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U.S. Census Bureau
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2014 AMERICAN COMMUNITY SURVEY RESEARCH AND EVALUATION REPORT
MEMORANDUM SERIES #ACS14-RER-12

MEMORANDUM FOR ACS Research and Evaluation Advisory Group

From: James B. Treat (**signed on April 22, 2014**)
Chief, American Community Survey Office

Prepared by: Sandra Lockett Clark
American Community Survey Office

Subject: Review of American Community Survey Item Response Distributions from Self-Administered Modes to Detect Processing Errors

Attached is the final American Community Survey (ACS) Research and Evaluation report, "Review of American Community Survey Item Response Distributions from Self-Administered Modes to Detect Processing Errors". We conducted this evaluation to identify and resolve processing error resulting from the implementation of the Internet mode in the 2013 ACS. If you have any questions about this report, please contact Sandra Clark at 301-763-5884 or Dave Raglin at 301-763-4226.

Attachment

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Review of Item Response Distributions from Self-Administered Modes to Detect Processing Errors

FINAL REPORT

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American Community Survey Office



Introduction

In January 2013, the Census Bureau began offering respondents the option to complete the American Community Survey (ACS) over the Internet. The ACS is a national survey that collects demographic, housing, social and economic characteristics from all household members. The Census Bureau tested the feasibility of using the Internet mode during two tests that took place in 2011 (Matthews et al. (2012) and Tancreto et al. (2012)). Census staff evaluated the data from these tests, and the high response rates and potential cost savings encouraged Census to implement the Internet mode in 2013.

The addition of the Internet mode required the American Community Survey Office (ACSO) to modify many operations, resulting in potential risks to the survey. Before the Internet mode went into production, a Strategic Project Integration Team, along with a series of sub-teams, was established and the new and modified operations were subject to a series of tests. The purpose of the testing was to insure that all operations were working as expected. ACSO staff created test datasets mocking production data to process through the operations. While the tests were thorough and designed to catch processing errors, there are always limitations associated with a test environment. For example, the test datasets may not be all-inclusive and some types of errors could be missed. Alternatively, the operation could be performing as specified, but producing unintended outcomes.

The purpose of this evaluation was to perform an additional check to see how the new and modified operations performed in a production environment. By reviewing the response distributions (including missing data rates) for every item on the survey, we were able to identify and research issues occurring in several operations. This study was designed to be a last check and serve as an early warning system for detecting and repairing processing problems early in the production cycle. It was not a study on mode effects or a study comparing Internet and mail responders.

Background

The ACS uses multiple modes of data collection, starting with self-response modes, which encourage households in sample to complete and return the survey on their own. Prior to 2013, the mail questionnaire was the only self-response mode. Beginning in 2013, there are two self-response modes: Internet and mail. Initial mailings are sent to sampled households instructing them to complete the survey online. If an online response is not received within two weeks, we send a mail questionnaire. Those who choose not to reply by self-response are eligible to be contacted by an interviewer over the telephone (Computer Assisted Telephone Interview (CATI)) or in person (Computer Assisted Personal Interview (CAPI)). In addition, we follow-up

(by phone) with some mail and Internet returns in an attempt to retrieve missing data through our Failed Edit Follow-up Operation (FEFU).¹ Note that some returns are also completed over the phone as a result of the respondent calling our help line for Telephone Questionnaire Assistance (TQA). This evaluation focuses on responses from the mail and Internet modes after FEFU. TQA responses are included in the research.

The ACS uses a series of monthly samples to produce annual estimates. Sample addresses selected for a particular survey year are assigned to a panel with three months allocated for data collection across the four modes. The panel represents the month during which cases are assigned for collection, not necessarily the month in which data are collected or tabulated. Table 1 shows the data collection modes by panel and calendar month. The December 2012 panel included only mail as its initial mode while the January 2013 panel used both mail and Internet modes in month 1. Note that we accept mail and Internet responses throughout the full three-month data collection period².

Table 1. Data Collection by Panel and Calendar Month

		Calendar Month						
		Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13
Panel	Dec-12	Mail	Telephone	Personal Visit				
	Jan-13		Mail/Internet	Telephone	Personal Visit			
	Feb-13			Mail/Internet	Telephone	Personal Visit		
	Mar-13				Mail/Internet	Telephone	Personal Visit	
	Apr-13					Mail/Internet	Telephone	Personal Visit

The ACS questionnaire is organized into three main sections. These sections are:

- **Basic Demographic** – demographic population items, such as relationship, age, sex, Hispanic origin, and race
- **Housing** – physical and financial characteristics of housing items, such as type of building, kitchen and plumbing facilities, household utilities, and number of rooms
- **Detailed Population** – social and economic population items, such as citizenship, educational attainment, and employment status

¹ The households we follow-up with are determined based on a set of criteria, including the number of people in the household, vacancy status, the number of missing data, and level of criticality assigned to the missing items. See Clark (2012) for more information on FEFU.

² The workload for each mode is assigned to a calendar month, however a small number of cases are received prior to the assigned calendar month. In addition, the official closeout of the panel occurs at the beginning of the calendar month following the month that personal visits are conducted.

The mail questionnaire is shown in Appendix A. The Internet survey is very similar to the mail survey. Like the mail survey, the Internet survey begins with the basic demographic items for each person in the household and then moves to the housing items. Once the housing items are complete, the survey proceeds to the detailed population questions. If there is more than one person in the household the survey includes a screen asking the respondent to pick a person for whom to begin the detailed population items. Once the items are complete for the first person, the respondent is asked to pick another person and answer questions until the detailed population questions are answered for everyone in the household.

