



**2014 Pew Research Center's American Trends Panel
Wave 8
Methodology Report**

Submitted to:
The Pew Research Center

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I. SUMMARY

The American Trends Panel (ATP) is a national, probability-based online panel of adults in the United States living in households. Adults who use the internet participate in the panel via self-administered Web surveys, and adults who do not use the internet participate via computer assisted telephone interviewing (CATI) or mail. The eighth wave of the panel survey was fielded for the Pew Research Center by Abt SRBI from October 3 through 27, 2014. In total, 3,181 ATP members completed the survey, with 2,875 participating by Web and 306 participating by mail. The survey was administered in English and Spanish. Survey weights are provided to account for differential probabilities of selection into the panel as well as differential nonresponse to the panel recruitment survey, the panel invitation, and the panel survey itself (Wave 8). The margin of sampling error for full sample weighted estimates is ± 2.29 percentage points.

II. SAMPLE DESIGN

The target population for Wave 8 was non-institutionalized persons age 18 and over, living in the US, including Alaska and Hawaii. The sample consisted of 4,228 members of the ATP, which is a probability-based online panel of adults in the United States. The ATP originally consisted of 5,338 members, however, 147 members requested to be removed from the panel prior to the start of Wave 8 and an additional 962 Web panelists were removed prior to the start of Wave 8 because they had not responded to any of the panel surveys since their recruitment. The Wave 8 Survey featured a simultaneous mixed-mode design. Panelists who use the internet and provided an email address participated via self-administered Web survey, and adults who do not use the internet (or do but did not provide an email address) participated via a mail survey. Abt SRBI conducted the survey but is not reporting on results based on part of the sample.

III. QUESTIONNAIRE DEVELOPMENT AND TESTING

The questionnaire was developed by the Pew Research Center in consultation with Abt SRBI. In order to improve the quality of the data, the Web program was rigorously tested by the Abt SRBI project management team and PRC researchers. Test scenarios were created for all possible combinations of sample variables and question filters to ensure all skip logic was functioning correctly. Test data was then analyzed to determine that all logic was correct. Pew Research Center has a copy of the final instruments in English and Spanish.

IV. DATA COLLECTION PROTOCOL FOR WAVE 8

Currently all ATP panelists have been recruited from a large (n=10,013) national overlapping dual frame landline and cell phone random digit dial (RDD) survey conducted for the Pew Research Center. At the end of that RDD survey, respondents were invited to join the panel.

The invitation was extended to all respondents who use the internet (from any location) and a random subsample of respondents who do not use the internet. The RDD survey was conducted from January 23rd to March 16th, 2014, in English and Spanish. Sample for the RDD survey was obtained from SSI. Please refer to the Pew Research Center Political Typology/Polarization Survey Methodology Report for additional information on the sample design for the RDD survey.

ATP panelists who reported using the internet and for whom we had an email address were invited to participate in Wave 8 via a self-administered Web survey. The data collection for the Web surveys was conducted from October 8-27, 2014. Advance postcards were mailed to all Web mode panelists with a known residential address. One hundred panelists were included in a soft launch of the Web survey which began with an initial email invitation sent on October 8. The Web panelists chosen for the soft launch were known responders to previous ATP surveys who had completed their surveys within two days of receiving their invitation. The remaining panelists assigned to the Web mode were included in the full launch and were sent an initial email invitation on October 9. Up to four reminder emails were sent to those who did not respond to the Web survey. Table 1 shows the field dates of mailings. The Web survey was closed October 27, 2014 at 9 a.m. Eastern.

Table 1. Mailing Dates for Wave 8 Panelists in Web Condition

	Soft Launch	Full Launch
Advance Post Card	October 8, 2014	October 8, 2014
Initial email invitation	October 8, 2014	October 9, 2014
1 st reminder email	October 13, 2014	October 14, 2014
2 nd reminder email	October 16, 2014	October 17, 2014
3 rd reminder email	October 20, 2014	October 21, 2014
Final reminder email	October 23, 2014	October 24, 2014

ATP Web panelists age 18 to 25 and those who reported being Hispanic/Latino in the RDD recruitment survey were offered a \$10 post-paid incentive for completing the Wave 8 Web survey. All other panelists who completed the Web survey were offered a \$5 post-paid incentive. Web respondents could choose to receive the post-paid incentive in form of a check or a gift code to Amazon.com. The differential incentive amounts were designed to increase panel survey participation among groups that traditionally have low survey response propensities.

