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# 2013 AMERICAN COMMUNITY SURVEY RESEARCH AND EVALUATION REPORT MEMORANDUM SERIES #ACS14-RER- 04

MEMORANDUM FOR ACS Research and Evaluation Advisory Group

From: James B. Treat(signed on March 11, 2014)

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American Community Survey Office

Subject: American Community Survey Item Nonresponse Rates: Mail versus Internet

Attached is the final American Community Survey (ACS) Research and Evaluation report, "American Community Survey Item Nonresponse Rates: Mail versus Internet". We conducted this evaluation to calculate item nonresponse rates across mail and Internet returns to compare the completeness of returns by mode. If you have any questions about this report, please contact Sandra Clark at 301-763-5884.

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# American Community Survey Item Nonresponse Rates: Mail versus Internet

FINAL REPORT

Sandra Luckett Clark



### 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. 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 evaluation of the 2011 test data included a review of item nonresponse rates. Matthews et al. (2012) and Tancreto et al. (2012) found that Internet returns, when compared with mail returns, had lower item nonresponse rates for basic demographic and housing items, but higher item nonresponse rates for detailed social and economic items.

The purpose of this evaluation is to document item nonresponse rates for mail and Internet returns and compare the completeness of returns by mode. This evaluation uses 2013 ACS production data and covers several survey items. The best source for comparing the completeness of item-level responses in these two modes is the final edited data but those data will not be available until we run the full set of edit and allocation programs. We plan to document and compare those final item allocation rates later this year. To preview the completeness of mail and Internet responses, we chose to calculate a set of item nonresponse rates based on incoming nonresponse before follow-up operations and editing. There are some expected limitations in using these raw response files which are detailed in the methodology section.

### **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). 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 only on responses from the mail and Internet modes before FEFU.

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 period<sup>2</sup>.

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

Mail/Internet

Telephone

Visit

Table 1. Data Collection by Panel and Calendar Month

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

Apr-13

- **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

<sup>1</sup> 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.

<sup>&</sup>lt;sup>2</sup> 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 returns are received, 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. To be consistent with mail, Internet forms 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. There are additional processing operations; however, they are outside the scope of this analysis.

### **Research Questions**

This report answers the following research questions:

- 1. Are the Internet item nonresponse rates calculated using 2013 ACS production data in line with projections based on the November 2011 ACS Internet Test?
- 2. How do the 2013 ACS Internet item nonresponse rates compare to the 2013 ACS mail item nonresponse rates?
- 3. How much of the item nonresponse in each mode is due to households that break off from the survey and leave the detailed population section completely blank for at least one person in the household?

### **Methodology and Limitations**

This evaluation uses self-response data from the January 2013 ACS panel, which includes data received from December 17, 2012 (the first day the Internet went live) until April 10, 2013 (the close-out date for the January panel). Of the January panel's mailable sample, 28 percent responded by Internet and 23 percent responded by mail. We received most of the responses in late December and January; however, some trickled in the last 2 months of the 3-month data collection period. We include data from Spanish mail and Internet returns in the analysis; however, we exclude data from group quarters and Puerto Rico. We also exclude data received from TQA and FEFU.

We use files created after the NORM operation for this analysis. 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 writeins. The files contain responses provided by respondents for every item on the survey questionnaire (for the mail mode) or instrument (for the Internet mode). 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. Most Internet returns with this status are not counted 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 when the insufficient return is the only return we get for the household. Therefore, these "insufficient partials" are included in some of the statistics created for this analysis. To be consistent with the Internet Test estimates, we did not include insufficient partials in the statistics used to answer research question 1. Insufficient partial returns meet the criteria to be considered a breakoff and therefore are also not included in the statistics used to answer research question 3.

We organize the data into two research files. One file includes records with housing-level items, and one includes records with person-level items. The housing-level file contains 137,798 housing unit records (62,302 mail and 75,496 Internet). Vacant housing units are in this file, but are only included in the calculations for the items in which they apply. The person-level file contains 324,362 person records (134,982 mail and 189,380 Internet). The person-level files

include person records for up to five people in the household. We exclude person records for persons six through twelve. The mail questionnaire only has space for a few basic demographic items (name, sex, and age) for persons six through twelve and we follow up by phone to obtain responses for the remaining items. For this reason, all of the detailed social and economic items for these people are missing from the mail data files. While the Internet instrument collects data for all persons, to make the comparison more equitable, this analysis only includes mail and Internet records for persons one through five.

Appendix A shows a sample mail questionnaire with a item label shown in red font. This can be used as a reference to match the items mentioned in the report tables to their corresponding question on the mail questionnaire. In most cases, the questions on the Internet instrument match the one on the mail questionnaire.

To answer the research questions, we calculate item nonresponse rates. We define the item nonresponse rate as the number of missing answers for a particular item divided by the number of respondents in universe for the item. Not all respondents are in universe for every item on the ACS questionnaire. For some items, a respondent is in universe based on their answer to a previous question. For example, there are age requirements for some questions. Because we use unedited data, we had to decide what to do if a respondent did not provide the critical information needed to define a universe. We initially chose to exclude these instances from our eligible universe (i.e., assume that they were not eligible to respond to the item). For example, to be in universe for the "worked last week" item a person must have a response of greater than 15 to the age item. If the age item is missing, we do not know if the person was in universe for the item. For the "worked last week" item, we exclude from the universe (denominator) any person record with a missing age. They, however, are included in both the numerator and denominator we use to calculate the item nonresponse rate for the age item.

We expected that this limitation could depress the true missing data rate for the detailed population items with universes that rely on answers to other items. To quantify this limitation, we conducted a sensitivity analysis to gauge the variability of the item nonresponse rates depending on how we defined the item's universe. For each item, we calculated two universes. One universe included all cases that were missing the data necessary to determine their universe status. The other universe excluded these cases. We found large differences in the item nonresponse rates that we calculated for items with universes that depend on answers to anything other than the age item. Therefore, we decided to include in this report only the subset of items that are asked of either the entire population or that are restricted to a certain age group. So, we exclude item nonresponse rates for items such as hours worked, which is only asked about people who worked during the last 12 months. Items left missing because the respondent left the survey early are included in our nonresponse count as long as we have enough data to determine if the person record was in universe for the item.

To answer research question 3, we identify and exclude households that left the survey (break off) early, thus limiting the universes to only those respondents who we believe saw the required survey items for everyone in their household. For Internet surveys, this is easy to do because we know when respondents leave the survey, however we have no definite way to know this for mail responses. To be consistent, for both modes we identify households that left the survey early as households with NO detailed person data for one or more rostered persons in the household. We define a rostered person as someone for whom we have a response for at least one of the following items in the basic demographic section: sex, age, date of birth, Hispanic origin or race. A total of 10,653 households (6,842 Internet and 3,811 mail) of the 137,798 households in our research meet the criterion, and are identified as a household that left the survey early. We remove all the person records for these households (8,811 person records from mail returns and 22,645 person records from Internet returns) and re-calculate the item nonresponse rates to answer research question 3. For the purposes of this analysis, we refer to these households as breakoffs. Note that breakoffs can be defined multiple ways and the definition used here is different than the definition used in other evaluations using ACS data. For this part of the analysis, we only examine the detailed population items. We focus only on the items in this section because we know this section is affected the most by breakoffs. Horwitz et al. (2013) found that fewer than 17 percent of households that break off do so in the basic demographic or housing sections of the survey<sup>3</sup>.

