



Contraception and Consumption in the Age of Extinction: U.S. Survey Results Survey Methodology and Demographics

Survey sampling plan

The Center for Biological Diversity surveyed 899 people distributed evenly across each of the 50 U.S. states and the District of Columbia proportionate to the U.S. Census Bureau's population estimates for 2018 to achieve statistically accurate results (95% confidence level).

To calculate a minimum sample size for a 95% confidence level, we used the Sample Size Calculator available online at OpenEpi². We assumed a large population ($N = 1,000,000$), a 50% frequency in the population of each measure with $\pm 3.5\%$ confidence limits and a design effect of 1.00. Given these criteria, a 95% confidence level required a minimum of 784 survey respondents. Given availability of resources, the Center was able to fund a total of 899 surveys, after quality control removals (detailed below). Therefore, the 95% confidence level margin of error for an 899 individual survey is less than $\pm 3.5\%$.

The random sample was recruited online via the Amazon platform Mechanical Turk ("MTurk") using both an English and Spanish survey instrument and Survey Monkey was used to collect the data. The Center funded and paid respondents between \$.60 and \$1.00 to take the eight-minute survey.

Survey content

The survey had 16 questions about population, consumption, voluntary family planning and climate change, five of which were from a previous survey conducted by the Center in 2013 to gauge change over time. The survey asked respondents to indicate the importance of a variety of social issues and tested basic knowledge around the extinction crisis and population growth. It asked a series of questions regarding moral responsibility to prevent wildlife extinction and whether the United States is doing enough to protect the natural world.

The survey also covered a range of perceptions around the impact of population growth, the severity of climate change and solutions like reproductive health. Finally, it asked whether people were comfortable talking about population and the types of actions they've already taken or would be willing to take to advocate around the issue, like advocating for universal access to contraception or voting for policymakers that address consumption issues in their platform.

Demographic questions included age, gender identity, race, state, political affiliation, income, education and religion, as well as whether respondents already have children and if they plan to have more. This broad range of demographic questions, as well as the variety of questions around knowledge, perceptions, and willingness to take action, allowed us to conduct an in-depth analysis on how different audiences may vary on these issues.

Survey analysis

We used a series of basic statistical approaches to conduct survey analysis using SPSS. Demographics of the sample were summarized with univariate (descriptive) statistics, in particular frequencies and proportions for categorical variables and means and standard deviations for continuous variables. The analysis was supported by a statistical analysis consultant and a George Washington University graduate student.

We treated Likert Scale-styled items categorically. We further described subpopulations of our survey sample with bivariate statistics ("crosstabs"). In instances where it was necessary to measure differences in means both within and among groups, we used the analysis of variance (ANOVA) statistical test. The ANOVA test allowed us to determine

statistically significant differences in sample means of multiple (more than two) groups. Our statistical testing employed an alpha of 0.05. ANOVA employs the F-test.

We implemented several quality-control measures in our survey. We eliminated respondents who completed the survey in under four minutes. We asked the respondent’s age and birth year at separate points within the survey. This allowed us to compare the birth year derived age with the reported age. We included in one of our matrices questionnaires a row that stated: “As part of our quality control, please choose ‘not sure’ for this row.” We eliminated respondents who failed to meet these criteria.

We compared our results to that of the [U.S. Census Bureau’s American Communities Survey \(ACS\)](#) and the [Current Population Survey \(CPS\)](#) to decide if post-stratification weights were needed. See Table 1 and Table 2 below. To create a nationally representative sample, our priority was to match the state geographical breakdown and then get as close as we could to U.S. race and ethnicity representation. We decided only to weight geography (state).

Table 1. American Communities Survey (ACS) and the Current Population Survey (CPS) in comparison to sample

Race/Ethnicity	Percent of U.S. Population	Percent of sample
White	77%	65%
Black	13%	8%
American Indian and Alaska Native	1%	1%
Asian	6%	8%
Native Hawaiian/ Pacific Islander	0.2%	0%
Two or more races	3%	9%
<i>Hispanic (self-identified, separate question from race)</i>	18%	9%

Table 2. Estimates of the Total Resident Population and Resident Population Age 18 Years and Older for the United States: July 1, 2018

