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MEMORANDUM FOR ACS Research and Evaluation Advisory Group

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Subject: Assessment of the Addition of the Internet Mode to the American Community Survey Housing Unit Primary Selection Algorithm

Attached is the final Assessment of the Addition of the Internet Mode to the American Community Housing Unit Primary Selection Algorithm report. The assessment evaluates our current methodology for choosing among returns when a housing unit responds to the American Community Survey more than once. The method, the Primary Selection Algorithm, recently changed to handle cases received via the new Internet mode. The report also investigated the algorithm's handling of cases received via Telephone Questionnaire Assistance.

If you have any questions about this report, please contact Mark E. Asiala (301-763-3605) or Joseph C. Powers (301-763-3604).

Attachment

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January 16, 2016

Assessment of the Addition of the Internet Mode to the American Community Survey Housing Unit Primary Selection Algorithm

FINAL REPORT

United States™ Census Bureau

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Contents

1. Executive Summary

Spurred by the introduction of the Internet mode of data collection to the 2013 American Community Survey (ACS), statisticians at the U.S. Census Bureau conducted an evaluation of the Primary Selection Algorithm, the method used to choose a return when a housing unit responds more than once. The ACS Primary Selection Algorithm uses an unweighted ratio of item completeness, called the return quality index to decide between multiple returns. We saw no evidence of any flaws in the current Primary Selection Algorithm that would require immediate correction for the next round of annual ACS estimates for release in 2015.

Research Question 1: How often does the Primary Selection Algorithm's 20-percentage-point bonus for mail and Telephone Questionnaire Assistance returns result in the selection of a mail or Telephone Questionnaire Assistance return over an Internet, computer-assisted telephone interview, or computer-assisted personal interview return? (This question refers to the practice of giving a bonus to mail and Telephone Questionnaire Assistance return quality index values.)

- The bonus changed the results of the Primary Selection Algorithm for 3,855 pairs of returns in 2013. There was no clear trend across panels.
- Of the 3,855 pairs of returns, only about 4.0 percent (155 pairs) consisted of Telephone Questionnaire Assistance and either Internet, computer-assisted telephone interview, or computer-assisted personal interview. About 43.2 percent (1,665 pairs) consisted of a mail return and an Internet return, about 37.5 percent (1,445 pairs) were mail and computer-assisted telephone interview, and about 15.3 percent (590 pairs) were mail and computer-assisted personal interview.

Research Question 2: How does the return quality index compare between the various modes?

- We discovered the completeness score for vacant computer-assisted telephone interview and computer-assisted personal interview cases has been based on incorrect assumptions about the ACS questions that are eligible to be asked, leading to a correction for 2014 processing.
- For occupied units, Internet returns generally have completeness scores comparable to computer-assisted personal interviews, with 54.8 percent of the Internet returns having a completeness score of 90 percent or more, and 89.8 percent of them having a completeness score of 80 percent or more. The equivalent rates for computer-assisted personal interviews are 56.6 percent and 91.8 percent, while for computer-assisted telephone interviews or Telephone Questionnaire Assistance, they were 37.6 percent and 92.7 percent, and for mail they were 43.6 percent and 74.4 percent.

Research Question 3: What is the impact of treating Telephone Questionnaire Assistance returns similar to the computer-assisted telephone interview or computer-assisted personal interview returns in determining completeness?

- For the 2,370 cases in 2013 with a Telephone Questionnaire Assistance and non-Telephone Questionnaire Assistance return, the Primary Selection Algorithm chose the Telephone Questionnaire Assistance case 2,166 times (91.4 percent) under the existing rule. If the Primary Selection Algorithm treated Telephone Questionnaire Assistance as a computer-assisted telephone interview return (and resolved Telephone Questionnaire Assistance vs. computer-assisted telephone interview exactly like Internet vs. computer-assisted telephone interview), it would choose the Telephone Questionnaire Assistance return only 1,787 times (75.4 percent).
- Stated differently, changing this part of the Primary Selection Algorithm to treat Telephone Questionnaire Assistance like computer-assisted telephone interview, rather than like mail, would result in 379 more non- Telephone Questionnaire Assistance returns being picked (16.0 percent), assuming only mail receives the 20-point bonus.

Research Question 4: How does the distribution of item nonresponse compare between the modes?

- Similar to the discovery in Research Question 2 above, we discovered that the contributions to completeness score for certain items are not calculated correctly for all modes. In particular, the Telephone item for Telephone Questionnaire Assistance and computer-assisted telephone interview, the three questions related to grandchildren for all modes, and the three computer items do not have the correct universe definitions. Unlike the issue in Research Question 2, we did not detect this problem in time to correct 2014 Edit Input processing.
- There was no clear pattern for the Internet mode, with some variables having higher nonresponse for Internet compared to mail, and some lower.

Research Question 5: When two returns have similar completeness scores, how do they differ in the components of the completeness score?

- Even limited to pairs of returns where the Primary Selection Algorithm bonus was the deciding factor, there was no clear pattern.

Conclusion

Although the error in calculating completeness score for vacant returns in some modes required fixing, and further errors still need correcting, the Census Bureau feels that the overall strategy of using the return completeness score as the basis for the Primary Selection Algorithm is sound. The merit of a bonus to completeness score for self-response returns in the Primary Selection Algorithm remains an area of ongoing research.

2. Introduction

With the 2013 data year, the American Community Survey (ACS) for the first time included an Internet response option. With the creation of this new mode of data collection came many changes to the existing processing systems. ACS data collection has always allowed for the possibility of multiple responses from its housing unit (HU) sample units during data collection operations. After data collection, but before the data are edited or weighted, multiple returns from an address are pared down so that each sample unit with more than one return has only one return passed into the edits and weighting. About 1.45 percent of the sample addresses have more than one return (Fish, 2014). The step for choosing which return among several is called the Primary Selection Algorithm (PSA), and is part of the edit input operation.

From the earliest days of the ACS, the PSA has favored interviews over noninterviews and records determined to be deletes, and favored noninterviews over deletes (Love, 1997). The ACS considers a vacant record to be an interview, because certain housing unit characteristics are collected from every HU, and other characteristics are collected specifically from vacant units. When choosing between two interviews, the PSA determines how to choose based on the combination of returns received. If both were mail interviews or if one is mail and the other is the respondent calling the Census Bureau (in an operation known as Telephone Questionnaire Assistance (TQA), the PSA selects the return received first in time. If one of the multiple returns was not a mail or TQA return, the PSA will use return completeness. In cases with three returns, the PSA selects the earlier of the mail or TQA returns, and compares the survivor to the third return on the basis of return completeness. Since the implementation of the Internet mode, it is no longer possible for most addresses to respond with two mail forms. Prior to the introduction of the Internet mode to the ACS, the PSA awarded a bonus to the score used to choose among returns to those returns that came via mail or by TQA. Historically, the bonus was given to these modes because of a preference for self-response (Love, 1997). Now that Internet-eligible addresses no longer receive two mail questionnaires, the only situation in which the PSA treats such an address as having two mail returns is when one return is via mail and the other is via TQA. The Internet response is new, and it was unclear what the data quality and pattern of item nonresponse would be. In particular, because of concern about Internet break-offs, the Internet mode did not receive the self-response bonus the mail forms receive in the PSA. Thus, for 2013, the PSA gives no preference to Internet returns over computer-assisted telephone interviewing (CATI) or computer-assisted personal interviewing (CAPI) returns, and mail returns receive a bonus over Internet, CATI, and CAPI returns.

Although the PSA used in the 2010 Decennial Census is too sensitive to discuss in open literature, there were some public evaluations of the PSA for the Census 2000 (Baumgardner, 2002 and 2003). Return completeness is a critical component of the ACS PSA, and Clark (2014) studied item nonresponse using data from the first six panels of 2013. Because ACS interviewing runs for three consecutive months, Fish (2014) examined the case of multiple returns, where one

return corresponds to an occupied interview and another return corresponds to a vacant interview. The ACS PSA was first articulated in Love (1997).

The purpose of this evaluation was to assess the current PSA methodology in light of the new data collection methodology. We also checked if the method of deciding between sample returns when respondents complete two or more ACS questionnaires now that the Internet mode of data collection has been implemented works as expected. Further, we checked if the current practices of favoring mail returns over other modes, and treating TQA returns as mail returns, are optimal.

Results from this report will help determine if the program should consider any changes to the PSA, and may lead to further research.

3. Overview of the American Community Survey Data Collection

This section contains an overview of the ACS and description of terms and concepts key to understanding this report. For further detail, consult the ACS Design and Methodology document (Census Bureau, 2014).

The ACS uses a series of monthly samples to produce annually updated estimates for the same small areas (census tracts and block groups) formerly surveyed via the decennial census long-form sample. The monthly samples are also known as sample panels, or just panels, and a unit in a particular panel, for instance, June, 2013, will often be described as "from the 201306 panel." For 2013 data collection, a unit's panel does not depend on the time at which the unit responds to the ACS though by design they frequently coincide[1]. Data collection efforts for a unit last for approximately three months: Late in the month prior to the unit's panel month, we send the unit a prenotice letter to inform the household they have been selected for the ACS. The next mailing, which also goes out prior to the panel month, is the initial mail package and includes an instruction card for the Internet instrument[2]. Three days later, sample units receive a reminder postcard. If the unit has not responded, about two-and-a-half weeks after the initial mail package mailing, we send a replacement mail package containing a paper questionnaire and prepaid return envelope. Three days after the replacement mail package, sample units receive another reminder postcard. Finally, at the start of the month after the panel month, households that did not respond via mail or Internet, and for which the ACS has no phone number, receive an additional postcard telling them the ACS may contact them in person. For units that have not responded to the replacement mailing for which we have a telephone number, early in the month after their panel month, we attempt to contact them via the telephone phase, CATI. Just before the second month after a unit's panel month, we draw a sample of units to follow-up with a

[1] One exception is for those HU determined to be unreachable by mail, or unmailable. They are contacted by personal visit two months after their panel month. Since they cannot respond by more than one mode, they are not relevant to this study.