As soon as we receive returns, we begin processing the data. The mail questionnaire images are scanned to capture the checkbox responses electronically and create scanned images for other responses. The forms then go to keyers who type in the mail write-in responses based on the scanned images. The keyers apply a small number of rules when they key-in the mail data. For example, they remove commas from monetary responses. Initially, mail and Internet response data are sent to staff in the American Community Survey Office (ACSO) in the form of text files (referred to as batch files), but are quickly turned into datasets for further processing. We refer to the process of reading in the mail and Internet data as the HU READ operation. To be consistent with mail, Internet data go through a cleanup operation called the Automated Response Cleanup (ARC) that applies these same keying rules. Next, we send both mail and Internet data through another process, called Normalization (NORM), which maps data variables from both modes into the same layout. ARC and NORM must be done so we can merge data from the two modes together for further processing. Once we merge the mail and Internet data into a single dataset, we implement the Automated Clerical Edit (ACE). This process determines which households we attempt to follow-up with over the phone in a FEFU interview. We then combine all self-response data with data from TQA, FEFU, CATI, and CAPI together to create the Data Capture Files (DCFs). The DCFs are datasets created after the data have passed through the data processing operations mentioned above. There are additional processing operations; however, they are outside the scope of this analysis.

To accommodate the Internet mode in 2013, we added the ARC operation mentioned above and modified the other processing operations. This research evaluated the self-response data on the Data Capture Files (DCFs). Reviewing the DCF data allowed us to evaluate the processing operations that involved changes.

The annual production cycle includes a thorough review of collected data, however this review does not take place until all data are collected and have gone through the entire processing cycle. This evaluation was necessary to identify possible errors quickly so they could be resolved as early in the production cycle as possible.

Research Questions

This report answers the following research questions:

- 1. Are there response values from either self-response mode that account for zero percent of the item's overall response distribution and indicate a possible data processing error?**
- 2. Do any of the estimates appear to be outliers or cause concerns based on expectations and knowledge from prior data review experiences? If so, are they a result of a data processing error?**

Methodology

We used several datasets containing response data for every item on the survey. We used the DCFs to create the response distributions. As mentioned above, these are files created after the data passes through the ARC, NORM, ACE, TQA, and FEFU operations. The data are unedited, meaning they include invalid (e.g., a response of “201” for age) and missing responses. Using unedited data also means that we count some responses of “Don’t Know” and “Refused” for write-in fields on Internet returns as valid responses. Our ARC process blanks these sort of Internet responses for monetary write-in, however they remain in our datasets for character write-in fields. For mail returns, the keyers blank such responses for both monetary and character write-ins.

We also used interim datasets to research errors. The interim datasets are very similar in structure to the DCFs; however, they are created between the processing phases. They allowed us to pinpoint the operation causing the error.

We ran frequency distributions for every item on the survey using data collected from self-response returns. The files include all mail returns, except those returned completely blank. The files also include all Internet submissions with enough data to be classified as a “complete,” a “sufficient partial, or an “insufficient partial.” A “complete” status is assigned to an Internet return if the respondent made it to the end of the survey, and a “sufficient partial” status means that the respondent did not make it to the end of the survey but progressed through the basic demographic and housing sections and at least reached the first detailed person question (the place of birth item). Internet returns not meeting the sufficient partial criteria are assigned an “insufficient partial” status. Insufficient partials represent a very small proportion of Internet survey responses. The ACS does not include the majority of the Internet returns with this status as a survey response because we obtain returns that are more complete for these households through other collection modes. However, we accept “insufficient partial” Internet returns as a

response when the insufficient return is the only return we get for the household. The DCFs included all insufficient partials; therefore, we decided to include all of them in the analysis. Data collected through the TQA and FEFU operations are included in the mail distributions. We excluded group quarters and Puerto Rico records. We calculated four sets of percent distributions, shown in Table 2.

Table 2. Self-response Returns Used To Calculate Research Percent Distributions

Distributions for:	Consisting of:
2012 self-response mode	Mail returns from the December 2012 panel
2013 self-response modes	Mail returns and Internet surveys from the January 2013 panel
2013 mail mode	Mail returns from the January 2013 panel
2013 Internet mode	Internet surveys from the January 2013 panel

Table 3 shows the number of housing units and person records used in the research.

Table 3. Number of Housing Units and Person Records

Panel / Mode	Housing Units	Person Records
2012 December Panel Mail	131,306	290,646
2013 January Panel Mail	66,102	143,609
2013 January Panel Internet	77,122	196,943

Source: 2012 American Community Survey December Panel and 2013 American Community Survey January Panel

We used specifications provided by the subject matter analysts in the Population (POP) and the Social, Economic and Household Statistics (SEHSD) Divisions to calculate the response distributions. Some survey items include both a checkbox and write-in field. For these items, we chose to analyze the checkbox responses separately from the write-in responses. For numeric write-ins, we organized the numbers into ranges (based on the analyst’s specifications). For character write-ins, we only distinguished whether the write-in included a response or if the respondent left the write-in blank.

To answer the research questions, we reviewed the 2013 self-response distributions for each survey item. We used the 2012 self-response distributions as a rough benchmark. We also reviewed the 2013 Internet distributions and the 2013 mail distributions separately. The review provided a first glimpse of incoming 2013 response data and focused on extreme outliers and unexpected distributions. It was a high-level review to identify possible processing errors early in the production cycle. It was not a detailed review of the characteristics of the respondents, or intended to provide preliminary survey estimates.

Processing errors found during the analysis were immediately researched and reported to appropriate staff in the ACSO. The ACSO areas most affected were the ACS Data Collections and ACS Data Processing branches.