At the start of the Wave 8 Survey, 555 ATP members belonged to the non-Internet arm of the panel. These panelists had provided a residential address during the RDD recruitment survey, but they did not provide an email address. The data collection for both English and Spanish language mail surveys was conducted October 3-27, 2014 following the timeline shown in Table 2. The first packet of English language surveys were mailed using first class mail and Spanish language surveys were mailed using Priority mail. ATP panelists age 18 to 25 and those who reported being Hispanic/Latino in the RDD recruitment survey received a \$10 bill in the first mailing, while all other panelists received a \$5 bill. The reminder postcard and a second survey packer were sent to all mail mode respondents. Based on respondent feedback, we identified that a portion of the English booklets were sent to incorrect respondents but were unable to ascertain the full magnitude of the mismatches. As a result, the second reminder packet was sent to English respondents via USPS Priority mail and contained an additional cash pre-incentive to re-complete the survey and send it back. The cutoff date to process returned mail surveys was October 27, 2014, which allowed a week for final data entry and quality checking.

Table 2. Mailing Dates for Wave 8 Panelists in Mail Mode

Mailing	Date
First Packet	October 3, 2014
Reminder Post Card	October 10, 2014
Second Packet	October 17, 2014

V. WEIGHTING

Survey weights are needed to support reliable inference from the panel to the target population of US adults. The final survey dataset contains a full sample weight (WEIGHT_W8). The design of the full sample weight is described below.

The final full sample weight was computed in three main stages:

- Base weight adjusting for differential probabilities of selection
- Propensity adjustment for attrition
- Calibration to demographic distributions for the target population

Base Weight

A base weight is computed for all ATP members. The base weight adjusts for factors affecting the probability that the individual was selected for the panel. This probability comes from the survey in which the respondent was recruited. Currently, all ATP members were recruited through a probability-based, national overlapping dual-frame landline and cell phone RDD survey. The target population for the RDD survey was identical to the target population for the ATP (adults living in households in the US). The RDD survey was administered in English and

Spanish. All respondents to the RDD survey were invited to join the panel, except some individuals who do not use the internet, as this group was subsampled for the panel. In the landline sample of the RDD survey, one adult was randomly selected from within the household. Interviewers asked to speak with either the youngest male or youngest female at home at the time of the call. In the cell sample of the RDD survey, interviews were conducted with the person who answered the phone, provided they were age 18+ and spoke English or Spanish.

The base weight was computed using single frame estimation to adjust for the probability that the respondent's phone number was selected from the sampling frame, the overlap in the landline and cell phone frames, and the within household selection in the landline sample. For most panel members, the base weight is equal to the variable NEWWT1 in the 2014 Pew Research Center Polarization Study dataset and can be expressed as:

$$BASEWT = \frac{1}{\left(\frac{S_{ll}}{U_{ll}} \times \frac{LL}{AD}\right) + \left(\frac{S_{cp}}{U_{cp}} \times CP\right) - \left(\frac{S_{ll}}{U_{ll}} \times \frac{LL}{AD} \times \frac{S_{cp}}{U_{cp}} \times CP\right)}$$

Where:

- LL =1 if respondent has a landline phone
=0 if respondent has no landline phone
(OR number of landlines on which the respondent could have been reached)
- CP =1 if respondent has a cell phone
=0 if respondent has no cell phone
(OR number of cell phones on which the respondent could have been reached)
- S_{ll}= number of cases released in the landline sample
- S_{cp}=number of cases released in the cell phone sample
- U_{ll}=size of the landline RDD frame
- U_{cp}=size of the cell phone RDD frame
- AD=number of adults in the household (1, 2, 3 or more)

For a subset of the ATP members, an additional adjustment is included in the base weight to account for the fact that they belong to a group that was subsampled for invitation to the panel. In the RDD survey, non-internet users were subsampled at a rate of 25% from January 23, 2014, through February 5, 2014, but they were not subsampled (100% invited) from February 6, 2014 through the end of the field period. Internet users who agreed to join the panel but did not have an email address were taken at 100% from January 23, 2014, through February 5, 2014, but they were subsampled at a rate of 25% from February 6, 2014, through the end of the field period. The base weight of the affected cases was multiplied by the inverse of the subsampling rate (1 / .25 = 4).

Adjusting for Attrition

The panel invitation featured a \$10 post-paid incentive for agreeing to join and a fixed post-paid incentive for each panel survey completed. Hispanics/Latinos and adults age 18 to 25 were offered \$10 per panel survey, and all other invitees were offered \$5 per survey. The differential incentives were designed to preemptively offset anticipated differential response rates across these groups. In total, 9,810 RDD survey respondents were invited to join the ATP and 5,338 accepted, yielding a panel acceptance rate of 54%.