[2] In some cases, this mailing arrives and the unit responds via the Internet prior to the panel month. Such interviews are treated as happening in the panel month.

personal visit from a field representative in the final phase, CAPI. Thus, every month of the year, three phases of ACS data collection are underway, and each housing unit in sample has a three-month window to respond to the ACS. It is also possible for a unit to call us and complete the ACS via TQA.

The Internet, TQA, CATI, and CAPI instruments all have similar flow of questions. The first questions determine if the housing unit is vacant or occupied, and if occupied, then by how many residents. Second, basic demographic information on the residents is assembled in a roster. These data items are sometimes referred to as "100 percent items," as they are also items collected on the decennial census. After rostering, the third section of the instrument is a series of questions about the housing unit's characteristics; vacant units are asked a subset of these items. The fourth and final set of questions includes detailed person items for each person on the roster, which correspond to the person-level questions from the decennial census long-form survey.

4. Research Questions and Methodology

We evaluated the 2013 HU edit input (EI) outputs and analyzed certain operational variables the HU EI operation generates using files described below. These operational variables were: the completeness measure, QIND, which is made up of the HU-level indicator of HU item completeness (HSTRING) and the person-level indicator of item completeness (PSTRING). HSTRING and PSTRING are strings of indicator variables; each position in the string takes the value "1" if the item corresponding to that position was eligible to be asked and was answered, the value "0" if the item was eligible but not answered, or the value "." if it was not eligible.

HSTRING contains thirty housing unit items, while PSTRING holds fifty-two person-level items for each person in an occupied housing unit. The completeness measure QIND is calculated as the ratio of items answered over items eligible to be answered, and is therefore the ratio of the number of instances of "1" appearing in a housing unit's HSTRING and PSTRINGs (if any) to the number of instances of "0" or "1" in HSTRING and the PSTRINGs, multiplied by 100 (to make it a percentage). Full documentation of the correspondence of ACS questions to positions in PSTRING and HSTRING can be found in Appendices D and E of the HU edit input specification, respectively (Powers, 2014).

This research used unedited data from the January through December 2013 ACS sample panels collected in time to be part of the data tabulated for the 2013 ACS estimates. The research excluded data from the 2012 sample panels that happened to be collected in 2013, as well as any data from 2013 sample panels received after the cutoff date of March 20, 2014.

Because the research questions concerned our handling of the individual returns, and not the characteristics of the U.S. population, we used unweighted statistics in the analysis.

The research questions of interest were:

1. *How often does the PSA's 20-point bonus for mail returns result in the selection of a mail return over an Internet, CATI, or CAPI return?*
2. *How does the questionnaire completeness score QIND compare between the various modes?*
3. *What is the impact of treating TQA (telephone questionnaire assistance) returns similar to the CATI/CAPI returns in determining completeness?*
4. *How does the distribution of item nonresponse compare between the modes?*
5. *When two returns have similar completeness scores, how do they differ in the components of the completeness score?*

5. Results

1. Distribution of Quality Index Differences by Panel and Mode

Table 1.0, included below in the attachment of tables, shows the distribution of the differences in QIND, the return quality index, between mail or TQA returns and the QIND for Internet, CATI, or CAPI returns. The rows show the difference in QIND. The columns show the panel month. By construction, the mail or TQA return is the first term of the difference, so positive values mean the mail return's QIND was larger than the QIND in the other mode, while negative differences mean the non-mail, non-TQA mode return had the higher QIND. Note that there is no panel month for 201310 because of the Federal government shutdown of October 2013[3]. Comparing the distributions across panel, the interval [0, 10) shows an increase in the November and December panels, possibly a result of changes in follow-up because of the federal government shutdown. For instance, a larger than usual workload in the post-shutdown panels could have led to less aggressive follow-up than usual, slightly reducing the QIND of the follow-up mode. Overall, Table 1.0 shows a longer tail in the negative differences, with 6,099 cases where the mail or TQA return had lower QIND than the other mode (out of 38,198 pairs of differences), and the bulk of the cases with the mail or TQA QIND as high or higher than the other mode.

In Table 1.0 the distribution of the differences also show a bimodal pattern, with the largest number of differences falling in the interval [0, 10) (5,028 cases) and a comparable number in each of the intervals [30, 40) and [40, 50) (4,784 and 4,823 cases respectively). The bimodal pattern in the distribution of differences between the mail or TQA return and a return in another mode comes from the mode of the second return (that is, the one that is not mail or TQA). Tables

[3] Because of the 2013 government shutdown (October 1- October 17), the ACS did not have a second mailing, a telephone followup, or a person followup operation for the October 2013 housing unit panel. Only respondents from the first mailing (Internet in the United States, paper questionnaire in Puerto Rico) contributed to the overall response for this panel. Additionally, the CATI follow-up for the September housing unit panel extended through November, with CAPI in December, and the CAPI for the August housing unit panel extended through November.

1.1-1.6 break Table 1.0 to compare just mail and each of Internet, CATI, and CAPI (in Tables 1.1-1.3), and just TQA to each of the Internet, CATI, and CAPI modes (in Tables 1.4-1.6).

Considering the distribution of differences restricted only to cases of mail and Internet, shown in Table 1.1, there is a much smaller spike in [0, 10), while the categories [30, 40) and [40, 50) have large peaks. Conversely, when the other mode is CATI or CAPI (respectively, Tables 1.2 and 1.3), the distribution peaks in [-10, 0) and [0, 10), and drops off sharply thereafter. Additionally, the effect of the shutdown is limited to the CATI/CAPI distribution, as Table 1.1 reveals the mail vs. Internet distributions for November and December are similar to the earlier panels.

Comparing Table 1.1 to Table 1.0 shows that in the majority of the cases where we have two returns, those returns are from the Internet and mail. The 29,918 returns on Table 1.1 are more than 78 percent of all the cases with multiple returns (as seen on Table 1.0). Also on this table, the possible effect of the government shutdown is not as clear, as the distributions of QIND differences for the November and December panels are more similar to those of the other panels. However, we do see an increase in total to 2,944 for the 201309 panel and drops for 201311 and 201312 to 2,556 and 2,380. The salience of the shutdown could explain why more respondents in the September panel responded in multiple modes than earlier panels. Likewise, the resumption of the ACS after the shutdown could explain why fewer respondents in the November and December panels responded multiple times.

In Table 1.2, the mail and CATI return combination makes up about 11 percent of all cases with two returns. Here the distribution is markedly different from prior tables, as the distribution of differences centers near zero. Further, in general, the mail returns have lower QIND, as the intervals below zero have higher frequencies than the intervals above zero. Table 1.2 also has the November and December panels as the most frequent panels for this combination of modes, consistent with changes to the ACS follow-up after the government shutdown. However, the 201302 panel is the third-most frequent panel for this combination, and is similar to the 201312, so the shutdown may not be the only factor at work. The mail and CAPI return combination appears in Table 1.3 (about 5.5 percent of Table 1.0), and this distribution more closely resembles the mail and CATI combination than mail and Internet.

Analyzing TQA compared to Internet, CATI, and CAPI modes shows that, overall, these combinations of two returns are infrequent. Table 1.4, which shows the returns with TQA and Internet responses, is about 4.6 percent of all cases with two responses. Table 1.5 contains just the returns with a TQA and a CATI response, while Table 1.6 contains just the returns with a TQA and a CAPI response. Tables 1.5 and 1.6 are only about 0.21 percent and 0.28 percent of cases with two responses. While it is reassuring that so few cases in the CATI and CAPI phases also respond by TQA, the sample sizes for Tables 1.5 and 1.6 (81 and 108) make it difficult to draw any conclusions. However, Table 1.4 does show an interesting bimodal pattern, with more than 10 percent of its returns in the interval [0, 10), and a peak around [50, 60). As most of the

differences on Table 1.4 are positive, this suggests that most of the respondents were willing to respond to most ACS questions, but may have been unable to complete them via the Internet, perhaps because they lost their passwords or were unaware they needed a password to return to the Internet instrument, thus becoming insufficient partial interviews. The cases near zero could represent people who filled out an Internet response late enough in time that the mail questionnaire was already on its way, and then called in to TQA after they received it. Also of note, in Table 1.4 we do not see any differences in the distributions of QIND differences between the November and December panels and the earlier months.

Under the existing PSA, mail and TQA cases receive a 20-point bonus to their QIND scores compared to the other modes. The intervals [-20, -10) and [-10, 0) from Table 1.0 combine in Table 2.0 to show this bonus is the deciding factor in which return the PSA selects 3,855 times.

Tables 2.1-2.6 break Table 2.0 out by mode just as Tables 1.1-1.6 break out Table 1.0. That is, Tables 2.1, 2.2, and 2.3 are the components of Table 2.0 corresponding to units that respond by mail and Internet, mail and CATI, and mail and CAPI respectively, while Tables 2.4-2.6 correspond to units that respond by TQA and Internet, CATI, and CAPI. It is rare for the TQA cases to have a quality index such that giving them the 20-point bonus would change the result of the PSA. Cases with TQA and another mode (Tables 2.4-2.6) contribute only 155 of the 3,855 cases with two returns and a QIND difference in the interval [-20, 0) (Table 2.0) (4 percent, and just 0.4 percent of the cases with two returns). In fact, fully 43.2 percent of the cases in which the PSA bonus changes the result come from the mail and Internet combination, while the mail and CATI combination contributes 37.5 percent and the mail and CAPI combination contributes 15.3 percent. It may not make sense to award the bonus to cases in the mail versus Internet combination, because the response pattern is so different from the mail versus CATI/CAPI distributions.

2. Distribution of Quality Index by Mode

Tables 3.0-3.2 show the distribution of QIND divided into 10-percentage-point intervals for all interviews, including units with one return and units with three returns, not just two returns as in Section 5.1. The distribution for QIND for the mail returns does not include the twenty-point bonus, so that all modes are shown with the range of 0 to 100, rather than 20 to 120 for mail and 0 to 100 for all the other modes. However, in cases with multiple returns, only the return the production PSA selected is included. This return is referred to as the selected return. As the ACS considers a vacant housing unit an interview, but the set of questions asked of vacant units differs from those asked of occupied units, the occupied and vacant units are analyzed separately. The ACS also has two categories of vacancy, temporary and regular, but this analysis collapses them together. Table 3.1 examines the distribution of QIND by mode of the selected return when the selected return is occupied; Table 3.2 considers the same distribution when the selected

return is vacant[4]. Note also that the tables do not include the QIND values for the return or returns the PSA rejected.

