
Not very strong Republican	12.3%	1.09	12.6%	1.15	0.28	1.58
Strong Republican	15.5%	1.34	14.6%	1.17	-0.89	1.78
Validated voter turnout 2016, weighted by probability match						
Voted	66.6%	1.65	67.6%	1.59	1.08	2.29
Did not vote	33.4%	1.65	32.4%	1.59	-1.08	2.29

Note: All analyses use jackknife replicate weights to compute ANES standard errors. All ANES 2016 TS weighted estimates use the Pre weight for the FTF sample [V160101f].

* $p < .05$ for difference between the full sample estimates compared to the pre+post completer estimates.

Full sample $n = 1180$; Pre-post completers $n = 1058$.

Table 4B. Comparison of full sample estimates to Pre+Post completers, Web sample

Characteristic	Full sample		Pre+post completers		Difference	
	Value	s.e.	Value	s.e.	Value	s.e.
Age						
18-29	20.3%	0.60	20.8%	0.66	0.54	0.89
30-39	17.2%	0.59	17.2%	0.70	-0.01	0.92
40-49	15.6%	0.57	15.4%	0.64	-0.15	0.86
50-59	20.8%	0.62	21.4%	0.76	0.55	0.98
60-69	15.7%	0.55	15.1%	0.63	-0.65	0.83
70 or older	10.4%	0.54	10.1%	0.63	-0.27	0.83
<i>Mean (cont)</i>	<i>47.18</i>	<i>0.15</i>	<i>46.91</i>	<i>0.22</i>	<i>0.28</i>	<i>0.27</i>
Sex						
Male	48.2%	0.09	48.3%	0.44	0.12	0.45
Female	51.8%	0.09	51.7%	0.44	-0.12	0.45
Education						
Less than HS cred.	9.1%	0.09	8.3%	0.37	-0.78 *	0.38
HS credential	29.0%	0.19	28.7%	0.46	-0.28	0.50
Some college/AA degree	31.5%	0.64	31.2%	0.76	-0.29	0.99
Bachelor's degree	17.6%	0.56	18.3%	0.65	0.75	0.86
Graduate degree	12.8%	0.48	13.4%	0.54	0.61	0.73
Race/ethnicity						
White non-Hispanic	69.3%	0.46	70.6%	0.60	1.33	0.76
Black non-Hispanic	10.7%	0.30	10.9%	0.45	0.16	0.54
Hispanic	11.9%	0.06	11.3%	0.39	-0.61	0.40
Other non-Hispanic	8.2%	0.51	7.3%	0.57	-0.88	0.77
Marital Status						
Married	54.3%	0.25	53.7%	0.49	-0.54	0.55
Prev married	17.5%	0.26	17.1%	0.38	-0.35	0.46
Never married	28.2%	0.06	29.1%	0.37	0.88 *	0.37
Income						
Under \$25,000	22.4%	0.83	22.0%	0.95	-0.46	1.26
\$25,000-\$49,999	20.4%	0.78	20.5%	0.86	0.08	1.16
\$50,000-\$99,999	30.9%	1.07	30.9%	1.20	0.00	1.61
\$100,000 or more	26.2%	0.82	26.6%	0.93	0.38	1.24
Household size						
1 U.S. citizen adult	16.0%	0.46	16.0%	0.50	0.01	0.68
2 U.S. citizen adults	54.1%	0.98	54.5%	1.14	0.40	1.50
3 U.S. citizen adults	19.0%	0.91	18.9%	1.03	-0.17	1.38
4 U.S. citizen adults	9.3%	0.71	9.4%	0.82	0.08	1.08
5 or more U.S. citizen adults	1.6%	0.35	1.3%	0.36	-0.32	0.50
<i>Mean (cont)</i>	<i>2.27</i>	<i>0.02</i>	<i>2.26</i>	<i>0.02</i>	<i>0.01</i>	<i>0.03</i>
Home tenure						
Own	60.3%	0.63	59.5%	0.74	-0.86	0.97
Rent/Other	39.7%	0.63	40.5%	0.74	0.86	0.97
Region						
Northeast	17.9%	0.00	18.0%	0.31	0.15	0.31
Midwest	22.0%	0.00	22.6%	0.35	0.58	0.35
South	37.6%	0.00	37.4%	0.41	-0.15	0.41
West	22.6%	0.00	22.0%	0.39	-0.59	0.39
Employment						
Employed	59.7%	1.05	59.3%	1.09	-0.40	1.52
Unemployed	7.9%	0.62	7.7%	0.68	-0.21	0.92
Not in labor force	32.4%	0.89	33.0%	0.91	0.61	1.27
Nativity						
Born in U.S.	91.5%	0.12	92.5%	0.32	0.97 *	0.34
Not born in U.S.	8.5%	0.12	7.5%	0.32	-0.97 *	0.34
Internet access						
Access at home	90.1%	0.65	90.8%	0.66	0.71	0.93
No access at home	9.9%	0.65	9.2%	0.66	-0.71	0.93

Table continues.

Table 4B. Comparison of full sample estimates to Pre+Post completers, Web sample -- continued

Characteristic	Full sample		Pre+post completers		Difference	
	Value	s.e.	Value	s.e.	Value	s.e.
Interpersonal trust						
Always	1.1%	0.24	1.0%	0.26	-0.19	0.36
Most of the time	37.2%	0.99	38.8%	1.07	1.55	1.45
About half the time	33.9%	1.08	32.7%	1.22	-1.18	1.62
Some of the time	22.5%	0.92	22.2%	0.99	-0.28	1.35
Never	5.3%	0.48	5.4%	0.55	0.10	0.73
<i>Mean</i>	<i>2.94</i>	<i>0.02</i>	<i>2.92</i>	<i>0.02</i>	<i>0.01</i>	<i>0.03</i>
Party ID						
Strong Democrat	22.2%	0.81	22.2%	0.84	-0.02	1.16
Not very strong Democrat	14.2%	0.72	14.6%	0.79	0.49	1.07
Independent-Democrat	9.4%	0.57	9.8%	0.62	0.39	0.84
Independent	16.4%	0.70	15.4%	0.74	-0.98	1.02
Independent-Republican	9.4%	0.58	9.6%	0.65	0.21	0.87
Not very strong Republican	11.6%	0.61	11.8%	0.72	0.18	0.94
Strong Republican	16.7%	0.77	16.5%	0.87	-0.28	1.16
Validated voter turnout 2016, weighted by probability match						
Voted	62.6%	0.97	64.0%	1.06	1.39	1.44
Did not vote	37.4%	0.97	36.0%	1.06	-1.39	1.44

Note: All analyses use jackknife replicate weights to compute ANES standard errors. All ANES 2016 TS weighted estimates use the Pre weight for the Web sample [V160101w].

* $p < .05$ for difference between the full sample estimates compared to the pre+post completer estimates.

Full sample $n = 3090$; Pre-post completers $n = 2590$.

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