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MEMORANDUM FOR American Community Survey Research and Evaluation Workgroup

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Subject: 2018 Data Slide Test

Attached is the American Community Survey (ACS) Research and Evaluation report entitled, *2018 Data Slide Test*. This report provides results of an experiment conducted to assess the impact on response and cost of proposed design changes to the ACS mail materials, using the June 2018 ACS methods panel.

If you have any questions about this report, please contact Elizabeth Poehler at 301-763-9305 or Sarah Heimel at 202-384-8548.

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American Community Survey Research and Evaluation Program

September 6, 2019

2018 Data Slide Test

FINAL REPORT

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EXECUTIVE SUMMARY

The American Community Survey (ACS) data provide a wealth of information used by businesses, governments, and organizations for research and planning purposes. The current design of the ACS, with an annual sample of roughly 3.5 million housing unit addresses, allows the U.S. Census Bureau to collect and update demographic, social, economic, and housing data for the United States every year. The Census Bureau continually evaluates how the ACS mail materials and methodology might be improved to increase survey participation and reduce survey costs.

To that end, the Census Bureau designed an interactive infographic tool (a "data slide") and mailed it to a sample of ACS housing unit addresses as a possible way to increase self-response. The 2018 Data Slide Test consisted of two experimental treatments: some addresses were sent a data slide in the initial mailing (Treatment 1), while other addresses were sent the data slide in a third mailing, which is the paper questionnaire package mailing (Treatment 2).[1] A separate control treatment had all of the current ACS production materials, without the addition of a data slide. This test was designed to evaluate the effect of sending a data slide in a mailing; analysis was conducted on both unit response (the number of sample addresses for which responses were received) and item response (the quantity and quality of survey questions that were answered), as well as annual survey costs (data collection costs for the experimental treatments relative to current survey production costs).

Key Findings:

- The impact of adding a data slide in the first mailing was evaluated by comparing Treatment 1 to the control treatment. For addresses sent the initial mail package, adding a data slide to the mail materials increased internet response before the fifth mailing (by 1.0 percentage point) and before the start of Computer-Assisted Personal Interview (CAPI) (by 1.1 percentage points). However, it also decreased combined mail and Telephone Questionnaire Assistance (TQA) response by 0.6 and 0.8 percentage points at the same points in time. Adding the data slide in the initial mailing did not affect overall self-response. This suggests that the data slide may have influenced a mode response change. Oddly, there is no explanation as to why the effect on response did not occur sooner in the data collection cycle.

- The impact of adding a data slide in the third mailing was evaluated by comparing Treatment 2 to the control treatment. For addresses sent the third mailing, adding the data slide increased overall self-response before the fifth mailing (by 1.1 percentage

[1] The third mailing is not sent to addresses from which we have received responses or addresses from which we have received mail back from the U.S. Postal Service determined to be "Undeliverable as Addressed" (UAA).

points) and before the start of CAPI (by 1.0 percentage point). This increase in self-response was driven by internet response, which also increased at both points in time (1.1 and 0.9 percentage points respectively). This result was somewhat unexpected, as it was hypothesized that sending the data slide with the paper questionnaire may have influenced response in that mode. However, considering the experimental results for both treatments, it does appear that the presence of the data slide in a mailing positively affects internet response.

- There was no effect on overall form completion, item nonresponse, or analyses for other response items. Thus, there is no evidence that the presence of the data slide in either of the mailings affected the quality or quantity of responses to the ACS survey items.

- Although there were some differences in total self-response for the smaller mailing universe for Treatment 2 (addresses mailed the third mailing), there were no significant differences in total self-response for the initial mailing universe between either of the experimental treatments and the control at any of the key points in time of the ACS data collection cycle. As such, any differences in cost would be the result of an increase in printing the data slides and any cost savings incurred by an increase in internet response and a decrease in mail response, as observed with Treatment 1.

- Processing internet responses is more cost effective than capturing the data from mail responses. Mail responses are also more costly as the Census Bureau must pay for the postage of the returned questionnaire. Since Treatment 1 showed an increase in internet response and a decrease in mail response, a cost savings for data capture and postage would be anticipated if the treatment were implemented in production. However, those costs would not offset the increased printing costs that would be incurred by the production of the data slides. Implementing either treatment into production would result in an estimated additional annual cost to the program of about $360,000.

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1. INTRODUCTION

The U.S. Census Bureau continually evaluates how the American Community Survey (ACS) mailing materials and methodology might be further refined to increase survey participation and reduce survey costs. Increasing survey response requires overcoming factors that contribute to nonresponse. Research has shown that two of the top reasons that respondents refuse or are reluctant to answer the ACS are privacy (unwillingness to share personal information and mistrusting that personal information will remain confidential) and legitimacy (not trusting that the ACS is a legitimate survey) (Zelenak and Davis, 2013).

To address these concerns, the Census Bureau created an interactive infographic tool (i.e., a "data slide") that presents statistics generated by the ACS for the fifty states, the District of Columbia, and Puerto Rico. These data slide statistics were intended to alleviate potential privacy concerns by conveying to potential respondents that the data obtained from the ACS are used only for aggregate statistics, thus instilling confidence that no single person's data are revealed. It was also hypothesized that, for those questioning the validity of the survey, the mere presence of the data slide in a mailing could add legitimacy to the survey, due to the cost and effort required to design, print, and mail it.

The 2018 Data Slide Test involved sending the data slide to a subsample of ACS addresses: some addresses received a data slide in the initial package (first mailing), other addresses received it in the paper questionnaire package (third mailing), and some addresses did not receive it. This test evaluates how including the data slide as a mail insert affected unit response (the number of sample addresses for which we received responses), item response (the quantity and quality of survey questions that are answered), and annual survey costs (data collection costs relative to current survey production).

2. BACKGROUND

This section presents information on the current ACS data collection strategy so readers can understand how this experiment uses and modifies the current approach. We also discuss background information that led to the creation of the data slide and present a detailed description of the data slide.

2.1 Current ACS Data Collection Strategy

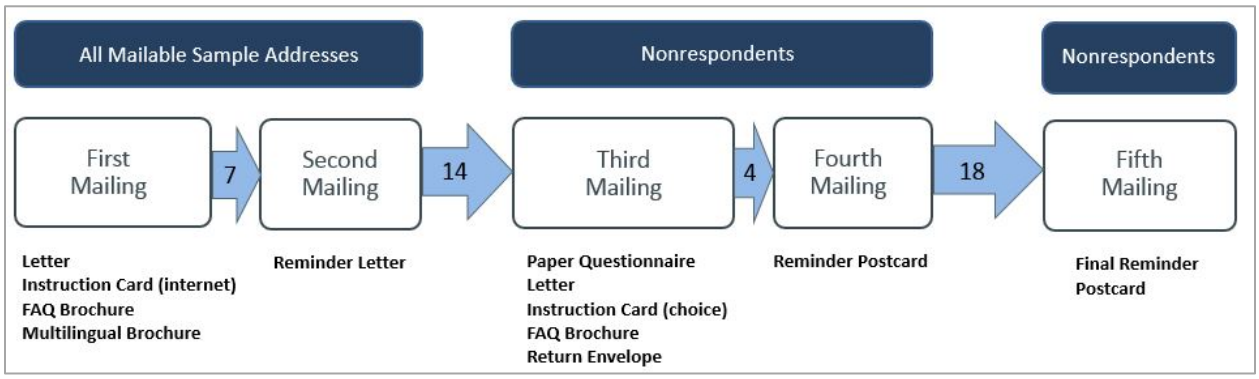
To encourage self-response in the ACS, the Census Bureau sends up to five mailings to a sample address. The first mailing (the initial package) is sent to all mailable addresses in the sample. It includes an invitation to participate in the ACS online and states that a paper questionnaire will be sent in a few weeks to those unable to respond online. About seven days later, the same

addresses are sent a second mailing (a reminder letter), which repeats the instructions to respond online, wait for a paper questionnaire, or call with questions.

Responding addresses are removed from the address file after the second mailing to create a new mailing universe of nonresponders. For the third mailing (the paper questionnaire package), the remaining sample addresses are sent a package with instructions for responding online, the telephone questionnaire assistance number, and a new response option—a paper questionnaire. About four days later, these addresses are sent a fourth mailing (a reminder postcard).

After the fourth mailing, responding addresses are again removed from the address file to create a new mailing universe of nonresponders. These remaining sample addresses are sent one last mailing (a final reminder postcard) as a last attempt to collect a self-response.[2]

Figure 1. Overview of the 2018 ACS Self-Response Mail Contact Strategy and Mailing Universes



Note: This was the mail contact strategy during the 2018 Data Slide Test which used the June 2018 ACS methods panel.

Two to three weeks after the fifth mailing is sent, responding addresses are removed to create the universe of addresses eligible for the Computer-Assisted Personal Interview (CAPI) nonresponse followup operation.[3] Of this universe, a subsample is chosen to be included in the CAPI operation. Field representatives visit addresses chosen for this operation to conduct in-person interviews.[4]

[2] In September 2018, the ACS Mail Contact Strategy was updated; the second and fifth mailings were converted to pressure seal mailers based on the results of the 2017 Pressure Seal Mailing Materials Test (Risley et al, 2018). At the time of the 2018 Data Slide Test, however, the second mailing was sent as a standard letter and the fifth mailing was a postcard.

[3] CAPI interviews start on the first of the month following the Final Reminder mailing.

[4] CAPI interviewers also attempt to conduct interviews by phone when possible.

2.2 The ACS Data Slide

2.2.1 Literature Review and Background

Many people living in the United States are unaware of the ACS; a messaging survey in 2014 found that only 11 percent of respondents had previously heard of the ACS (Hagedorn, Green, and Rosenblatt, 2014). Another study of respondents in the nonresponse followup phase of data collection revealed that two of the top reasons that respondents refuse or are reluctant to answer the ACS are privacy and legitimacy concerns (Zelenak and Davis, 2013).

We conjectured that adding an insert to a mailing could help address some of these concerns. In 2009, a multilingual brochure was tested in order to reach out to limited English-speaking households. Adding the multilingual brochure led to an increase in response from limited English-speaking households (Joshipura, 2010) so the brochure has been in all ACS initial mailing packages since then. In 2015, the Census Bureau tested an insert that gave information about why certain topics appear on the ACS and gave examples of how the data are used to benefit communities (Heimel, Barth, and Rabe, 2016). While the insert tested did not affect self-response, we thought that perhaps a different type of insert may be used to address other issues related to nonresponse. The ACS already had a product called a "data wheel" that was considered to be a good candidate to be included in a mailing.

The Census Bureau uses the ACS data wheel as a marketing tool at conferences, workshops, and similar events (see Appendix B for an image of the ACS data wheel).[5] Reaction to the data wheel at these events is positive; in fact, over 4,000 data wheels were distributed during the fiscal years of 2016 and 2017 (Valdisera, 2017). This popularity with event attendees prompted curiosity about whether ACS respondents might react similarly, with the idea that including the data slide in ACS mailings could engage them in the survey and encourage self-response. Members of the National Academies of Science (NAS) Committee on National Statistics (CNSTAT) and the Harvard Behavioral Insights Group also supported the idea (NAS, 2016).

Staff at the Census Bureau's National Processing Center (NPC) tested the feasibility of including the data wheel as an insert for an ACS mailing, as all mail materials must be inserted into envelopes and addressed by machine.[6] The testing revealed that the presence of the grommet used to fasten the data wheel together and the irregular shape of the data wheel (a circle) created machine feeding problems, which caused a slowdown with the insertion portion of assembly and with the inkjets used to print the address labels. As a result, the data wheel was

[5] Data slides have also been previously used by the Census Bureau as part of the 2010 Census in Schools program and the 2007 Economic Census, though they were handed out and not included in mailings.

[6] The Census Bureau's National Processing Center is responsible for the assembly and posting of all ACS mailings, in addition to the processing of incoming mail and completed questionnaires.

reconfigured into a data slide, which does not require a grommet and has the same rectangular shape as the envelope used for the mailing package.[7]

As noted previously, two of the top reasons that respondents refuse or are reluctant to answer the ACS are privacy and legitimacy concerns (Zelenak and Davis, 2013). There was speculation that the data slide would not only convey to recipients that the data obtained from the ACS are used for aggregate statistics as shown on the slide but that it could also minimize a respondent's fear that their individual data would be published. It was also speculated that the mere presence of the data slide in a mailing could bring legitimacy to the survey if respondents recognized the cost and effort required to design, print, and mail it. However, we were unable to obtain insight or feedback on the data slide through cognitive testing prior to the field test.

Research in the field of survey methodology posits that building trust is the most important aspect of survey messaging (Dillman, Smyth, and Christian, 2014). Survey recipients are more likely to respond if they trust the organization sending them the survey. It was theorized that including a data slide with numerous references to the Census Bureau on it (see Figure 2) would help engage respondents in the survey and communicate that the survey was fielded by a trusted entity.

While we were hopeful that the data slide would build trust and generate interest in completing the survey, we recognized that it could also prompt respondents to use data from the data slide as their own answer to an ACS question (notably for the potentially burdensome write-in fields on the data slide: home value and income). Survey methodology literature recognizes that some respondents with lower motivation may appear to provide an acceptable answer but will actually provide a suboptimal response (this action is called *satisficing*) (Krosnick, 1991). Working to accurately and completely answer a survey request may exceed respondents' motivation or ability, leading them to find ways to avoid doing the work while still appearing to complete a survey appropriately. These shortcuts, such as copying answers, can result in lower data quality and measurement error.

2.2.2 Description of the ACS Data Slide

The data slide is a two-sided, hand-held tool that reports a selection of 2016 ACS national and state-level statistics.[8] The selected characteristics are Total population, Median age, Median home value, Median household income, Percent high school graduate or higher, Percent foreign born, Percent below poverty, and Percent veterans. Printed on the exterior of the data slide are the eight characteristics, along with the corresponding 2016 national statistic (see

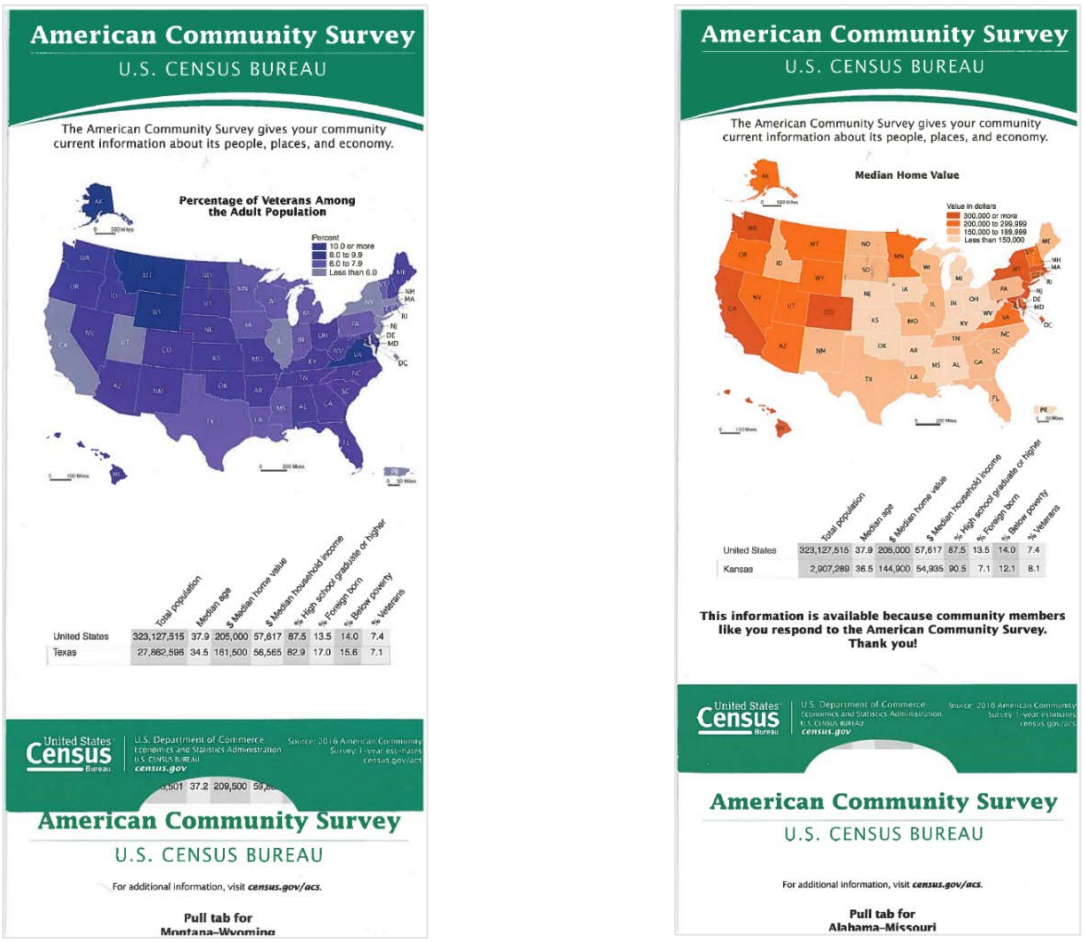
[7] The data slides were tested and approved by NPC for use in mail package assembly and labelling.

[8] Statistics are provided for all 50 states as well as the District of Columbia and Puerto Rico. These geographies match those reported on the original data wheel.

Figure 2). Below the national statistics is a rectangular cut out, through which the interior slide is visible (the interior of the data slide is shown in Appendix C). At the bottom of the data slide exterior is another cut out, through which the "Pull tab" of the interior slide is accessible. By pulling this tab, users can change the geography displayed in the rectangular cut out.[9]

The exterior of the data slide is decorated with headers and footers in shade of green that corresponds to other ACS materials. Each side of the exterior also features a map created from ACS state-level statistics. Both of these data visualizations feature a characteristic reported by the data slide; one side features an orange map of median home value while the other side features a purple map of percent of veterans.