Geographic Area	Total Resident Population	Resident Population Age 18 Years and Older		Number of respondents needed for an accurate proportion per state for a sample size of 812	Actual number of respondents per state in final sample
		Total	%		
Alabama	4,887,871	3,798,031	77.7	12	12
Alaska	737,438	553,622	75.1	2	2
Arizona	7,171,646	5,528,989	77.1	18	18
Arkansas	3,013,825	2,310,645	76.7	8	8
California	39,557,045	30,567,090	77.3	95	112
Colorado	5,695,564	4,430,329	77.8	14	17
Connecticut	3,572,665	2,837,472	79.4	9	13
Delaware	967,171	763,555	78.9	3	3
District of Columbia	702,455	574,961	81.9	2	3
Florida	21,299,325	17,070,244	80.1	52	58
Georgia	10,519,475	8,013,724	76.2	26	29
Hawaii	1,420,491	1,117,077	78.6	4	4
Idaho	1,754,208	1,307,236	74.5	5	7
Illinois	12,741,080	9,883,814	77.6	31	31
Indiana	6,691,878	5,123,748	76.6	17	17
Iowa	3,156,145	2,425,378	76.8	8	9
Kansas	2,911,505	2,205,544	75.8	7	10
Kentucky	4,468,402	3,459,573	77.4	11	11
Louisiana	4,659,978	3,564,062	76.5	12	12
Maine	1,338,404	1,088,000	81.3	4	4
Maryland	6,042,718	4,702,570	77.8	15	15
Massachusetts	6,902,149	5,535,291	80.2	17	22
Michigan	9,995,915	7,831,247	78.3	24	24
Minnesota	5,611,179	4,308,564	76.8	14	15
Mississippi	2,986,530	2,280,389	76.4	8	8
Missouri	6,126,452	4,749,622	77.5	15	15
Montana	1,062,305	832,871	78.4	3	3
Nebraska	1,929,268	1,452,427	75.3	5	5
Nevada	3,034,392	2,345,395	77.3	8	8
New Hampshire	1,356,458	1,098,288	81	4	5
New Jersey	8,908,520	6,954,877	78.1	22	26
New Mexico	2,095,428	1,613,275	77	6	6
New York	19,542,209	15,474,107	79.2	47	57
North Carolina	10,383,620	8,082,975	77.8	25	27
North Dakota	760,077	581,379	76.5	2	2
Ohio	11,689,442	9,096,117	77.8	29	29
Oklahoma	3,943,079	2,986,593	75.7	10	11
Oregon	4,190,713	3,317,146	79.2	11	11
Pennsylvania	12,807,060	10,158,149	79.3	31	34
Rhode Island	1,057,315	852,102	80.6	3	3

South Carolina	5,084,127	3,978,182	78.2	13	13
South Dakota	882,235	664,629	75.3	3	4
Tennessee	6,770,010	5,263,790	77.8	17	18
Texas	28,701,845	21,303,746	74.2	69	78
Utah	3,161,105	2,228,643	70.5	8	9
Vermont	626,299	510,326	81.5	2	2
Virginia	8,517,685	6,647,893	78	21	21
Washington	7,535,591	5,872,306	77.9	19	26
West Virginia	1,805,832	1,441,672	79.8	5	5
Wisconsin	5,813,568	4,537,465	78	14	14
Wyoming	577,737	442,962	76.7	2	3
				812	899

Demographics of respondents

Below are the demographics for the 899 survey respondents.

Gender	Percent of sample
Female	48%
Male	51%
Transgender	0%
Non-binary	0%
I prefer not to answer	0%
Agender	0%
<i>*A total of 12 respondents noted something other than female or male</i>	
Age	Percent of sample
18-29	26%
30-49	58%
50-64	14%
65+	2%
Race	Percent of sample
White	65%
Black	8%
American Indian & Alaska Native	1%
Asian	8%
Native Hawaiian and Other Pacific Islander	0%
Two or more races	9%
Hispanic	9%
Other	0%
Political Party	Percent of sample
Democrat	45%
Republican	27%
Independent	22%
I prefer not to answer	2%
Other	3%

Census Region	Percent of sample
Northeast	18%
Southeast	37%
Midwest	21%
West	24%
Place (self-described)	Percent of sample
Urban	35%
Suburban	47%
Rural	18%
Income (annual)	Percent of sample
Less than \$20,000	13%
\$20,000 to \$34,999	18%
\$35,000 to \$49,999	20%
\$50,000 to \$74,999	23%
\$75,000 to \$99,999	12%
Over \$100,000	12%
I prefer not to answer	2%
Religion	Percent of sample
Catholic (incl. Roman Catholic and Orthodox)	23%
Protestant (Anglican, Orthodox, Baptist, Lutheran)	20%
Jewish	1%
Muslim	1%
Sikh	0%
Hindu	1%
Buddhist	2%
Unaffiliated/none	13%
Atheist	15%
Agnostic	15%
I prefer not to answer	5%
Other (respondent writes in answer)	5%
Educational attainment	Percent of sample
Did not finish high school	1%
High school diploma	10%
Some college (no degree)	22%
Associate degree	10%
Bachelor's degree	41%
Master's degree	12%
Doctorate degree	2%
Trade/Technical/Vocational training	1%



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