We weight all item nonresponse rates using the base weight, which accounts for the sample design. We conduct statistical significance testing for many of the estimates shown in the report. To do this, we use replicate weights<sup>4</sup> to calculate the margins of error of the differences between the mail and Internet estimates to determine if the differences are statistically significant. Our tests use a 90 percent confidence level. We did not make adjustments for multiple comparisons.

The rates in this study are calculated on pre-edited data and therefore are not the official ACS item nonresponse rates. Also, the results in this study are from data collected using the ACS data collection methods. The ACS first attempts to collect data from respondents through the Internet survey, then two weeks later we follow up with those who have not responded by sending a mail questionnaire. Respondents are not assigned to respond by mail or Internet randomly, rather those who get both modes ultimately have a choice in their response method. Therefore, the results in this report are not generalizable to how respondents respond to all mail surveys and Internet surveys.

<sup>&</sup>lt;sup>3</sup> Horwitz et al. (2013) define breakoffs slightly different than this evaluation. Their definition of breakoffs includes households that provide some detailed population data for all household members but do not make it to the end of the survey. These households would not be considered breakoffs in this research.

<sup>&</sup>lt;sup>4</sup> The ACS uses successive difference replication to produce the replicate weights. For more information see U.S. Census Bureau (2009).

#### **Results**

Are the Internet item nonresponse rates calculated using 2013 ACS production data in line with projections based on the November 2011 ACS Internet Test?

To answer this question we used the same definitions for Internet responses that Matthews et al. (2012) used in their 2011 research. Specifically, we included all complete and sufficient partial Internet responses. However, there are some important differences in the test and production data sources. The data used to calculate the 2011 ACS Internet Test rates were collected only during the month of November 2011, while the data used to calculate the 2013 ACS rates were collected throughout the full January 2013 panel's data collection period, which consisted of three months. Unlike the 2013 ACS, the 2011 Test did not include the CATI/CAPI modes. Therefore, the 2011 data did not benefit from phone calls and personal visits that could have prompted additional self response. In addition, the 2011 ACS Internet Test rates were calculated for two separate strata: targeted and not targeted. The targeted stratum consisted of households with people who are young, mobile, and advantaged homeowners. The expectation was that these households are more likely to use the Internet. The not-targeted stratum included all remaining households. Roughly 60 percent of the sample was included in the not targeted stratum and 40 percent in the targeted stratum. The 2013 ACS production data represent the total population and are not broken out by these strata. Finally, the 2013 data source uses the push accelerated with post card notification strategy<sup>5</sup>, while the 2011 data was collected from a combination of notification strategies used during the test. Detailed information describing the stratification and notification strategies used in the November 2011 test is included in Matthews et al. (2012).

Table 2 displays item nonresponse rates from Internet responses from the January 2013 ACS production panel and the two strata-level estimates from the November 2011 ACS Internet Test. Due to the differences noted above, we chose not to make direct comparisons between the rates and, therefore, did not calculate margins of errors. The purpose of this research question is to see if the 2011 test produced reasonable projections of what we found in 2013 production.

Table 2. 2013 ACS and 2011 ACS Internet Test - Internet Item Nonresponse Rates

	I	Item Nonresponse Rate								
ГГЕМ	2013 ACS (Jan. panel)	2011 ACS Internet Test	2011 ACS Internet Test (Not Targeted)							
11111	(Jan. paner)	(Targeted)	(Not Targeteu)							
Basic Demographic Section	Basic Demographic Section									
Age/Date of Birth	0.5	0.4	0.4							
Sex	0.1	0.1	0.1							

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<sup>&</sup>lt;sup>5</sup> The push accelerated with post card notification strategy was designed to push respondents towards completing the online survey. Respondents first received an invitation to complete the survey online. After two weeks, mail questionnaries were sent to nonrespondents. Those who still had not responded by Internet or mail after two more weeks received reminder post cards.

Table 2. continued...

	I	tem Nonresponse	Rate
ІГЕМ	2013 ACS (Jan. panel)	2011 ACS Internet Test (Targeted)	2011 ACS Internet Test (Not Targeted)
Relationship	0.0	0.1	0.0
Hispanic Origin	0.3	0.3	0.3
Race	0.3	0.3	0.3
Housing Section			
Building Type	0.2	0.1	0.0
Rooms	0.7	0.5	0.4
Vehicles	1.9	1.2	1.9
Tenure	1.8	1.2	1.7
Detailed Population Section			
Place of Birth	7.2	6.4	7.4
Educationnal Attainment	7.0	6.2	7.4
Language Other Than English	7.3	6.4	7.7
Health Insurance	8.5	7.5	8.8
Housing Section			
Food Stamps	2.0	1.2	1.9
Hearing Difficulty	8.2	7.3	8.7
Worked Last Week	6.9	5.7	7.1

Source: 2013 American Community Survey January Panel and November 2011 ACS Internet Test

A particular stratum is not used for the 2013 ACS. The 2013 ACS rates are closer to the 2011 Internet Test not-targeted stratum, which make sense because that group represents a larger share (60 percent) of the test sample. In general, the 2013 ACS rates are similar to those from the 2011 Internet Test and we did not find any noteworthy differences.

# How do the 2013 ACS Internet item nonresponse rates compare to the 2013 ACS mail item nonresponse rates?

To answer this question we compare the item nonresponse rates for all nonblank mail returns with all Internet responses that we will likely use in production as a response. This includes Internet records that we determine to be complete responses, sufficient partial responses, and insufficient partial responses for occupied housing units without a response from another data collection mode. Table 3 shows the Internet and mail item nonresponse rates for the five items in the basic demographic section. Note that they differ from the results in Table 2 due to the differences in the universes. The table includes a column showing the difference between the two rates and another column showing the margin of error of the difference. A negative difference means that the Internet mode has lower levels of missing data. All the differences in Table 3 are statistically significant at the 90 percent confidence level.

Table 3. 2013 ACS Mail and Internet Item Nonresponse Rates – Basic Demographic Section Items

	Item Nonre	esponse Rate		
ІТЕМ	Internet	Mail	Percentage Point Difference (Internet - Mail)	Margin of Error of the Difference (+/-)
Relationship	0.1	1.3	-1.3	0.1
Sex	0.1	3.0	-2.9	0.1
Age/Date of Birth	0.8	1.7	-0.9	0.1
Hispanic Origin	0.6	7.2	-6.5	0.2
Race	0.7	3.4	-2.7	0.1

Source: 2013 American Community Survey January Panel

All items in the basic demographic section of the survey have low item nonresponse rates for both mail and Internet; however, the rates are lower for Internet than mail (ranging from about 1 to about 6 percentage points lower). The item nonresponse rate for "Hispanic Origin" on mail responses (at 7.2 percent) is somewhat of an outlier compared with the others.