Figure 2. Image of the ACS Data Slide (Front & Back)



Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test

[9] Due to size constraints, each side of the interior slide contains half of the state-level geographies. Alabama through Missouri are featured on one side; Montana through Wyoming are featured on the other side. Only one geography is visible in the rectangular cut out at a time.

3. METHODOLOGY

This report answers the following research questions:

1) What is the impact on unit response of adding a data slide to the initial package mailing materials?
2) What is the impact on unit response of adding a data slide to the paper questionnaire package mailing materials?
3) What is the impact on response to the items included on the data slide? Is there any impact on item nonresponse or to the estimates for those items? What is the frequency at which a response matches to a statistic found on the data slide?
4) What would be the cost impact, relative to current production, of implementing each experimental treatment into a full ACS production year?

3.1 Experimental Design

The experimental design for this test included a control treatment and two experimental treatments.

- The Control treatment had the same mail materials as production but were sorted and mailed separately so that the control and treatments had similar mail delivery timing.[10]
- Treatment 1 had the same mail materials as production, plus the data slide in the initial package materials (the first mailing). The data slide was inserted between the letter and the multilingual brochure. The enclosed letter to respondents was minimally modified to acknowledge the data slide (see Figure 7, Appendix D).
- Treatment 2 had the same mail materials as production, plus the data slide in the paper questionnaire package materials (the third mailing). The data slide was inserted between the instruction card and the letter. The enclosed letter to respondents was minimally modified to acknowledge the data slide (see Figure 18, Appendix D).
- The ACS Production universe retained the standard ACS materials and mail strategy. Production cases were combined with Control cases for some analysis against the treatments (see Section 3.3.2).

Both Treatments 1 and 2 received the same data slide. Table 1 shows where the data slide was included in the ACS mailings for each experimental treatment. The mailouts for this test were

[10] Previous research indicates that, in ACS experiments, postal procedures alone could cause a difference in response rates at a given point in time between smaller experimental treatments and larger control treatments, with response for the small treatments having a negative bias (Heimel, 2016).

sent between May 31, 2018 and July 13, 2018 (see Appendix A for the detailed mailout schedule).

Table 1. Experimental Design for the 2018 Data Slide Test

	1st Mailing	2nd Mailing	3rd Mailing[1]	4th Mailing[1]	5th Mailing[2]
Control	Initial Package	Reminder Letter	Paper Questionnaire Package	Reminder Postcard	Final Reminder Postcard
Treatment 1	**Data Slide Included**	No change	No change	No change	No change
Treatment 2	No change	No change	**Data Slide Included**	No change	No change

[1] Sent only if a response was not received prior to the third mailing

[2] Sent only if a response was not received prior to the fifth mailing

The data slide could not fit inside the envelope used in the second mailing, nor be sent with the postcard in the fourth and fifth mailings without substantially changing the mailing. As a result, the data slide was only eligible for testing in the first and third mailings that already used large envelopes with multiple inserts.

3.2 Sample Design

The monthly ACS production sample consists of approximately 295,000 housing unit addresses and is divided into 24 nationally representative groups (referred to as methods panel groups) of approximately 12,000 addresses each. This test was conducted using the June 2018 ACS production sample. The control, Treatment 1, and Treatment 2 each used two randomly assigned methods panel groups (approximately 24,000 mailing addresses per treatment). The remaining eighteen methods panel groups, not selected for the experiment, received production ACS materials and were sorted and mailed using the usual production protocol.

The sample size was designed to detect differences of approximately 1.25 percentage points between the self-response return rates of the control and experimental treatments (with 80 percent power and α=0.1). Detectable differences for the analysis of item-level data (such as item nonresponse rates) vary depending on the item, with housing-level items having minimum detectable differences up to 1.6 percentage points. We used two-tailed hypothesis tests and a significance level of α=0.1 when determining significant differences between treatments. Since the item-level analysis involved a relatively larger number of multiple comparisons, we adjusted for the Type I familywise error rate using the Hochberg method (Hochberg, 1988). The Hochberg multiple comparisons procedure places a cap on the adjusted p-values, which results in many adjusted p-values being equal. The cap ensures that the order of the values does not change after adjustment.

3.3 Response Analysis

The following section provides detailed methodology for the analysis used to answer each of the research questions.

3.3.1 Unit Response Analysis

What is the impact on unit response of adding a data slide to the initial package mailing materials? What is the impact on unit response of adding a data slide to the paper questionnaire package mailing materials?

To evaluate the impact of each mailing that contained a data slide, the mailing universes changed so that only sample addresses that received the mailing were evaluated. There were two universes of interest: (1) the universe of all mailable and deliverable sample addresses that were mailed the initial package and (2) the universe of all mailable and deliverable sample addresses that were mailed the paper questionnaire package. Using the universe of only addresses that were sent the data slide helps to isolate the effect of the data slide on response.

The self-response return rates were calculated using the following formula:

$$\text{Self-Response Return Rate} = \frac{\text{Number of mailable and deliverable sample addresses that either provided a non-blank[11] return by mail or Telephone Questionnaire Assistance (TQA), or provided a complete or sufficient partial return by internet}}{\text{Total number of mailable and deliverable sample addresses[12]}}$$

The self-response return rates were calculated at selected points in time in the data collection cycle. The selected points in time reflect the dates of additional mailings or the end of the data collection periods. Calculating the return rates at different points in the data collection cycle provides an idea of how the experimental treatments would affect operational and mailing costs if they were implemented into a full ACS production year.

To evaluate the impact of each experimental treatment on costs, the return rates were calculated using the initial mailing universe. An increase in self-response presents a cost savings for each subsequent phase of the mailing process by decreasing the number of mailing pieces that need to be sent out. A significant increase in self-response before CAPI decreases the number of costly interviews that need to be conducted. For the comparisons of return rates by

[11] A blank form is a form in which there are no persons with sufficient response data and there is no telephone number listed on the form.

[12] Addresses deemed to be Undeliverable as Addressed by the U.S. Postal Service and for which no response was received were removed from the analysis.

mode, the small number of returns obtained from Telephone Questionnaire Assistance (TQA) were combined with mail returns for calculations, comparisons, and tabulations.
To evaluate whether or not the data slide has a residual effect on cooperation in nonresponse followup interviews, we calculated CAPI response rates.

$$\text{CAPI Response Rate} = \frac{\text{Number of completed responses from a CAPI interview}}{\text{Total number of addresses in the CAPI sample}} * 100$$

3.3.2 Item Response Analysis

What is the impact on response to the items seen on the data slide? Is there any impact on item nonresponse or to the estimates for those items? What is the frequency at which a response is an exact match to the corresponding item found on the data slide?

To assess the impact that the data slide might have had on response to distinct ACS questions, we assessed the following:

- Form completion rates
- Item nonresponse rates to the ACS questions corresponding to data slide statistics
- Whether estimates appear to be influenced by a respondent seeing them on the data slide
- Rates at which data slide statistics are used as a respondent's own answer

We used the same analysis universes for item nonresponse rates and form completion rates as was used for self-response return rates. Treatment 1 rates and comparisons with Treatment 1 used all addresses that were mailed the initial package and that self-responded. Treatment 2 rates and comparisons with Treatment 2 used all addresses that were sent the paper questionnaire package and self-responded.

For the unit response analysis, we used a control universe that was a subset of production in order to mimic the possible mail delivery experience of the treatments, which directly impacts the self-response return rate analysis. However, for item response analysis, timing is not a central feature of the analysis; thus we combined the production responses with control treatment responses for the control universe of analysis (referred to herein as Baseline), which creates a larger sample size and reduces the standard error of the Baseline estimates. The Baseline universe (all production cases plus all control cases) was used as the non-experimental treatment of comparison for all item analysis in Section 5.2.[13] The purpose of the item response

[13] Before combining to conduct the analysis against the data slide treatments, we confirmed that there was not a difference in results between Control and Production cases.

analysis was to determine whether the presence of the data slide affected response to specific items on the survey.

For the form completion and item nonresponse analyses, treatments were compared within mode, due to modal differences in data collection. The ACS internet instrument prompts respondents to reply to most questions if they initially left it blank; these prompts lead to higher item response rates and are not possible with a paper questionnaire response. Additionally, if a respondent stops completing the online ACS instrument before the end of the questions, their partial responses to that point are still retained and analyzed, which leads to higher nonresponse in later questions. However, if a respondent does not finish completing a paper questionnaire, they might not bother to return it at all.

3.3.2.1 Form Completion Rates

Form completion measures the number of questions on the form that were answered among those that should have been answered.[14] Calculations were made using the following formula:

$$\text{Overall Form Completion Rate} = \frac{\sum_{i=1}^{r} \text{Number of questions answered}}{\sum_{i=1}^{r} \text{Number of questions that should have been answered}}$$

where *r* is the number of complete and sufficient partial returns.

3.3.2.2 Item Nonresponse Rates

The second part of this analysis assessed item nonresponse rates to the ACS questions that correspond to data slide statistics. The connection of each data slide statistic to the ACS question is shown in Table 2. See Appendix E for images of the ACS questions referenced in this table.

[14] The number of questions that should have been answered is determined based on questionnaire skip patterns and respondent answers.

Table 2: Item Nonresponse Crosswalk for the 2018 Data Slide Test

Data Slide Statistic	Associated ACS Question	Universe of Interest for Item Nonresponse Analysis
Total Population	Front Page of Questionnaire	All housing units that responded by mail
Median Age	Person Question 4	All persons
Median Home Value	Housing Question 19	All housing units known to be owner-occupied
Median Household Income	Person Question 47, part a (See table note)	All persons age 15 and older who report working
Percent High School Graduate or Higher	Person Question 11	All persons age 3 and older
Percent Foreign Born	Person Question 7	All persons
Percent Below Poverty	NA	NA
Percent Veterans	Person Question 26	All persons age 18 or older

Note: The first income question asked on the ACS is about wages (person question 47, part a) and thus was chosen as the best way to assess item nonresponse for this analysis.

Total population, which is calculated using questions about the count of persons in each house, can be acquired either by asking directly for the number of persons living or staying at an address or by asking for the names of all persons living at the address (thus indirectly acquiring a number of persons). The first approach is used on the ACS paper questionnaire, while the second approach is used on the internet instrument. As a result, the analyses found in this report used only responses received by mail to assess item nonresponse to the total population count.

Since Poverty is not a distinct question on the ACS, but rather an amalgam of multiple questions, analysis could not be done to assess item nonresponse for a distinct poverty question. However, the items that make up the poverty statistic (household population count, age of each household member, and household income) are a part of the item nonresponse analysis.

Item nonresponse was calculated using the following formula:

$$\text{Item Nonresponse Rate} = \frac{\text{Number of nonresponses to item of interest}}{\text{Universe for item of interest}} * 100$$

3.3.2.3 Estimated Values of Data Slide Items

For the third part of this analysis, we investigated the possibility of the data slide influencing respondent answers and therefore the resulting statistics. We generated the aggregate national-level statistics that are on the data slide (such as median age). Note that all estimates come from the unedited test data so they are not directly comparable to official estimates.

3.3.2.4 Specific Answers to Data Slide Items

For the fourth part of this analysis, we investigated the possibility of respondents using data slide statistics as their own answers, an example of satisficing (see Section 2.2.1). This analysis was only considered viable for the home value and income statistics, which could be copied directly from the data slide into the survey item response box. Median age could also be copied directly into a survey item response box but was not used in this analysis for two reasons. First, age is not a question that requires a high level of effort from respondents or is often left blank, thus it is not likely that respondents would need a shortcut to help them answer it. Additionally, the median age is itself a very common age so we did not expect to see a statistical difference due to some respondents' satisficing. The other data slide statistics and their corresponding survey items are not structured in a way that allows for direct copying.

For this analysis, we identified the frequency with which a housing unit reported either the national or a state-level statistic for home value or income. For example, any housing unit that reported a home value of $205,000 (the national median home value) was flagged. For income, a housing unit where any individual income component was an exact match to the national median household income ($57,617) was flagged. For this analysis, any state statistic that appeared on a return was flagged, regardless of the return's state; that is, a return from California that reported a home value of $267,900 (Alaska's median home value) was flagged.[15]

3.3.3 Relative Cost Analysis

What would be the cost impact, relative to current production, of implementing each experimental treatment into a full ACS production year?

The cost differences, relative to current production, for each experimental treatment were calculated to determine how each treatment would affect costs for the ACS program. Significant differences in the return rates could affect printing, assembly, and postage costs, as well as costs for data capture and nonresponse followup activities. Since this cost model uses estimated workload differences to project survey costs, this part of the analysis was not weighted. All costs presented in this report were derived from fiscal year 2018 estimates.

[15] Only exact matches were flagged; no comparisons were made of rounded answers.

3.3.4 Calculation of Standard Errors

All variances were estimated using the Successive Differences Replication (SDR) method with replicate weights, the standard method used for the ACS.[16] The variance for each rate and difference was calculated using the formula below.

The standard error of an estimate is the square root of the variance:

$$Var(RR_0) = \frac{4}{80}\sum_{r=1}^{80}(RR_r - RR_0)^2$$

where:

RR_0 = rate or difference in rates estimate calculated using the full sample base weights,

RR_r = rate or difference in rates estimate calculated for replicate r.

3.3.5 Weighting

All self-response analyses, except for the cost analysis, were weighted using the ACS base sampling weight (the inverse of the probability of selection).[17] All nonresponding addresses in the initial sample were eligible for the CAPI sample, including unmailable and undeliverable addresses. Addresses eligible for CAPI were sampled at a rate of about one in three, due to the high cost of obtaining a response via personal interviews. For all calculations involving CAPI responses, the weights were adjusted with a subsampling factor, which was multiplied by the base weight.

4. ASSUMPTIONS AND LIMITATIONS

4.1 Assumptions

- A single ACS monthly sample is representative of an entire year (twelve panels) and the entire frame sample, with respect to both return rates and cost, as designed.
- A single methods panel group (1/24 of the full monthly sample) is representative of the full monthly sample, as designed.
- We assume that there is no difference in mail delivery timing or subsequent response time across samples of similar size using the same postal sort and mailout procedures, as we have chosen sample sizes of the experimental treatments considering postal procedures.

[16] See Chapter 12 of the ACS Design and Methodology document for details and references regarding the successive differences (SDR) method for variance estimation (U.S. Census Bureau, 2014).

[17] Check-in rates calculated for costs analysis were not weighted because they were used to estimate workloads for analysis of data collection costs.

4.2 Limitations

- Group quarters and sample housing unit addresses from remote Alaska and Puerto Rico were not included in the sample for this test.
- The cost analysis section compares 2018 mail materials in 2018 dollars. As mail materials change over time and prices change, the cost analysis conclusions might also change.
- There was no cognitive testing on the data slide before it was used in this field test. The creation of a different data slide after iterative rounds of cognitive testing may help to inform a better design that may elicit different response results.
- The results of this test apply only to the mailing materials and mailing contact strategy used during this test. Any change in materials or contact strategy may elicit different response results.

5. RESULTS

5.1 Unit Response Analysis

Response rate results for Treatment 1 are discussed before introducing the results for Treatment 2.

5.1.1 Results from adding the Data Slide to the Initial Mailing Package

What is the impact on unit response of adding a data slide to the initial package mailing materials?

To answer this research question, we compared Treatment 1 to the control treatment. The calculations were done using the universe of all sample addresses that were sent the initial mailing package.

Adding a data slide to the initial mail package produced significantly higher internet return rates before the fifth mailing by 1.0 percentage point and before the start of CAPI by 1.1 percentage points. However, it also significantly lowered combined mail and TQA return rates by 0.6 and 0.8 percentage points at the same points in time. Adding the data slide in the initial mailing did not significantly affect overall self-response at any calculated point in time in the data collection cycle. This suggests that the data slide may have influenced a mode response change, causing those who might have otherwise responded via paper questionnaire or TQA to respond via internet. (See Table 3, Table 4, and Table 5 for detailed results.) Oddly, there is no explanation as to why the effect on response did not occur sooner in the data collection cycle.

Table 3. Total Self-Response Return Rates for Addresses Mailed the Initial Mailing Package, Data Slide (Treatment 1) vs. Control Materials

Point in Data Collection Cycle	Data Slide (Trt1) (n=20,000)	Control (n=20,000)	Difference	P-value
Before the Third Mailing	24.0 (0.3)	23.9 (0.3)	0.1 (0.5)	0.87
Before the Fifth Mailing	44.8 (0.4)	44.4 (0.4)	0.4 (0.5)	0.43
Before CAPI	51.6 (0.4)	51.4 (0.4)	0.2 (0.5)	0.68

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two-tailed t-test at the α=0.1 level.

Table 4. Internet Return Rates for Addresses Mailed the Initial Mailing Package, Data Slide (Treatment 1) vs. Control Materials

Point in Data Collection Cycle	Data Slide (Trt1) (n=20,000)	Control (n=20,000)	Difference	P-value
Before the Third Mailing	23.7 (0.3)	23.7 (0.3)	0.1 (0.4)	0.87
Before the Fifth Mailing	31.9 (0.3)	30.9 (0.4)	1.0 (0.5)	0.04*
Before CAPI	34.4 (0.3)	33.4 (0.4)	1.1 (0.5)	0.04*

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two -tailed t-test at the α=0.1 level. An asterisk (*) indicates a statistically significant difference.