Turning to the distribution of QIND by the mode of the selected return in Table 3.0, the Internet returns generally have the best quality, with more than half of Internet returns having QIND in [90, 100], and more than 88 percent in [80, 100]. For the mail mode, 43 percent had QIND in [90, 100] and only 74 percent had QIND in [80, 100]. For CAPI, only 39 percent had QIND in [90, 100], and 63 percent had QIND in [80, 100].

Because of a mathematical artifact of the construction of QIND, the distributions of vacant and occupied QIND must differ[5] regardless of mode. However, as seen in Tables 3.1 and 3.2, the distribution of QIND is also notably bimodal for CAPI (and to a lesser extent for mail, TQA, and CATI), and the bimodality owes to the difference in QIND distributions for occupied versus vacant units by mode. In Table 3.2, only five TQA, CATI, and CAPI vacant cases had QIND as high as 60. This outcome is under further investigation, as it may be because the rules for calculating QIND do not properly account for the question skip patterns in the CATI and CAPI instruments. The distribution for vacant mail returns is also different from the distribution of vacant Internet returns, as 40 percent of vacant mail cases have QIND in [80, 100], while only 14 vacant Internet cases out of 10,778 were in this interval. (QIND can be non-zero for vacant units because QIND includes certain housing unit items, such as the number of bedrooms, for which every HU is eligible.) For occupied units only, nearly 90 percent of the Internet returns had QIND in [80, 100], while only 74 percent of mail returns fell in the same interval.

3. Experimental Primary Selection Algorithm

Under the existing PSA, TQA cases are treated as if they were mail cases because a TQA return occurs when the respondent replies without further prompting (as in CATI or CAPI). In the 2013 data, there were 2,370 cases where the PSA had to choose between a TQA case and a return in another mode (including mail). Under the existing PSA, it chose the TQA 2,166 times (91.4 percent), as shown in Table 4.0. Under an alternative treatment, where TQA is treated as a CATI return (and TQA vs. CATI choices are resolved the same as Internet vs. CATI/CAPI), the PSA would choose the TQA return only 1,787 times (75.4 percent). The 379 cases that change

[4] Unit status (whether occupied or vacant) is not set for returns not selected by the PSA, so this analysis does not distinguish between cases where all returns have the same status versus cases where they differ (some occupied, some vacant). See Fish (2014) for a discussion where status differs in multiple responses.

[5] Vacant units are eligible for only a few housing unit items to calculate their QIND (ten items all housing units are eligible for, plus two asked only of vacant units [see Table E-1 of [Powers, 2014] for the list of items). As a result, their QIND values can take on only thirteen values between zero and one, corresponding to zero twelfths, one twelfth … twelve twelfths. Occupied units contribute person-level items for each person, as well as more housing unit items than vacant housing units, so the QINDs of occupied unit vary more than QIND for the vacant units. Since both the number of people in an occupied unit and the person-items each person is eligible to be asked are random variables, the QIND distribution for occupied units is finer, i.e. has many more possible values in (0,1) than for vacant units. More formally, given that a return is vacant, the denominator of its QIND must be twelve with certainty, while given that a return is occupied, the denominator of its QIND is still a random variable.

between the two treatments of TQA are 16 percent of the cases examined. Thus, altering the PSA to treat TQA as CATI (their instruments are very similar) would not drastically change the composition of returns the PSA selects. Additionally, these cases do not sum to the entries on Tables 2.4-2.6 because the results of this experiment are not directly comparable to the results discussed above, as this experiment included two-return combinations of mail and TQA. The PSA does not use QIND in this two-return combination, so these cases were excluded from the analysis of Section 3.1 above.

4. Item Response Rates by Mode

Table 5.0 presents the item response rates by all five response modes for the thirty housing unit items used in calculating QIND. The denominator of the rate is the number of times the edit input QIND algorithm indicated that the return was eligible to answer the item; the numerator of the rate is the number of times the edit input QIND algorithm found the unit to have an answer to the item. Only housing units with at least two responses were included, but units with exactly two mail responses were excluded. Further, these item response calculations include both the accepted and rejected response. Table 6.0 presents the item response rates for the fifty-two person items used in calculating QIND occupied units. In occupied housing units with more than one person, each person contributes to Table 6.0 those items for which he or she is eligible. Response rates were calculated without weighting the data.

This analysis uses QIND calculations consistent with those in production edit input, although we discovered that the universe definition for some items used to calculate QIND was incorrect. TQA and CATI cases are not asked the telephone service item, since it would be redundant. The existing edit input procedure expected this item to have been automatically filled with a 'yes' answer in these modes, but this is only done after edit input. In fact, these modes are not eligible to be asked this question, so their cells on Tables 5.0-5.2 incorrectly show 0% response. Likewise, the Computer Use, Internet Access, and Internet Subscription items on these tables have incorrect definitions, leading to an underestimate of the true response rates. Finally, on Tables 6.0-6.2, the Grandchildren Living at Home, Responsible for Grandchildren, and Months Responsible for Grandchildren items have counts of eligible cases that are all too high, underestimating the true response rates. These flaws will be corrected with edit input for the 2015 data in March 2016.

Analyzing the item response rates by mode for the housing unit items in Table 5.0 shows a mixed pattern for the Internet mode. Item response rates such as for Property Value show response rates close to those of mail, but some item response rates were closer to the CATI/CAPI rates, such as the Monthly Electricity Cost. A few items diverged from the rate for mail, such as Monthly Condominium Fee. The most obvious pattern in Table 5.0 is that the Internet mode shows generally the lowest item response rates for many items of all the modes, such as Number of Bedrooms, Number of Rooms, and Receipt of Food Stamps. This might occur if respondents break off from the instrument after completing the household roster, as the housing unit items

appear after basic demographic questions such as Sex and Age but before detailed person-level items such as English Ability or Educational Attainment.

Tables 5.1 and 5.2 show the item response by mode for housing unit items limited to pairs of returns for which the difference in the quality index between the returns falls in [-20, 0), with 5.1 containing only the returns the PSA selected, and 5.2 the returns the PSA rejected. Thus, the mail returns on Table 5.1 were selected over a competing response with a lower QIND because of the bonus in the PSA. Because their selections were often driven by time of arrival rather than item completeness, TQA returns are excluded from these tables.

No clear pattern in the item responses emerges, though Table 5.1 shows that the mail returns have much higher overall item response rates than the Internet returns in the same table. In Table 5.2 we see the reverse; the response rates are higher for the Internet than the mail.

The item nonresponse patterns in Table 6.0 are similar to those seen in Table 5.0, as the basic demographic item response rates (Sex, Age, Marital Status, Hispanic Origin, and Race) are high for Internet returns (with the exception of Marital Status), and decrease thereafter on the detailed person items. The Internet response rates for Citizenship and Ancestry decreased from those of the most comparable mode (mail), and for items such as English Ability, were much smaller than the best mode. (For English Ability, the item response rate for mail was 77.9 percent, while for the Internet, the rate was 42.7 percent.)

Tables 6.1 and 6.2 are analogous to Tables 5.1 and 5.2, in that they analyze the item response rates for person items by mode, restricted to pairs of returns where the difference in the quality index is in the range [-20, 0). Table 6.1 contains the returns the PSA selected, while Table 6.2 holds those it rejected. As with Tables 5.1 and 5.2, TQA returns are excluded from these tables. The stark difference between the Internet returns on Table 6.1 and the mail returns shows that some Internet respondents break off the interview before completing the detailed person items, which come after the basic information gathered in creating the roster at the housing unit, and after collecting the housing unit items.

6. Conclusions

Importantly, we found no evidence of any flaws in the current PSA that would require immediate correction for the next round of annual ACS estimates to be released in 2015.

From our review of the distribution of return completeness, we saw no reason to give mail but not Internet responses a 20-point QIND bonus in the PSA selection. It remains a topic for future research whether the self-response returns in general merit a 20-point bonus in QIND in the PSA. We add that there may be reason to be less concerned about the effect of having an interviewer collect the ACS data from respondents now than in the early days of the survey. ACS field interviewers have more familiarity with the survey than would temporary employees hired to conduct a long-form survey during a decennial census.

The addition of the Internet mode has changed the population of the ACS respondents who respond to the ACS in more than one mode, as Table 1.1 shows a different pattern of responses than Tables 1.2 and 1.3. Patterns in the Internet responses suggest that respondents who respond by the Internet and another mode may have lost their passwords to re-enter the Internet instrument, instead of being reluctant to respond to the ACS. Because the population of cases the PSA must resolve has changed, it may be worth revising under what circumstances a mail return should receive a bonus to its return quality index in the PSA. For instance, the PSA could apply the bonus only to mail returns when the other mode is CATI or CAPI, not Internet, or the PSA could do away with a bonus for mail returns entirely.

Table 4.0 shows that changing the PSA to treat TQA as a CATI return would not change the PSA results dramatically. In the case of TQA vs. another mode, in only 379 cases would we expect the PSA results to change, and in many of those cases (the mail vs. TQA cases) the results would go from being determined by the return received first to being the return with higher data quality, even allowing for the mail retaining a bonus. Therefore, it may be worth changing the PSA to treat TQA more like the instrument that collects it (CATI), rather than grouping it with mail returns because it is a self-response.

Although this study did not examine the case of two mail returns (which only happens in the Puerto Rico Community Survey) or the case of a mail return and a TQA return (which is currently handled in the PSA just as if both returns were mail returns), future research may address whether the ACS preference for the earlier return is justified given the responses we have seen.