Table 4 shows the Internet and mail item nonresponse rates for the 24 items in the housing section asked of all housing units<sup>6</sup>. All the differences are statistically significant at the 90 percent confidence level.

**Table 4. 2013 ACS Mail and Internet Item Nonresponse Rates – Housing Section Items** 

	Item Nonre	esponse Rate		
			Percentage Point Difference	Margin of Error of the Difference
ITEM	Internet	Mail	(Internet - Mail)	(+/-)
Building Type	0.5	2.7	-2.3	0.1
Year Built	1.6	8.1	-6.5	0.2
Month Moved In	2.5	9.5	-6.9	0.3
Year Moved In	2.6	5.0	-2.5	0.2
Rooms	1.1	3.9	-2.7	0.1
Bedrooms	1.8	3.5	-1.7	0.2
Running Water	0.8	2.1	-1.3	0.1
Toilet	1.2	2.3	-1.2	0.1
Bath	1.3	2.4	-1.1	0.1
Sink	1.3	2.4	-1.1	0.1
Stove	1.3	2.4	-1.1	0.1
Refrigerator	1.4	2.6	-1.2	0.1
Telephone	1.0	3.8	-2.8	0.2
Own Computer	2.3	3.1	-0.8	0.2
Internet Access	2.4	6.2	-3.8	0.2

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<sup>&</sup>lt;sup>6</sup> The remaining items in this section are not shown due to the universe limitation associated with using unedited data, which is mentioned in the methodology and limitation section of the report.

Table 4. continued...

	Item Nonre	esponse Rate		
ІГЕМ	Internet	Mail	Percentage Point Difference (Internet - Mail)	Margin of Error of the Difference (+/-)
Vehicles	2.4	2.8	-0.5	0.2
Heating Fuel	2.5	8.6	-6.1	0.2
Electricity Costs	4.4	6.4	-2.1	0.2
Gas Costs	4.1	13.9	-9.8	0.3
Water Usage Costs	4.3	9.6	-5.3	0.2
FuelCosts	2.9	18.5	-15.6	0.2
Food Stamps	2.5	3.6	-1.0	0.1
CondominiumCosts	2.4	6.5	-4.0	0.2
Tenure	2.3	5.5	-3.2	0.2

Source: 2013 American Community Survey January Panel

The item nonresponse rates from Internet returns are lower than the item nonresponse rates from mail returns for all items in the housing section. Items requiring respondents to provide a monetary amount (i.e., utility costs associated with electricity, gas, water, and fuel) have among the highest item nonresponse rates for both modes. However, the rates for these items are particularly high for mail returns. Appendix B shows the electricity, gas, water, and fuel items from the mail questionnaire. All four items are laid out the same, so it is interesting that the mail item nonresponse rates range from 6.4 percent to 18.5 percent. Perhaps the gas and fuel cost items are higher than the electricity and water items because these amounts are more difficult for respondents to remember. They may fluctuate from month to month and instead of approximating or verifying the gas or fuel amounts, some respondents may choose to skip over these items. Water bills are often a fixed amount and many electricity companies offer their customers a fixed option. Therefore, the amount for these items may be easier for respondents to recall. In addition, there may be some confusion for respondents who pay for electricity and gas together. While there are instructions for how to handle these situations, it is possible that the instructions are not read and respondents only complete one of the items and skip over the other.

The Internet rates for these four items, particularly for the fuel and gas cost items, are quite a bit lower than the mail item rates. The mail item nonresponse rate is 18.5 percent for the fuel costs item and 13.9 percent for the gas cost item. For Internet, these item nonresponse rates are 2.9 percentage and 4.1 percent, respectively. Differences in the Internet and mail questions for the fuel and gas items may help explain the lower Internet rates. Appendix C shows the Internet questions. Notice that there is an additional question (asking about usage) located before the gas cost and fuel cost items. Also, the cost items are broken into two parts<sup>7</sup>. The additional questions/parts may help Internet respondents understand and navigate through these items. It is

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<sup>&</sup>lt;sup>7</sup> The water and electricity items on the Internet survey do not include the additional item asking about usage. However, the items are broken into two parts like the gas and fuel cost items.

also possible that Internet responders pay their bills online and may have easy access to their statements showing these amounts while they are completing the survey online.

Table 5 shows the Internet and mail item nonresponse rates for 7 items in the detailed population section that are asked of all people in the household and an additional 18 items that are asked of persons in specific age groups<sup>8</sup>. All of the differences are statistically significant at the 90 percent confidence level.

Table 5. 2013 ACS Mail and Internet Item Nonresponse Rates – Detailed Population Section Items

	Item Nonre	esponse Rate		
ІТЕМ	Internet	Mail	Percentage Point Difference (Internet - Mail)	Margin of Error of the Difference (+/-)
All people				
Place of Birth	8.0	6.0	2.1	0.2
Citizenship	8.0	6.5	1.5	0.2
Ancestry	14.2	19.2	-5.0	0.4
Language Other Than English	7.9	7.5	0.4	0.3
Health Insurance	9.4	7.1	2.3	0.3
Hearing Difficulty	9.1	6.8	2.3	0.2
Vision Difficulty	9.4	7.5	1.9	0.3
Population 1 year and over			•	
Move in the Last Year	8.1	10.6	-2.5	0.3
Population 3 years and over				
School Enrollment School Enrollment	7.8	8.3	-0.5	0.2
Educational Attainment	7.6	7.9	-0.3	0.2
Population 5 years and over				
Cognitive Difficulty	8.6	9.5	-0.8	0.3
Ambulatory Difficulty	8.7	9.8	-1.1	0.3
Self-care Difficulty	8.8	9.7	-0.9	0.3
Population 15 years and over			•	
Independent Living Difficulty	8.0	9.6	-1.6	0.3
MaritalStatus	4.4	9.0	-4.6	0.3
Military Service	7.7	10.8	-3.1	0.3
Grandparent With				
Grandchildren	8.5	7.9	0.6	0.5
Worked Last Week	7.5	8.2	-0.7	0.3
Interest Income	12.0	25.2	-13.2	0.4
Social Security Income	11.2	20.1	-8.9	0.4
Supplemental Security Income	10.6	20.9	-10.3	0.4
Public Assistance Income	10.8	19.8	-8.9	0.4
Retirement Income	11.1	19.9	-8.7	0.4

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<sup>&</sup>lt;sup>8</sup> The remaining items in this section are not shown due to the universe limitation as sociated with using unedited data, which is mentioned in the methodology and limitation section of the report.

Table 5. continued...