Table 5. Mail and TQA Return Rates for Addresses Mailed the Initial Mailing Package, Data Slide (Treatment 1) vs. Control Materials

Point in Data Collection Cycle	Data Slide (Trt1) (n=20,000)	Control (n=20,000)	Difference	P-value
Before the Third Mailing[†]	0.3 (0.0)	0.3 (0.0)	<0.1 (0.1)	0.95
Before the Fifth Mailing	12.9 (0.3)	13.5 (0.3)	-0.6 (0.3)	0.08*
Before CAPI	17.1 (0.3)	18.0 (0.3)	-0.8 (0.4)	0.05*

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two -tailed t-test at the α=0.1 level. An asterisk (*) indicates a statistically significant difference.
[†]Only TQA responses were in the calculations before the third mailing.

For addresses in the CAPI sample, we calculated and compared the rates of response in CAPI for both Treatment 1 and the control treatment. The presence of the data slide in the initial mailing does not appear to affect the level of response in CAPI, as there are no significant differences between Treatment 1 and the control treatment (See Table 6).

Table 6: CAPI Response Rates, Data Slide (Treatment 1) vs. Control

Data Slide (Trt1) (N = 4,200)	Control (N = 4,100)	Difference	P-value
87.4 (0.6)	87.9 (0.6)	-0.5 (0.9)	0.56

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Standard errors are in parentheses. Significance was tested based on a two-tailed t-test at the α=0.1 level.

5.1.2 Results from adding the Data Slide to the Paper Questionnaire Mailing

What is the impact on unit response of adding a data slide to the paper questionnaire package mailing materials?

To answer this research question, we compared Treatment 2 with the control treatment. The calculations were done using the universe of all sample addresses that were mailed the paper questionnaire package (the third mailing). The difference in return rates between the two treatments were not statistically different before the third mailing (about 24 percent for each treatment). Therefore, any changes in response after the third mailing can be attributed to the experimental change of including a data slide in the mailing.

Adding the data slide in the third mailing produced significantly higher self-response before the fifth mailing (by 1.1 percentage points) and before the start of CAPI (by one percentage point). This increase in self-response was driven by internet response, which was also significantly higher at both points in time. (See Table 7, Table 8, and Table 9 for details.) This result was somewhat unexpected, as it was hypothesized that sending the data slide with the paper questionnaire may have influenced response in that mode. However, considering the experimental results for both treatments, it does appear that the presence of the data slide in a mailing positively affects internet response. The reason for this respondent behavior as a reaction to the data slide being present in a mailing is unclear.

Table 7: Total Self-Response Return Rates for Addresses Mailed the Paper Questionnaire Package, Data Slide (Treatment 2) vs. Control Materials

Point in Data Collection Cycle	Data Slide (Trt2) (n=16,500)	Control (n=16,500)	Difference	P-value
Before the Fifth Mailing	32.1 (0.4)	31.0 (0.4)	1.1 (0.5)	0.05*
Before CAPI	40.6 (0.4)	39.6 (0.4)	1.0 (0.5)	0.08*

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two -tailed t-test at the α=0.1 level. An asterisk (*) indicates a statistically significant difference.

Table 8: Internet Return Rates for Addresses Mailed the Paper Questionnaire Package, Data Slide (Treatment 2) vs. Control Materials

Point in Data Collection Cycle	Data Slide (Trt2) (n=16,500)	Control (n=16,500)	Difference	P-value
Before the Fifth Mailing	15.6 (0.3)	14.5 (0.3)	1.1 (0.4)	0.01*
Before CAPI	18.5 (0.3)	17.6 (0.3)	0.9 (0.5)	0.05*

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two -tailed t-test at the α=0.1 level. An asterisk (*) indicates a statistically significant difference.

Table 9: Mail and TQA Return Rates for Addresses Mailed the Paper Questionnaire Package, Data Slide (Treatment 2) vs. Control Materials

Point in Data Collection Cycle	Data Slide (Trt2) (n=16,500)	Control (n=16,500)	Difference	P-value
Before the Fifth Mailing	16.4 (0.3)	16.5 (0.3)	-0.1 (0.4)	0.89
Before CAPI	22.1 (0.4)	22.1 (0.4)	0.1 (0.5)	0.89

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two -tailed t-test at the α=0.1 level.

For addresses in the CAPI sample, we calculated and compared the rates of response in CAPI for both Treatment 2 and the control treatment. The presence of the data slide in the third mailing does not appear to affect the likelihood of receiving a response in CAPI, as there are no significant differences between Treatment 2 and the control treatment (See Table 10).

Table 10: CAPI Response Rates, Data Slide (Treatment 2) vs. Control

Data Slide (Trt2) (N=4,100)	Control (N=4,100)	Difference	P-value
88.0 (0.5)	87.9 (0.6)	<0.1 (0.8)	0.96

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Standard errors are in parentheses. Significance was tested based on a two-tailed t-test at the α=0.1 level.

5.2 Item Analysis

What is the impact on response to the items seen on the data slide? Is there any impact on item nonresponse or to the estimates for those items? What is the frequency at which a response is an exact match to the corresponding item found on the data slide?

To answer the research question, we conducted analysis of the following:

- Form completion rates
- Item nonresponse rates to the ACS questions corresponding to data slide statistics
- Whether estimates appear to be influenced by a respondent seeing them on the data slide
- Rates at which data slide statistics are used as a respondent's own answer

For each analysis, we compared both Treatment 1 and Treatment 2 to Baseline, or a combination of control and production panels. As with the return rates, all analyses for Treatment 1 were conducted using the universe of all sample addresses that were sent the initial mailing package; analyses for Treatment 2 used the universe of all sample addresses that were mailed the paper questionnaire package (the third mailing).

5.2.1 Form Completion

Form completion rates identify the total percent of questions that were answered out of all the questions that should have been answered, within a given mode and treatment.

At the 0.1 level of significance, there are no significant differences in the comparisons of Treatment 1 or Treatment 2 against their corresponding Baseline (see Table 11 and Table 12). Therefore, there is no evidence from the form completion analysis that the data slide impacted respondent behavior in either treatment.

Table 11: Form Completion Rates – Treatment 1 (Data Slide in Initial Mailing) vs. Baseline

Mode	Trt1	Baseline	Difference	P-value
All self-response	92.4 (0.2)	92.6 (<0.1)	0.2 (0.2)	0.16
Mail	90.4 (0.2)	90.7 (0.1)	0.3 (0.2)	0.15
Internet	93.1 (0.2)	93.4 (0.1)	0.3 (0.2)	0.23

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two -tailed t-test at the α=0.1 level.

Table 12: Form Completion Rates – Treatment 2 (Data Slide in Paper Questionnaire Mailing) vs. Baseline

Mode	Trt2	Baseline	Difference	P-value
All self-response	89.9 (0.2)	90.1 (0.1)	0.2 (0.3)	0.41
Mail	90.7 (0.3)	90.7 (0.1)	<0.1 (0.3)	0.95
Internet	89.2 (0.4)	89.5 (0.1)	0.3 (0.4)	0.47

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two -tailed t-test at the α=0.1 level.

5.2.2 Item Nonresponse for Data Slide Items

In the second part of the Item Analysis, we assessed item nonresponse rates to the ACS questions that correspond to data slide statistics.[18] As with form completion, we compared these rates separately by mode.

At the 0.1 level of significance, there are no significant differences in the comparisons of Treatment 1 or Treatment 2 against their corresponding Baseline item nonresponse rates. Therefore, there is no evidence from the item nonresponse rate analysis that the data slide impacted respondent behavior in either treatment (see Table 13 and Table 14).

[18] For information on the connection between each data slide statistic and the ACS questionnaire, see Table 2 in section 3.3.2.2.

Table 13: Item Nonresponse Rates – Treatment 1 (Data Slide in Initial Mailing) vs. Baseline

All Self-Response	Trt1	Baseline	Difference	Adjusted P-value
Age	1.2 (0.1)	1.4 (<0.1)	-0.2 (0.1)	0.88
Home Value	5.7 (0.3)	5.7 (0.1)	<0.1 (0.3)	0.89
Wages	5.8 (0.3)	5.8 (0.1)	-0.1 (0.3)	0.89
Educational Attainment	8.0 (0.3)	7.4 (0.1)	0.6 (0.3)	0.40
Foreign Born	8.1 (0.3)	7.5 (0.1)	0.5 (0.3)	0.56
Veteran Status	8.9 (0.3)	8.4 (0.1)	0.4 (0.3)	0.63

Mail	Trt1	Baseline	Difference	Adjusted P-value
Pop Count	2.3 (0.3)	2.8 (0.1)	-0.5 (0.3)	0.64
Age	2.0 (0.2)	2.1 (0.1)	<0.1 (0.2)	0.99
Home Value	11.6 (0.7)	11.6 (0.2)	<0.1 (0.7)	0.99
Wages	12.7 (0.8)	12.1 (0.2)	0.6 (0.8)	0.99
Educational Attainment	7.9 (0.5)	7.6 (0.1)	0.3 (0.5)	0.99
Foreign Born	7.0 (0.4)	6.5 (0.1)	0.5 (0.4)	0.99
Veteran Status	10.8 (0.5)	10.4 (0.2)	0.4 (0.5)	0.99

Internet	Trt1	Baseline	Difference	Adjusted P-value
Age	0.9 (0.2)	1.1 (<0.1)	-0.2 (0.2)	0.83
Home Value	2.9 (0.3)	2.8 (0.1)	0.2 (0.3)	0.83
Wages	3.6 (0.2)	3.7 (0.1)	<0.1 (0.2)	0.83
Educational Attainment	8.0 (0.4)	7.3 (0.1)	0.7 (0.4)	0.53
Foreign Born	8.4 (0.4)	7.9 (0.1)	0.5 (0.4)	0.83
Veteran Status	8.1 (0.4)	7.5 (0.1)	0.5 (0.4)	0.83

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two -tailed t-test at the α=0.1 level. The Hochberg multiple comparisons procedure places a cap on the adjusted p-values, which results in many adjusted p-values being equal. The cap ensures that the order of the values does not change after adjustment.

Table 14: Item Nonresponse Rates – Treatment 2 (Data Slide in Paper Questionnaire Mailing) vs. Baseline

All Self-Response	Trt2	Baseline	Difference	Adjusted P-value
Age	1.7 (0.2)	1.9 (0.1)	-0.2 (0.2)	0.81
Home Value	7.8 (0.5)	7.9 (0.1)	-0.1 (0.5)	0.81
Wages	8.7 (0.4)	8.5 (0.1)	0.2 (0.4)	0.81
Educational Attainment	11.4 (0.5)	10.9 (0.1)	0.5 (0.5)	0.81
Foreign Born	11.8 (0.5)	11.0 (0.1)	0.8 (0.5)	0.81
Veteran Status	12.5 (0.5)	12.3 (0.1)	0.2 (0.5)	0.81

Mail	Trt2	Baseline	Difference	Adjusted P-value
Pop Count	3.0 (0.3)	2.8 (0.1)	0.2 (0.3)	0.93
Age	2.1 (0.2)	2.1 (0.1)	0.1 (0.2)	0.93
Home Value	10.9 (0.7)	11.6 (0.2)	-0.7 (0.7)	0.93
Wages	13.1 (0.8)	12.1 (0.2)	1.0 (0.8)	0.93
Educational Attainment	6.9 (0.4)	7.6 (0.1)	-0.7 (0.4)	0.53
Foreign Born	6.5 (0.4)	6.5 (0.1)	<0.1 (0.4)	0.93
Veteran Status	9.7 (0.5)	10.4 (0.2)	-0.7 (0.6)	0.93

Internet	Trt2	Baseline	Difference	Adjusted P-value
Age	1.4 (0.3)	1.7 (0.1)	-0.3 (0.3)	0.57
Home Value	4.6 (0.5)	3.7 (0.1)	0.8 (0.5)	0.57
Wages	5.7 (0.4)	5.9 (0.1)	-0.1 (0.4)	0.72
Educational Attainment	14.9 (0.8)	13.7 (0.2)	1.2 (0.9)	0.57
Foreign Born	15.8 (0.9)	14.7 (0.2)	1.1 (0.9)	0.57
Veteran Status	14.9 (0.8)	14.0 (0.2)	0.9 (0.8)	0.57

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two -tailed t-test at the α=0.1 level. The Hochberg multiple comparisons procedure places a cap on the adjusted p-values, which results in many adjusted p-values being equal. The cap ensures that the order of the values does not change after adjustment.

5.2.3 Estimated Values of Data Slide Items

For the third part of this analysis, we investigated the possibility of the data slide influencing respondent answers. To look at the potential impact on estimates, we generated informal, national statistics of the same characteristics that are featured on the data slide.

The informal estimates and their standard errors were generated using ACS production methodology. However, as we used the unedited test data for this analysis, the results are not comparable to official ACS estimates and should not be referenced outside of this analysis. At the 0.1 significance level, no significant differences were found in the comparisons of Treatment 1 and Treatment 2 estimates against their corresponding Baseline estimates.[19] Therefore, there is no evidence from the informal estimates analysis that the data slide impacted respondent answers in either treatment.

Table 15. Estimates – Treatment 1 (Data Slide in Initial Mailing) vs. Baseline

Estimate	Data Slide (Trt1)	Baseline	Difference	Adjusted P-value
Average Household Size	2.1 (<0.1)	2.1 (<0.1)	<0.1 (<0.1)	0.73
Median Age	41.0 (0.4)	40.4 (0.1)	0.6 (0.4)	0.73
Median Home Value	$232,400.0 ($2,645.0)	$230,700.0 ($949.2)	$1,730.0 ($2,748.0)	0.73
Median Household Income	$54,720.0 ($1,023.0)	$55,800.0 ($213.9)	$1,079.0 ($1,088.0)	0.73
Percent High School Graduate or Higher	89.7 (0.3)	89.5 (0.1)	0.2 (0.4)	0.73
Percent Foreign Born	13.4 (0.4)	13.6 (0.1)	0.1 (0.4)	0.73
Percent Veterans	7.4 (0.2)	7.5 (0.1)	0.1 (0.2)	0.73

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two-tailed t-test (Trt1 ≠ Baseline) at the α=0.1 level. The Hochberg multiple comparisons procedure places a cap on the adjusted p-values, which results in many adjusted p-values being equal. The cap ensures that the order of the values does not change after adjustment.

[19] As with the return rate analysis, Treatment 1 analysis used the universe of all sample addresses that were sent the initial mailing package; analysis for Treatment 2 used the universe of all sample addresses that were mailed the paper questionnaire package (the third mailing).

Table 16. Estimates – Treatment 2 (Data Slide in Paper Questionnaire Mailing) vs. Baseline

Estimate	Data Slide (Trt2)	Baseline	Difference	Adjusted P-value
Average Household Size	2.2 (<0.1)	2.2 (<0.1)	<0.1 (<0.1)	0.97
Median Age	38.4 (0.4)	38.9 (0.1)	0.5 (0.4)	0.97
Median Home Value	$221,700.0 ($3,279.0)	$220,500.0 ($1,210.0)	$1,133.0 ($3,628.0)	0.97
Median Household Income	$50,900.0 ($556.4)	$50,090.0 ($202.5)	$844.8 ($598.5)	0.97
Percent High School Graduate or Higher	87.7 (0.4)	87.6 (0.1)	<0.1 (0.5)	0.97
Percent Foreign Born	15.1 (0.5)	14.7 (0.2)	0.4 (0.5)	0.97
Percent Veterans	7.1 (0.3)	6.9 (0.1)	0.2 (0.3)	0.97

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two-tailed t-test (Trt2 ≠ Baseline) at the α=0.1 level. The Hochberg multiple comparisons procedure places a cap on the adjusted p-values, which results in many adjusted p-values being equal. The cap ensures that the order of the values does not change after adjustment.

5.2.4 Specific Answers to Data Slide Items

For the fourth part of this analysis, we investigated the possibility of respondents using data slide statistics as their own answers, an example of satisficing (see Section 2.2.1 for more discussion). For home value and for income, we identified the frequency with which a housing unit reported either the national statistic or any state-level statistic as their own home value or income.

The rates at which a respondent answer matched a data slide statistic were not significantly different between either treatment and the Baseline. Therefore, there is no evidence that the data slide encouraged satisficing in either treatment.

Table 17. Satisficing Rates – Treatment 1 vs. Baseline

Topic	Data Slide (Trt1)	Baseline	Difference	P-value
Home Value	0.2 (0.1)	0.2 (<0.1)	<0.1 (0.1)	0.72
Income	<0.1 (<0.1)	<0.1 (<0.1)	<0.1 (<0.1)	0.57

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two-tailed t-test at the α=0.1 level.

Table 18. Satisficing Rates – Treatment 2 vs. Baseline

Topic	Data Slide (Trt2)	Baseline	Difference	P-value
Home Value	0.2 (0.1)	0.2 (<0.1)	<0.1 (0.1)	0.58
Income	<0.1 (<0.1)	<0.1 (<0.1)	<0.1 (<0.1)	0.34

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Notes: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. Significance was tested based on a two-tailed t-test at the α=0.1 level.

5.3 Cost Analysis

What would be the cost impact, relative to current production, of implementing each experimental treatment into a full ACS production year?

The response rate analysis conducted in Section 5.1 considered only the addresses that were affected by the data slide experiment, the initial mailing universe for analysis of Treatment 1 and the paper questionnaire mailing universe for analysis of Treatment 2. Using different universes for the calculations allows us to observe whether the experiment affected response specifically for those addresses that could have been affected by the experimental change (the inclusion of a data slide in the mailing). For cost analysis however, the initial mailing universe must be considered for Treatment 2 as well, since the larger universe is used to determine effects on overall costs for data collection. The analysis in this section will show whether any differences in response seen in Section 5.1 are large enough to affect survey data collection costs for the ACS program.