Because the purpose of the research was to identify processing errors, we decided it was not necessary to weight the data, calculate sampling errors, or perform statistical testing. We did not include the item response distributions calculated for this research in the report. They are preliminary estimates created from unedited data that we calculated to detect processing errors. The Census Bureau plans to release the final 2013 ACS estimates in September 2014.

Limitations

Using unedited data resulted in some limitations. For a record to be included in the distribution, the record had to be in universe for the item. When missing data prevented us from knowing if the record was in universe for a particular item, we excluded the record from the distribution. For example, if age was missing on a record it was included for the evaluation of age (in the missing data rate), but the record was excluded in the evaluation of other items with a universe requiring an answer for age. In addition, (as mentioned above) some invalid responses from Internet returns (such as “none of your business” in a write-in field) were not identified and therefore were considered a response. This limitation, however, does not affect mail responses because keyers do not key these sort of responses from mail returns.

Research from the 2011 Internet test found that mail and Internet respondents differ (Matthews, 2012). Therefore, we expected differences in self-response and we anticipated shifts in the distributions. This research was not about assessing those things; it was designed to catch processing errors.

Results

Are there response values from either self-response mode that account for zero percent of the item’s overall response distribution and indicate a possible data processing error?

Estimates of zero percent could indicate that a response value was not captured in one or more modes, suggesting a processing error. To answer the research question, we reviewed the overall self-response distributions calculated for each survey item using the 2013 January panel data. We also reviewed the 2013 January panel Internet distributions and the 2013 mail distributions separately. For this part of the analysis, we looked for zero percent estimates. We did not find any zero percent estimates. Therefore, we concluded that all survey items are captured on the DCFs and each of the categories specified for the research had at least one response.

Do any of the estimates appear to be outliers or cause concerns based on expectations and knowledge from prior data review experiences? If so, are they a result of a data processing error?

During the research, we noted differences in the distributions for several survey items. We found most differences when comparing the mail and Internet distributions; however, we expected this since we knew going into the research that mail and Internet responders are different. For example, the younger age groups in the age distribution were larger for Internet returns than mail returns; however, we expected this finding because studies show that Internet respondents are more likely than mail respondents to be younger (Matthews, 2012). Our research did not focus on these findings; instead, its focus was on outliers and unexpected differences.

Reviewing the response distributions, including missing data rates, allowed us to uncover several processing errors. We corrected all errors found during this research.

Other type of computer and other Internet service - We found invalid mail response values for these two housing items. Both items are checkbox responses, which require respondents to check the “Yes” checkbox or the “No” checkbox. Therefore, on the DCF we expect response values of “1” for “Yes”, “2” for “No”, or “Blank” for missing responses. However, in addition to these response values we found response values of “I”, indicating an illegal response value. To investigate this, we reviewed all the interim datasets created prior to the DCF. We also reviewed the batch files (initial text files). On the pre-DCF datasets, the response values were “0” for these cases, which is not a valid response value. However, on the batch files the response values were all valid values of “1” or “2”. We learned that the HU READ process was incorrectly capturing some values of “1” and “2” as “0”. Then during the DCF creation the “0” values were converted to “I” (and treated the same as a missing response) because “0” is an illegal response value. This error caused us to interpret reported data for these two variables as missing responses for nearly 14,000 mail returns.

Place of residence one year ago - We noticed high missing data rates from Internet returns for the items in this series. The survey asks this about household members with a response of “No, different house in the United States or Puerto Rico” to the question, “Did this person live in this house or apartment 1 year ago?” The series asks the street address, city, county, state, and zip code of the last residence. When researching the high missing data rates for these items, we noticed that many cases with missing responses for this series had MIGX=1, meaning that they check the checkbox indicating that 1 year ago they lived at the same address as the previous person in the household who provided the address of their last residence. This checkbox only exists on the Internet survey, and can only be checked by the second or subsequent household member who answers, “No, different house in the United States or Puerto Rico.” If this checkbox is selected, the instrument applies a hard edit and automatically fills in all five items in the place

of residence one year ago series. Unfortunately, the Internet instrument did not fill in the response values for these items when the checkbox was marked. Therefore, ACSO never received the values for the items in this series for these cases; instead, the values appear as missing. This error caused reported data for the five variables in this series to be interpreted as missing responses for approximately 33,000 person records from Internet returns.

Citizenship and Age - The missing data rates were larger for mail returns than Internet returns for most items. However, the missing data rate for the *citizenship* item was larger for Internet returns than mail returns, which prompted additional research. We looked at the cases missing *citizenship* and found that a large number of these cases had *age* reported as zero years old. We reviewed the *age* distribution that included zero year olds and noticed that this group represented a larger share of Internet respondents than mail respondents. Initially, we were not concerned about this difference because of the known age differences between mail and Internet responders. We decided to compare the count of zero year olds between modes and found a significantly larger number of Internet zero year olds than mail zero year olds. Tracing response values for the *age* item for the Internet zero year olds uncovered an error in the ARC process. The error caused us to capture some missing values as a response of “0”. A response of “0” is a valid response for the *age* item; therefore, the error inflated the number of zero year olds. This error incorrectly assigned a value of “0” for the *age* item for 9,000 Internet person records that did not actually have a response for *age*.