7. References

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Table 1.0 Frequency Differences Of Mail/TQA QIND Minus Internet/CATI/CAPI QIND For All Units With Only Two Returns

Difference in QIND	2013 Total	Panel 201301	Panel 201302	Panel 201303	Panel 201304	Panel 201305	Panel 201306	Panel 201307	Panel 201308	Panel 201309	Panel 201311	Panel 201312
[-100, -90)	46	5	2	4	5	2	1	7	4	3	5	8
[-90, -80)	167	23	21	8	7	8	7	9	26	19	24	15
[-80, -70)	110	7	13	9	10	11	9	9	9	11	13	9
[-70, -60)	163	17	13	19	10	14	13	10	19	10	23	15
[-60, -50)	276	27	31	28	18	16	25	29	22	13	42	25
[-50, -40)	368	44	38	18	26	29	39	25	33	32	52	32
[-40, -30)	474	46	58	39	37	39	37	35	36	28	65	54
[-30, -20)	640	61	68	47	53	61	57	51	48	41	86	67
[-20, -10)	1,038	96	114	89	85	77	76	80	77	82	149	113
[-10, 0)	2,817	256	278	251	239	223	226	215	246	191	365	327
[0, 10)	5,028	416	497	407	413	407	437	406	439	423	643	540
[10, 20)	2,123	184	227	194	192	194	193	182	190	188	204	175
[20, 30)	2,633	235	232	240	249	267	241	254	262	241	211	201
[30, 40)	4,784	439	494	459	437	417	430	469	437	426	403	373
[40, 50)	4,823	408	465	451	418	459	440	459	456	457	429	381
[50, 60)	4,041	358	421	337	327	406	399	362	359	374	365	333
[60, 70)	3,120	249	278	285	265	297	314	329	296	285	269	253
[70, 80)	1,965	184	191	176	193	189	179	175	181	165	177	155
[80, 90)	1,930	183	177	168	179	165	174	167	221	178	146	172
[90, 100)	1,652	197	133	141	149	156	127	152	162	168	151	116
Total	38,198	3,435	3,751	3,370	3,312	3,437	3,424	3,425	3,523	3,335	3,822	3,364

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 1.1 Frequency Differences of Mail Minus Internet For All Units With Only This Combination of Two Returns

Difference in QIND	2013 Total	Panel 201301	Panel 201302	Panel 201303	Panel 201304	Panel 201305	Panel 201306	Panel 201307	Panel 201308	Panel 201309	Panel 201311	Panel 201312
[-100, -90)	14	1	0	1	2	2	1	2	1	1	1	2
[-90, -80)	29	4	2	3	1	2	3	2	3	3	4	2
[-80, -70)	34	4	2	2	2	3	2	4	1	9	0	5
[-70, -60)	55	8	2	5	5	7	6	2	7	7	4	2
[-60, -50)	90	10	7	11	7	6	11	8	9	7	8	6
[-50, -40)	120	14	11	6	10	9	13	6	10	18	13	10
[-40, -30)	180	23	22	14	21	19	16	13	16	12	15	9
[-30, -20)	252	22	22	21	30	24	22	17	20	30	21	23
[-20, -10)	454	50	39	48	47	32	32	39	38	54	38	37
[-10, 0)	1,211	130	103	110	112	102	100	102	102	128	113	109
[0, 10)	2,797	245	238	237	262	248	255	247	280	339	223	223
[10, 20)	1,773	160	178	166	157	169	159	158	155	173	159	139
[20, 30)	2,371	209	204	226	213	247	211	228	238	230	184	181
[30, 40)	4,370	384	451	411	402	377	398	436	406	404	362	339
[40, 50)	4,530	384	430	422	398	423	414	434	428	440	401	356
[50, 60)	3,607	312	364	295	307	368	358	325	310	346	325	297
[60, 70)	2,899	235	254	271	246	271	287	311	283	268	242	231
[70, 80)	1,821	167	170	163	179	172	167	164	172	155	169	143
[80, 90)	1,765	166	166	155	160	155	152	152	206	163	136	154
[90, 100)	1,546	184	126	135	142	141	120	140	151	157	138	112
Total	29,918	2,712	2,791	2,702	2,703	2,777	2,727	2,790	2,836	2,944	2,556	2,380

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 1.2 Frequency Differences Of Mail Minus CATI QIND For All Units With Only This Combination Of Two Returns

Difference in QIND	2013 Total	Panel 201301	Panel 201302	Panel 201303	Panel 201304	Panel 201305	Panel 201306	Panel 201307	Panel 201308	Panel 201309	Panel 201311	Panel 201312
[-100, -90)	5	0	1	1	1	0	0	0	1	0	1	0
[-90, -80)	66	7	11	2	3	2	3	2	12	2	15	7
[-80, -70)	48	1	7	3	7	5	6	2	6	0	9	2
[-70, -60)	70	3	7	11	4	2	6	4	8	1	15	9
[-60, -50)	120	11	17	9	8	5	8	7	10	1	29	15
[-50, -40)	164	15	18	10	9	14	15	9	14	9	35	16
[-40, -30)	193	12	31	11	9	9	14	12	16	6	38	35
[-30, -20)	239	17	34	17	10	23	13	15	20	3	53	34
[-20, -10)	403	26	58	33	25	24	26	22	30	13	85	61
[-10, 0)	1,042	77	131	84	69	73	70	57	103	31	191	156
[0, 10)	1,484	104	200	101	81	89	102	80	119	39	322	247
[10, 20)	163	11	25	15	16	7	16	8	15	4	25	21
[20, 30)	44	2	9	2	8	3	2	3	4	1	3	7
[30, 40)	30	4	1	3	0	4	5	4	1	0	6	2
[40, 50)	49	2	8	5	4	4	6	2	3	1	9	5
[50, 60)	70	10	10	6	3	4	6	9	7	4	9	2
[60, 70)	19	2	1	1	1	4	4	1	0	1	3	1
[70, 80)	1	0	0	0	0	0	0	0	1	0	0	0
[80, 90)	0	0	0	0	0	0	0	0	0	0	0	0
[90, 100)	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,210	304	569	314	258	272	302	237	370	116	848	620

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 1.3 Frequency Differences Of Mail Minus CAPI QIND For All Units With Only This Combination Of Two Returns

Difference in QIND	2013 Total	Panel 201301	Panel 201302	Panel 201303	Panel 201304	Panel 201305	Panel 201306	Panel 201307	Panel 201308	Panel 201309	Panel 201311	Panel 201312
[-100, -90)	27	4	1	2	2	0	0	5	2	2	3	6
[-90, -80)	72	12	8	3	3	4	1	5	11	14	5	6
[-80, -70)	28	2	4	4	1	3	1	3	2	2	4	2
[-70, -60)	35	5	3	3	1	4	1	4	4	2	4	4
[-60, -50)	61	5	7	7	2	5	5	13	3	5	5	4
[-50, -40)	71	14	7	2	5	5	7	10	8	5	3	5
[-40, -30)	79	7	4	13	5	8	7	9	1	6	10	9
[-30, -20)	117	20	9	7	12	8	15	16	5	7	10	8
[-20, -10)	159	19	15	8	13	18	17	16	8	13	22	10
[-10, 0)	431	40	35	35	44	40	43	41	32	25	55	41
[0, 10)	472	39	28	35	50	42	51	58	26	25	75	43
[10, 20)	107	5	11	5	14	7	10	13	13	10	10	9
[20, 30)	107	9	11	7	16	8	13	11	5	5	15	7
[30, 40)	128	10	15	19	14	9	15	9	4	8	13	12
[40, 50)	77	4	9	9	2	8	6	8	7	9	10	5
[50, 60)	79	6	12	9	5	9	7	7	4	4	6	10
[60, 70)	39	2	4	2	3	6	5	5	4	3	4	1
[70, 80)	16	2	3	1	2	2	1	3	1	0	1	0
[80, 90)	5	1	0	1	1	0	1	0	0	0	0	1
[90, 100)	3	0	0	0	0	0	1	1	0	1	0	0
Total	2,113	206	186	172	195	186	207	237	140	146	255	183

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 1.4 Frequency Differences Of TQA Minus Internet QIND For All Units With Only This Combination Of Two Returns

Difference in QIND	2013 Total	Panel 201301	Panel 201302	Panel 201303	Panel 201304	Panel 201305	Panel 201306	Panel 201307	Panel 201308	Panel 201309	Panel 201311	Panel 201312
[-100, -90)	0	0	0	0	0	0	0	0	0	0	0	0
[-90, -80)	0	0	0	0	0	0	0	0	0	0	0	0
[-80, -70)	0	0	0	0	0	0	0	0	0	0	0	0
[-70, -60)	2	1	1	0	0	0	0	0	0	0	0	0
[-60, -50)	3	1	0	1	0	0	0	1	0	0	0	0
[-50, -40)	10	1	2	0	1	1	3	0	1	0	1	0
[-40, -30)	15	3	1	0	2	1	0	1	3	2	1	1
[-30, -20)	25	2	3	2	1	3	6	2	3	1	1	1
[-20, -10)	19	1	1	0	0	3	1	3	1	2	3	4
[-10, 0)	96	7	7	16	10	7	7	12	7	6	4	13
[0, 10)	197	22	19	23	17	19	23	18	7	17	16	16
[10, 20)	69	8	11	6	5	10	5	3	6	1	8	6
[20, 30)	90	11	7	5	9	7	14	8	14	4	5	6
[30, 40)	248	38	25	26	21	27	12	18	26	14	22	19
[40, 50)	158	18	17	12	14	24	14	14	18	7	7	13
[50, 60)	283	30	35	27	12	25	28	20	38	20	24	24
[60, 70)	163	10	19	11	15	16	18	12	9	13	20	20
[70, 80)	127	15	18	12	12	15	11	8	7	10	7	12
[80, 90)	160	16	11	12	18	10	21	15	15	15	10	17
[90, 100)	103	13	7	6	7	15	6	11	11	10	13	4
Total	1,768	197	184	159	144	183	169	146	166	122	142	156

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 1.5 Frequency Differences Of TQA Minus CATI QIND For All Units With Only This Combination Of Two Returns