	Item Nonre	esponse Rate		
			Percentage Point Difference	Margin of Error of the Difference
ITEM	Internet	Mail	(Internet - Mail)	(+/-)
Other Income	10.7	19.8	-9.1	0.4
TotalIncome	13.3	23.4	-10.2	0.4

Source: 2013 Amercian Community Survey January Panel

For both mail and Internet returns, the nonresponse rates for the detailed population items are higher than the rates for the items in the other sections. When comparing mail and Internet rates, most item nonresponse rates in the detailed population section are within five percentage points of one another and many are within two percentage points. The exceptions are the items asking about income sources, which require people to provide a monetary amount. For the income items, the Internet nonresponse rates are nearly half the mail nonresponse rates.

Interestingly, all but one of the items asked of all household members have slightly higher item nonresponse rates for Internet versus mail responses. In addition to being asked of all household members, these items are located in the beginning of the detailed population section. We believe some mail respondents may answer these items for everyone in the household while they skip over other items they may consider more difficult or burdensome due to skip instructions and/or navigation difficulties. It is more difficult for Internet responders to skip through items and therefore some may chose to skip the entire detailed population section for one or more household members.

The only item asked of all household members having a higher Internet item nonresponse rate than mail item nonresponse rate is the ancestry item. This item requires people to write-in an ancestry. It appears that all items that require write-in responses, rather than provide checkbox or radio button response options, have lower item nonresponse rates for Internet responses when compared with mail responses.

The items that are asked of restricted age groups (with the exception of grandparents with grandchildren item) have lower item nonresponse rates for Internet versus mail responses. When reviewing nonresponse rates for items restricted to a particular age group, it is important to consider the universe limitation mentioned in the methodology section. As shown in Table 2, the nonresponse rate for the age item is 1.7 percent for mail returns compared to 0.8 percent for Internet returns. Therefore, this limitation could have a larger impact on the mail item nonresponse rates than the Internet item nonresponse rates for items asked of restricted age groups. To research this, we calculate additional item nonresponse rates for these "age-restricted" items. Unlike the estimates shown in Table 5, the universes for these calculations include the cases missing a response for age. Including these cases, results in slightly higher item

nonresponse rates for both mail and Internet returns. However, the results still show lower item nonresponse rates for Internet versus mail responses.

# How much of the item nonresponse in each mode is due to households that break off from the survey and leave the detailed population section completely blank for at least one person in the household?

As noted in the methodology section, more Internet returns (than mail returns) break off before answering the detailed person section for every household member. Of the approximately 189,000 persons on Internet responses about 23,000 (12.2 percent) are from households that did not complete detailed person data for everyone in the household. For mail returns, this estimate is about 6.6 percent (approximately 9,000 of 135,000). We know of at least two reasons for this. First, respondents who break off while completing a mail survey can choose not to mail back the questionnaire; however, we receive all data provided on Internet surveys even if the respondent breaks off without completing or submitting the survey. In addition, mail respondents are less likely to break off at a particular item because they have the survey in their hands and can move around freely and answer questions as they choose. Therefore, mail responders may answer random questions for each person in the household (and not be considered a breakoff or incomplete), while Internet responders may answer questions in the detailed section for only one or two people in the household and then break off before getting to the detailed population items for the other people in the household.

Breakoffs contribute to higher item nonresponse rates for questions located towards the end of the survey since all eligible missing responses are counted as nonresponse when calculating the item nonresponse rates - even responses that are missing because the respondent left the survey before getting to the item. By removing all person records for households that break off, we are able to focus on items skipped over and intentionally left blank by respondents. As mentioned in the methodology section, we define breakoffs as returns missing responses for all the detailed population items for at least one person in the household. Table 6 contains the mail and Internet item nonresponse rates calculated for all people (as shown in Table 5) along with the item nonresponse rates that exclude population records from returns we classify as breakoffs (8,811 person records from mail returns and 22,645 person records from Internet returns are excluded).

We did not calculate margins of errors for the differences shown in Table 6, however we did calculate margins of errors for the differences between mail and Internet item nonresponse rates excluding records for households that break off (all of the differences are statistically significant at the 90 percent confidence level). These are shown in Appendix D. The margins of error are very small, ranging from 0.1 to 0.4 percent.

Table~6.~2013~ACS~Mail~and~Internet~Item~Nonresponse~Rates~(Excluding~Breakoffs~and~for~All~Persons)-Detailed~Population~Section~Items

		Internet			Mail	
		sponse Rate	Percentage	Item Nonres	pons e Rate	Percentage
Item	Excluding break offs	All persons	Point Difference	Excluding break offs	All persons	Point Difference
All people	breakons	riii persons	211101 01100	or currons	THI PETSONS	2111010110
Place of Birth	0.1	8.0	-7.9	1.3	6.0	-4.7
Citizenship	0.1	8.0	-7.9	2.0	6.5	-4.5
Ancestry	6.5	14.2	-7.7	15.1	19.2	-4.1
Language Other		11.2	7.7		17.2	
Than English	0.6	7.9	-7.3	3.4	7.5	-4.1
Health Insurance	1.2	9.4	-8.2	2.5	7.1	-4.6
Hearing		,,,,	3.2		,,,_	
Difficulty	0.9	9.1	-8.2	2.2	6.8	-4.6
Vision Difficulty	1.2	9.4	-8.2	2.9	7.5	-4.6
Population 1 year	andover					
Move in the Last						
Year	0.5	8.1	-7.6	6.6	10.6	-4.0
Population 3 year	s and over					
School						
Enrollment	0.4	7.8	-7.4	4.2	8.3	-4.1
Educational						
Attainment	0.2	7.6	-7.4	3.9	7.9	-4.0
Population 5 year	s and over					
Cognitive						
Difficulty	1.2	8.6	-7.4	5.5	9.5	-4.0
Ambulatory						
Difficulty	1.2	8.7	-7.5	5.8	9.8	-4.0
Self-care						
Difficulty	1.3	8.8	-7.5	5.7	9.7	-4.0
Population 15 year	rs and over				T	
Independent		0.0				
Living Difficulty	1.2	8.0	-6.8	5.8	9.6	-3.8
Marital Status	0.5	4.4	-3.9	5.1	9.0	-3.9
Grandparent						
With Grandchildren	0.0	0.7	7.	4.2	7.0	2.7
Military Service	0.9	8.5	-7.6	4.2	7.9	-3.7
Worked Last	0.8	7.7	-6.9	6.9	10.8	-3.9
Week	0.7	7.5	7.0	4.2	0.2	4.0
Interest Income	0.5	7.5	-7.0	4.2	8.2	-4.0
Social Security	3.7	12.0	-8.3	21.7	25.2	-3.5
Income	2.7	11.2	0.5	162	20.1	2.0
Supplemental	2.7	11.2	-8.5	16.3	20.1	-3.8
Security Income	2.1	10.6	0.5	17.0	20.0	2.7
Security income	2.1	10.6	-8.5	17.2	20.9	-3.7

Table 6. continued...