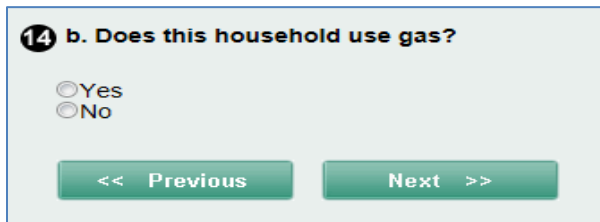
Gas costs and fuel costs - The Internet response distributions for these items were very different from the mail response distributions. The percentage of Internet respondents in the “No charge or <gas/these fuels> not used” response category for both items was significantly smaller than the percentage of mail respondents in this category. For these items, there are important differences between the mail and Internet questions. The mail form has a checkbox item and a write-in field for both items, as shown in Figure 1.

Figure 1. Mail Gas Cost and Fuel Costs Items – checkbox and write-in

The Internet instrument is set up slightly different. It includes filter questions to help Internet respondents navigate through the survey. The first filter question (Figure 2) asks if the household uses gas/fuel. Based on the answer to the filter question some respondents receive additional

follow-up questions (Figure 3). Figures 2 and 3 show the Internet screens for the *gas cost* item (the *fuel costs* item follows the same layout).

Figure 2. Internet Gas Usage Item – Filter Question

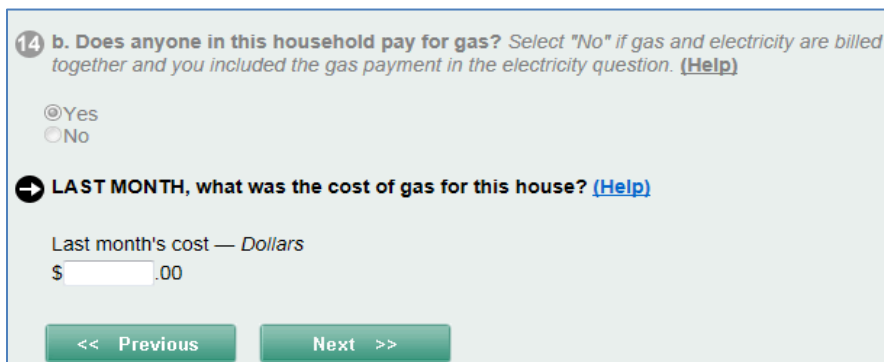


14 b. Does this household use gas?

Yes
 No

<< Previous Next >>

Figure 3. Internet Gas Cost Item – Additional Gas Pay Filter (grayed out) and Follow-up Cost Item



14 b. Does anyone in this household pay for gas? Select "No" if gas and electricity are billed together and you included the gas payment in the electricity question. (Help)

Yes
 No

➔ LAST MONTH, what was the cost of gas for this house? (Help)

Last month's cost — Dollars
\$.00

<< Previous Next >>

If the Internet respondent answers “No” to the first filter question, they are not asked the additional items. During the NORM operation, we map the mail and Internet variables into the same layout for further processing. In NORM, responses of “No” to the first filter about usage is converted into the mail response, “No charge or <gas/these fuels> not used.” Unfortunately, we accidentally left this step out of the NORM operation. Therefore, responses of “No charge or <gas/these fuels> not used” were not assigned for these cases in NORM, resulting in an underreporting of responses and an over reporting of missing data for these two items. This error affected responses for over 300,000 households for the *fuel costs* item and over 100,000 households for the *gas cost* item.

Conclusion

We discovered several processing errors because of this research. We uncovered errors occurring in the HU READ operation affecting response values from mail returns for the *other type of computer* and *other Internet service* items. A hard edit in the Internet instrument was missing resulting in missing responses for the five address items in the *place of residence one year ago* series. The ARC operation incorrectly assigned a value of “0” to the *age* item for many Internet

records missing a response for the *age* item. The NORM operation was missing a step necessary to capture Internet data for the *gas cost* and *fuel cost* items.

Reviewing response distributions for the survey items was instrumental in catching and resolving processing errors early in the annual production cycle. ACSO immediately fixed the errors mentioned in this report once they were identified. In addition, ACSO corrected the processes so they did not affect additional data processed through the operations. Because these errors were found early in the process we were able to fix data that was captured incorrectly because of the errors before it goes through final editing and to the subject matter analysts for a detailed subject review.

Despite thorough planning and pre-testing of the new and modified operations, the research uncovered several processing errors. These results show the importance of continuing testing once production has started and demonstrate that it is critical to have intermediate datasets between processing phases in order to investigate and pinpoint the cause of errors. As the ACS program progresses to using new corporate processing systems, like Maestro and CaRDS, we recommend that the teams designing those systems incorporate tools, such as intermediate datasets and detailed specifications, to aid in the review of the survey processing operations. In addition, we recommend that once the new operation is implemented that ACSO conduct research similar to that described here to assess the quality of the data and the operating system in a production environment.

References

Clark, S., L. (2012). "Evaluation of an Alternative Option for Improving the Mail Return Edit Used in Failed Edit Follow up," 2012 American Community Survey Research and Evaluation Report memorandum Series #ACS12-RER-30, November 6, 2012.

Matthews, B. L., Davis, M. C., Tancreto, J. G., Zelenak, M. F., and Ruiter, M. (2012). "2011 American Community Survey Internet Test: Results from Second Test in November 2011," 2012 American Community Survey Research and Evaluation Report Memorandum Series #ACS12-RER-21-R1, June 25, 2012.

Tancreto, J. G., Zelenak, M. F., Davis, M. C., Ruiter, M., and Matthews, B. L. (2012). "2011 American Community Survey Internet Test: Results from First Test in April 2011," 2012 American Community Survey Research and Evaluation Report Memorandum Series #ACS12-RER-13-R2, June 25, 2012.