Difference in QIND	2013 Total	Panel 201301	Panel 201302	Panel 201303	Panel 201304	Panel 201305	Panel 201306	Panel 201307	Panel 201308	Panel 201309	Panel 201311	Panel 201312
[-100, -90)	0	0	0	0	0	0	0	0	0	0	0	0
[-90, -80)	0	0	0	0	0	0	0	0	0	0	0	0
[-80, -70)	0	0	0	0	0	0	0	0	0	0	0	0
[-70, -60)	1	0	0	0	0	1	0	0	0	0	0	0
[-60, -50)	0	0	0	0	0	0	0	0	0	0	0	0
[-50, -40)	1	0	0	0	0	0	0	0	0	0	0	1
[-40, -30)	3	0	0	0	0	0	0	0	0	2	1	0
[-30, -20)	1	0	0	0	0	0	1	0	0	0	0	0
[-20, -10)	1	0	0	0	0	0	0	0	0	0	1	0
[-10, 0)	14	1	0	2	0	1	3	3	2	0	0	2
[0, 10)	47	6	5	5	2	4	4	2	6	2	3	8
[10, 20)	3	0	0	1	0	0	0	0	1	0	1	0
[20, 30)	9	2	0	0	2	1	0	1	1	0	2	0
[30, 40)	0	0	0	0	0	0	0	0	0	0	0	0
[40, 50)	1	0	0	0	0	0	0	0	0	0	0	1
[50, 60)	0	0	0	0	0	0	0	0	0	0	0	0
[60, 70)	0	0	0	0	0	0	0	0	0	0	0	0
[70, 80)	0	0	0	0	0	0	0	0	0	0	0	0
[80, 90)	0	0	0	0	0	0	0	0	0	0	0	0
[90, 100)	0	0	0	0	0	0	0	0	0	0	0	0
Total	81	9	5	8	4	7	8	6	10	4	8	12

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 1.6 Frequency Differences Of TQA Minus CAPI QIND For All Units With Only This Combination Of Two Returns

Difference in QIND	2013 Total	Panel 201301	Panel 201302	Panel 201303	Panel 201304	Panel 201305	Panel 201306	Panel 201307	Panel 201308	Panel 201309	Panel 201311	Panel 201312
[-100, -90)	0	0	0	0	0	0	0	0	0	0	0	0
[-90, -80)	0	0	0	0	0	0	0	0	0	0	0	0
[-80, -70)	0	0	0	0	0	0	0	0	0	0	0	0
[-70, -60)	0	0	0	0	0	0	0	0	0	0	0	0
[-60, -50)	2	0	0	0	1	0	1	0	0	0	0	0
[-50, -40)	2	0	0	0	1	0	1	0	0	0	0	0
[-40, -30)	4	1	0	1	0	2	0	0	0	0	0	0
[-30, -20)	6	0	0	0	0	3	0	1	0	0	1	1
[-20, -10)	2	0	1	0	0	0	0	0	0	0	0	1
[-10, 0)	23	1	2	4	4	0	3	0	0	1	2	6
[0, 10)	31	0	7	6	1	5	2	1	1	1	4	3
[10, 20)	8	0	2	1	0	1	3	0	0	0	1	0
[20, 30)	12	2	1	0	1	1	1	3	0	1	2	0
[30, 40)	8	3	2	0	0	0	0	2	0	0	0	1
[40, 50)	8	0	1	3	0	0	0	1	0	0	2	1
[50, 60)	2	0	0	0	0	0	0	1	0	0	1	0
[60, 70)	0	0	0	0	0	0	0	0	0	0	0	0
[70, 80)	0	0	0	0	0	0	0	0	0	0	0	0
[80, 90)	0	0	0	0	0	0	0	0	0	0	0	0
[90, 100)	0	0	0	0	0	0	0	0	0	0	0	0
Total	108	7	16	15	8	12	11	9	1	3	13	13

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 2.0 Frequency of Mail/TQA Minus Internet/CATI/CAPI QIND For All Units With Two Returns Within Range of PSA Bonus

Difference in QIND	All units in 2013	201301	201302	201303	201304	201305	201306	201307	201308	201309	201311	201312
[-20, 0)	3,855	352	392	340	324	300	302	295	323	273	514	440

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 2.1 Frequency of Mail Minus Internet QIND For All Units With Only This Combination of Two Returns Within Range of PSA Bonus

Difference in QIND	All units in 2013	201301	201302	201303	201304	201305	201306	201307	201308	201309	201311	201312
[-20, 0)	1,665	180	142	158	159	134	132	141	140	182	151	146

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 2.2 Frequency of Mail Minus CATI QIND For All Units With Only This Combination of Two Returns Within Range of PSA Bonus

Difference in QIND	All units in 2013	201301	201302	201303	201304	201305	201306	201307	201308	201309	201311	201312
[-20, 0)	1,445	103	189	117	94	97	96	79	133	44	276	217

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 2.3 Frequency of Mail Minus CAPI QIND For All Units With Only This Combination of Two Returns Within Range of PSA Bonus

Difference in QIND	All units in 2013	201301	201302	201303	201304	201305	201306	201307	201308	201309	201311	201312
[-20, 0)	590	59	50	43	57	58	60	57	40	38	77	51

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 2.4 Frequency of TQA Minus Internet QIND For All Units With Only This Combination of Two Returns Within Range of PSA Bonus

Difference in QIND	All units in 2013	201301	201302	201303	201304	201305	201306	201307	201308	201309	201311	201312
[-20, 0)	115	8	8	16	10	10	8	15	8	8	7	17

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 2.5 Frequency of TQA Minus CATI QIND For All Units With Only This Combination of Two Returns Within Range of PSA Bonus

Difference in QIND	All units in 2013	201301	201302	201303	201304	201305	201306	201307	201308	201309	201311	201312
[-20, 0)	15	1	0	2	0	1	3	3	2	0	1	2

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 2.6 Frequency of TQA Minus CAPI QIND For All Units With Only This Combination of Two Returns Within Range of PSA Bonus

Difference in QIND	All units in 2013	201301	201302	201303	201304	201305	201306	201307	201308	201309	201311	201312
[-20, 0)	25	1	3	4	4	0	3	0	0	1	2	7

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 3.0 QIND Decile By Mode Where Selected Return Is Occupied or Vacant

QIND Bin	Mail	CATI/TQA	CAPI	Internet
[0, 10)	4,734	26	2,566	1,593
[10, 20)	5,001	125	16,039	2,950
[20, 30)	9,079	956	12,388	8,089
[30, 40)	17,377	7,854	23,871	12,896
[40, 50)	16,714	1,566	19,133	16,239
[50, 60)	22,192	6,518	115,328	20,769
[60, 70)	32,862	1,312	4,578	15,265
[70, 80)	66,514	6,707	11,387	14,258
[80, 90)	207,616	99,568	132,663	279,430
[90, 100]	293,435	68,111	213,048	438,117
Total	675,524	192,743	551,001	809,606

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 3.1 QIND Decile By Mode, Restricted To Cases Where Selected Return Is Occupied

QIND Bin	Mail	CATI/TQA	CAPI	Internet
[0, 10)	4,382	2	174	1,071
[10, 20)	4,953	80	1,632	2,893
[20, 30)	9,063	890	4,096	8,019
[30, 40)	17,344	1,534	3,443	12,859
[40, 50)	16,598	1,493	2,495	16,085
[50, 60)	21,900	1,265	3,103	16,583
[60, 70)	31,778	1,311	4,574	10,005
[70, 80)	65,906	6,707	11,387	13,780
[80, 90)	206,464	99,568	132,663	279,417
[90, 100]	292,874	68,111	213,048	438,116
Total	671,262	180,961	376,615	798,828

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 3.2 QIND Decile By Mode, Restricted To Cases Where Selected Return Vacant

QIND Bin	Mail	CATI/TQA	CAPI	Internet
[0, 10)	352	24	2,392	522
[10, 20)	48	45	14,407	57
[20, 30)	16	66	8,292	70
[30, 40)	33	6,320	20,428	37
[40, 50)	116	73	16,638	154
[50, 60)	292	5,253	112,225	4,186
[60, 70)	1,084	1	4	5,260
[70, 80)	608	0	0	478
[80, 90)	1,152	0	0	13
[90, 100]	561	0	0	1
Total	4,262	11,782	174,386	10,778

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 4.0 Comparison of Existing And Experimental PSAs, Full Sample

Treatments	PSA Chooses TQA	PSA Chooses non-TQA	Total
PSA Treats TQA as Mail (Existing)	2,166	204	2,370
PSA Treats TQA as CATI (Experimental)	1,787	583	2,370

Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 5.0 Housing Unit Item Response By Mode Of Data Collection For All Units With Multiple Returns, Except Those With Two Mail Returns

Item	Internet Eligible	Internet Answered	Mail El.	Mail Ans.	TQA CATI El.	TQA CATI Ans.	CATI El.	CATI Ans.	CAPI Personal Visit El.	CAPI Personal Visit Ans.	CAPI via Phone El.	CAPI via Phone Ans.
Type of Building	2,012	99.0%	34,124	98.8%	1,914	99.8%	3,258	99.8%	3,779	99.4%	1,393	99.9%
Year Built	2,012	97.9%	34,124	92.3%	1,914	91.7%	3,258	90.8%	3,779	77.4%	1,393	79.8%
Year Moved In	1,439	95.6%	33,869	96.8%	1,608	94.7%	3,258	96.3%	3,393	95.5%	1,268	95.3%
Number of Rooms	2,012	96.5%	34,124	97.3%	1,914	99.6%	3,258	98.8%	3,779	96.9%	1,393	97.3%
Number of Bedrooms	2,012	96.1%	34,124	98.0%	1,914	99.6%	3,258	98.7%	3,779	96.8%	1,393	97.3%
Complete Plumbing	2,012	96.4%	34,124	98.6%	1,914	99.8%	3,258	99.8%	3,779	99.1%	1,393	99.4%
Complete Kitchen	2,012	95.6%	34,124	98.3%	1,914	99.8%	3,258	99.8%	3,779	98.8%	1,393	99.4%
Telephone Service	1,439	97.4%	33,869	97.8%	1,608	0.0%	3,258	0.0%	3,393	98.8%	1,268	98.8%
Computer Use	2,012	2.5%	34,124	2.6%	1,914	8.7%	3,258	17.7%	3,779	10.3%	1,393	11.1%
Internet Access	2,012	94.0%	34,124	97.1%	1,914	79.4%	3,258	96.2%	3,779	86.4%	1,393	87.2%
Internet Subscription	2,012	56.5%	34,124	89.6%	1,914	63.4%	3,258	71.2%	3,779	69.7%	1,393	72.6%
Number of Vehicles	1,439	96.9%	33,869	98.3%	1,608	95.0%	3,258	97.3%	3,393	97.2%	1,268	96.5%
Type of Fuel	1,439	96.5%	33,869	93.9%	1,608	93.3%	3,258	97.1%	3,393	96.9%	1,268	96.3%