		Internet		Mail				
	Item Nonre	esponse Rate	onse Rate Percentage		Item Nonresponse Rate			
Item	Excluding break offs	All persons	Point Difference	Excluding break offs	All persons	Point Difference		
Population 15 yea	ırs and over							
Public								
Assistance								
Income	2.3	10.8	-8.5	16.0	19.8	-3.8		
Retirement								
Income	2.6	11.1	-8.5	16.1	19.9	-3.8		
Other Income	2.2	10.7	-8.5	16.1	19.8	-3.7		
Total Income	4.8	13.3	-8.5	19.7	23.4	-3.7		

Source: 2013 American Community Survey January Panel

Once we removed responses from households that break off, all the item nonresponse rates drop for mail and Internet returns. However, the percentage point differences for the Internet rates (decreases of around 7 to 8 percentage points) are larger than the percentage point differences for the mail rates (decreases of around 3 to 4 percentage points). Without breakoffs the item nonresponse rates are lower for Internet responses for all the detailed population items.

As expected, breakoffs increase item nonresponse rates. Returns received from the Internet suffer from breakoffs to a greater extent than mail returns. However, the lower item nonresponse rates for Internet returns without breakoffs suggests that if Internet respondents get to a survey question, they are more likely to provide an answer. This is not particularly surprising as the Internet instrument leads respondents to a screen for each survey item and requires them to click on something within the screen before leading them to the next survey item. They don't necessarily have to provide an answer to the item, but they must press the next button to proceed to the next item. In addition, Internet respondents may get an error message if they don't provide answers for some items. Mail respondents can more easily skip over any survey item.

Table 6 also shows that the ancestry and income items are clearly the most troublesome for respondents. These questions require respondents to write-in a response, which may be more burdensome for some respondents. It is also possible that respondents consider these questions difficult or intrusive and choose not to answer due to privacy concerns.

The rates for the income source items from mail returns remain high. All are over 15 percent. This may suggest that more mail responders than Internet responders provide some level of detailed population data for everyone in the household, but skip over the income items for each household member.

### **Conclusion**

This research confirms the results found in the Internet research conducted in 2011. Overall, item nonresponse rates for Internet returns from 2013 ACS production are similar to those observed during the November 2011 ACS Internet Test.

In this initial look at item nonresponse, we found that Internet nonresponse was lower than mail nonresponse for many of the survey items included in the study. There are a handful of items in the detailed population section of the survey with higher nonresponse for Internet compared to mail, however for those items the differences are very small. This is partly because we obtain data from incomplete Internet returns as long as they make it to the first item in the detailed population section of the survey. We likely have fewer of these sorts of incomplete mail returns because mail respondents can choose not to return them. It is interesting, however, to point out that the items with higher Internet nonresponse rates are the items asked to the entire population. Perhaps, we could obtain more data for this set of items if we asked them of all household members together. We recommend research to test to see if a topic based approach, rather than person based approach, could be used to improve Internet item nonresponse rates for items ask of all household members.

Items requiring respondents to provide a written response generally have nominally higher item nonresponse rates on mail and Internet returns than items that require respondents to choose from a list of checkbox response options. Between modes the differences in the nonresponse rates for the write-in items are larger than the differences in the nonresponse rates for the checkbox items. In fact, the Internet nonresponse rates for nearly all the monetary write-in items are approximately half the mail nonresponse rates.

Finally, the research concludes that we find highly complete data from Internet respondents. However, breakoffs are an issue, particularly for Internet responses. Breakoffs lead to increases in item nonresponse for the social and economic person-level data and more research is necessary to learn the reasons for breakoffs and how to reduce them<sup>9</sup>. Despite breakoffs, no Internet item has a nonresponse rate over 15 percent, which is not unusual for some items from mail returns.

We computed the rates in this study on pre-edited data; therefore, they are not the final ACS item nonresponse rates. The Census Bureau will release the final rates with the 2013ACS estimates later this year. In addition, the findings shown here represent the ACS methods and design and may not represent other Internet and mail surveys.

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<sup>&</sup>lt;sup>9</sup> Research is currently underway to learn more about Internet breakoffs through another Internet test planned for the summer of 2014.

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U.S. CENSUS BUREAU

U.S. DEPARTMENT OF COMMERCE



# THE American Community Survey

#### Start Here

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

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 1–800–582–8330. 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 puede 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/

•	0	Please print today's date.  Month Day Year		
•	0	Please print the name and telephone number of the pe filling out this form. We may contact you if there is a ques Last Name		
		First Name		MI
		Area Code + Number		_
		How many people are living or staying at this address?  • INCLUDE everyone who is living or staying here for more  • INCLUDE yourself if you are living here for more than 2 m  • INCLUDE anyone else staying here who does not have an  stay, even if they are here for 2 months or less.  • DO NOT INCLUDE anyone who is living somewhere else  2 months, such as a college student living away or someor  Armed Forces on deployment.	tha noni oth	ths. er place to more than
•	9	Number of people  Fill out pages 2, 3, and 4 for everyone, including yours living or staying at this address for more than 2 month complete the rest of the form.		
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ACS-1(2013)KFI, Page 1, Base (Black)

ACS-1(2013)KFI, Page 1, Green Pantone 354 (20 & 40%)