5.3.1 Overall Self-Response Return Rate Results

A change in response, either positively or negatively, before certain times in the data collection cycle could affect data collection costs. Those points in time are before the third mailing, before the fifth mailing, and before the start of the CAPI operation. There was no difference in self-response between Treatment 1 and the control treatment before the third mailing and Treatment 2 was not implemented until the third mailing. Tables 19 and 20 show the self-response return rates for each treatment before the fifth mailing and before the start of the CAPI operation. These rates are based on the initial mailing universe, which includes all sample addresses that were mailed the initial mailing package and excludes unmailable and undeliverable addresses.

Table 19. Self-Response Return Rates Before the Fifth Mailing for All Addresses in the Initial Mailing Universe, Control vs. Each Experimental Treatment

Response Mode	Control (n=20,000)	Treatment 1 (n=20,000)	Treatment 1 minus Control	P-value	Treatment 2 (n=20,000)	Treatment 2 minus Control	P-value
Total Self-Response	44.4 (0.4)	44.8 (0.4)	0.4 (0.5)	0.43	44.9(0.4)	0.5 (0.5)	0.33
Internet	30.9 (0.4)	31.9 (0.3)	1.0 (0.5)	0.04*	31.3(0.3)	0.4(0.5)	0.42
Mail and TQA	13.5 (0.3)	12.9 (0.3)	-0.6 (0.3)	0.08*	13.6(0.3)	0.1(0.3)	0.77

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Note: Standard errors are in parentheses. The p-value column indicates the p-values obtained from the hypothesis testing of the difference between the experimental treatment and the control treatment. Significance was tested based on a two-tailed t-test at the α=0.1 level. An asterisk (*) indicates a statistically significant difference.

Table 20. Self-Response Return Rates Before CAPI for All Addresses in the Initial Mailing Universe, Control vs. Each Experimental Treatment

Response Mode	Control (n=20,000)	Treatment 1 (n=20,000)	Treatment 1 minus Control	P-value	Treatment 2 (n=20,000)	Treatment 2 minus Control	P-value
Total Self-Response	51.4 (0.4)	51.6 (0.4)	0.2 (0.5)	0.68	51.8 (0.3)	0.4 (0.5)	0.37
Internet	33.4 (0.4)	34.4 (0.3)	1.1 (0.5)	0.04*	33.6 (0.4)	0.2 (0.5)	0.62
Mail and TQA	18.0 (0.3)	17.1 (0.3)	-0.8 (0.4)	0.05*	18.2 (0.3)	0.2 (0.4)	0.55

Source: U.S. Census Bureau, American Community Survey, 2018 Data Slide Test, CBDRB-FY19-RAGLIN-B0016
Note: Standard errors are in parentheses. The p-value column indicates the p-values obtained from the hypothesis testing of the difference between the experimental treatment and the control treatment. Significance was tested based on a two-tailed t-test at the α=0.1 level. An asterisk (*) indicates a statistically significant difference.

As can be seen in Tables 19 and 20, the significant differences that were observed for Treatment 2 in Section 5.1 are not seen before the fifth mailing or before the start of CAPI, when calculating with the larger initial mailing sample universe for the treatment. When compared to the control treatment, Treatment 1 had more internet returns (1.1 percentage points) and fewer mail and TQA returns (0.8 percentage points).

5.3.2 Estimated Cost Impacts

A significant difference in total self-response before a subsequent mailing affects the number of mailing pieces to be sent out, which affects printing, assembly, and postage costs.[20] A significant difference in response before CAPI would affect the number of interviews in the CAPI workload. An increase in internet response paired with a decrease in mail response (i.e. a switch in response mode) decreases costs for data capture and return postage.[21] A response mode switch from internet to mail would affect the same costs, but costs would increase.

[20] For the ACS program the amount of addresses sent the third and fifth mailings are affected by increases or decreases in response.

[21] Return postage is paid for every response that is mailed in.

Treatment 1 shows an increase in internet response and a decrease in mail response, so including the data slide in the first mailing would decrease costs for data capture and return postage. However, the decrease in costs would not be enough to offset the increase in costs of printing the data slide.

Total cost differences, relative to the Control, combine costs for printing, postage, and data capture. The results of this test predict that either treatment would increase the annual cost of the ACS program. Treatment 1, which included the data slide in the initial mailing, would increase costs by $358,000 with a range of $353,000 to $363,000 accounting for sampling variance of the return rate input parameters.[22] Treatment 2 would increase costs by $364,000 with a range of $362,000 to $366,000.

6. CONCLUSION

The results of the analyses showed no overall impact on self-response for addresses that received the data slide compared to the control cases that did not. The analysis revealed an increase in internet response and a decrease in mail response for the experimental treatment that sent the data slide in the initial mailing package. Results also showed an increase in internet response for addresses sent the data slide in the third mailing. However, the effect on self-response observed in either treatment would not be enough to cover the costs for printing the data slide, and including a data slide in production would result in increased costs to the ACS program.

The analyses on responses to survey items also showed no evidence that the inclusion of a data slide in either the first or the third mailing had an impact, either positively or negatively, on data quality. With the added cost and no quality benefits, we do not recommend including the data slide in the production ACS mail materials.

With that said, updating the data slide with a new design informed by cognitive testing or updating the mail materials (omitting some inserts so the data slide is more prominent in the package) or any other variation on the mailout materials or self-response data collection methodology could produce different results.

7. ACKNOWLEDGEMENTS

The authors would like to thank Jonathan Schreiner, Kerri Givens, Anthony Richards, and the members of our team at the National Processing Center for their valuable contributions to this project.

[22] This range does not account for variability in the cost parameters.

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Appendix A. ACS Mailing Descriptions and Schedule for the June 2018 Panel

Mailing	Description of Materials	Mailout Date
Initial Package*	A package of materials containing the following: Internet Response Instruction Card, Introduction Letter, Multilingual Informational Brochure, and Frequently Asked Questions (FAQ) Brochure. This mailing urged housing units to respond via the internet. ***Treatment 1 included the Data Slide between the letter and the multilingual brochure.***	05/31/2018
Reminder Letter	A reminder letter sent to all addresses that were sent the initial package, reiterating the request to respond.	06/07/2018
Paper Questionnaire Package*	A package of materials sent to addresses that had not yet responded. Contained the following: Paper Questionnaire, Response Instruction Card, Introduction Letter, FAQ Brochure, and Return Envelope. ***Treatment 2 included the Data Slide between the instruction card and the letter.***	06/21/2018
Reminder Postcard	A reminder postcard sent to all addresses that were also sent the paper questionnaire package, reiterating the request to respond.	06/25/2018
Final Reminder Postcard	An additional reminder postcard sent to addresses that had not yet responded.	07/13/2018

Note: Items marked with an asterisk (*) were part of the experimental treatments for this test.

Appendix B. Data Wheel

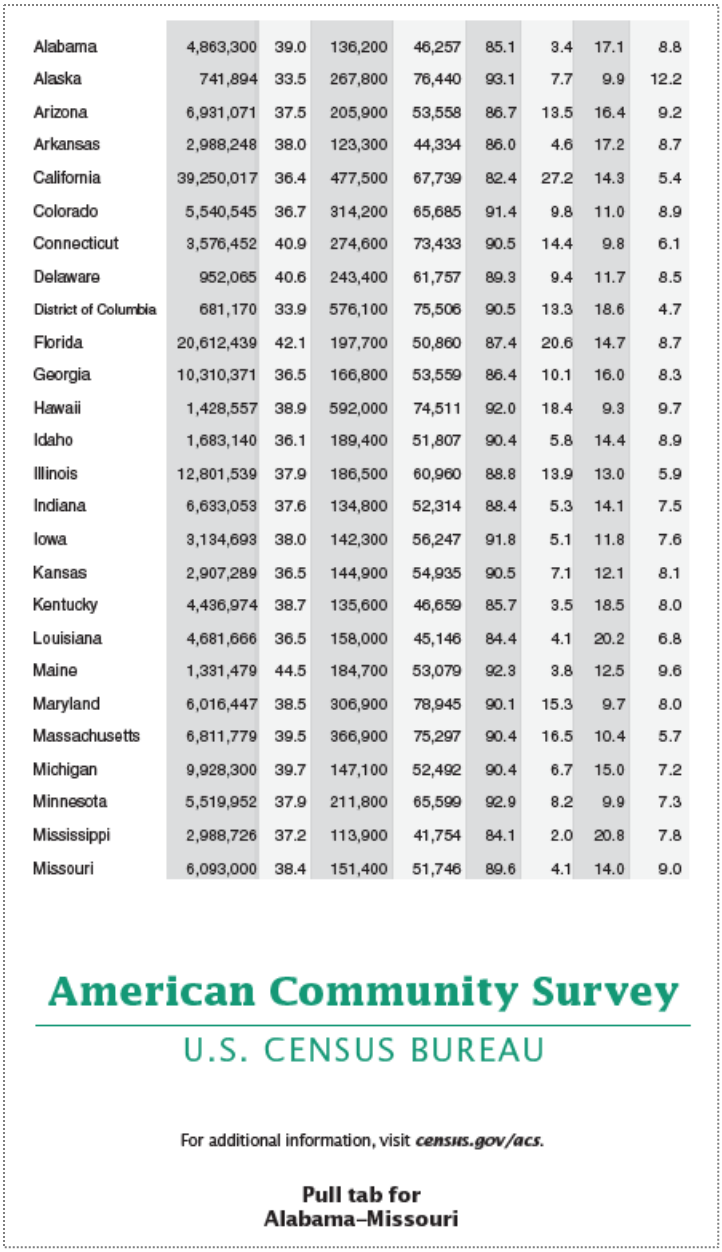
Figure 3 shows the ACS data wheel using 2016 1-year estimates to report select statistics for the country and for each state. The reverse side of the data wheel contains the states in the other half of the alphabet. The grommet is the metal ring in the center. (An interactive electronic visualization of the data wheel can also be found online: https://www.census.gov/library/visualizations/interactive/acs-datawheel.html)

Figure 3. 2016 ACS Data Wheel

Appendix C. Statistics inside the Data Slide

The interior piece of the data slide is printed on both sides with state-level statistics that, together, report on all 50 states, the District of Columbia, and Puerto Rico. The first 26 entities in alphabetical order appear on one side (Figure 4) and the second 26 appear on the reverse side (Figure 5).

Figure 4. Interior of the Data Slide (Side 1)



Alabama	4,863,300	39.0	136,200	46,257	85.1	3.4	17.1	8.8
Alaska	741,894	33.5	267,800	76,440	93.1	7.7	9.9	12.2
Arizona	6,931,071	37.5	205,900	53,558	86.7	13.5	16.4	9.2
Arkansas	2,988,248	38.0	123,300	44,334	86.0	4.6	17.2	8.7
California	39,250,017	36.4	477,500	67,739	82.4	27.2	14.3	5.4
Colorado	5,540,545	36.7	314,200	65,685	91.4	9.8	11.0	8.9
Connecticut	3,576,452	40.9	274,600	73,433	90.5	14.4	9.8	6.1
Delaware	952,065	40.6	243,400	61,757	89.3	9.4	11.7	8.5
District of Columbia	681,170	33.9	576,100	75,506	90.5	13.3	18.6	4.7
Florida	20,612,439	42.1	197,700	50,860	87.4	20.6	14.7	8.7
Georgia	10,310,371	36.5	166,800	53,559	86.4	10.1	16.0	8.3
Hawaii	1,428,557	38.9	592,000	74,511	92.0	18.4	9.3	9.7
Idaho	1,683,140	36.1	189,400	51,807	90.4	5.8	14.4	8.9
Illinois	12,801,539	37.9	186,500	60,960	88.8	13.9	13.0	5.9
Indiana	6,633,053	37.6	134,800	52,314	88.4	5.3	14.1	7.5
Iowa	3,134,693	38.0	142,300	56,247	91.8	5.1	11.8	7.6
Kansas	2,907,289	36.5	144,900	54,935	90.5	7.1	12.1	8.1
Kentucky	4,436,974	38.7	135,600	46,659	85.7	3.5	18.5	8.0
Louisiana	4,681,666	36.5	158,000	45,146	84.4	4.1	20.2	6.8
Maine	1,331,479	44.5	184,700	53,079	92.3	3.8	12.5	9.6
Maryland	6,016,447	38.5	306,900	78,945	90.1	15.3	9.7	8.0
Massachusetts	6,811,779	39.5	366,900	75,297	90.4	16.5	10.4	5.7
Michigan	9,928,300	39.7	147,100	52,492	90.4	6.7	15.0	7.2
Minnesota	5,519,952	37.9	211,800	65,599	92.9	8.2	9.9	7.3
Mississippi	2,988,726	37.2	113,900	41,754	84.1	2.0	20.8	7.8
Missouri	6,093,000	38.4	151,400	51,746	89.6	4.1	14.0	9.0

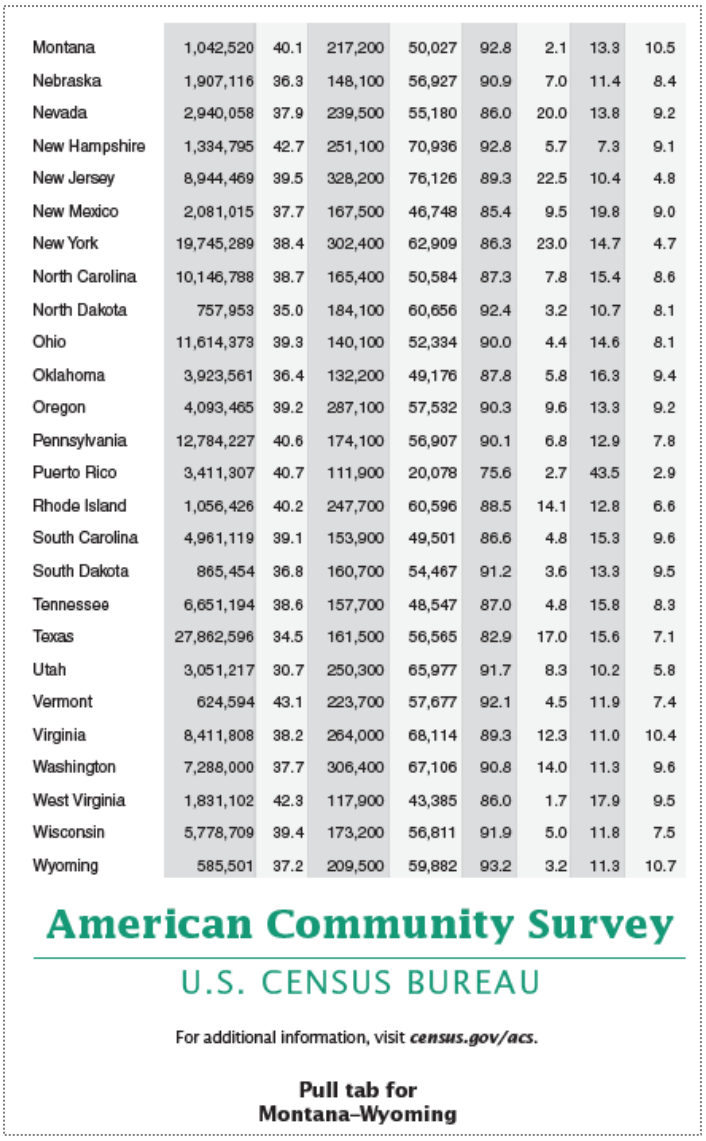
American Community Survey

U.S. CENSUS BUREAU

For additional information, visit *census.gov/acs.*

Pull tab for
Alabama–Missouri

Figure 5. Interior of the Data Slide (Side 2)