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U.S. DEPARTMENT OF COMMERCE
Economic and Statistics Administration
U.S. CENSUS BUREAU

THE American Community Survey

Start Here

Respond online today at
<https://respond.census.gov/acs>

OR

Complete this form and mail it
back as soon as possible.

This form asks for information about the people who are living or staying at the address on the mailing label and about the house, apartment, or mobile home located at the address on the mailing label.



If you need help or have questions about completing this form, please call 1-800-354-7271. The telephone call is free.

Telephone Device for the Deaf (TDD):
Call 1-800-562-6330. The telephone call is free.

¿NECESITA AYUDA? Si usted habla español y necesita ayuda para completar su cuestionario, llame sin cargo alguno al 1-877-833-5625. Usted también puede completar su entrevista por teléfono con un entrevistador que habla español. O pueda responder por Internet en <https://respond.census.gov/acs>

For more information about the American Community Survey, visit our web site at <http://www.census.gov/acs/www/>

➡ Please print today's date.

Month Day Year

➡ Please print the name and telephone number of the person who is filling out this form. We may contact you if there is a question.

Last Name

 First Name M

Area Code + Number

➡ How many people are living or staying at this address?
 • **INCLUDE** everyone who is living or staying here for more than 2 months.
 • **INCLUDE** yourself if you are living here for more than 2 months.
 • **INCLUDE** anyone else staying here who does not have another place to stay, even if they are here for 2 months or less.
 • **DO NOT INCLUDE** anyone who is living somewhere else for more than 2 months, such as a college student living away or someone in the Armed Forces on deployment.

Number of people

➡ Fill out pages 2, 3, and 4 for everyone, including yourself, who is living or staying at this address for more than 2 months. Then complete the rest of the form.

FORM **ACS-1/2013KFI**
09 16 2012

OME No. 0007-0010



Person 1

(Person 1 is the person living or staying here in whose name this house or apartment is owned, being bought, or rented. If there is no such person, start with the name of any adult living or staying here.)

1 What is Person 1's name?
 Last Name (Please print) First Name MI

2 How is this person related to Person 1? Mark (X) ONE box
 Person 1

3 What is Person 1's sex? Mark (X) ONE box
 Male Female

4 What is Person 1's age and what is Person 1's date of birth?
 Please report babies as age 0 when the child is less than 1 year old. Print numbers in boxes.
 Age (in years) Month Day Year of birth

→ NOTE: Please answer BOTH Question 5 about Hispanic origin and Question 6 about race. For this survey, Hispanic origins are not races.

5 Is Person 1 of Hispanic, Latino, or Spanish origin?
 No, not of Hispanic, Latino, or Spanish origin
 Yes, Mexican, Mexican Am., Chicano
 Yes, Puerto Rican
 Yes, Cuban
 Yes, another Hispanic, Latino, or Spanish origin. Print origin, for example, Argentinian, Colombian, Dominican, Nicaraguan, Salvadorian, Spaniard, and so on.

6 What is Person 1's race? Mark (X) one or more boxes.
 White
 Black, African Am., or Negro
 American Indian or Alaska Native – Print name of enrolled or principal tribe.
 Asian Indian Japanese Native Hawaiian
 Chinese Korean Guamanian or Chamorro
 Filipino Vietnamese Samoan
 Other Asian. Print race, for example, Bangladeshi, Laotian, Thai, Pakistani, Cambodian, and so on.
 Other Pacific Islander. Print race, for example, Fijian, Tongan, and so on.
 Some other race – Print race.

Person 2

1 What is Person 2's name?
 Last Name (Please print) First Name MI

2 How is this person related to Person 1? Mark (X) ONE box
 Husband or wife Son-in-law or daughter-in-law
 Biological son or daughter Other relative
 Adopted son or daughter Roomer or boarder
 Stepson or stepdaughter Housemate or roommate
 Brother or sister Unmarried partner
 Father or mother Foster child
 Grandchild Other nonrelative
 Parent-in-law

3 What is Person 2's sex? Mark (X) ONE box.
 Male Female

4 What is Person 2's age and what is Person 2's date of birth?
 Please report babies as age 0 when the child is less than 1 year old. Print numbers in boxes.
 Age (in years) Month Day Year of birth

→ NOTE: Please answer BOTH Question 5 about Hispanic origin and Question 6 about race. For this survey, Hispanic origins are not races.

5 Is Person 2 of Hispanic, Latino, or Spanish origin?
 No, not of Hispanic, Latino, or Spanish origin
 Yes, Mexican, Mexican Am., Chicano
 Yes, Puerto Rican
 Yes, Cuban
 Yes, another Hispanic, Latino, or Spanish origin. Print origin, for example, Argentinian, Colombian, Dominican, Nicaraguan, Salvadorian, Spaniard, and so on.

6 What is Person 2's race? Mark (X) one or more boxes.
 White
 Black, African Am., or Negro
 American Indian or Alaska Native – Print name of enrolled or principal tribe.
 Asian Indian Japanese Native Hawaiian
 Chinese Korean Guamanian or Chamorro
 Filipino Vietnamese Samoan
 Other Asian. Print race, for example, Bangladeshi, Laotian, Thai, Pakistani, Cambodian, and so on.
 Other Pacific Islander. Print race, for example, Fijian, Tongan, and so on.
 Some other race – Print race.



Housing

1 Please answer the following questions about the house, apartment, or mobile home at the address on the mailing label.

1 Which best describes this building? *Include all apartments, flats, etc., even if vacant.*

- A mobile home
- A one-family house detached from any other houses
- A one-family house attached to one or more houses
- A building with 2 apartments
- A building with 3 or 4 apartments
- A building with 5 to 9 apartments
- A building with 10 to 19 apartments
- A building with 20 to 49 apartments
- A building with 50 or more apartments
- Boat, RV, van, etc.