	Person 1					Person 2					
						Wha	nt is Person 2's name?				
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.)					Last	Name (Please print)	Fire	st Name		MI
1											
1	pers	on, start with the name of any a	adult living or s	taying here.)	6	Hou	v is this person related to	Dorson 1	2 Mark	/Y) ONE hav	
1					Y			rerson i			a in Inve
1						Ы	Husband or wife Biological son or daughter		_	on-in-law or daughte ther relative	r-in-iaw
d	Wh.	t is Person 1's name?				H	Adopted son or daughter		=	oomer or boarder	
٧	,	Name (Please print)	First Name	MI		Н	Stepson or stepdaughter		=	ousemate or roomm	oto
1						Ы	Brother or sister			nmarried partner	ate
1	_				IJ	H	Father or mother			oster child	
2	How	is this person related to Pe	rson 1? Rela	ntionship		Ы	Grandchild			ther nonrelative	
Τ	X	Person 1					Parent-in-law			and monitoriality	
d	wi	nt is Person 1's sex? Mark (X)	ONE how				nt is Person 2's sex? Mark	(X) ONE I	LOV.		
٩		Male Female	Sex		Y	Wha	Male Sex? Wark	(A) OIVE D	OX.		
Ţ	_										
4		it is Person 1's age and what se report babies as age 0 when			Ψ		at is Person 2's age and w se report babies as age 0 w				
1		Print num b	ers in boxes.				Print nu	ımbers in b	boxes.		
1	Age	(in years) Month Day	Year of bir			Age	(in years) Month	Day Y	ear of bi	irth	
1				birth							
1	→ NO	TE: Please answer BOTH Qu	estion 5 about	Hispanic origin and	١.	→ NC	OTE: Please answer BOTH	Question	5 abou	rt Hispanic origin	and
1	Qu	estion 6 about race. For this s	survey, Hispan	ic origins are not races			estion 6 about race. For t				
Ų	_	erson 1 of Hispanic, Latino,		igin?	Ų	Is P	erson 2 of Hispanic, Latir			rigin?	
1	븬	No, not of Hispanic, Latino, or Sp	_			님	No, not of Hispanic, Latino, o		rigin		
1	빞	Yes, Mexican, Mexican Am., Chica		Hispanic		님	Yes, Mexican, Mexican Am., (	Chicano			
1	님	Yes, Puerto Rican		Origin			Yes, Puerto Rican				
1	님	Yes, Cuban		•			Yes, Cuban				
1	ш	Yes, another Hispanic, Latino, or S Argentinean, Colombian, Dominic	spanish origin – i can, Nicaraguan,	Print origin, for example, Salvadoran, Spaniard,		ш	Yes, another Hispanic, Latino, Argentinean, Colombian, Don	, or Spanisn minican, Nic	ı orıgın – araguan,	, Salvadoran, Spania	mpie, ird,
1		and so on.			.		and so on. 7				
1											
Ġ	Wha	t is Person 1's race? Mark (X	) one or more l	ooxes.	6	Wha	nt is Person 2's race? Mar	k (X) one o	or more	boxes.	
T		White	_		1		White				
		Black, African Am., or Negro	Ra	ice			Black, African Am., or Negro				
		American Indian or Alaska Native	- Print name of	enrolled or principal tribe	~		American Indian or Alaska Na	ative — Prin	t name o	of enrolled or principa	al tribe.
1					íΙ						ĺ
1					١,						
		Asian Indian	panese	Native Hawaiian			Asian Indian	Japanese		Native Hawaiian	
1		Chinese Ko	orean	Guamanian or Chamorro			Chinese	Korean		Guamanian or Cha	amorro
		Filipino	etnamese	Samoan			Filipino	Vietname	se	Samoan	
		Other Asian - Print race, for example, Hmong,		Other Pacific Islander – Print race, for example,			Other Asian – Print race, for example, Hmong,			Other Pacific Island Print race, for exam	der – mple.
1		Laotian, Thai, Pakistani, Cambodian, and so on.		Fijian, Tongan, and			Laotian, Thai, Pakistani, Cambodian, and so on.			Fijian, Tongan, and	ď
		, and a do on. y		so on. 📈			The same of the sa			so on. 7	
		Some other race – Print race. 🗾					Some other race - Print race.	7			
L					1						
	2										

ACS-1(2013)KFI, Page 2, Base (Black)

ACS-1(2013)KFI, Page 2, Green Pantone 354 (20 & 40%)

Housing  Please answer the following	Answer questions 4 – 6 if this is a HOUSE OR A MOBILE HOME; otherwise, SKIP to question 7a.	Does this house, apartment, or home have –  a. hot and cold running water?	Yes No	Running Water
questions about the house,	,	_	= =	
apartment, or mobile home at the address on the mailing label.	4 How many acres is this house or mobile home on? Acres	b. a flush toilet? c. a bathtub or shower?		Tdilet Bath
Which best describes this building?	☐ Less than 1 acre → SKIP to question 6	d. a sink with a faucet?		Sink
Include all apartments, flats, etc., even if vacant. Building Type	1 to 9.9 acres	e. a stove or range?		Stove
A mobile home	10 or more acres	f. a refrigerator?		
□ A one-family house detached from any other house     □ A one-family house attached to one or	IN THE PAST 12 MONTHS, what were the actual sales of all agricultural	g. telephone service from which you can both make and receive calls? <i>Include</i> cell phones.		Refrigerator Telephone
more house's  A building with 2 apartments  A building with 3 or 4 apartments  A building with 5 to 9 apartments	products from this property?  None Agriculture  \$1 to \$999\$	At this house, apartment, or m do you or any member of this hown or use any of the following  EXCLUDE GPS devices, digital and devices with only limited or	household g computers	?
A building with 10 to 19 apartments	☐ \$1,000 to \$2,499	capabilities, for example: house	ehold	
A building with 20 to 49 apartments	\$2,500 to \$4,999	appliances.	Yes No	
A building with 50 or more apartments	\$5,000 to \$9,999 \$10,000 or more	a. Desktop, laptop, netbook, or notebook computer		
☐ Boat, RV, van, etc.		b. Handheld computer, smart mobile phone, or other	0	)wh
About when was this building first built?	Is there a business (such as a store or barber shop) or a medical office on	handheld wireless computer		omputer
2000 or later – Specify year,	this property?	c. Some other type of computer		
2000 of later - Spedily year	☐ Yes Business	Specify 7	1	
	□ No			
☐ 1990 to 1999 ☐ 1980 to 1989 Year Built	a. How many separate rooms are in this	At this house, apartment, or m do you or any member of this h access the Internet?	household	
1970 to 1979 1960 to 1969	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.	Yes, with a subscription to a service	Internet Acc	ess
☐ 1950 to 1959 ☐ 1940 to 1949	INCLUDE bedrooms, kitchens, etc.     EXCLUDE bathrooms, porches, balconies,	Yes, without a subscription to service → SKIP to question 1.	2	
☐ 1939 or earlier	foyers, halls, or unfinished basements.	No Internet access at this how or mobile home → SKIP to que	use, apartmen uestion 12	nt,
When did PERSON 1 (listed on page 2)	Number of rooms Rooms	At this house, apartment, or m do you or any member of this h subscribe to the Internet using	obile home – household	
move into this house, apartment, or			Yes No	
mobile home?	b. How many of these rooms are bedrooms?  Count as bedrooms those rooms you would	a. Dial-up service?		nternet
Month Year	list if this house, apartment, or mobile home	b. DSL service?		Subscription
Month and Year	were for sale or rent. If this is an efficiency/studio apartment, print "0".	c. Cable modem service?		Jupaciipiloi
Moved In	Number of bedrooms	d. Fiber-optic service?		
	Bedrooms	e. Mobile broadband plan for a computer or a cell phone?		
		f. Satellite Internet service?		
		g. Some other service?  Specify service		
				_

1	2 How many automobiles, vans, and trucks of one-ton capacity or less are kept at home for use by members of this household?  Vehicles  None  1  2  3  4  5  6 or more	a. LAST MONTH, what was the cost of electricity for this house, apartment, or mobile home?  Last month's cost - Dollars  Last month's cost - Dollars    Dollars   Dollars
	Which FUEL is used MOST for heating this house, apartment, or mobile home?  Gas: from underground pipes serving the neighborhood Gas: bottled, tank, or LP Electricity Fuel oil, kerosene, etc. Coal or coke Heating Fuel Wood Solar energy Other fuel No fuel used	answer only if you pay the condominium fee included in rent or condominium fee included in electricity payment entered above    No charge or gas not used   No charge or gas not used