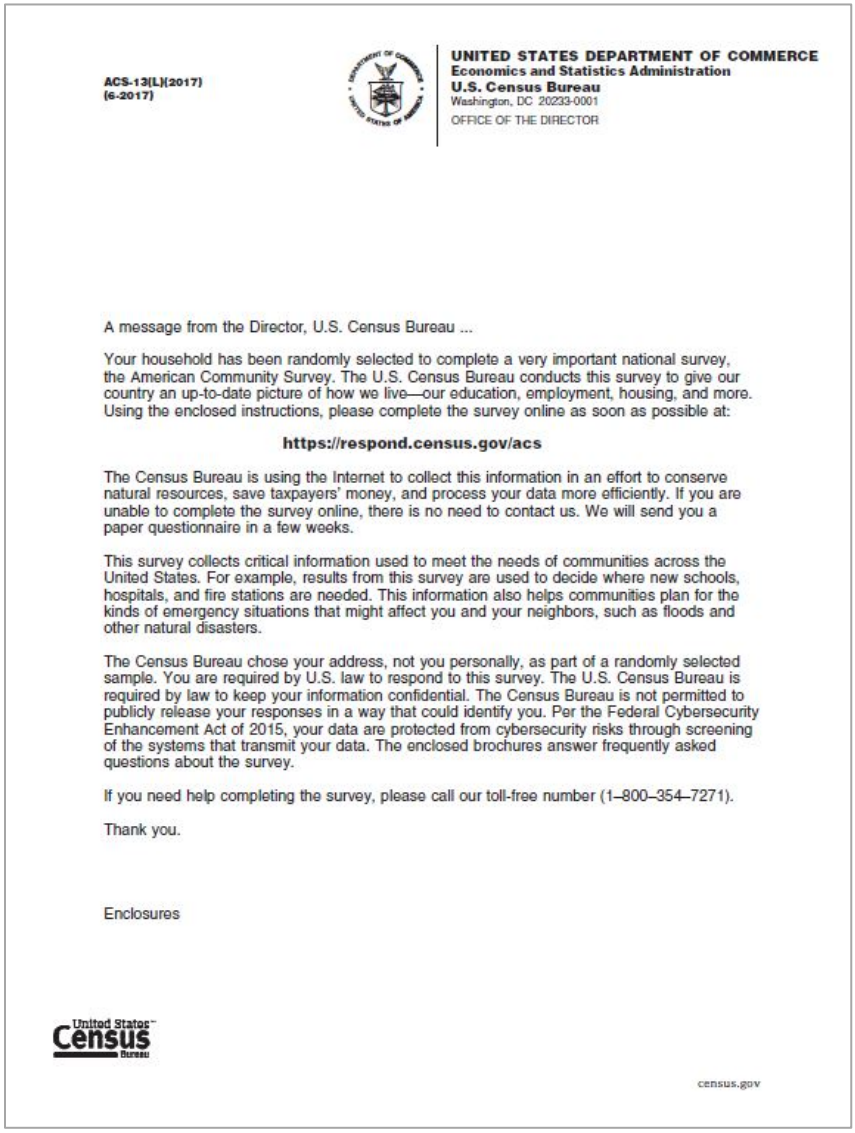
Montana	1,042,520	40.1	217,200	50,027	92.8	2.1	13.3	10.5
Nebraska	1,907,116	36.3	148,100	56,927	90.9	7.0	11.4	8.4
Nevada	2,940,058	37.9	239,500	55,180	86.0	20.0	13.8	9.2
New Hampshire	1,334,795	42.7	251,100	70,936	92.8	5.7	7.3	9.1
New Jersey	8,944,469	39.5	328,200	76,126	89.3	22.5	10.4	4.8
New Mexico	2,081,015	37.7	167,500	46,748	85.4	9.5	19.8	9.0
New York	19,745,289	38.4	302,400	62,909	86.3	23.0	14.7	4.7
North Carolina	10,146,788	38.7	165,400	50,584	87.3	7.8	15.4	8.6
North Dakota	757,953	35.0	184,100	60,656	92.4	3.2	10.7	8.1
Ohio	11,614,373	39.3	140,100	52,334	90.0	4.4	14.6	8.1
Oklahoma	3,923,561	36.4	132,200	49,176	87.8	5.8	16.3	9.4
Oregon	4,093,465	39.2	287,100	57,532	90.3	9.6	13.3	9.2
Pennsylvania	12,784,227	40.6	174,100	56,907	90.1	6.8	12.9	7.8
Puerto Rico	3,411,307	40.7	111,900	20,078	75.6	2.7	43.5	2.9
Rhode Island	1,056,426	40.2	247,700	60,596	88.5	14.1	12.8	6.6
South Carolina	4,961,119	39.1	153,900	49,501	86.6	4.8	15.3	9.6
South Dakota	865,454	36.8	160,700	54,467	91.2	3.6	13.3	9.5
Tennessee	6,651,194	38.6	157,700	48,547	87.0	4.8	15.8	8.3
Texas	27,862,596	34.5	161,500	56,565	82.9	17.0	15.6	7.1
Utah	3,051,217	30.7	250,300	65,977	91.7	8.3	10.2	5.8
Vermont	624,594	43.1	223,700	57,677	92.1	4.5	11.9	7.4
Virginia	8,411,808	38.2	264,000	68,114	89.3	12.3	11.0	10.4
Washington	7,288,000	37.7	306,400	67,106	90.8	14.0	11.3	9.6
West Virginia	1,831,102	42.3	117,900	43,385	86.0	1.7	17.9	9.5
Wisconsin	5,778,709	39.4	173,200	56,811	91.9	5.0	11.8	7.5
Wyoming	585,501	37.2	209,500	59,882	93.2	3.2	11.3	10.7

Appendix D. Data Slide Test Mail Materials

In addition to the inclusion of the data slide, the two treatments saw slight modifications to the mailing materials. In each treatment, we modified the wording of the letter in the mailing that also included the data slide. The control materials referenced the FAQ brochure in the second-to-last paragraph: “The enclosed brochure answers frequently asked questions about the survey.” For the experimental treatment letters, this statement was modified and moved to the last paragraph: “The enclosed materials answer frequently asked questions about the survey and provide facts and figures for each state.” The following figures illustrate this difference by showing the production (and modified) “regular” mailing items; the images are not true to size.

Materials in the Initial Mailing:

Figure 6. Production Letter in First Mailing (Control and Treatment 2)



ACS-13(L)(2017)
(6-2017)

UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Washington, DC 20233-0001
OFFICE OF THE DIRECTOR

A message from the Director, U.S. Census Bureau ...

Your household has been randomly selected to complete a very important national survey, the American Community Survey. The U.S. Census Bureau conducts this survey to give our country an up-to-date picture of how we live—our education, employment, housing, and more. Using the enclosed instructions, please complete the survey online as soon as possible at:

https://respond.census.gov/acs

The Census Bureau is using the Internet to collect this information in an effort to conserve natural resources, save taxpayers' money, and process your data more efficiently. If you are unable to complete the survey online, there is no need to contact us. We will send you a paper questionnaire in a few weeks.

This survey collects critical information used to meet the needs of communities across the United States. For example, results from this survey are used to decide where new schools, hospitals, and fire stations are needed. This information also helps communities plan for the kinds of emergency situations that might affect you and your neighbors, such as floods and other natural disasters.

The Census Bureau chose your address, not you personally, as part of a randomly selected sample. You are required by U.S. law to respond to this survey. The U.S. Census Bureau is required by law to keep your information confidential. The Census Bureau is not permitted to publicly release your responses in a way that could identify you. Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the systems that transmit your data. The enclosed brochures answer frequently asked questions about the survey.

If you need help completing the survey, please call our toll-free number (1–800–354–7271).

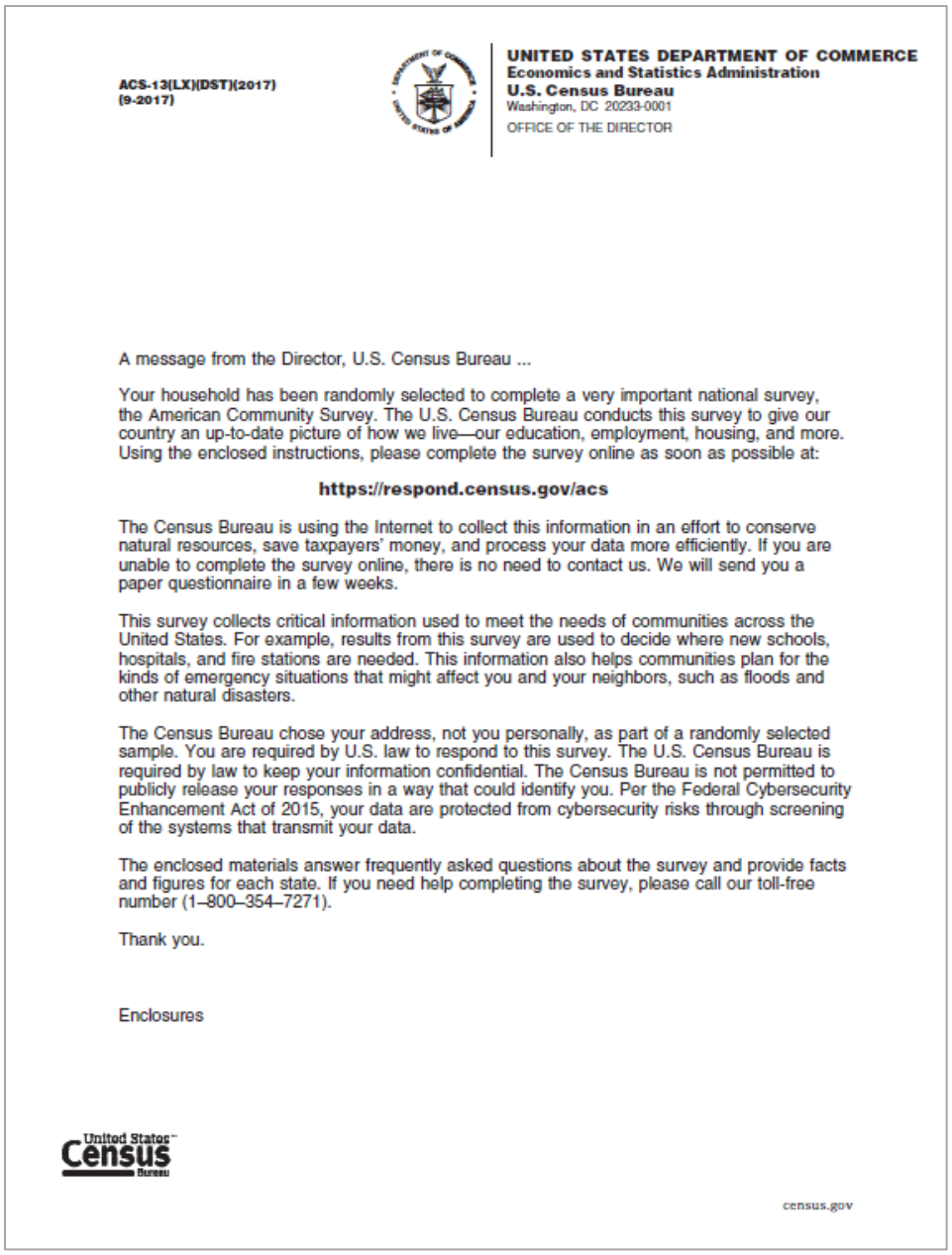
Thank you.

Enclosures

United States Census Bureau

census.gov

Figure 7. Letter in Experimental Treatment 1



ACS-13(LX)(DST)(2017)
(9-2017)

UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Washington, DC 20233-0001
OFFICE OF THE DIRECTOR

A message from the Director, U.S. Census Bureau ...

Your household has been randomly selected to complete a very important national survey, the American Community Survey. The U.S. Census Bureau conducts this survey to give our country an up-to-date picture of how we live—our education, employment, housing, and more. Using the enclosed instructions, please complete the survey online as soon as possible at:

https://respond.census.gov/acs

The Census Bureau is using the Internet to collect this information in an effort to conserve natural resources, save taxpayers' money, and process your data more efficiently. If you are unable to complete the survey online, there is no need to contact us. We will send you a paper questionnaire in a few weeks.

This survey collects critical information used to meet the needs of communities across the United States. For example, results from this survey are used to decide where new schools, hospitals, and fire stations are needed. This information also helps communities plan for the kinds of emergency situations that might affect you and your neighbors, such as floods and other natural disasters.

The Census Bureau chose your address, not you personally, as part of a randomly selected sample. You are required by U.S. law to respond to this survey. The U.S. Census Bureau is required by law to keep your information confidential. The Census Bureau is not permitted to publicly release your responses in a way that could identify you. Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the systems that transmit your data.

The enclosed materials answer frequently asked questions about the survey and provide facts and figures for each state. If you need help completing the survey, please call our toll-free number (1–800–354–7271).

Thank you.

Enclosures

United States Census Bureau

census.gov

Figure 8. First Mailing Envelope

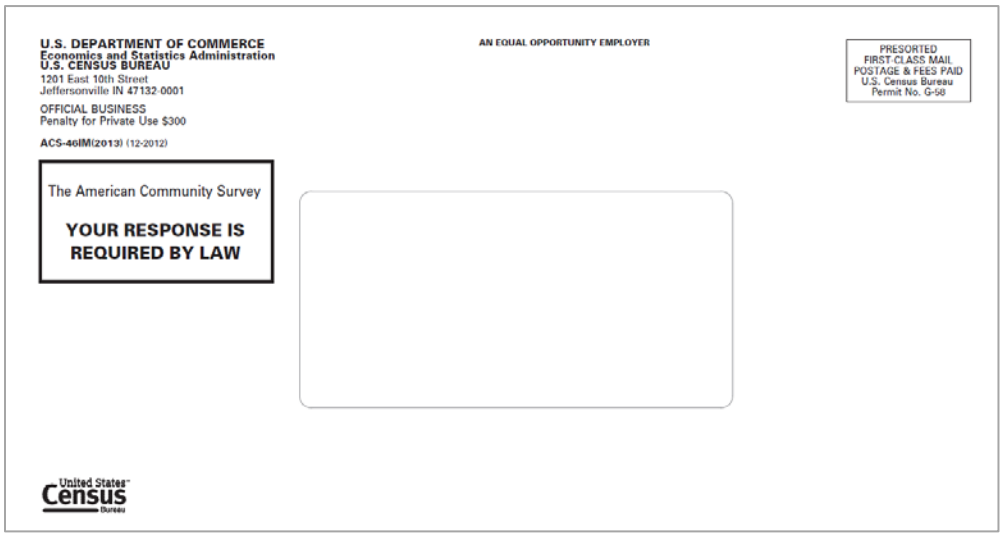
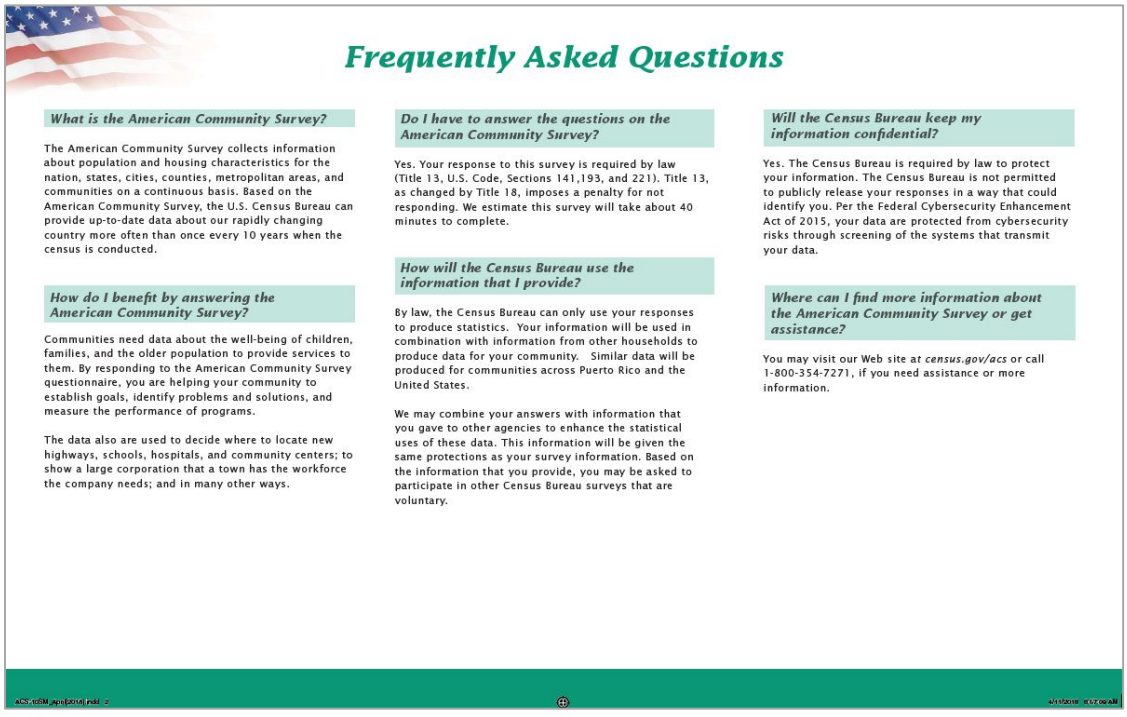


Figure 9. Front of Instruction Card

Figure 10. Back of Instruction Card

Figure 11. Outside of FAQ Brochure

Figure 12. Inside of FAQ Brochure



Frequently Asked Questions

What is the American Community Survey?

The American Community Survey collects information about population and housing characteristics for the nation, states, cities, counties, metropolitan areas, and communities on a continuous basis. Based on the American Community Survey, the U.S. Census Bureau can provide up-to-date data about our rapidly changing country more often than once every 10 years when the census is conducted.

How do I benefit by answering the American Community Survey?

Communities need data about the well-being of children, families, and the older population to provide services to them. By responding to the American Community Survey questionnaire, you are helping your community to establish goals, identify problems and solutions, and measure the performance of programs.

The data also are used to decide where to locate new highways, schools, hospitals, and community centers; to show a large corporation that a town has the workforce the company needs; and in many other ways.

Do I have to answer the questions on the American Community Survey?

Yes. Your response to this survey is required by law (Title 13, U.S. Code, Sections 141,193, and 221). Title 13, as changed by Title 18, imposes a penalty for not responding. We estimate this survey will take about 40 minutes to complete.

How will the Census Bureau use the information that I provide?

By law, the Census Bureau can only use your responses to produce statistics. Your information will be used in combination with information from other households to produce data for your community. Similar data will be produced for communities across Puerto Rico and the United States.

We may combine your answers with information that you gave to other agencies to enhance the statistical uses of these data. This information will be given the same protections as your survey information. Based on the information that you provide, you may be asked to participate in other Census Bureau surveys that are voluntary.

Will the Census Bureau keep my information confidential?

Yes. The Census Bureau is required by law to protect your information. The Census Bureau is not permitted to publicly release your responses in a way that could identify you. Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the systems that transmit your data.

Where can I find more information about the American Community Survey or get assistance?

You may visit our Web site at *census.gov/acs* or call 1-800-354-7271, if you need assistance or more information.

Figure 13. Outside of Multilingual Brochure

The U.S. Census Bureau is conducting the American Community Survey

In a few days you will receive an American Community Survey questionnaire in the mail. Because you are living in the United States, you are required by law to respond to this survey. If you have questions about the form, please call us toll-free at 1-800-354-7271.

What is the American Community Survey?

The American Community Survey is an important survey conducted by the Census Bureau. It is designed to give communities current information about its people and housing. In order to make well-informed decisions, a community needs accurate and reliable information. By responding to this survey, you are helping your community to get this kind of information.

Will my answers to this survey be kept confidential?

Yes. The U.S. Census Bureau is required by law to keep your information confidential. The Census Bureau is not permitted to publicly release your responses in a way that could identify you. Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the systems that transmit your data.