2 About when was this building first built?

2000 or later - Specify year

- 1990 to 1999
- 1980 to 1989
- 1970 to 1979
- 1960 to 1969
- 1950 to 1959
- 1940 to 1949
- 1939 or earlier

3 When did PERSON 1 (listed on page 2) move into this house, apartment, or mobile home?

Month Year

A Answer questions 4 - 6 if this is a HOUSE OR A MOBILE HOME; otherwise, SKIP to question 7a.

4 How many acres is this house or mobile home on?

- Less than 1 acre → SKIP to question 6
- 1 to 9.9 acres
- 10 or more acres

5 IN THE PAST 12 MONTHS, what were the actual sales of all agricultural products from this property?

- None
- \$1 to \$999
- \$1,000 to \$2,999
- \$2,500 to \$4,999
- \$5,000 to \$9,999
- \$10,000 or more

6 Is there a business such as a store or barber shop or a medical office on this property?

- Yes
- No

7 a. How many separate rooms are in this house, apartment, or mobile home? *Rooms must be separated by built-in archways or walls that extend out at least 6 inches and go from floor to ceiling.*

- INCLUDE bedrooms, kitchens, etc.
- EXCLUDE bathrooms, porches, balconies, foyers, halls, or unfinished basements.

Number of rooms

b. How many of these rooms are bedrooms? *Count as bedrooms those rooms you would list if this house, apartment, or mobile home were for sale or rent. If this is an efficiency/apartment, print "0".*

Number of bedrooms

8 Does this house, apartment, or mobile home have -

- | | Yes | No |
|---|--------------------------|--------------------------|
| a. hot and cold running water? | <input type="checkbox"/> | <input type="checkbox"/> |
| b. a flush toilet? | <input type="checkbox"/> | <input type="checkbox"/> |
| c. a bathtub or shower? | <input type="checkbox"/> | <input type="checkbox"/> |
| d. a sink with a faucet? | <input type="checkbox"/> | <input type="checkbox"/> |
| e. a stove or range? | <input type="checkbox"/> | <input type="checkbox"/> |
| f. a refrigerator? | <input type="checkbox"/> | <input type="checkbox"/> |
| g. telephone service (rural, which you can both make and receive calls? <i>Include cell phones.</i>) | <input type="checkbox"/> | <input type="checkbox"/> |

9 At this house, apartment, or mobile home - do you or any member of this household own or use any of the following computers?

• EXCLUDE GPS devices, digital music players, and devices with only limited computing capabilities, for example, household appliances

- | | Yes | No |
|---|--------------------------|--------------------------|
| a. Desktop, laptop, netbook, or notebook computer | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Handheld computer, smart mobile phone, or other handheld wireless computer | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Some other type of computer <i>Specify</i> <input type="text"/> | <input type="checkbox"/> | <input type="checkbox"/> |

10 At this house, apartment, or mobile home - do you or any member of this household access the Internet?

- Yes, with a subscription to an internet service
- Yes, without a subscription to an Internet service → SKIP to question 12
- No Internet access at this house, apartment, or mobile home → SKIP to question 12

11 At this house, apartment, or mobile home - do you or any member of this household subscribe to the Internet using -

- | | Yes | No |
|--|--------------------------|--------------------------|
| a. Dial-up service? | <input type="checkbox"/> | <input type="checkbox"/> |
| b. DSL service? | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Cable modem service? | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Fiber optic service? | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Mobile broadband plan for a computer or a cell phone? | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Satellite Internet service? | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Some other service? <i>Specify service</i> <input type="text"/> | <input type="checkbox"/> | <input type="checkbox"/> |



Person 1

➔ Please copy the name of Person 1 from page 2, then continue answering questions below.

Last Name

First Name MI

7 Where was this person born?

In the United States. Print name of state.

Outside the United States. Print name of foreign country, or Puerto Rico, Guam, etc.

8 Is this person a citizen of the United States?

Yes, born in the United States → SKIP to question 13a

Yes, born in Puerto Rico, Guam, the U.S. Virgin Islands, or Northern Mariana

Yes, born abroad of U.S. citizen parent or parents

Yes, U.S. citizen by naturalization. Print year of naturalization.

No, not a U.S. citizen

9 When did this person come to live in the United States? Print numbers in boxes.

Year

10 a. At any time IN THE LAST 3 MONTHS, has this person attended school or college? *Include only nursery or preschool, kindergarten, elementary school, junior school, and schooling which leads to a high school diploma or a college degree.*

- No, has not attended in the last 3 months → SKIP to question 11
- Yes, public school, public college
- Yes, private school, private college, home school

b. What grade or level was this person attending? *Mark X, ONE box.*

- Nursery school, preschool
- Kindergarten
- Grade 1 through 12 - Specify grade 1-12
- College undergraduate years (freshman to senior)
- Graduate or professional school (beyond a bachelor's degree) (for example: MA or PhD program, or medical or law school)

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)

BETTER BACHELOR'S DEGREE

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

F Answer question 12 if this person has a bachelor's degree or higher. Otherwise, SKIP to question 13.

12 This question focuses on this person's BACHELOR'S DEGREE. Please print below the specific major(s) of any BACHELOR'S DEGREES this person has received. (for example: chemical engineering, elementary teacher education, organizational psychology)

13 What is this person's ancestry or ethnic origin?

(For example: Italian, Jamaican, African Am., Cambodian, Cape Verdean, Norwegian, Dominican, French Canadian, Korean, Korean Japanese, Polish, Nigerian, Mexican, Taiwanese, Ukrainian, and so on.)