A majority of those who agreed to join the panel were still active at the start of Wave 8 (4,228/5,338=79%). Individuals who agreed to join the panel but were not active at the start of Wave 8 belong to two general classes: 147 panel members requested to be removed from the panel prior to the start of Wave 8 and an additional 963 panelists were removed prior to the start of Wave 8 because they had not responded to any of the panel surveys since their recruitment.

To the extent that active panel members may be different from individuals who are not active (either because they declined to join or because they dropped out), there is a risk that estimates from the panel could be subject to nonresponse bias. A propensity score adjustment was computed to adjust for this attrition. Most of the information available for individuals who either declined the panel invitation or have been dropped from the panel comes from the recruitment survey. A logistic regression model was estimated in which being an active panel member was regressed on recruitment survey sampling frame, incentive amount (\$10/\$5 per survey), internet user, race, marital status, child in the household, age, education, religious service attendance, household income, frequency of voting, opinion of the Tea Party (agree/disagree), whether or not they contacted an elected official in the last two years, political ideology, and statistically significant 2-way interactions ($p < .05$). The model was estimated using the respondents in the recruitment survey who were invited to join the panel. Hispanic ethnicity was excluded from the model because it was collinear with the incentive variable. Marital status and the number of adults in the household were not predictive and ultimately excluded from the model. The set of predictors considered for the model are variables that are routinely measured in surveys conducted for the Pew Research Center for the People & the Press. The significant predictors used in the final model are presented in Table 3.

The estimated propensities were used to divide cases into approximately equal size groups using the quintiles of the estimated propensity score. Quintiles have been found to be effective in capturing most of the variation. The propensity score adjustment was computed as the inverse of the active status rate in each quintile. This approach helps to protect against model misspecification, relative to using the inverse of the propensity score.

Table 3. Parameter Estimates from the Attrition Propensity Model[^]

Variable (reference group)	Estimate	s.e.	p-value	
Intercept	-.147	.229	.520	
Frame (landline)	.352	.046	<.001	***
Gender (male)	.159	.043	<.001	***
Internet User (non-user)	-1.117	.151	<.001	***
Race (other race)			<.01	**
White	.321	.107	<.01	**
African American	.377	.124	<.01	**
Asian	.028	.166	.865	
Multi-racial	.283	.145	.051	
Tea Party (disagree)	.269	.059	<.001	***
Contacted Elected Official (did not)	.397	.048	<.001	***
Incentive (\$5 per survey)	-.438	.147	<.01	**
Voting Frequency	.141	.023	<.001	***
Age	-.017	.002	<.001	***
Education	.127	.014	<.001	***
Religious Attendance	-.049	.014	<.01	**
HH Income	-.226	.033	<.001	***
Ideology	.119	.024	<.001	***
Incentive x Age	.011	.004	<.01	**
Internet User x HH Income	.199	.034	<.001	***

*** $p < .001$, ** $p < .01$, * $p < .05$

[^]Variables are coded such that the model predicts active status in the panel. Positive coefficients are associated with a higher probability of being active. Negative coefficients are associated with lower probability of being active.

Calibration to Target Population Controls

In the final stage of weighting, the attrition-adjusted base weights for the panelists responding to a particular panel survey are calibrated to population benchmarks using raking, or iterative proportional fitting. This adjustment is designed to reduce the risk of nonresponse bias stemming from nonresponse at the various stages of the panel design. The raking dimensions and the source for the population parameter estimates are reported in Table 4. All raking targets are based on the non-institutionalized U.S. adult (age 18+) population.

Table 4. Raking Dimensions and Source for Population Parameter Estimates

Raking Dimension[^]	Source
Gender(2) x Age(6)	2012 American Community Survey
Gender(2) x Education (3)	2012 American Community Survey
Age(3) x Education(3)	2012 American Community Survey
Race/Ethnicity(4)	2012 American Community Survey
Census Region(4)	2012 American Community Survey
Population Density(5)	2010 Decennial Census
Telephone Service(3)	July -December 2013 National Health Interview Survey, projected to 2014
Internet Usage(2)	2014 Pew Typology Study
Party Affiliation(5)	Average from the three most recent monthly surveys conducted for the Pew Research Center for the People & the Press

[^] The number of categories (prior to any collapsing from small cell size) are shown in parentheses.