Item	Internet Eligible	Internet Answered	Mail El.	Mail Ans.	TQA CATI El.	TQA CATI Ans.	CATI El.	CATI Ans.	CAPI Personal Visit El.	CAPI Personal Visit Ans.	CAPI via Phone El.	CAPI via Phone Ans.
Monthly Electricity Cost	1,433	92.0%	33,856	94.5%	1,533	95.3%	3,211	89.6%	3,370	84.5%	1,261	84.4%
Monthly Gas Cost	1,433	93.7%	33,856	89.8%	1,533	95.2%	3,211	90.2%	3,370	88.0%	1,261	87.0%
Yearly Water and Sewer Cost	1,433	92.8%	33,856	92.3%	1,533	93.3%	3,211	88.0%	3,370	85.2%	1,261	84.5%
Yearly Other Fuel Costs	1,433	96.4%	33,856	86.1%	1,533	99.2%	3,211	98.2%	3,370	97.4%	1,261	97.5%
Received Food Stamps	1,433	96.6%	33,856	97.8%	1,533	99.7%	3,211	99.5%	3,370	98.1%	1,261	98.3%
Monthly Condo Fee	2,012	68.9%	34,124	96.1%	1,914	79.9%	3,258	98.3%	3,779	88.3%	1,393	89.4%
Tenure	1,439	96.5%	33,869	96.5%	1,608	95.3%	3,258	98.2%	3,393	97.4%	1,268	97.6%
Monthly Rent	998	39.6%	8,143	77.9%	798	44.6%	459	68.0%	1,732	62.6%	596	66.3%
Meals Included in Rent	419	79.5%	8,054	80.7%	417	88.2%	412	80.8%	1,323	87.6%	464	90.1%
Property Value	1,014	92.6%	25,982	89.9%	1,126	91.8%	2,800	84.0%	2,064	80.8%	804	80.5%
Yearly Real Estate Taxes	1,014	90.8%	25,802	89.5%	1,114	87.0%	2,771	77.5%	2,035	65.2%	786	70.1%
Property Insurance	1,014	87.9%	25,802	86.0%	1,114	80.5%	2,771	66.0%	2,035	55.2%	786	58.9%

Item	Internet Eligible	Internet Answered	Mail El.	Mail Ans.	TQA CATI El.	TQA CATI Ans.	CATI El.	CATI Ans.	CAPI Personal Visit El.	CAPI Personal Visit Ans.	CAPI via Phone El.	CAPI via Phone Ans.
Mortgage	1,014	52.9%	25,802	60.9%	1,114	51.8%	2,771	54.9%	2,035	62.1%	786	60.9%
Monthly Mortgage Payment	1,014	98.2%	25,802	96.0%	1,114	58.0%	2,771	63.1%	2,035	76.0%	786	77.2%
Second Mortgage	1,014	96.3%	25,802	96.7%	1,114	99.3%	2,771	98.6%	2,035	95.5%	786	95.9%
Home Equity Loan	1,014	96.3%	25,802	96.7%	1,114	98.7%	2,771	97.7%	2,035	95.6%	786	95.5%
Vacancy Status	573	3.5%	251	19.5%	306	100.0%	0	N/A	386	99.5%	125	99.2%

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 5.1 Housing Unit Item Response By Mode, [-20, 0) PSA-Selected Returns Only, Excluding TQA And Units With Three Returns

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered
Type of Building	21	71.4%	3,677	96.6%	2	100.0%
Year Built	21	61.9%	3,677	85.3%	2	0.0%
Number of Rooms	21	28.6%	3,677	93.1%	2	0.0%
Number of Bedrooms	21	28.6%	3,677	94.5%	2	0.0%
Complete Plumbing	21	33.3%	3,677	95.5%	2	0.0%
Complete Kitchen	21	33.3%	3,677	95.3%	2	0.0%
Monthly Condo Fee	21	28.6%	3,677	89.4%	2	0.0%
Year Moved In	19	47.4%	3,644	92.3%	0	N/A
Telephone Service	19	36.8%	3,644	93.9%	0	N/A
Number of Vehicles	19	31.6%	3,644	95.3%	0	N/A
Type of Fuel	19	26.3%	3,644	88.1%	0	N/A
Tenure	19	26.3%	3,644	90.8%	0	N/A
Meals Included in Rent	15	6.7%	1,107	66.1%	0	N/A

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered
Yearly Real Estate Taxes	4	25.0%	2,537	79.5%	0	N/A
Property Insurance	4	0.0%	2,537	74.7%	0	N/A
Mortgage	4	0.0%	2,537	48.6%	0	N/A
Monthly Mortgage Payment	4	25.0%	2,537	89.4%	0	N/A
Second Mortgage	4	0.0%	2,537	91.3%	0	N/A
Home Equity Loan	4	0.0%	2,537	91.3%	0	N/A
Monthly Electricity Cost	19	21.1%	3,644	87.1%	0	N/A
Monthly Gas Cost	19	26.3%	3,644	79.0%	0	N/A
Yearly Water and Sewer Cost	19	26.3%	3,644	82.2%	0	N/A
Yearly Other Fuel Costs	19	26.3%	3,644	73.1%	0	N/A
Received Food Stamps	19	31.6%	3,644	93.5%	0	N/A
Monthly Rent	17	5.9%	1,129	62.5%	2	0.0%
Property Value	4	25.0%	2,548	79.0%	0	N/A

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered
Vacancy Status	2	0.0%	33	0.0%	2	100.0%
Computer Use	21	0.0%	3,677	2.0%	2	0.0%
Internet Access	21	28.6%	3,677	91.9%	2	0.0%
Internet Subscription	21	19.0%	3,677	80.3%	2	0.0%

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 5.2 Housing Unit Item Response By Mode, [-20, 0) PSA-Rejected Returns Only, Excluding TQA And Units With Three Returns

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CATI Eligible	CATI Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered	CAPI via Phone Eligible	CAPI via Phone Answered
Type of Building	1,644	99.6%	23	43.5%	1,445	100.0%	439	99.8%	149	100.0%
Year Built	1,644	97.9%	23	30.4%	1,445	89.4%	439	76.1%	149	83.2%
Number of Rooms	1,644	96.3%	23	21.7%	1,445	99.8%	439	98.2%	149	98.7%
Number of Bedrooms	1,644	95.8%	23	26.1%	1,445	99.7%	439	98.2%	149	98.7%
Complete Plumbing	1,644	97.4%	23	30.4%	1,445	100.0%	439	99.3%	149	98.0%
Complete Kitchen	1,644	96.8%	23	30.4%	1,445	100.0%	439	99.3%	149	98.0%
Monthly Condo Fee	1,644	96.7%	23	26.1%	1,445	99.6%	439	94.5%	149	96.6%
Year Moved In	1,635	97.2%	10	20.0%	1,445	97.6%	418	98.1%	144	97.9%
Telephone Service	1,635	98.2%	10	40.0%	1,445	0.0%	418	99.3%	144	100.0%
Number of Vehicles	1,635	97.6%	10	20.0%	1,445	99.7%	418	99.3%	144	100.0%
Type of Fuel	1,635	97.7%	10	20.0%	1,445	99.0%	418	98.8%	144	98.6%
Tenure	1,635	97.6%	10	30.0%	1,445	99.7%	418	99.0%	144	99.3%
Meals Included in Rent	382	82.5%	8	12.5%	259	87.6%	197	91.9%	67	97.0%

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CATI Eligible	CATI Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered	CAPI via Phone Eligible	CAPI via Phone Answered
Yearly Real Estate Taxes	1,252	90.5%	2	50.0%	1,180	84.3%	218	71.1%	77	85.7%
Property Insurance	1,252	87.5%	2	50.0%	1,180	74.3%	218	64.2%	77	68.8%
Mortgage	1,252	49.0%	2	50.0%	1,180	43.4%	218	56.0%	77	64.9%
Monthly Mortgage Payment	1,252	97.6%	2	0.0%	1,180	47.4%	218	69.3%	77	76.6%
Second Mortgage	1,252	95.9%	2	0.0%	1,180	99.4%	218	97.2%	77	98.7%
Home Equity Loan	1,252	95.9%	2	0.0%	1,180	99.4%	218	96.8%	77	98.7%
Monthly Electricity Cost	1,634	92.4%	10	20.0%	1,442	93.4%	417	89.4%	144	94.4%
Monthly Gas Cost	1,634	94.7%	10	20.0%	1,442	93.4%	417	90.9%	144	95.1%
Yearly Water and Sewer Cost	1,634	93.3%	10	20.0%	1,442	91.3%	417	87.3%	144	91.0%
Yearly Other Fuel Costs	1,634	96.3%	10	20.0%	1,442	98.6%	417	97.6%	144	100.0%
Received Food Stamps	1,634	97.2%	10	40.0%	1,442	99.7%	417	99.5%	144	98.6%
Monthly Rent	392	79.6%	20	10.0%	262	80.9%	219	79.5%	72	84.7%