La Oficina del Censo de los Estados Unidos está realizando la Encuesta sobre la Comunidad Estadounidense

En unos días, recibirá por correo un cuestionario de la Encuesta sobre la Comunidad Estadounidense. Como usted esta viviendo en los Estados Unidos, la ley exige que usted responda a esta encuesta. Si tiene preguntas sobre el cuestionario, llámenos al 1-877-833-5625 para hablar con uno de nuestros empleados que habla español. La llamada es gratis. El empleado podrá contestar sus preguntas o usted podrá completar la encuesta por teléfono.

¿Qué es la Encuesta sobre la Comunidad Estadounidense?

La Encuesta sobre la Comunidad Estadounidense es una encuesta importante realizada por la Oficina del Censo de los Estados Unidos. Está diseñada para brindar información actual a las comunidades sobre las personas y las viviendas. Para poder tomar buenas decisiones, una comunidad necesita información precisa y confiable. Al responder a esta encuesta, usted está ayudando a su comunidad a obtener este tipo de información.

¿Serán confidenciales mis respuestas a esta encuesta?

Sí. La Oficina del Censo de los EE.UU. está obligada por ley a mantener confidencial su información. A la Oficina del Censo no se le permite divulgar sus respuestas de manera que este hogar pudiera ser identificado. En conformidad con la Ley para el Fortalecimiento de la Seguridad Cibernética Federal del 2015, sus datos están protegidos contra los riesgos de seguridad cibernética mediante los controles aplicados a los sistemas que trasmiten su información.

Important Information From the U.S. Census Bureau

Información Importante de la Oficina del Censo de los Estados Unidos

美国人口普查局
重要通知

Thông tin quan trọng từ Văn phòng Thống kê Dân số Hoa Kỳ

Важная информация от Бюро переписи населения США

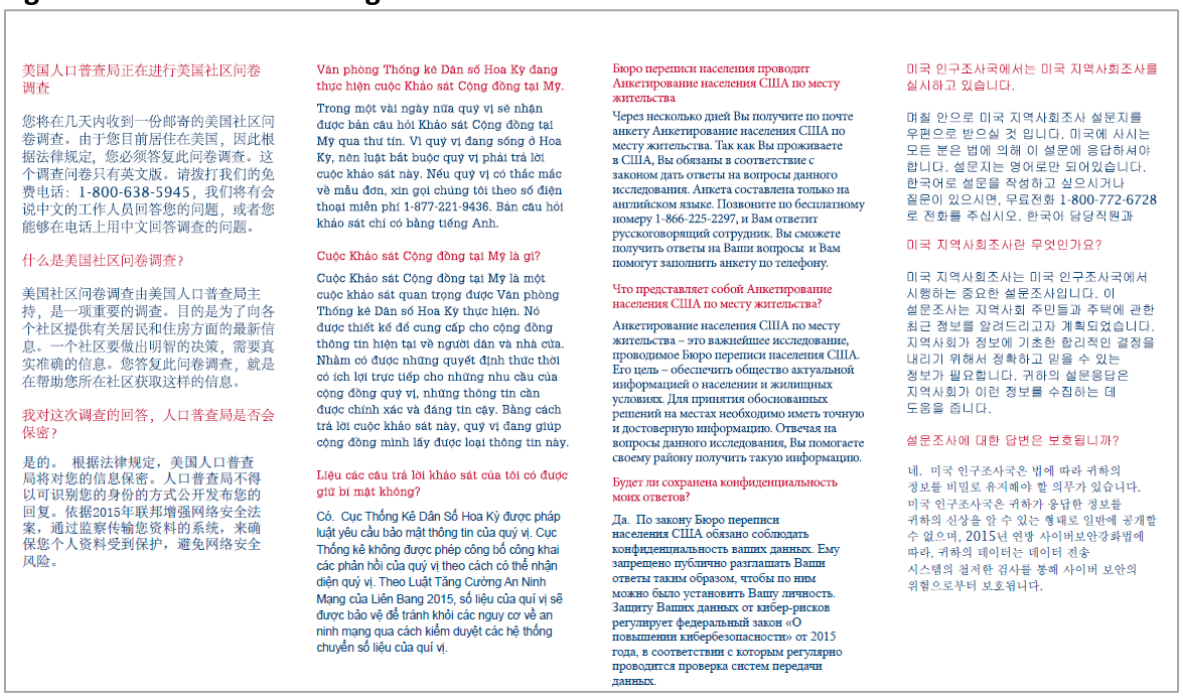
미국 인구조사국에서
전해드리는 중요한 정보

Issued September 2017
ACS-9 (2017)

United States Census Bureau

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov

Figure 14. Inside of Multilingual Brochure



美国人口普查局正在进行美国社区问卷调查

您将在几天内收到一份邮寄的美国社区问卷调查。由于您目前居住在美国，因此根据法律规定，您必须答复此问卷调查。这个调查问卷只有英文版。请拨打我们的免费电话：1-800-638-5945，我们将有会说中文的工作人员回答您的问题，或者您能够在电话上用中文回答调查的问题。

什么是美国社区问卷调查？

美国社区问卷调查由美国人口普查局主持，是一项重要的调查。目的是为了向各个社区提供有关居民和住房方面的最新信息。一个社区要做出明智的决策，需要真实准确的信息。您答复此问卷调查，就是在帮助您所在社区获取这样的信息。

我对这次调查的回答，人口普查局是否会保密？

是的。 根据法律规定，美国人口普查局将对您的信息保密。人口普查局不得以可识别您的身份的方式公开发布您的回复。依据2015年联邦增强网络安全法案，通过监察传输您资料的系统，来确保您个人资料受到保护，避免网络安全风险。

Văn phòng Thống kê Dân số Hoa Kỳ đang thực hiện cuộc Khảo sát Cộng đồng tại Mỹ.

Trong một vài ngày nữa quý vị sẽ nhận được bản câu hỏi Khảo sát Cộng đồng tại Mỹ qua thư tín. Vì quý vị đang sống ở Hoa Kỳ, nên luật bắt buộc quý vị phải trả lời cuộc khảo sát này. Nếu quý vị có thắc mắc về mẫu đơn, xin gọi chúng tôi theo số điện thoại miễn phí 1-877-221-9436. Bản câu hỏi khảo sát chỉ có bằng tiếng Anh.

Cuộc Khảo sát Cộng đồng tại Mỹ là gì?

Cuộc Khảo sát Cộng đồng tại Mỹ là một cuộc khảo sát quan trọng được Văn phòng Thống kê Dân số Hoa Kỳ thực hiện. Nó được thiết kế để cung cấp cho cộng đồng thông tin hiện tại về người dân và nhà cửa. Nhằm có được những quyết định thức thời có ích lợi trực tiếp cho những nhu cầu của cộng đồng quý vị, những thông tin cần được chính xác và đáng tin cậy. Bằng cách trả lời cuộc khảo sát này, quý vị đang giúp cộng đồng mình lấy được loại thông tin này.

Liệu các câu trả lời khảo sát của tôi có được giữ bí mật không?

Có. Cục Thống Kê Dân Số Hoa Kỳ được pháp luật yêu cầu bảo mật thông tin của quý vị. Cục Thống kê không được phép công bố công khai các phân hồi của quý vị theo cách có thể nhận diện quý vị. Theo Luật Tăng Cường An Ninh Mạng của Liên Bang 2015, số liệu của quí vị sẽ được bảo vệ để tránh khỏi các nguy cơ về an ninh mạng qua cách kiểm duyệt các hệ thống chuyển số liệu của quí vị.

Бюро переписи населения проводит Анкетирование населения США по месту жительства

Через несколько дней Вы получите по почте анкету Анкетирование населения США по месту жительства. Так как Вы проживаете в США, Вы обязаны в соответствие с законом дать ответы на вопросы данного исследования. Анкета составлена только на английском языке. Позвоните по бесплатному номеру 1-866-225-2297, и Вам ответит русскоговорящий сотрудник. Вы сможете получить ответы на Ваши вопросы и Вам помогут заполнить анкету по телефону.

Что представляет собой Анкетирование населения США по месту жительства?

Анкетирование населения США по месту жительства – это важнейшее исследование, проводимое Бюро переписи населения США. Его цель – обеспечить общество актуальной информацией о населении и жилищных условиях. Для принятия обоснованных решений на местах необходимо иметь точную и достоверную информацию. Отвечая на вопросы данного исследования, Вы помогаете своему району получить такую информацию.

Будет ли сохранена конфиденциальность моих ответов?

Да. По закону Бюро переписи населения США обязано соблюдать конфиденциальность ваших данных. Ему запрещено публично разглашать Ваши ответы таким образом, чтобы по ним можно было установить Вашу личность. Защиту Ваших данных от кибер-рисков регулирует федеральный закон «О повышении кибербезопасности» от 2015 года, в соответствии с которым регулярно проводится проверка систем передачи данных.

미국 인구조사국에서는 미국 지역사회조사를 실시하고 있습니다.

며칠 안으로 미국 지역사회조사 설문지를 우편으로 받으실 것 입니다. 미국에 사시는 모든 분은 법에 의해 이 설문에 응답하셔야 합니다. 설문지는 영어로만 되어있습니다. 한국어로 설문을 작성하고 싶으시거나 질문이 있으시면, 무료전화 1-800-772-6728로 전화를 주십시오. 한국어 담당직원과

미국 지역사회조사란 무엇인가요?

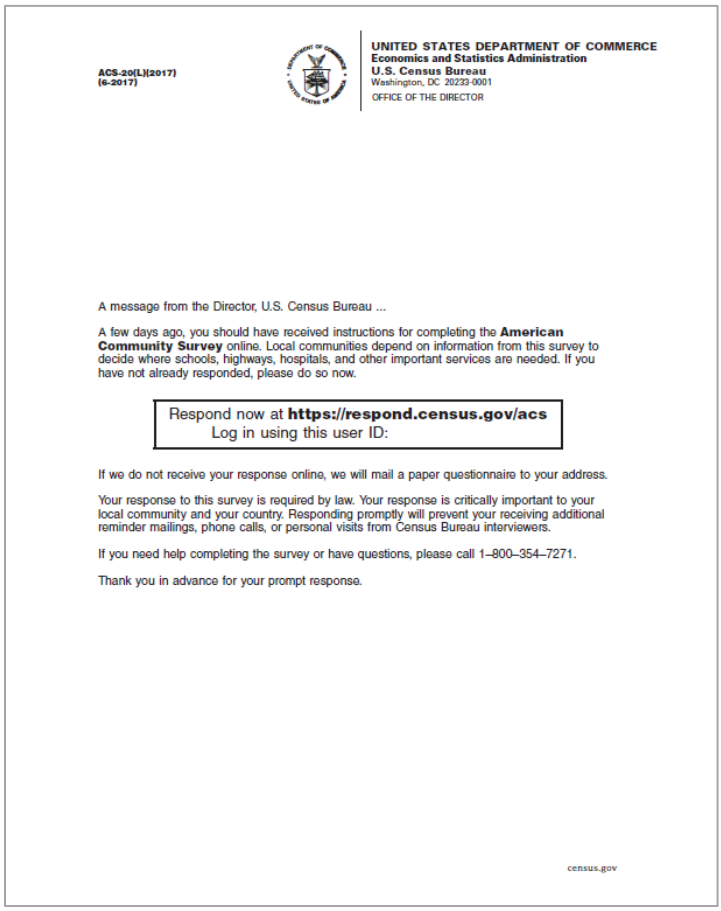
미국 지역사회조사는 미국 인구조사국에서 시행하는 중요한 설문조사입니다. 이 설문조사는 지역사회 주민들과 주택에 관한 최근 정보를 알려드리고자 계획되었습니다. 지역사회가 정보에 기초한 합리적인 결정을 내리기 위해서 정확하고 믿을 수 있는 정보가 필요합니다. 귀하의 설문응답은 지역사회가 이런 정보를 수집하는 데 도움을 줍니다.

설문조사에 대한 답변은 보호됩니까?

네. 미국 인구조사국은 법에 따라 귀하의 정보를 비밀로 유지해야 할 의무가 있습니다. 미국 인구조사국은 귀하가 응답한 정보를 귀하의 신상을 알 수 있는 형태로 일반에 공개할 수 없으며, 2015년 연방 사이버보안강화법에 따라, 귀하의 데이터는 데이터 전송 시스템의 철저한 검사를 통해 사이버 보안의 위협으로부터 보호됩니다.

Second Mailing

Figure 15. First Reminder Letter



ACS-20(L)(2017)
(6-2017)

UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Washington, DC 20233-0001
OFFICE OF THE DIRECTOR

A message from the Director, U.S. Census Bureau ...

A few days ago, you should have received instructions for completing the **American Community Survey** online. Local communities depend on information from this survey to decide where schools, highways, hospitals, and other important services are needed. If you have not already responded, please do so now.

Respond now at **https://respond.census.gov/acs**
Log in using this user ID:

If we do not receive your response online, we will mail a paper questionnaire to your address.

Your response to this survey is required by law. Your response is critically important to your local community and your country. Responding promptly will prevent your receiving additional reminder mailings, phone calls, or personal visits from Census Bureau interviewers.

If you need help completing the survey or have questions, please call 1–800–354–7271.

Thank you in advance for your prompt response.

census.gov

Figure 16. Second Mailing Envelope

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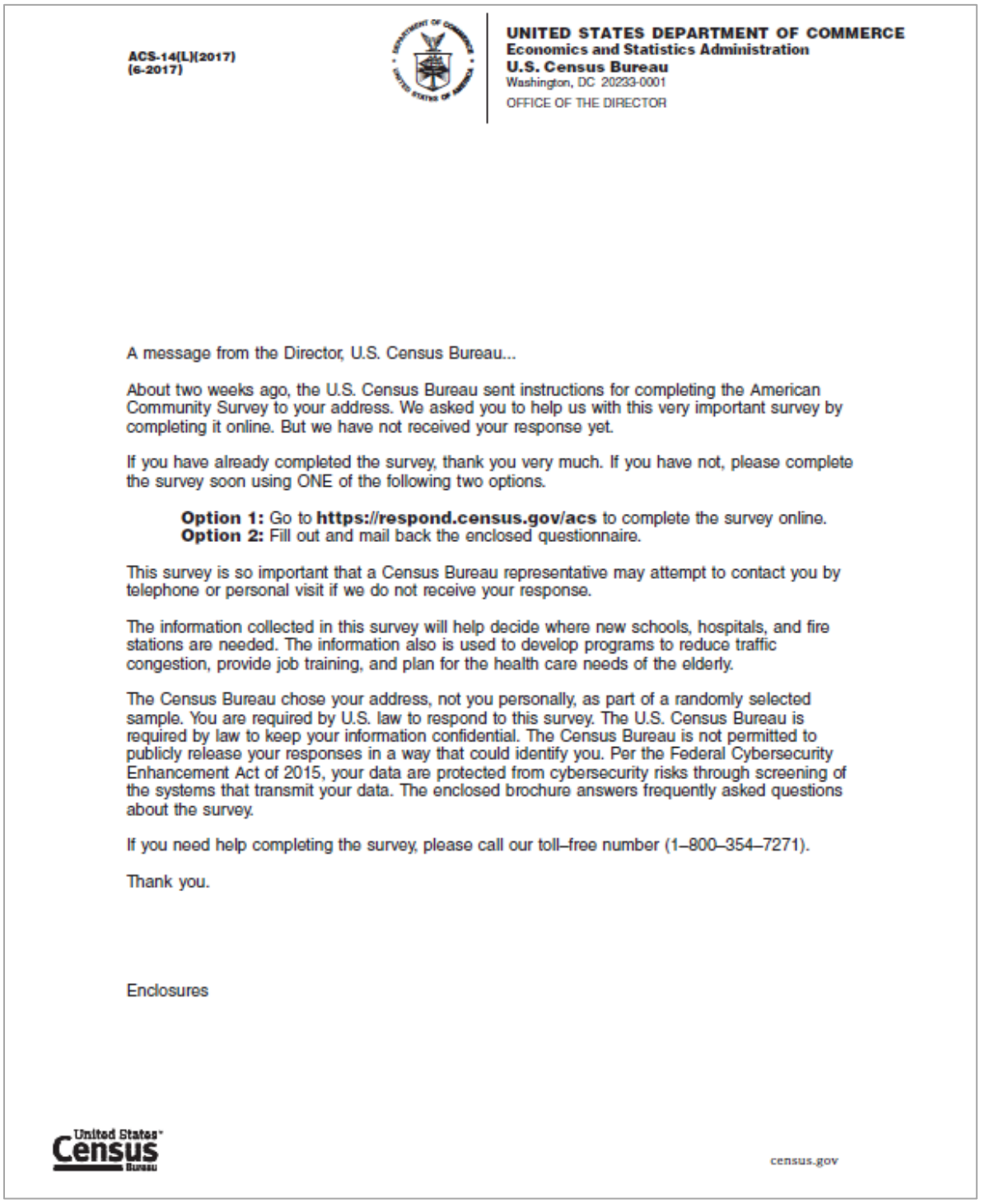
United States Census Bureau

Third Mailing

Figure 17. Production Letter in Questionnaire Package (Control and Treatment 1)



ACS-14(L)(2017)
(6-2017)

UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Washington, DC 20233-0001
OFFICE OF THE DIRECTOR

A message from the Director, U.S. Census Bureau...

About two weeks ago, the U.S. Census Bureau sent instructions for completing the American Community Survey to your address. We asked you to help us with this very important survey by completing it online. But we have not received your response yet.

If you have already completed the survey, thank you very much. If you have not, please complete the survey soon using ONE of the following two options.