Most of the dimensions are commonly observed in weighting protocols for general population household surveys in the US. One exception is the raking for internet usage. This is included in the algorithm so that the panel survey estimates reflect the target population with respect to the proportion of people who use the internet and the proportion who do not. The large majority of ATP interviews are completed via self-administered Web survey. There is, therefore, a concern that internet users could be over-represented in the survey estimates if this dimension is not controlled for in the raking. Currently, the estimated population parameter for the percent of U.S. adults who use the internet is 89%, based on the 2014 Typology Survey conducted for the Pew Research Center. It would have been preferable to use a large, federal in-person survey (such as ACS or CPS) to obtain this parameter estimate, but unfortunately the federal government does not routinely measure internet access from any location.^{1,2}

¹ The July 2011 Current Population Survey estimated that 73% of US residents age 15 and older access the internet from some location. Given the increasing trends in internet access, particularly on mobile devices, this 2011 CPS estimate was deemed too out-of-date to be helpful in the ATP weighting.

² Starting in 2013 the American Community Survey is measuring internet access, but it only measures access inside the sample household. Members of the ATP are permitted to complete the surveys from any location. So the

Trimming

The distribution of the raked weights was then evaluated and checked for extreme values. For Wave 8, the weights were trimmed at the 2nd and 98th percentiles.

VI. DESIGN EFFECT AND MARGIN OF ERROR

Weighting and survey design features that depart from simple random sampling tend to result in an increase in the variance of survey estimates. This increase, known as the design effect or *deff*, should be incorporated into the margin of error, standard errors, and tests of statistical significance. The overall design effect for a survey is commonly approximated as the 1 plus the squared coefficient of variation of the weights. For this survey, the margin of error (half-width of the 95% confidence interval) incorporating the design effect for full sample estimates at 50% is ± 2.29 percentage points. Estimates based on subgroups will have larger margins of error. It is important to remember that random sampling error is only one possible source of error in a survey estimate. Other sources, such as question wording and reporting inaccuracy, may contribute additional error. A summary of the weights and their associated design effect is reported in Table 5 below.

Table 5. Design Effect and Effective Sample Size

Weight Variable	Completed Interviews	Approximate Design Effect	Effective Sample Size	Margin of Error (95% confidence level)
WEIGHT_W8	3,181	1.72	1,845	+/- 2.29

VII. DISPOSITIONS

The final dispositions and AAPOR rates from the Web and mail components are reported in Tables 6a and 6b, respectively. The response rate to Wave 8 itself was 75%. Table 7 reports the cumulative response rate for Wave 8 when all of the stages of recruitment into the panel are taken into account.

more relevant parameter for the ATP is the proportion of adults who can access the internet from any location, not just at home.

Table 6a. Final Dispositions from the Web Component of the Wave 8 Survey

Final Disposition	AAPOR Code¹	Cases
Completed interview	1.10	2,875
Logged onto survey; broke-off	2.12	25
Logged onto survey; did not complete any items	2.1121	19
Never logged on (implicit refusal)	2.11	754
Total Panelists in Web Sample of the Wave 8 Survey		3,673
Completed interviews	I	2,875
Partial interviews	P	
Refusals	R	798
Non-contact	NC	
Other	O	
Unknown household	UH	
Unknown other	UO	
Not eligible	NE	
Total		3,673
AAPOR RR1 = I / (I+P+R+NC+O+UH+UO)		78%

Table 6b. Final Dispositions from the Mail Component of the Wave 8 Study

Final Disposition	AAPOR Code¹	Cases
Completed mail survey during field period	1.10	306
Completed mail survey after field period	2.27	36
Refusal	2.11	1
Other: Known eligible but nothing ever returned	2.30	184
Other: Known eligible but undeliverable address	2.30	28
Total Panelists in Mail Sample of Wave 8 Study		555
Completed interviews	I	306
Partial interviews	P	
Refusals	R	185
Non-contact	NC	64
Other	O	
Unknown household	UH	
Unknown other	UO	
Not eligible	NE	
Total		555
AAPOR RR1 = I / (I+P+R+NC+O+UH+UO)		55%

¹ These codes are modified to reflect the fact that this survey was a panel survey, not an RDD survey. All sample members were eligible.

Table 7. Cumulative Response Rate

Response Rate to Recruitment Survey	11%
Percent of Recruitment Survey Respondents Who Agreed to Join the ATP, Among Those Invited	54%
Percent of Those Agreeing to Join Who Were Active Panelists at Start of Wave 8	79%
Response Rate to Wave 8 Survey	75%
Cumulative Response Rate for the Wave 8 Survey	3%