B B C B C B C B	Answer questions 18a and b if this house, apartment, or mobile home is RENTED. Otherwise, SKIP to question 19.  a. What is the monthly rent for this house, apartment, or mobile home? Monthly amount – Dollars  Rent  Does the monthly rent include any meals?  What is the monthly rent include any meals?  Meals Included in Rent  Answer questions 19 – 23 if you or any member of this household OWNS or IS BUYING this house, apartment, or mobile home. Otherwise, SKIP to E.  About how much do you think this house and lot, apartment, or mobile home (and lot, if owned) would sell for if it were for sale?  Amount – Dollars  Property Value  OR Property Taxes  None  OR Property Taxes  None  Homeowners Insurance	household have a mortgage, deed of trust, contract to purchase, or similar debt on THIS property? Mortgage  Yes, mortgage, deed of trust, or similar debt  Yes, contract to purchase  No → SKIP to question 23a  b. How much is the regular monthly mortgage payment on THIS property? Include payment only on FIRST mortgage or contract to purchase.  Monthly amount – Dollars  Mortgage Amount  No regular payment required → SKIP to question 23a  c. Does the regular monthly mortgage payment include payments for real estate taxes on THIS property?  Yes, taxes included in mortgage payment  No, taxes paid separately or taxes not required	a. Do you or any member of this household have a second mortgage or a home equity loan on THIS property? Second Mortgage    Yes, home equity loan   Yes, second mortgage and home equity loan   No → SKIP to D    b. How much is the regular monthly payment on all second or junior mortgages and all home equity loans on THIS property?    Monthly amount - Dollars   Second Mortgage Amount     No regular payment required     No regular payment required     No regular payment required     Answer question 24 if this is a MOBILE HOME. Otherwise, SKIP to E .    What are the total annual costs for personal property taxes, site rent, registration fees, and license fees on THIS mobile home and its site?     Exclude real estate taxes.     Annual costs - Dollars   Mobile Home     Answer questions about PERSON 1 on the next page if you listed at least one person on page 2. Otherwise, SKIP to page 28 for the mailing instructions.
			7
			,

ACS-1(2013)KFI, Page 7, Base (Black)

ACS-1(2013)KFI, Page 7, Green Pantone 354 (10, 20, 40, & 50%)

0	Please copy the name of Person 1 from page 2, then continue answering questions below.  Last Name  MI	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  What is this person's ancestry or ethnic origin?  Ancestry  (For example: Italian, Jamaican, African Am., Cambodian, Cape Verdean, Norwegian, Dominican, French Canadian, Haitian, Korean, Lebanese, Polish, Nigerian, Mexican, Taiwanese, Ukrainian, and so on.)
		Kindergarten   A Does this person speak a language other than
ø	Where was this person born?  In the United States – Print name of state.  Place of Birth	Grade 1 through 11 – Specify    Grade 1 through 11 – Specify   Grade 1 – 11
		12th grade - NO DIPLOMA  b. What is this language?
	Outside the United States - Print name of foreign country, or Puerto Rico, Guam, etc.	HIGH SCHOOL GRADUATE  Regular high school diploma GED or alternative credential  Language Spoken  For example: Korean, Italian, Spanish, Vietnamese
d	Is this person a citizen of the United States?	COLLEGE OR SOME COLLEGE  c. How well does this person speak English?
Ĭ	Yes, born in the United States → SKIP to question 10a	Some college credit, but less than 1 year of college credit  Some college credit, but less than 1 year of Well  Well  English Speaking
	Yes, born in Puerto Rico, Guam, the U.S. Virgin Islands, or Northern Marianas	1 or more years of college credit, no degree     Not well     Ability     Associate's degree (for example: AA, AS)
	Yes, born abroad of U.S. citizen parent or parents	Bachelor's degree (for example: BA, BS)
9	Yes, U.S. citizen by naturalization – Print year of naturalization  Citizenship  No, not a U.S. citizen  When did this person come to live in the United States? Print numbers in boxes.  Year  Year of Entry	AFTER BACHELOR'S DEGRE   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)
Φ	a. At any time IN THE LAST 3 MONTHS, has this person attended school or college? Include only nursery or preschool, kindergarten,	Answer question 12 if this person has a bachelor's degree or higher. Otherwise, SKIP to question 13.  No, different house in the United States or Puerto Rico
	which leads to a high school diploma or a college degree. School Enrollment	b. Where did this person live 1 year ago?  Address (Number and street name)
	No, has not attended in the last 3 months -> SKIP to question 11  Yes, public school, public college	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,
	Yes, private school, private college, home school	organizational psychology)  Name of city, town, or post office
	b. What grade or level was this person attending?  Mark (X) ONE box.	Field of Degree Migration (City)
ı	☐ Nursery school, preschool ☐ Kindergarten	Name of U.S. county or municipio in Puerto Rico
	Grade 1 through 12 – Specify grade 1 – 12 –	Migration (County)
	✓ Grade Attending	Name of U.S. state or Puerto Rico ZIP Code
	College undergraduate years (freshman to senior)	Migration (State) Migration (zipcod
	Graduate or professional school beyond a bachelor's degree (for example: MA or PhD program, or medical or law school)	

ACS-1(2013)KFI, Page 8, Base (Black)

ACS-1(2013) KFI, Page 8, Green Pantone 354 (10, 20, 40, 50, & 100%)

following types of health insurance or health coverage plans? Mark "Yes" or "No" for EACH type	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.
person or another family member)  b. Insurance purchased directly from	Uses than 6 months 6 to 11 months Months 1 or 2 years Grandparents 3 or 4 years Responsible for
Health Independent Living	5 or more years Grandchildren
d. Medicaid, Medical Assistance, or any kind of government-assistance plan for those with low incomes or a disability  e. TRICARE or other military health care □ □ Separated  f. VA (including those who have ever used or enrolled for VA health care) □ □ In the PAST 12 MONTHS did this person get − Yes No  a. Married? □ Married  b. Widowed? □ Widowed  Wing widowed  Widowed? □ Divorced  Wing widowed  Widowed? □ Divorced	question 29a  Only on active duty for training in the Reserves or National Guard → SKIP to question 28a  Now on active duty  On active duty in the past, but not now  then did this person serve on active duty in the S. Armed Forces? Mark (X) a box for EACH period which this person served, even if just for part of the riod.  Period of Military
Yes   Hearing Difficulty   Two times   Married   Three or more times	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 1946) November 1941 or earlier
a. Because of a physical, mental, or emotional condition, does this person have serious difficulty concentrating, remembering, or making decisions?    Yes   Cognitive Difficulty   No   No   No   No   No   No   No   No	disability rating?  ☐ Yes (such as 0%, 10%, 20%,, 100%) ☐ No → SKIP to question 29a  What is this person's service-connected disability rating? ☐ 0 percent  Service  Conrecte Disability Status

ACS-1(2013)KFI, Page 9, Base (Black)

ACS-1(2013)KFI, Page 9, Green Pantone 354 (10, 20, 40, & 50%)

ACS-1(2013)KFI, Page 10, Base (Black)

ACS-1(2013)KFI, Page 10, Green Pantone 354 (10, 20, 40, & 50%)

