

RANDS 1 Technical Documentation

Overview

The National Center for Health Statistics (NCHS) Division of Research and Methodology (DRM) contracted with Gallup to conduct round 1 of the Research and Development Survey (RANDS), referred to as RANDS 1 in this documentation. RANDS is designed to evaluate estimation approaches for health outcomes from recruited panels and quantitative methodologies for measuring error. RANDS is collected for methodological research purposes and is not designed to produce nationally representative estimates. The objective of RANDS 1 was to understand how recruited Web-based panels can be integrated alongside traditional modes of data collection. RANDS 1 was conducted from November 2, 2015 to December 9, 2015. This documentation describes the sampling approach, data collection timeline, response rate, and sample weighting for the survey.

Sampling

The target population for this survey consisted of the general population of the United States aged 18 and older. The source of the sample for this survey was the Gallup Panel. The Gallup Panel is a national research panel, a representative group of people recruited to respond to surveys in order to gather information. Since Gallup contacts potential members at random and all U.S. households have an equal and known probability of selection, the Gallup Panel is a probability panel. Currently, the Gallup Panel covers Americans, aged 18 and older, who live in a household with a telephone.

Gallup selects potential members using random-digit-dialing (RDD) of landline telephones and cellphones or address-based sampling (ABS) to contact U.S. households at random (<https://www.gallup.com/analytics/213695/gallup-panel.aspx>). After a person joins the Panel, depending on his/her internet access status, Gallup will contact him/her to complete surveys via either email, mail, or telephone. Gallup conducted RANDS 1 via web, inviting only Panel members with internet access to participate. RANDS 1 does not include individuals who do not have web access (approximately 15% of the Panel).

For RANDS 1, Gallup collaborated with NCHS' DRM on a stratified sample design to obtain a random, representative sample of U.S. adults aged 18 and over (50 states and District of Columbia) from the Gallup Panel. The 36 sampling strata were assigned by Race/Ethnicity (Non-Hispanic White-Only, Non-Hispanic Black-only, Non-Hispanic Other, Hispanic), Age (18-34, 35-54, 55+), and Education (High School or Less, Some College, College Graduates). First, the sampled respondents obtained in the Gallup Panel were stratified according to the NCHS specifications provided above. Then, Gallup performed sampling independently within each stratum using simple random sampling. The sampling ratios varied by stratum to account for differential non-response to improve sample efficiency.

Summary of Field Work

Gallup sent 5,318 randomly selected Panel members email invitations to RANDS 1 on November 2. Panelists who had not yet completed the survey also received email reminders on November 6, November 12, and November 19. On November 20, 1,532 respondents of the original 5,318 had completed the survey (overall response rate of 28.8 percent).

This response rate was lower than the expected response rate of 40 percent. Based on the response rate to that point, Gallup recommended sending two additional reminders on November 24 and December 1 and further recommended that an additional sample be drawn and placed into the field. Gallup selected an additional 4,491 respondents based on the response rates of each cell in the stratification plan,

contacting this group according to the following schedule: invitations were sent on November 24, and email reminders were sent on November 27, December 1, and December 7.

The survey reached the desired 2,000 completes on November 27, but Gallup left it in the field until the third reminder for the second sample group was sent. Gallup invited a total of 9,809 participants to complete the survey, and when it pulled the survey from the field on December 9, a total of 2,304 had responded and completed it, for an overall completion rate of 23.5 percent. An additional 118 respondents started but did not complete the survey. Although the final completion rate was lower than expected due to the additional sample, the 2,000 completed responses were needed to achieve the statistical power for the planned analyses.

Table 1 reports the RANDS 1 response rates by week. Table 2 reports the sample sizes and response rates by sample strata.

Table 1. RANDS 1 Response Rates by Week

Date	Event	Number of cumulative completes	Response rate based on initial sample size (N=5,318)	Response rate based on full sample size (N=9,809)
11/02/2015	1 st day of field work	527	9.9%	5.3%
11/06/2015	1 st reminder for 1 st sample group	1,113	20.9%	11.3%
11/09/2015	After 7 days of data collection	1,244	23.4%	12.7%
11/12/2015	2 nd reminder for 1 st sample group	1,378	25.9%	14.0%
11/16/2015	After 14 days of data collection	1,451	27.2%	14.8%
11/19/2015	3 rd reminder for 1 st sample group	1,520	28.6%	15.5%
11/23/2015	After 21 days of data collection	1,551	29.2%	15.8%
11/24/2015	4 th reminder for 1 st sample group; invite for 2 nd sample group	1,817		18.5%
11/27/2015	1 st reminder for 2 nd sample group	2,003		20.4%
11/30/2015	After 28 days of data collection	2,088		21.3%
12/1/2015	5 th reminder for 1 st sample group; 2 nd reminder for 2 nd sample group	2,194		22.4%
12/7/2015	3 rd reminder for 2 nd sample group; After 35 days of data collection	2,293		23.4%
12/9/2015	End of field period	2,304		23.5%