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CATI Eligible	CATI Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered	CAPI via Phone Eligible	CAPI via Phone Answered
Property Value	1,252	92.3%	3	33.3%	1,183	87.3%	221	82.8%	77	92.2%
Vacancy Status	9	44.4%	0	N/A	0	N/A	21	100.0%	5	100.0%
Computer Use	1,644	4.4%	23	4.3%	1,445	11.2%	439	6.8%	149	9.4%
Internet Access	1,644	97.9%	23	65.2%	1,445	99.0%	439	94.8%	149	95.3%
Internet Subscription	1,644	84.4%	23	21.7%	1,445	59.2%	439	61.3%	149	65.8%

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 6.0 Person Item Response By Mode Of Data Collection

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	TQA CATI Eligible	TQA CATI Answered	CATI Eligible	CATI Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered	CAPI via Phone Eligible	CAPI via Phone Answered
Relationship	3,362	99.9%	90,037	97.4%	3,660	99.9%	8,837	100.0%	9,795	99.8%	3,483	99.7%
Sex	3,362	99.8%	90,037	97.7%	3,660	99.9%	8,837	99.9%	9,795	99.9%	3,483	99.7%
Age	3,362	97.6%	90,037	98.9%	3,660	99.9%	8,837	99.9%	9,795	99.6%	3,483	99.5%
Hispanic Origin	3,362	98.4%	90,037	94.3%	3,660	99.6%	8,837	99.2%	9,795	99.4%	3,483	99.0%
Race	3,362	97.6%	90,037	95.9%	3,660	98.8%	8,837	99.1%	9,795	99.5%	3,483	98.9%
Place of Birth	3,362	80.0%	90,037	84.8%	3,660	97.9%	8,837	97.2%	9,795	95.9%	3,483	94.8%
Citizenship	3,362	81.0%	90,037	94.9%	3,660	98.6%	8,837	98.0%	9,795	97.2%	3,483	96.5%
School Enrollment	3,265	80.8%	87,263	93.7%	3,568	98.6%	8,636	97.8%	9,362	96.5%	3,315	95.5%
Type of School	1,232	49.0%	24,326	77.5%	788	93.1%	2,364	91.5%	3,171	88.7%	1,100	85.8%
Grade Level Attending	3,265	18.4%	87,263	27.3%	3,568	20.5%	8,636	24.9%	9,362	29.6%	3,315	28.3%
Educational Attainment	3,265	80.8%	87,263	91.9%	3,568	97.2%	8,636	96.0%	9,362	93.1%	3,315	92.5%
Field of Degree	704	95.0%	22,852	94.1%	888	98.0%	2,009	97.2%	1,934	95.0%	877	94.5%
Ancestry	3,362	73.0%	90,037	84.4%	3,660	92.1%	8,837	91.9%	9,795	89.1%	3,483	87.7%
Migration	3,195	80.6%	85,343	93.3%	3,496	98.8%	8,454	97.9%	9,097	96.8%	3,199	96.3%
Speaks Another Language at Home	3,195	80.4%	85,343	94.7%	3,496	98.7%	8,454	97.8%	9,097	96.6%	3,199	95.8%
Other Language	918	42.2%	15,332	70.0%	636	95.1%	1,510	90.5%	2,327	88.7%	708	84.9%
English Ability	918	42.7%	15,332	77.9%	636	94.8%	1,510	90.6%	2,327	88.8%	708	84.6%
Health Insurance	3,362	78.7%	90,037	94.3%	3,660	98.4%	8,837	97.4%	9,795	94.6%	3,483	93.9%
Hearing Difficulty	3,362	79.3%	90,037	94.8%	3,660	98.4%	8,837	97.5%	9,795	96.2%	3,483	95.8%

ATTACHMENT

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	TQA CATI Eligible	TQA CATI Answered	CATI Eligible	CATI Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered	CAPI via Phone Eligible	CAPI via Phone Answered
Vision Difficulty	3,362	78.6%	90,037	94.3%	3,660	98.5%	8,837	97.5%	9,795	96.2%	3,483	95.8%
Physical Difficulty	3,195	78.8%	85,343	93.0%	3,496	98.7%	8,454	97.5%	9,097	96.1%	3,199	95.6%
Difficulty Remembering	3,195	79.0%	85,343	93.3%	3,496	98.3%	8,454	97.3%	9,097	96.0%	3,199	95.6%
Difficulty Dressing	3,195	78.7%	85,343	93.0%	3,496	98.6%	8,454	97.5%	9,097	96.1%	3,199	95.6%
Difficulty Going Out	2,686	80.8%	72,794	94.4%	3,057	98.8%	7,035	97.8%	7,441	96.4%	2,590	96.1%
Marital Status	3,362	74.7%	90,037	83.5%	3,660	83.9%	8,837	80.4%	9,795	75.6%	3,483	73.9%
Grandchildren Living at Home	2,803	20.1%	74,997	92.6%	3,103	99.7%	7,198	99.5%	7,630	99.6%	2,661	99.3%
Responsible for Grandchildren	2,803	2.6%	74,997	23.8%	3,103	3.1%	7,198	3.9%	7,630	2.7%	2,661	3.3%
Months Responsible for Grandchildren	2,803	1.0%	74,997	1.4%	3,103	1.0%	7,198	1.3%	7,630	0.9%	2,661	0.9%
Service in the Armed Forces	2,803	79.5%	74,997	93.6%	3,103	98.9%	7,198	97.7%	7,630	95.9%	2,661	95.1%
Has Service-Connected Disability Rating	825	28.8%	12,470	63.5%	377	87.0%	883	77.8%	816	60.2%	301	54.2%
Service Connected Disability Rating	629	6.8%	5,894	22.5%	104	50.0%	321	32.7%	403	16.6%	166	12.7%

ATTACHMENT

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	TQA CATI Eligible	TQA CATI Answered	CATI Eligible	CATI Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered	CAPI via Phone Eligible	CAPI via Phone Answered
Worked Last Week	2,803	79.6%	74,997	94.8%	3,103	98.5%	7,198	97.6%	7,630	95.7%	2,661	95.2%
Place of Work	1,830	57.8%	45,466	77.6%	1,492	75.2%	3,771	68.0%	4,810	69.6%	1,782	66.9%
Transportation to Work	1,830	65.1%	45,466	86.6%	1,492	96.3%	3,771	94.8%	4,810	91.3%	1,782	90.5%
When Last Worked	1,008	96.7%	31,601	88.5%	1,631	98.7%	3,501	97.7%	2,852	97.5%	891	97.8%
Weeks Worked Past 12 Months	2,036	21.7%	51,339	46.8%	1,755	26.8%	4,364	24.6%	5,322	19.5%	1,959	18.3%
Hours Worked per Week	2,036	64.6%	51,339	86.5%	1,755	93.0%	4,364	91.1%	5,322	89.2%	1,959	87.5%
Worked 50+ Weeks	210	97.1%	13,643	98.0%	266	98.1%	599	98.7%	517	98.3%	179	98.3%
Class of Worker	2,235	66.9%	57,194	84.5%	2,079	96.2%	4,936	94.3%	5,712	91.2%	2,103	90.3%
Business Name	2,235	63.4%	57,194	79.1%	2,079	87.3%	4,936	85.5%	5,712	82.5%	2,103	78.2%
Type of Business	2,235	65.1%	57,194	83.3%	2,079	95.6%	4,936	93.4%	5,712	88.6%	2,103	87.5%
Kind of Work Done	2,235	64.8%	57,194	84.9%	2,079	95.1%	4,936	93.4%	5,712	88.7%	2,103	87.6%
Most Important Duties/Activities	2,235	62.2%	57,194	80.9%	2,079	94.7%	4,936	91.8%	5,712	87.6%	2,103	85.6%
Wages/Salary Income	2,803	54.7%	74,997	83.1%	1,754	96.5%	4,336	94.9%	5,323	91.3%	1,947	91.9%
Self-Employment Income	2,803	52.4%	74,997	80.2%	1,754	96.6%	4,336	93.9%	5,323	89.3%	1,947	87.8%

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	TQA CATI Eligible	TQA CATI Answered	CATI Eligible	CATI Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered	CAPI via Phone Eligible	CAPI via Phone Answered
Interest, Net Rental, etc. Income	2,803	70.6%	74,997	80.5%	3,103	96.0%	7,198	93.3%	7,630	90.2%	2,661	88.3%
Social Security or Railroad Retirement Income	2,803	70.6%	74,997	85.1%	3,103	97.9%	7,198	96.2%	7,630	91.7%	2,661	90.0%
Supplemental Security Income	2,803	70.0%	74,997	83.7%	3,103	97.9%	7,198	96.0%	7,630	91.8%	2,661	89.9%
Public Assistance Income	2,803	69.5%	74,997	84.3%	3,103	97.9%	7,198	96.4%	7,630	92.0%	2,661	90.0%
Retirement Income	2,803	69.6%	74,997	84.7%	3,103	97.9%	7,198	96.2%	7,630	91.8%	2,661	89.6%
Other Income	2,803	69.4%	74,997	84.2%	3,103	97.9%	7,198	96.4%	7,630	91.3%	2,661	89.0%
Total Income	2,803	61.5%	74,997	80.4%	3,103	82.3%	7,198	73.1%	7,630	67.9%	2,661	64.9%

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 6.1 Person Item Response By Mode, [-20, 0) PSA-Selected Form Only, Excluding TQA And Units With Three Returns

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered
Sex	60	100.0%	8,683	96.7%	0	N/A
Age	60	80.0%	8,683	97.9%	0	N/A
Marital Status	60	50.0%	8,683	75.6%	0	N/A
Hispanic Origin	60	80.0%	8,683	88.9%	0	N/A
Race	60	66.7%	8,683	92.8%	0	N/A
Place of Birth	60	3.3%	8,683	74.2%	0	N/A
Citizenship	60	3.3%	8,683	86.6%	0	N/A
Ancestry	60	1.7%	8,683	70.2%	0	N/A
Relationship	60	100.0%	8,683	95.6%	0	N/A
School Enrollment	58	1.7%	8,477	83.7%	0	N/A
Type of School	57	0.0%	2,768	50.2%	0	N/A
Grade Level Attending	58	0.0%	8,477	23.3%	0	N/A
Educational Attainment	58	1.7%	8,477	81.1%	0	N/A
Migration	56	1.8%	8,330	81.8%	0	N/A
Speaks Another Language at Home	56	1.8%	8,330	85.1%	0	N/A
Other Language	50	0.0%	2,214	48.6%	0	N/A
English Ability	50	2.0%	2,214	55.4%	0	N/A
Physical Difficulty	56	0.0%	8,330	81.4%	0	N/A