14 a. Does this person speak a language other than English at home?

- Yes
- No → SKIP to question 15a

b. What is this language?

(For example: Korean, Italian, Spanish, Vietnamese)

c. How well does this person speak English?

- Very well
- Well
- Not well
- Not at all

15 a. Did this person live in this house or apartment 1 year ago?

- Person is under 1 year old → SKIP to question 10
- Yes, this house → SKIP to question 10
- No, outside the United States and Puerto Rico - Print name of foreign country, or U.S. Virgin Islands, Guam, etc., below, then SKIP to question 10

- No, different house in the United States or Puerto Rico

b. Where did this person live 1 year ago?

Address (Number and street name)

Name of city, town, or post office

Name of U.S. county or municipio in Puerto Rico

Name of U.S. state or Puerto Rico

ZIP Code



Person 1 (continued)

16 Is this person **CURRENTLY** covered by any of the following types of health insurance or health coverage plans? Mark "Yes" or "No" for EACH type of coverage in items a - h.

- | | Yes | No |
|---|--------------------------|--------------------------|
| a. Insurance through a current or former employer or union (of this person or another family member) | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Insurance purchased directly from an insurance company (by this person or another family member) | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Medicare, for people 65 and older, or people with certain disabilities | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Medicaid, Medical Assistance, or any kind of government-assistance plan for those with low incomes or a disability | <input type="checkbox"/> | <input type="checkbox"/> |
| e. TRICARE or other military health care | <input type="checkbox"/> | <input type="checkbox"/> |
| f. VA (including, if applicable, ever used or enrolled for VA health care) | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Indian Health Service | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Any other type of health insurance or health coverage plan - Specify | <input type="checkbox"/> | <input type="checkbox"/> |

17 a. Is this person deaf or does he/she have serious difficulty hearing?

- Yes
 No

b. Is this person blind or does he/she have serious difficulty seeing even when wearing glasses?

- Yes
 No

G Answer question 19a - c if this person is 5 years old or over. Otherwise, SKIP to the questions for Person 2 on page 12.

18 a. Because of a physical, mental, or emotional condition, does this person have serious difficulty concentrating, remembering, or making decisions?

- Yes
 No

b. Does this person have serious difficulty walking or climbing stairs?

- Yes
 No

c. Does this person have difficulty dressing or bathing?

- Yes
 No

H Answer question 19 if this person is 15 years old or over. Otherwise, SKIP to the questions for Person 2 on page 12.

19 Because of a physical, mental, or emotional condition, does this person have difficulty doing errands alone such as visiting a doctor's office or shopping?

- Yes
 No

20 What is this person's marital status?

- Now married
 Widowed
 Divorced
 Separated
 Never married → SKIP to **1**

21 In the PAST 12 MONTHS did this person get -

- | | Yes | No |
|--------------|--------------------------|--------------------------|
| a. Married? | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Widowed? | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Divorced? | <input type="checkbox"/> | <input type="checkbox"/> |

22 How many times has this person been married?

- Once
 Two times
 Three or more times

23 In what year did this person last get married?

Year

I Answer question 24 if this person is female and 15 - 50 years old. Otherwise, SKIP to question 25a.

24 Has this person given birth to any children in the past 12 months?

- Yes
 No

25 a. Does this person have any of his/her own grandchildren under the age of 18 living in this house or apartment?

- Yes
 No → SKIP to question 25

b. Is this grandparent currently responsible for most of the basic needs of any grandchildren under the age of 18 who live in this house or apartment?

- Yes
 No → SKIP to question 25

c. How long has this grandparent been responsible for these grandchildren? If the grandparent is financially responsible for more than one grandchild, answer the question for the grandchild for whom the grandparent has been responsible for the longest period of time.

- Less than 6 months
 6 to 11 months
 1 or 2 years
 3 or 4 years
 5 or more years

26 Has this person ever served on active duty in the U.S. Armed Forces, Reserves, or National Guard? Mark (X) ONE box.

- Never served in the military → SKIP to question 29a
 Only on active duty for training in the Reserves or National Guard → SKIP to question 29a
 Now on active duty
 On active duty in the past, but not now

27 When did this person serve on active duty in the U.S. Armed Forces? Mark (X) a box for EACH period in which this person served, even if just for part of the period.

- September 2001 or later
 August 1990 to August 2001 (including Persian Gulf War)
 May 1975 to July 1990
 Vietnam era (August 1964 to April 1975)
 February 1955 to July 1964
 Korean War (July 1950 to January 1955)
 January 1947 to June 1950
 World War II (December 1941 to December 1945)
 November 1941 or earlier

28 a. Does this person have a VA service-connected disability rating?

- Yes (such as 1%, 10%, 20%, ..., 100%)
 No → SKIP to question 29a

b. What is this person's service-connected disability rating?

- 0 percent
 10 or 20 percent
 30 or 40 percent
 50 or 60 percent
 70 percent or higher



Person 1 (continued)

29 a. LAST WEEK, did this person work for pay at a job (or business)?

- Yes → SKIP to question 30
 No – Did not work (or retired)

b. LAST WEEK, did this person do ANY work for pay, even for as little as one hour?

- Yes
 No → SKIP to question 36a

30 At what location did this person work LAST WEEK? If this person worked at more than one location, print where he or she worked most last week.

a. Address (Number and street name)

If the exact address is not known, give a description of the location such as the building name or the nearest street or intersection.

b. Name of city, town, or post office

c. Is the work location inside the limits of that city or town?