Option 1: Go to **https://respond.census.gov/acs** to complete the survey online.
Option 2: Fill out and mail back the enclosed questionnaire.

This survey is so important that a Census Bureau representative may attempt to contact you by telephone or personal visit if we do not receive your response.

The information collected in this survey will help decide where new schools, hospitals, and fire stations are needed. The information also is used to develop programs to reduce traffic congestion, provide job training, and plan for the health care needs of the elderly.

The Census Bureau chose your address, not you personally, as part of a randomly selected sample. You are required by U.S. law to respond to this survey. The U.S. Census Bureau is required by law to keep your information confidential. The Census Bureau is not permitted to publicly release your responses in a way that could identify you. Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the systems that transmit your data. The enclosed brochure answers frequently asked questions about the survey.

If you need help completing the survey, please call our toll–free number (1–800–354–7271).

Thank you.

Enclosures

United States Census Bureau

census.gov

Figure 18. Treatment 2 Letter in Questionnaire Package

ACS-14(LX)(DST)(2017)
(9-2017)

UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Washington, DC 20233-0001
OFFICE OF THE DIRECTOR

A message from the Director, U.S. Census Bureau...

About two weeks ago, the U.S. Census Bureau sent instructions for completing the American Community Survey to your address. We asked you to help us with this very important survey by completing it online. But we have not received your response yet.

If you have already completed the survey, thank you very much. If you have not, please complete the survey soon using ONE of the following two options.

Option 1: Go to **https://respond.census.gov/acs** to complete the survey online.
Option 2: Fill out and mail back the enclosed questionnaire.

This survey is so important that a Census Bureau representative may attempt to contact you by telephone or personal visit if we do not receive your response.

The information collected in this survey will help decide where new schools, hospitals, and fire stations are needed. The information also is used to develop programs to reduce traffic congestion, provide job training, and plan for the health care needs of the elderly.

The Census Bureau chose your address, not you personally, as part of a randomly selected sample. You are required by U.S. law to respond to this survey. The U.S. Census Bureau is required by law to keep your information confidential. The Census Bureau is not permitted to publicly release your responses in a way that could identify you. Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the systems that transmit your data.

The enclosed materials answer frequently asked questions about the survey and provide facts and figures for each state. If you need help completing the survey, please call our toll-free number (1–800–354–7271).

Thank you.

Enclosures

United States Census Bureau

census.gov

Figure 19. Front of Instruction Card in Questionnaire Package

Figure 20. Back of Instruction Card in Questionnaire Package

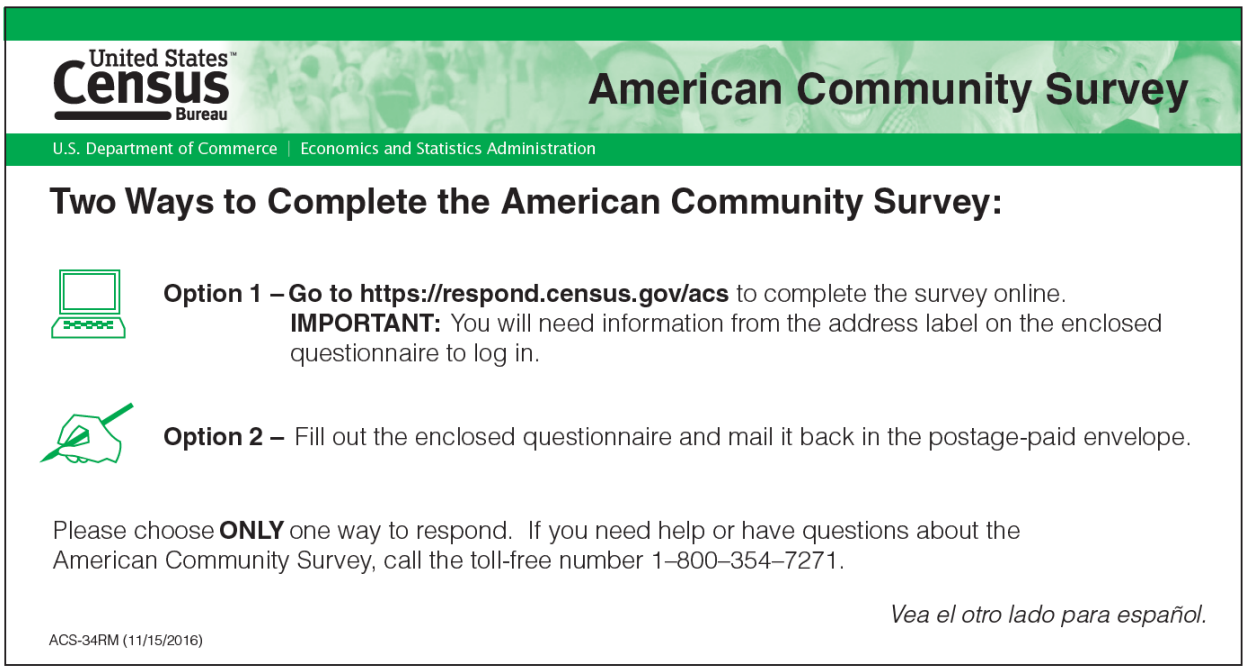


Figure 21. Questionnaire Package Mailing Envelope

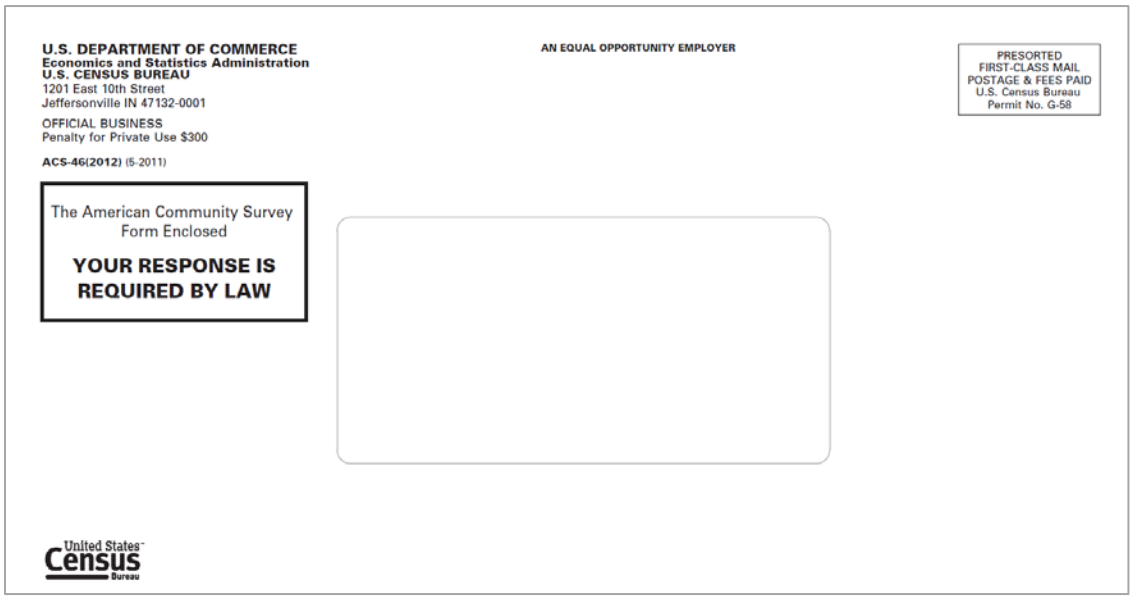
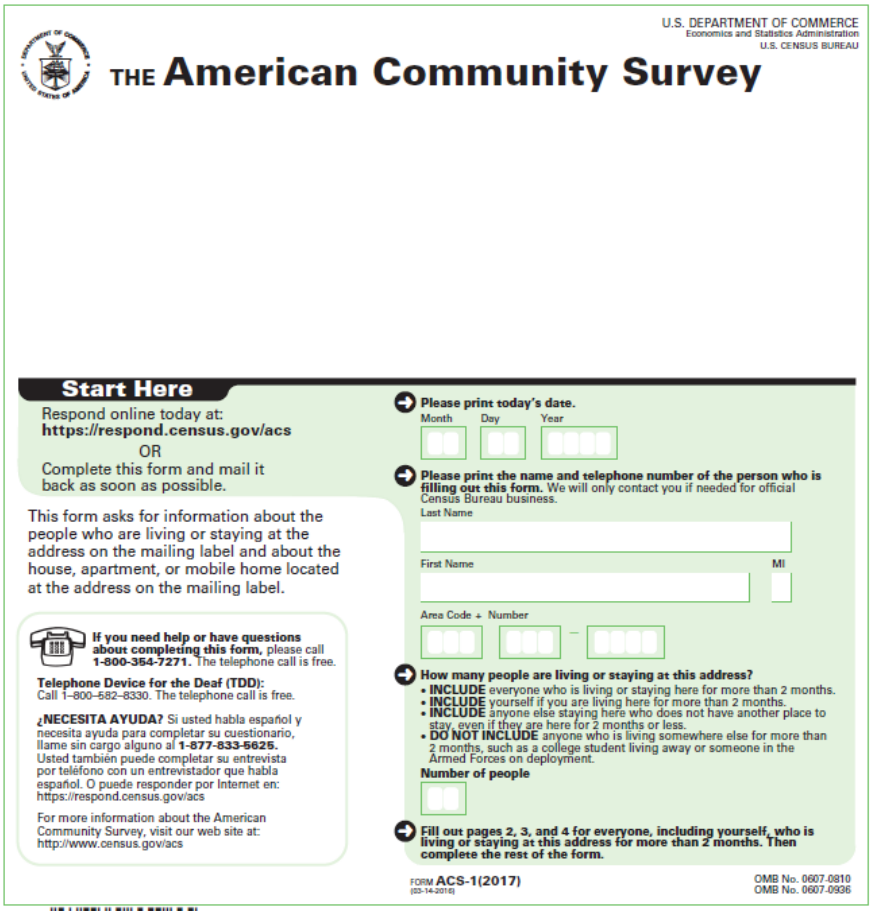
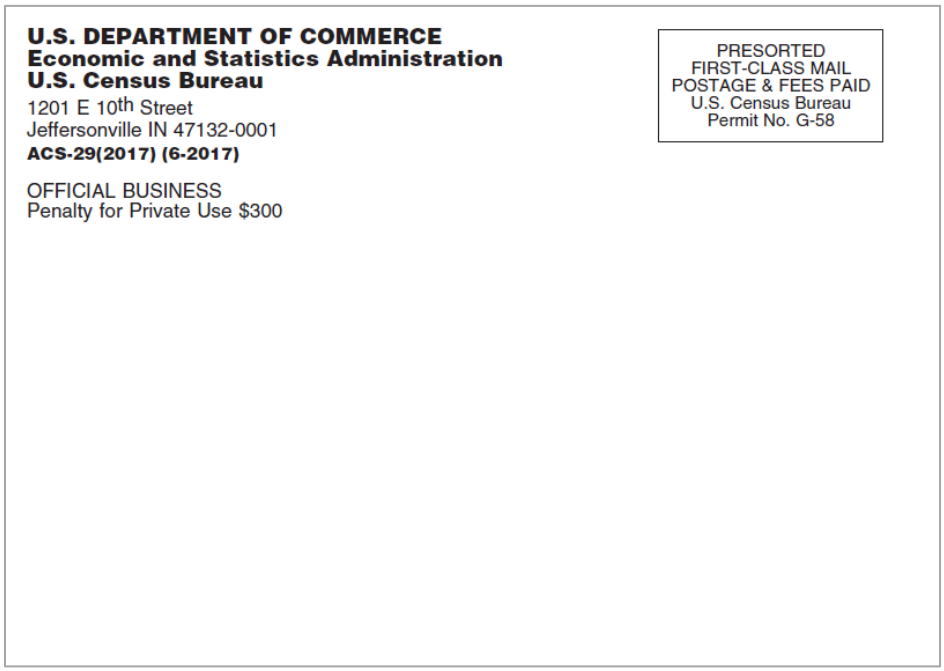


Figure 22. Questionnaire Cover



Fourth Mailing

Figure 23. Front of First Reminder Postcard



U.S. DEPARTMENT OF COMMERCE
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U.S. Census Bureau
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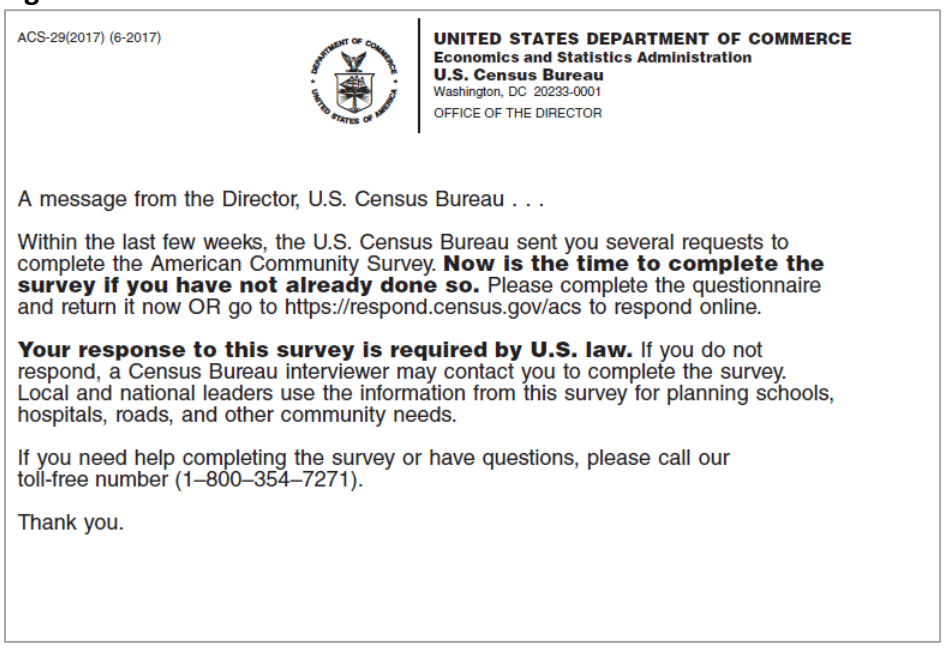
Figure 24. Back of First Reminder Postcard



ACS-29(2017) (6-2017)

UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Washington, DC 20233-0001
OFFICE OF THE DIRECTOR

A message from the Director, U.S. Census Bureau . . .

Within the last few weeks, the U.S. Census Bureau sent you several requests to complete the American Community Survey. **Now is the time to complete the survey if you have not already done so.** Please complete the questionnaire and return it now OR go to https://respond.census.gov/acs to respond online.

Your response to this survey is required by U.S. law. If you do not respond, a Census Bureau interviewer may contact you to complete the survey. Local and national leaders use the information from this survey for planning schools, hospitals, roads, and other community needs.

If you need help completing the survey or have questions, please call our toll-free number (1–800–354–7271).

Thank you.