Person 1 (continued)  Answer questions 41 – 46 if this person worked in the past 5 years. Otherwise, SKIP to question 47.	What kind of work was this person doing?  (For example: registered nurse, personnel manager, supervisor of order department, secretary, accountant)  Occupation	d. Social Security or Railroad Retirement.  ☐ Yes → Social Security Income ☐ No ☐ TOTAL AMOUNT for past 12 months
41 – 46 CURRENT OR MOST RECENT JOB ACTIVITY. Describe clearly this person's chief job activity or business last week. If this person had more than one job, describe the one at which this person worked the most hours. If this person had no job or business last week, give information for his/her last job or business.	What were this person's most important activities or duties? (For example: patient care, directing hinng policies, supervising order clerks, typing and filing, reconciling financial records)  Work Activities	e. Supplemental Security Income (SSI).  ☐ Yes →Supplemental Security Income ☐ No ☐ TOTAL AMOUNT for past 12 months
Was this person - Class of Worker  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?  2 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  Employer	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 → \$ Wages	f. Any public assistance or welfare payments from the state or local welfare office.    Yes → Public Assistance     TOTAL AMOUNT for past     Yes → Retirement, survivor, or disability pensions.   Do NOT include Social Security.   Yes → Retirement Income     No TOTAL AMOUNT for past     No TOTAL AMOUNT for past     No TOTAL AMOUNT for past     No NOT include lump sum 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 → Other Income     No TOTAL AMOUNT for past     No TOTAL AMOUNT for past
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)  Kind of Business  Is this mainly - Mark (X) ONE box.  manufacturing? holesale trade? Industry retail trade? other (agriculture, construction, service, government, etc.)?		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.  OR Total Income None 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.

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11

# Mail Utility Cost Items

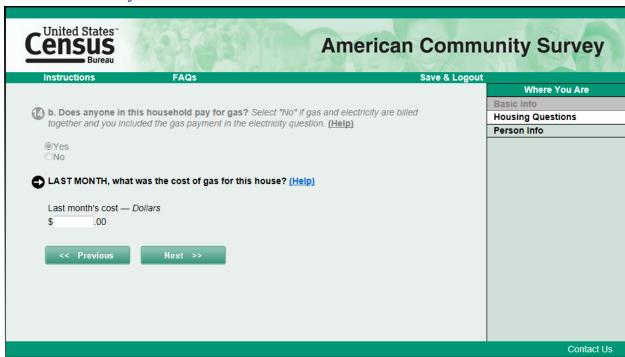
4	a. LAST MONTH, what was the cost of electricity for this house,				
	apartment, or mobile home?				
	Last month's cost - Dollars				
		s .00 Electricity			
		OR			
		☐ Included in rent or condominium fee			
		No charge or electricity not used			
	b. LAST MONTH, what was the cost of gas for this house, apartment, or mobile home?				
		Last month's cost - Dollars			
		s .00 Gas			
		OR			
		Included in rent or condominium fee			
		☐ Included in electricity payment			
		entered above  No charge or gas not used			
		No charge of gas not used			
	c. IN THE PAST 12 MONTHS, what was the cost of water and sewer for this house, apartment, or mobile home? If you have lived here less than 12 months, estimate the cost.				
	Past 12 months' cost - Dollars				
		s .00 Water Usage			
		OR			
		Included in rent or condominium fee			
		No charge			
	d. IN THE PAST 12 MONTHS, what was the cost of oil, coal, kerosene, wood, etc., for this house, apartment, or mobile home? If you have lived here less than 12 months, estimate the cost.				
		Past 12 months' cost - Dollars			
		s .00 Fuel			
		OR			
		☐ Included in rent or condominium fee			
		No charge or these fuels not used			

### **Appendix C**

### Internet Gas Use Item



### Internet Gas Pay and Gas Cost Items



1

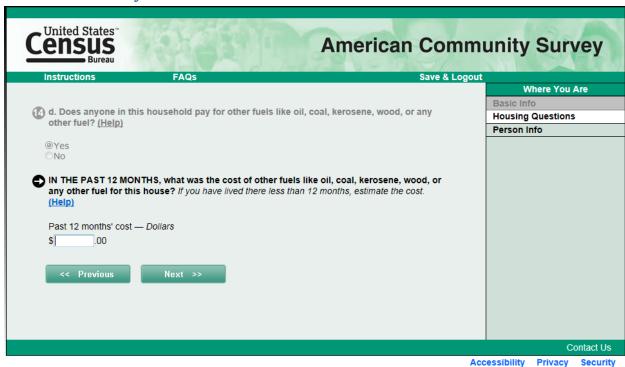
Accessibility Privacy Security

### Appendix C continued

### Internet Fuel Use Item



### Internet Fuel Pay and Fuel Cost Item



2

## Appendix D

 ${\bf 2013\ ACS\ Mail\ and\ Internet\ Item\ Nonres\ ponse\ Rates\ (Excluding\ B\ reak offs)-Detailed\ Population\ Section\ Items}$ 

	Item Nonresponse Rate		Percentage Point	Margin of Error	
	<b>-</b>	3.5.11	Difference	of the Difference	
ITEM	Internet	Mail	(Internet - Mail)	(+/-)	
All people					
Place of Birth	0.1	1.3	-1.2	0.1	
Citizenship	0.1	2.0	-1.9	0.1	
Ancestry	6.5	15.1	-8.6	0.3	
Language Other Than English	0.6	3.4	-2.9	0.1	
Health Insurance	1.2	2.5	-1.3	0.1	
Hearing Difficulty	0.9	2.2	-1.3	0.1	
Vision Difficulty	1.2	2.9	-1.7	0.1	
Population 1 year and over					
Move in the Last Year	0.5	6.6	-6.0	0.2	
Population 3 years and over					
SchoolEnrollment	0.4	4.2	-3.8	0.1	
Educational Attainment	0.2	3.9	-3.7	0.1	
Population 5 years and over					
Cognitive Difficulty	1.2	5.5	-4.3	0.2	
Ambulatory Difficulty	1.2	5.8	-4.6	0.2	
Self-care Difficulty	1.3	5.7	-4.4	0.2	
Population 15 years and over		•			
Independent Living Difficulty	1.2	5.8	-4.6	0.2	
Marital Status	0.5	5.1	-4.6	0.2	
Grandparent With					
Grandchildren	0.9	4.2	-3.3	0.4	
Military Service	0.8	6.9	-6.2	0.2	
Worked Last Week	0.5	4.2	-3.8	0.2	
Interest Income	3.7	21.7	-18.0	0.4	
Social Security Income	2.7	16.3	-13.6	0.3	
Supplemental Security Income	2.1	17.2	-15.1	0.3	
Public Assistance Income	2.3	16.0	-13.7	0.3	
Retirement Income	2.6	16.1	-13.5	0.3	
OtherIncome	2.2	16.1	-13.9	0.3	
TotalIncome	4.8	19.7	-15.0	0.4	

Source: 2013 American Community Survey January Panel