- Yes
 No, outside the city/town limits

d. Name of county

e. Name of U.S. state or foreign country

f. ZIP Code

31 How did this person usually get to work LAST WEEK? If this person usually used more than one method of transportation during the trip, mark (X) the box of the one used for most of the distance.

- | | |
|---|--|
| <input type="checkbox"/> Car, truck, or van | <input type="checkbox"/> Motorcycle |
| <input type="checkbox"/> Bus or trolley bus | <input type="checkbox"/> Bicycle |
| <input type="checkbox"/> Streetcar or trolley car | <input type="checkbox"/> Walked |
| <input type="checkbox"/> Subway or elevated | <input type="checkbox"/> Worked at home → SKIP to question 39a |
| <input type="checkbox"/> Railroad | <input type="checkbox"/> Other method |
| <input type="checkbox"/> Ferryboat | |
| <input type="checkbox"/> Taxicab | |

J Answer question 32 if you marked "Car, truck, or van" in question 31. Otherwise, SKIP to question 33.

32 How many people, including this person, usually rode to work in the car, truck, or van LAST WEEK?

Person(s)

33 What time did this person usually leave home to go to work LAST WEEK?

Hour Minute

 :

- a.m.
 p.m.

34 How many minutes did it usually take this person to get from home to work LAST WEEK?

Minutes

K Answer questions 35 – 38 if this person did NOT work last week. Otherwise, SKIP to question 39a.

35 a. LAST WEEK, was this person on layoff from a job?

- Yes → SKIP to question 35c
 No

b. LAST WEEK, was this person TEMPORARILY absent from a job or business?

- Yes, on vacation, temporary illness, maternity leave, other family/personal reasons, bad weather, etc. → SKIP to question 38
 No → SKIP to question 36

c. Has this person been informed that he or she will be recalled to work within the next 6 months OR been given a date to return to work?

- Yes → SKIP to question 37
 No

36 During the LAST 4 WEEKS, has this person been ACTIVELY looking for work?

- Yes
 No → SKIP to question 39

37 LAST WEEK, could this person have started a job if offered one, or returned to work if recalled?

- Yes, could have gone to work
 No, because of own temporary illness
 No, because of all other reasons (in school, etc.)

38 When did this person last work, even for a few days?

- Within the past 12 months
 1 to 5 years ago → SKIP to **L**
 Over 5 years ago or never worked → SKIP to question 41

39 a. During the PAST 12 MONTHS (52 weeks), did this person work 50 or more weeks? Count paid time off as work.

- Yes → SKIP to question 40
 No

b. How many weeks DID this person work, even for a few hours, including paid vacation, paid sick leave, and military service?

- 60 to 62 weeks
 48 to 60 weeks
 40 to 47 weeks
 27 to 39 weeks
 19 to 26 weeks
 13 weeks or less

40 During the PAST 12 MONTHS, in the WEEKS WORKED, how many hours did this person usually work each WEEK?

Usual hours worked each WEEK



Person 1 (continued)

L Answer questions 41 - 46 if this person worked in the past 5 years. Otherwise, SKIP to question 47.

41 - 46 CURRENT OR MOST RECENT JOB ACTIVITY. Describe clearly the person's chief job activity or business (or work, if this person had more than one job, describe the one at which this person worked the most hours, if this person held no job or business last week, give information for his/her last job or business.

- 41** Was this person - Mark (X) ONE box.
- an employee of a PRIVATE FOR-PROFIT company or business, or of an individual, for wages, salary, or commissions?
 - an employee of a PRIVATE NOT-FOR-PROFIT, tax exempt, or charitable organization?
 - a local GOVERNMENT employee (city, county, etc.)?
 - a state GOVERNMENT employee?
 - a Federal GOVERNMENT employee?
 - SELF-EMPLOYED in own NOT INCORPORATED business, professional practice, or farm?
 - SELF-EMPLOYED in own INCORPORATED business, professional practice, or farm?
 - working WITHOUT PAY in family business or farm?

42 For whom did this person work? if now on active duty in the Armed Forces, mark (X) this box → and print the branch of the Armed Forces.

Name of company, business, or other employer:

43 What kind of business or industry was this? Describe the activity at the location where employed. (For example: hospital, newspaper publishing, mail order house, auto engine manufacturing, bank)

- 44** Is this mainly - Mark (X) ONE box.
- manufacturing?
 - wholesale trade?
 - retail trade?
 - other (agriculture, construction, service, government, etc.)?

45 What kind of work was this person doing? (For example: registered nurse, personnel manager, supervisor of order department, secretary, accountant)

46 What were this person's most important activities or duties? (For example: patient care, insurance billing, supervising order clerks, typing and filing, reconciling financial records)

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 to 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, health, disk, or other items.

Yes → \$ 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 → \$ 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 → \$ Loss

No

TOTAL AMOUNT for past 12 months

d. Social Security or Railroad Retirement.

Yes → \$ No

TOTAL AMOUNT for past 12 months

e. Supplemental Security Income (SSI).

Yes → \$ No

TOTAL AMOUNT for past 12 months

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

Yes → \$ No

TOTAL AMOUNT for past 12 months

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

Yes → \$ 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 house.

Yes → \$ No

TOTAL AMOUNT for past 12 months

48 What was this person's total income during the PAST 12 MONTHS? If net income was a loss, enter the amount and mark (X) the "Loss" box next to the dollar amount.

None Loss

\$

TOTAL AMOUNT for past 12 months

Continue with the questions for Person 2 on the next page. If no one is listed as person 2 on page 2, SKIP to page 28 for mailing instructions.