Table 2. RANDS 1 Response Rates by Sampling Strata

Race/Ethnicity	Education Level	Age Group	Total Sample per Stratum	Completes per Stratum	Response Rate
Non-Hispanic White	HS or Less	18-34	1258	127	10.10%
Non-Hispanic White	HS or Less	35-54	488	134	27.46%
Non-Hispanic White	HS or Less	55+	447	255	57.05%
Non-Hispanic White	Some College	18-34	865	115	13.29%
Non-Hispanic White	Some College	35-54	367	134	36.51%
Non-Hispanic White	Some College	55+	260	160	61.54%
Non-Hispanic White	Bachelors +	18-34	447	143	31.99%

Non-Hispanic White	Bachelors +	35-54	278	134	48.20%
Non-Hispanic White	Bachelors +	55+	268	186	69.40%
Non-Hispanic Black	HS or Less	18-34	262	5	1.91%
Non-Hispanic Black	HS or Less	35-54	195	17	8.72%
Non-Hispanic Black	HS or Less	55+	174	29	16.67%
Non-Hispanic Black	Some College	18-34	352	23	6.53%
Non-Hispanic Black	Some College	35-54	303	42	13.86%
Non-Hispanic Black	Some College	55+	125	44	35.20%
Non-Hispanic Black	Bachelors +	18-34	281	36	12.81%
Non-Hispanic Black	Bachelors +	35-54	112	26	23.21%
Non-Hispanic Black	Bachelors +	55+	106	41	38.68%
Non-Hispanic Other	HS or Less	18-34	224	12	5.36%
Non-Hispanic Other	HS or Less	35-54	136	23	16.91%
Non-Hispanic Other	HS or Less	55+	81	27	33.33%
Non-Hispanic Other	Some College	18-34	288	33	11.46%
Non-Hispanic Other	Some College	35-54	144	32	22.22%
Non-Hispanic Other	Some College	55+	68	35	51.47%
Non-Hispanic Other	Bachelors +	18-34	225	47	20.89%
Non-Hispanic Other	Bachelors +	35-54	60	30	50.00%
Non-Hispanic Other	Bachelors +	55+	60	41	68.33%
Hispanic	HS or Less	18-34	357	17	4.76%
Hispanic	HS or Less	35-54	150	28	18.67%
Hispanic	HS or Less	55+	44	15	34.09%
Hispanic	Some College	18-34	478	40	8.37%
Hispanic	Some College	35-54	411	106	25.79%
Hispanic	Some College	55+	104	42	40.38%
Hispanic	Bachelors +	18-34	250	52	20.80%
Hispanic	Bachelors +	35-54	83	31	37.35%
Hispanic	Bachelors +	55+	60	42	70.00%

Sample Weighting

The final RANDS 1 sample was weighted to account for the sample design and further weighted to U.S. population counts to account for differential non-response and under-coverage of some groups on the sample frame. Sample weights must be used in the analysis of these data in order to produce results with meaningful population representativeness.

Since the Gallup Panel is a probability panel, each Panel member on the sampling frame had an initial weight assigned to each sampled unit (the “Panel weight”). The RANDS survey-specific base sampling weights are derived using a combination of the Panel weight and the probability of selection into RANDS associated with the sampled panel member. This overall survey sampling weight was calculated as the panel base sampling weight multiplied by the inverse probability of selection of a Gallup Panel member in RANDS where the probability of selection of a panelist within a stratum (defined by race/ethnicity, age, and education) was n_h/N_h , the ratio of the number of panelists sampled (n_h) and the total number of panelists available (N_h) in that stratum (h).

Since not all sampled panel members respond to the survey interview, an adjustment is needed to account for and adjust for survey non-respondents. This adjustment decreases potential nonresponse bias associated with sampled panel members who did not complete the RANDS 1 survey. Gallup created disjoint non-response adjustment cells to generate non-response weights, basing the adjustment cells on region, age group, gender, and education. This non-response adjustment adjusts the sampling weights of records within the non-response adjustment cells of those who completed the survey to account for sampled cases in the same adjustment cell of those who did not complete the survey.

The last stage of adjustments involved post-stratification weighting. In the process of post-stratification weighting, Gallup adjusts the weights by raking, an iterative process in which weights are adjusted until the sample distribution aligns with the reference population, to known demographic characteristics of the U.S. population by age, race/ethnicity, gender, education, and region based on the latest available population projections from the U.S. Census Bureau Current Population Survey (CPS). The post-stratification weighting steps were as follows:

- First, respondents were post-stratified by a total of four regions, two gender groups, and five age groups (18-34, 35-44, 45-54, 55-64, 65+), resulting in 40 post-stratification adjustment cells for region, gender, and age.
- Second, respondents were post-stratified by education (HS or Less, Some College, College Grads) within each of the five age groups.
- Third, respondents were post-stratified by gender within race groups (White Only, Black Only, and Other).
- Finally, respondents were post-stratified by gender within Ethnicity (Hispanic/Non-Hispanic).

These steps were performed iteratively in that order until the raking algorithm converged. At the final stage of weighting, any extreme weights were trimmed to minimize the effect of such weights on the variance of estimates and then weights are re-raked to the same population totals. Once weighting adjustment achieved the goal of matching the CPS population post-stratum totals, the final weights were proportionally adjusted to sum to the total number of RANDS 1 respondents (n=2,304).

Suggested Citation

National Center for Health Statistics. RANDS 1 Technical Documentation. Hyattsville, Maryland. 2020.