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered
Difficulty Remembering	56	0.0%	8,330	81.6%	0	N/A
Difficulty Dressing	56	0.0%	8,330	81.5%	0	N/A
Difficulty Going Out	36	0.0%	7,132	83.5%	0	N/A
Grandchildren Living at Home	51	0.0%	7,410	81.5%	0	N/A
Responsible for Grandchildren	51	0.0%	7,410	23.3%	0	N/A
Months Responsible for Grandchildren	51	0.0%	7,410	1.8%	0	N/A
Service in the Armed Forces	51	0.0%	7,410	81.9%	0	N/A
Worked last Week	51	0.0%	7,410	84.8%	0	N/A
Place of Work	51	0.0%	4,306	53.9%	0	N/A
Transportation to Work	51	0.0%	4,306	65.2%	0	N/A
When Last Worked	0	N/A	3,463	79.2%	0	N/A
Weeks Worked Past 12 Months	51	0.0%	4,766	36.1%	0	N/A
Hours Worked per Week	51	0.0%	4,766	65.9%	0	N/A
Class of Worker	51	0.0%	5,365	63.0%	0	N/A

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered
Business Name	51	0.0%	5,365	55.7%	0	N/A
Type of Business	51	0.0%	5,365	60.7%	0	N/A
Kind of Work Done	51	0.0%	5,365	63.4%	0	N/A
Most Important Duties/Activities	51	0.0%	5,365	58.1%	0	N/A
Wages/Salary Income	51	0.0%	7,410	63.7%	0	N/A
Self-Employment Income	51	0.0%	7,410	59.0%	0	N/A
Interest, Net Rental, etc. Income	51	0.0%	7,410	58.7%	0	N/A
Social Security or Railroad Retirement Income	51	0.0%	7,410	68.1%	0	N/A
Supplemental Security Income	51	0.0%	7,410	64.2%	0	N/A
Public Assistance Income	51	0.0%	7,410	65.7%	0	N/A
Retirement Income	51	0.0%	7,410	66.6%	0	N/A
Other Income	51	0.0%	7,410	65.6%	0	N/A
Total Income	51	0.0%	7,410	62.2%	0	N/A

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered
Hearing Difficulty	60	0.0%	8,683	85.6%	0	N/A
Vision Difficulty	60	0.0%	8,683	84.8%	0	N/A
Worked 50+ Weeks	0	N/A	1,080	97.4%	0	N/A
Has Service-Connected Disability Rating	51	0.0%	2,084	38.8%	0	N/A
Service Connected Disability Rating	51	0.0%	1,422	10.1%	0	N/A
Health Insurance	60	0.0%	8,683	84.8%	0	N/A
Field of Degree	0	N/A	1,535	88.3%	0	N/A

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data

Table 6.2 Person Item Response By Mode, [-20, 0) PSA-Rejected Forms Only, Excluding TQA And Units With Three Returns

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CATI Eligible	CATI Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered	CAPI via Phone Eligible	CAPI via Phone Answered
Sex	4,011	100.0%	22	63.6%	3,172	100.0%	1,060	99.9%	341	100.0%
Age	4,011	99.0%	22	0.0%	3,172	100.0%	1,060	99.7%	341	100.0%
Marital Status	4,011	73.3%	22	9.1%	3,172	88.4%	1,060	79.1%	341	71.6%
Hispanic Origin	4,011	99.5%	22	0.0%	3,172	99.9%	1,060	99.8%	341	100.0%
Race	4,011	99.0%	22	9.1%	3,172	99.4%	1,060	99.4%	341	99.7%
Place of Birth	4,011	77.2%	22	18.2%	3,172	98.6%	1,060	98.9%	341	97.4%
Citizenship	4,011	78.0%	22	22.7%	3,172	98.8%	1,060	99.2%	341	97.4%
Ancestry	4,011	71.8%	22	13.6%	3,172	93.1%	1,060	93.2%	341	93.8%
Relationship	4,011	100.0%	22	90.9%	3,172	100.0%	1,060	99.9%	341	100.0%
School Enrollment	3,883	77.7%	22	9.1%	3,116	98.8%	1,033	98.7%	327	97.2%
Type of School	1,516	42.9%	20	0.0%	533	92.9%	315	95.9%	100	91.0%
Grade Level Attending	3,883	16.7%	22	4.5%	3,116	15.9%	1,033	29.1%	327	26.6%
Educational Attainment	3,883	77.5%	22	4.5%	3,116	97.5%	1,033	96.3%	327	93.9%
Migration	3,807	76.9%	22	9.1%	3,082	98.9%	1,003	98.8%	319	98.1%
Speaks Another Language at Home	3,807	77.1%	22	18.2%	3,082	98.9%	1,003	98.8%	319	98.1%
Other Language	1,097	31.6%	18	0.0%	464	94.8%	270	95.9%	45	86.7%
English Ability	1,097	33.0%	18	5.6%	464	94.6%	270	95.9%	45	88.9%
Physical Difficulty	3,807	75.1%	22	9.1%	3,082	98.7%	1,003	98.7%	319	97.8%

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CATI Eligible	CATI Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered	CAPI via Phone Eligible	CAPI via Phone Answered
Difficulty Remembering	3,807	75.2%	22	9.1%	3,082	98.7%	1,003	98.7%	319	97.8%
Difficulty Dressing	3,807	75.3%	22	9.1%	3,082	98.7%	1,003	98.7%	319	97.8%
Difficulty Going Out	3,247	76.2%	0	N/A	2,792	99.1%	832	99.2%	251	98.0%
Grandchildren Living at Home	3,334	19.5%	22	13.6%	2,828	99.8%	848	100.0%	256	99.6%
Responsible for Grandchildren	3,334	2.5%	22	9.1%	2,828	3.8%	848	2.7%	256	3.5%
Months Responsible for Grandchildren	3,334	1.0%	22	0.0%	2,828	1.1%	848	0.9%	256	1.2%
Service in the Armed Forces	3,334	76.0%	22	13.6%	2,828	99.0%	848	98.3%	256	96.9%
Worked last Week	3,334	76.1%	22	13.6%	2,828	99.0%	848	98.8%	256	98.0%
Place of Work	2,183	54.1%	19	5.3%	1,143	78.2%	487	74.7%	152	81.6%
Transportation to Work	2,183	60.3%	19	0.0%	1,143	97.5%	487	96.9%	152	96.7%
When Last Worked	1,193	96.3%	3	66.7%	1,700	99.0%	362	99.4%	105	98.1%
Weeks Worked Past 12 Months	2,427	22.0%	20	5.0%	1,351	27.2%	544	17.8%	168	21.4%
Hours Worked per Week	2,427	61.0%	20	5.0%	1,351	94.0%	544	93.9%	168	92.9%
Class of Worker	2,720	64.3%	20	10.0%	1,613	96.7%	600	97.2%	184	91.3%
Business Name	2,720	62.4%	20	10.0%	1,613	93.4%	600	88.5%	184	89.1%

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CATI Eligible	CATI Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered	CAPI via Phone Eligible	CAPI via Phone Answered
Type of Business	2,720	63.3%	20	5.0%	1,613	97.0%	600	93.8%	184	90.8%
Kind of Work Done	2,720	62.9%	20	5.0%	1,613	96.8%	600	94.0%	184	92.4%
Most Important Duties/Activities	2,720	60.5%	20	5.0%	1,613	95.7%	600	93.5%	184	92.9%
Wages/Salary Income	3,334	53.5%	22	4.5%	1,350	97.3%	542	97.6%	169	95.3%
Self-Employment Income	3,334	51.5%	22	4.5%	1,350	96.8%	542	96.1%	169	94.1%
Interest, Net Rental, etc. Income	3,334	68.4%	22	9.1%	2,828	96.7%	848	94.2%	256	94.5%
Social Security or Railroad Retirement Income	3,334	68.1%	22	13.6%	2,828	98.5%	848	96.1%	256	94.9%
Supplemental Security Income	3,334	67.2%	22	13.6%	2,828	98.5%	848	96.1%	256	94.9%
Public Assistance Income	3,334	66.8%	22	13.6%	2,828	98.4%	848	96.2%	256	94.5%
Retirement Income	3,334	66.6%	22	9.1%	2,828	98.5%	848	95.9%	256	94.5%
Other Income	3,334	66.5%	22	13.6%	2,828	98.6%	848	95.8%	256	94.9%
Total Income	3,334	56.4%	22	4.5%	2,828	83.2%	848	75.2%	256	78.9%

Item	Internet Eligible	Internet Answered	Mail Eligible	Mail Answered	CATI Eligible	CATI Answered	CAPI Personal Visit Eligible	CAPI Personal Visit Answered	CAPI via Phone Eligible	CAPI via Phone Answered
Hearing Difficulty	4,011	75.4%	22	18.2%	3,172	98.8%	1,060	98.7%	341	97.7%
Vision Difficulty	4,011	74.7%	22	13.6%	3,172	98.7%	1,060	98.7%	341	97.7%
Worked 50+ Weeks	251	98.0%	1	100.0%	209	98.1%	57	98.2%	16	100.0%
Has Service-Connected Disability Rating	1,117	27.6%	22	18.2%	390	91.5%	71	77.5%	24	66.7%
Service Connected Disability Rating	859	5.7%	20	5.0%	92	62.0%	31	45.2%	11	27.3%
Health Insurance	4,011	75.0%	22	18.2%	3,172	98.7%	1,060	97.9%	341	96.5%
Field of Degree	856	96.1%	1	100.0%	505	97.8%	164	93.3%	57	96.5%

Source: U. S. Census Bureau, 2013 American Community Survey 1-Year Data