Fifth Mailing

Figure 25. Front of Final Reminder Postcard

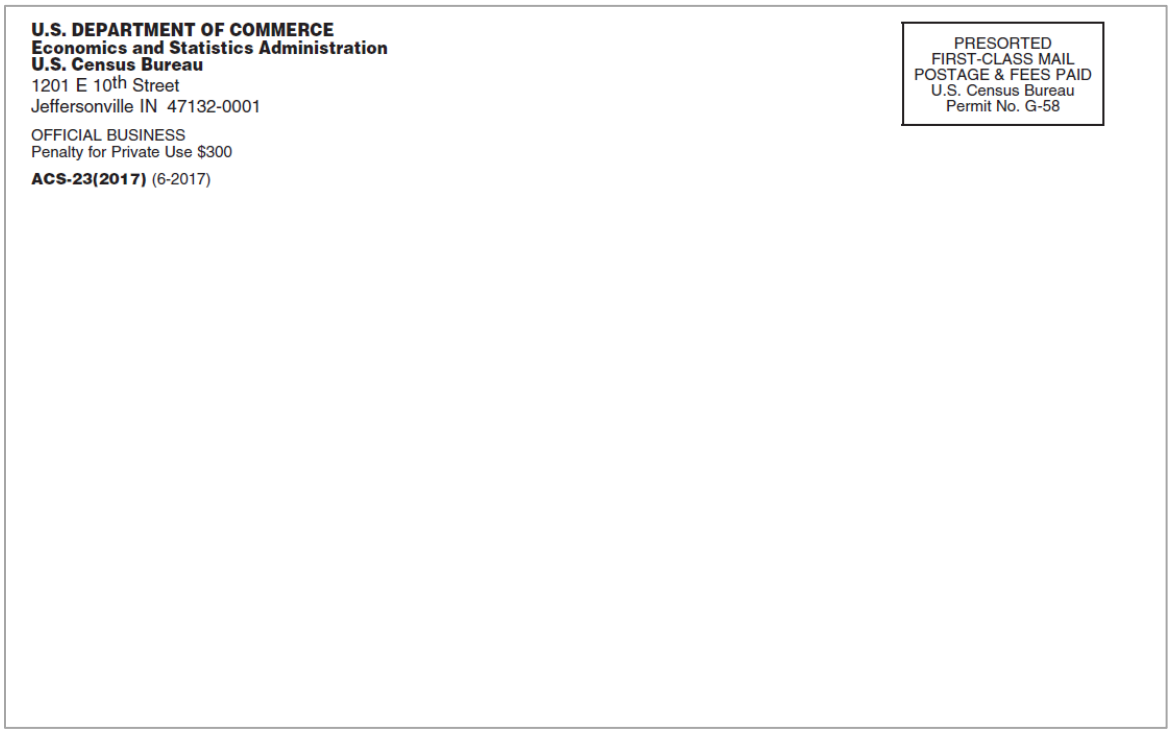


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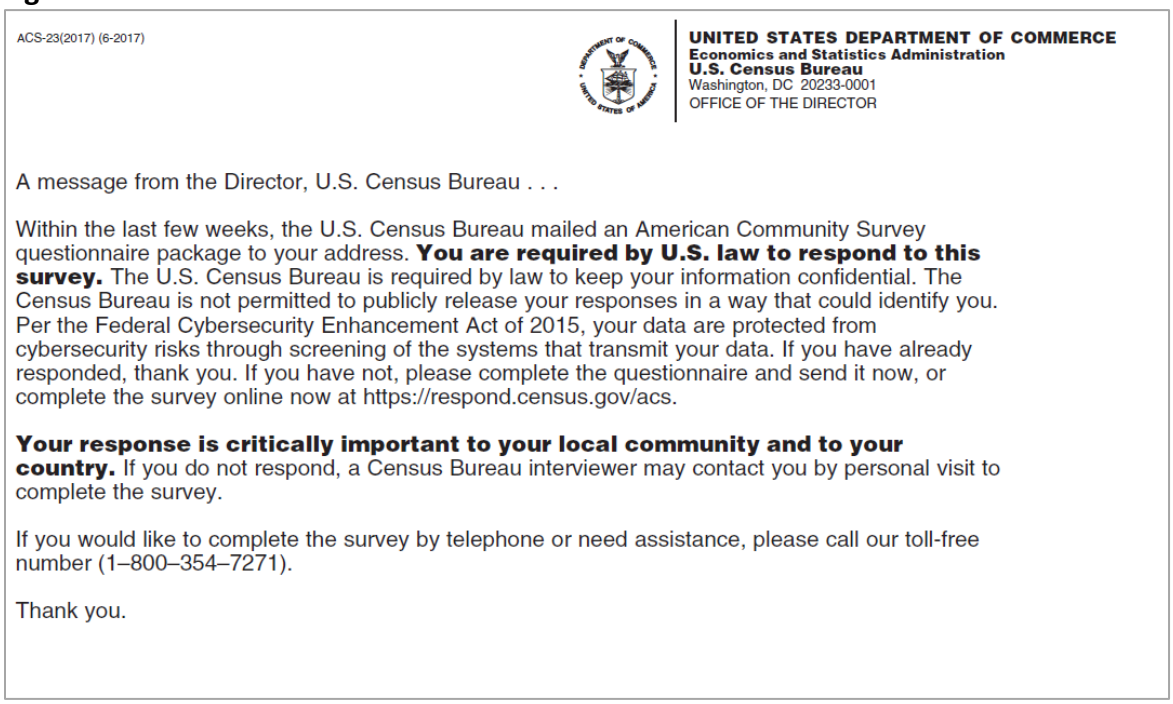
Figure 26. Back of Final Reminder Postcard



ACS-23(2017) (6-2017)

UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Washington, DC 20233-0001
OFFICE OF THE DIRECTOR

A message from the Director, U.S. Census Bureau . . .

Within the last few weeks, the U.S. Census Bureau mailed an American Community Survey questionnaire package to your address. **You are required by U.S. law to respond to this survey.** The U.S. Census Bureau is required by law to keep your information confidential. The Census Bureau is not permitted to publicly release your responses in a way that could identify you. Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the systems that transmit your data. If you have already responded, thank you. If you have not, please complete the questionnaire and send it now, or complete the survey online now at https://respond.census.gov/acs.

Your response is critically important to your local community and to your country. If you do not respond, a Census Bureau interviewer may contact you by personal visit to complete the survey.

If you would like to complete the survey by telephone or need assistance, please call our toll-free number (1–800–354–7271).

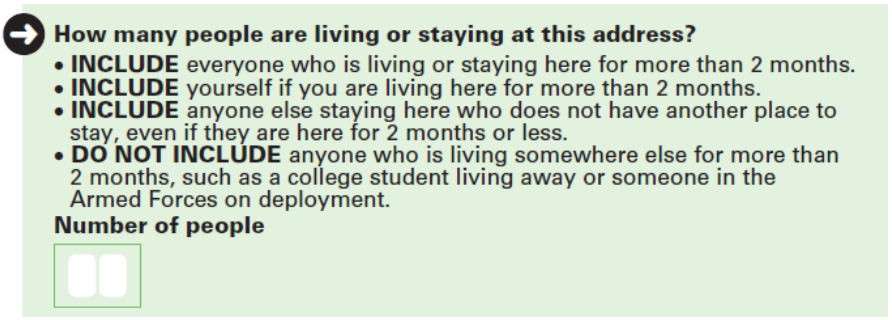
Thank you.

Appendix E. ACS Questions Relating to the Data Slide Statistics

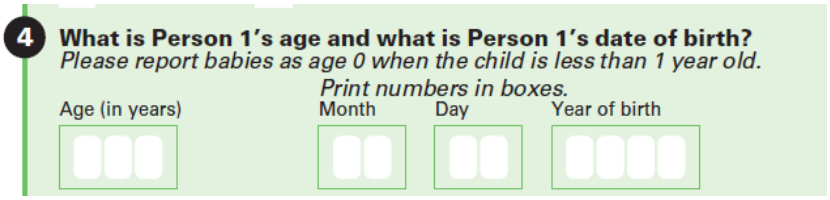
The data items that are included on the data slide are Total population, Median age, Median home value, Median household income, Percent high school graduate or higher, Percent foreign born, Percent below poverty, and Percent veterans.

The following images show the corresponding ACS questions, as they appeared on the paper questionnaire at the time of this test.

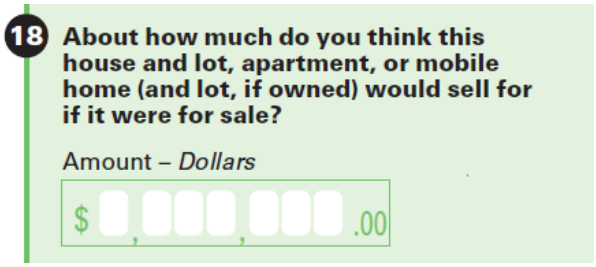
1. Total Population



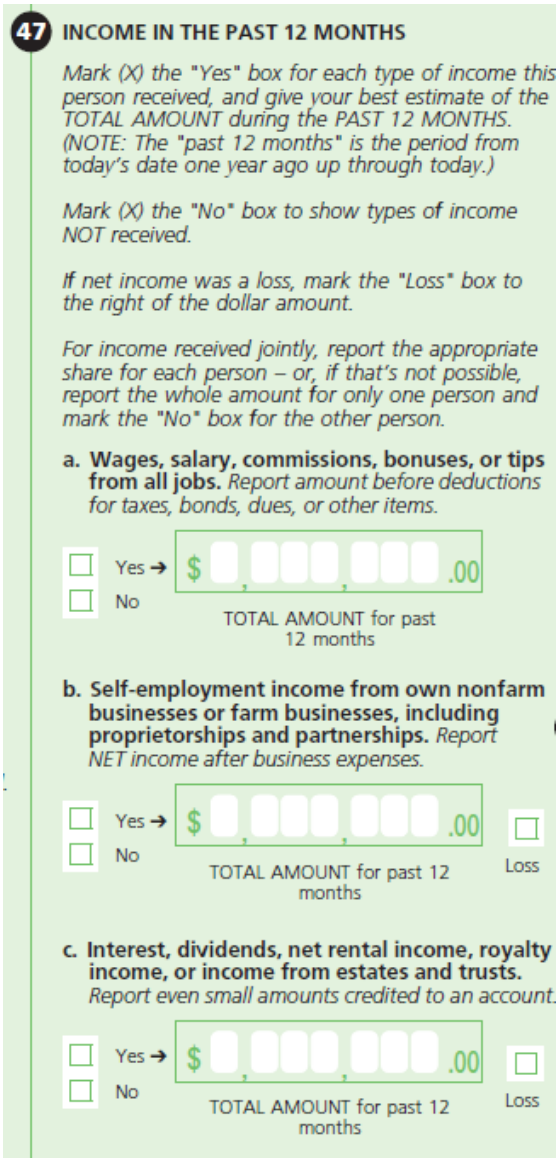
2. Age and Date of Birth



3. Home Value



4. Household Income – asked at the person-level



47 INCOME IN THE PAST 12 MONTHS

Mark (X) the "Yes" box for each type of income this person received, and give your best estimate of the TOTAL AMOUNT during the PAST 12 MONTHS. (NOTE: The "past 12 months" is the period from today's date one year ago up through today.)

Mark (X) the "No" box to show types of income NOT received.

If net income was a loss, mark the "Loss" box to the right of the dollar amount.

For income received jointly, report the appropriate share for each person – or, if that's not possible, report the whole amount for only one person and mark the "No" box for the other person.

a. Wages, salary, commissions, bonuses, or tips from all jobs. *Report amount before deductions for taxes, bonds, dues, or other items.*

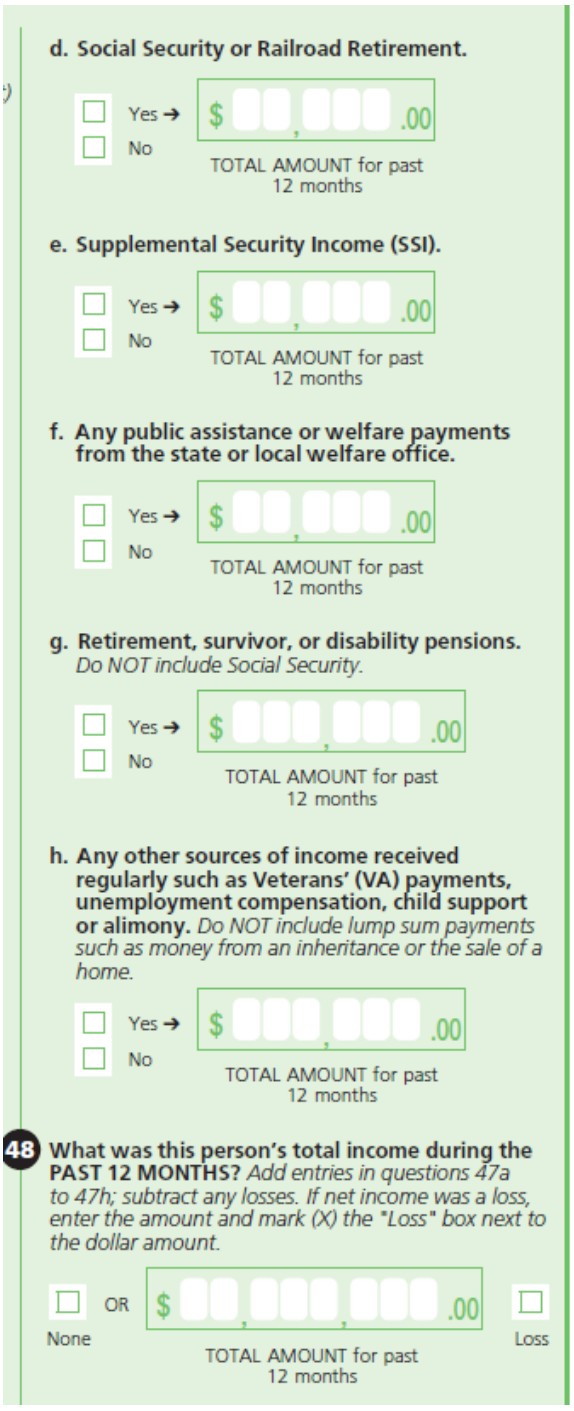
☐ Yes → $, , .00
☐ No
TOTAL AMOUNT for past 12 months

b. Self-employment income from own nonfarm businesses or farm businesses, including proprietorships and partnerships. *Report NET income after business expenses.*

☐ Yes → $, , .00 ☐ Loss
☐ No
TOTAL AMOUNT for past 12 months

c. Interest, dividends, net rental income, royalty income, or income from estates and trusts. *Report even small amounts credited to an account.*

☐ Yes → $, , .00 ☐ Loss
☐ No
TOTAL AMOUNT for past 12 months



d. Social Security or Railroad Retirement.

☐ Yes → $, .00
☐ No
TOTAL AMOUNT for past 12 months

e. Supplemental Security Income (SSI).

☐ Yes → $, .00
☐ No
TOTAL AMOUNT for past 12 months

f. Any public assistance or welfare payments from the state or local welfare office.

☐ Yes → $, .00
☐ No
TOTAL AMOUNT for past 12 months

g. Retirement, survivor, or disability pensions. *Do NOT include Social Security.*

☐ Yes → $, .00
☐ No
TOTAL AMOUNT for past 12 months

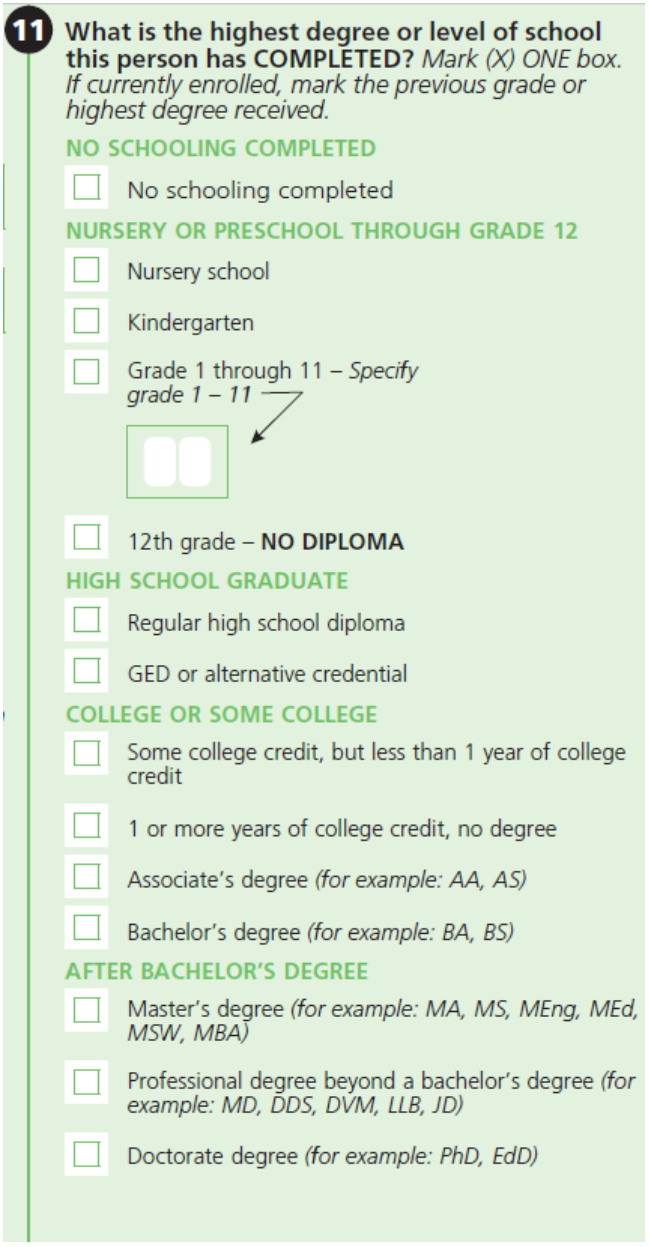
h. Any other sources of income received regularly such as Veterans' (VA) payments, unemployment compensation, child support or alimony. *Do NOT include lump sum payments such as money from an inheritance or the sale of a home.*

☐ Yes → $, .00
☐ No
TOTAL AMOUNT for past 12 months

48 What was this person's total income during the PAST 12 MONTHS? *Add entries in questions 47a to 47h; subtract any losses. If net income was a loss, enter the amount and mark (X) the "Loss" box next to the dollar amount.*

☐ None OR $, , .00 ☐ Loss
TOTAL AMOUNT for past 12 months

5. High School Graduate or Higher



11 **What is the highest degree or level of school this person has COMPLETED?** *Mark (X) ONE box. If currently enrolled, mark the previous grade or highest degree received.*

NO SCHOOLING COMPLETED

- ☐ No schooling completed

NURSERY OR PRESCHOOL THROUGH GRADE 12

- ☐ Nursery school
- ☐ Kindergarten
- ☐ Grade 1 through 11 – *Specify grade 1 – 11*
- ☐ 12th grade – **NO DIPLOMA**

HIGH SCHOOL GRADUATE

- ☐ Regular high school diploma
- ☐ GED or alternative credential

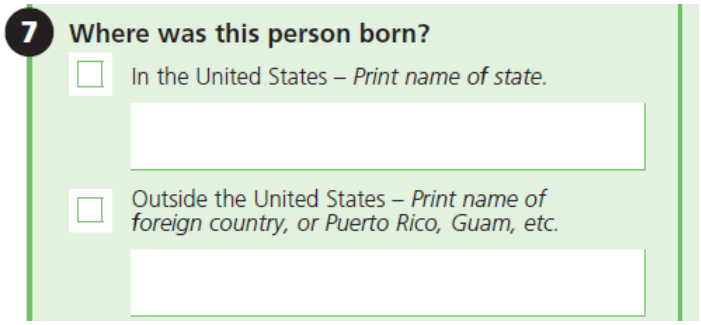
COLLEGE OR SOME COLLEGE

- ☐ Some college credit, but less than 1 year of college credit
- ☐ 1 or more years of college credit, no degree
- ☐ Associate's degree *(for example: AA, AS)*
- ☐ Bachelor's degree *(for example: BA, BS)*

AFTER BACHELOR'S DEGREE

- ☐ Master's degree *(for example: MA, MS, MEng, MEd, MSW, MBA)*
- ☐ Professional degree beyond a bachelor's degree *(for example: MD, DDS, DVM, LLB, JD)*
- ☐ Doctorate degree *(for example: PhD, EdD)*

6. Foreign Born



7. Military Service