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MEMORANDUM FOR ACS Research and Evaluation Advisory Group

From: James B. Treat **(signed 05/29/2014)**
Chief, American Community Survey Office

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American Community Survey Office

Subject: The Effects of Adding an Internet Response Option to the American Community Survey

Attached is the final American Community Survey (ACS) Research and Evaluation report on the effects of adding an Internet response option to the ACS. The report describes the full implementation strategy used in the 2013 ACS and the survey response by mode and geography.

If you have any questions about this report, please contact Stephanie Baumgardner at (301) 763-5893 or David Raglin at (301) 763-4226.

Attachment

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The Effects of Adding an Internet Response Option to the American Community Survey

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ABSTRACT

The American Community Survey (ACS) is a large household survey that continuously collects data on social, demographic, economic, and housing characteristics. Traditionally, the ACS collected data using three sequential modes - a paper questionnaire, a telephone follow-up and a personal visit follow-up. In 2013, the Census Bureau added a fourth mode, an Internet response mode, offered first with nonrespondents eligible for the other three modes. This paper describes the full implementation strategy used in the 2013 ACS. It summarizes survey response by mode and geography. The paper also compares the levels of self-response in 2013 with those observed in 2012.

KEY WORDS

Census Bureau, Internet, mail data collection, response rates

BACKGROUND

The American Community Survey

The ACS is an on-going survey that provides information to communities (large and small) to aid them in planning investments and services. Prior to 2005, the Census Bureau collected these data in combination with the decennial census. Given the rapid demographic, social, and economic changes experienced in the past decades and the expectation that such changes would continue and accelerate, this once-a-decade approach was recognized as unacceptable for producing the data required by federal, state, local, and tribal governments. To meet the need for timely community-level data, the Census Bureau designed the ACS.

The ACS collects demographic, social, and economic data from the population living in housing units and group quarters facilities (e.g., prisons, skilled nursing facilities, college dormitories). In addition, the ACS collects data on the physical and financial characteristics of the places where people live. For the population living in housing units (the focus of this paper), we select an annual sample of about 3.54 million housing unit addresses and distribute them into 12 monthly sample panels for data collection. The 2005 through 2012 ACS used three data collection modes spread over a three-month time period to obtain information about the sample addresses in each month's sample.

[1] This paper is released to inform interested parties of ongoing research and to encourage discussion. The views expressed are those of the authors and not necessarily those of the U.S. Census Bureau.

Figure 1 summarizes this sequential design with rows representing the calendar months of each operation and columns defining each three-month sample panel. Referring to the first column for January 2012, the mail mode is first, with follow-ups conducted initially by telephone and ultimately (for a subsample) in person. The mail mode also includes cases that self-respond by calling our Telephone Questionnaire Assistance (TQA) line. We accepted mail and TQA responses throughout the full three-month data collection period. U.S. Census Bureau (2010) provides details on the mixed mode data collection methods used prior to 2013.

Figure 1. 2005-2012 ACS Data Collection

CALENDAR MONTH	SAMPLE PANELS January 2012	February 2012	March 2012
January 2012	**Mail/TQA**		
February 2012	**Telephone** Mail/TQA (Cont'd)	**Mail/TQA**	
March 2012	**Personal Visit** Mail/TQA (Cont'd)	**Telephone** Mail/TQA (Cont'd)	**Mail/TQA**
April 2012		**Personal Visit** Mail/TQA (Cont'd)	**Telephone** Mail/TQA (Cont'd)

The Census Bureau conducted two experiments of an Internet response option in 2011. Based on the findings, the Census Bureau decided to change the self-response methodology in the 2013 ACS by adding an Internet response option and new mailing strategy. See Matthews et al (2012) and Tancreto et al (2012) for information about the development and testing associated with the new Internet mode.

2013 Implementation Strategy

The ACS added the Internet response option and new mailing strategy in January of 2013. As was true in previous years, each monthly sample panel consists of three sequential phases of data collection, each lasting about one month, occurring in the following order: Self-Response, Telephone, and Personal Visit. See Figure 2. A new mode is now included in the self-response phase. In the January 2013 panel, for example, the ACS collected self-responses by Internet, mail, and TQA in January, telephone responses in February, and personal visit responses in March. In February and March, the ACS continued to accept Internet, mail, and telephone responses for the January panel. A new panel begins each calendar month so that in any month of the year, all three phases run simultaneously. We describe each phase below.

Self-Response (Internet, Mail, and TQA) - We start data collection just prior to the first month of each sample panel and it includes three modes of data collection: Internet, mail, and telephone. Respondents can call a toll-free number to get assistance or to have their interview completed by telephone. This self-response phase runs for the full 3-month data collection period.

Figure 2. 2013 ACS Data Collection

CALENDAR MONTH	SAMPLE PANELS January 2013	February 2013	March 2013
January 2013	**Internet/Mail/TQA**		
February 2013	**Telephone** Internet/Mail/TQA (Cont'd)	**Internet/Mail/TQA**	
March 2013	**Personal Visit** Internet/Mail/TQA (Cont'd)	**Telephone** Internet/Mail/TQA (Cont'd)	**Internet/Mail/TQA**
April 2013		**Personal Visit** Internet/Mail/TQA (Cont'd)	**Telephone** Internet/Mail/TQA (Cont'd)

All sample addresses with a complete mailing address receive a pre-notice letter informing them that the Census Bureau selected their address for the ACS. This letter includes a brochure with telephone numbers for help (different numbers for assistance in multiple languages), which respondents may call to complete an interview over the phone. A few days later, the ACS sends these addresses information on how to access the Internet instrument to respond to the survey. We refer to this mailing package as the "first mailing." When a household receives this initial mailing, the Internet and telephone (i.e., TQA) are their only response options.

The ACS uses multiple follow up mailings to improve response. Shortly after the first mailing, all mail-eligible households receive a reminder postcard. We refer to this mailing as the "first reminder postcard." About two weeks after mailing the first reminder, if the Census Bureau has no record of receiving a sufficiently completed response, we mail the address a package that includes a paper questionnaire. At this point, respondents have the option to respond by Internet, telephone, or paper. About four days after this second mailing package, the ACS sends a second reminder postcard to the same nonresponse universe that received the second mailing package. Prior to 2013, we mailed nonresponding addresses the second mailing package about three weeks after the first mailing and these addresses did not receive a second reminder postcard,

The ACS gives respondents about one month to provide a self-response before starting telephone follow-up. Respondents may continue to complete the survey on the Internet, use the paper questionnaire, or call in to the TQA line throughout the remainder of the three-month data collection period. In addition, we mail a third reminder postcard to addresses without telephone numbers to encourage self-response from these households since they are not included in telephone follow-up.

Telephone Follow-up **-** Non-respondents after the self-response phase are eligible for telephone follow-up if the Census Bureau can match their address with an available telephone number. If a sample address in the telephone follow-up workload submits a self-response, the ACS control system removes them from the telephone follow-up workload.

This telephone follow-up operation uses computer-assisted telephone interviewing (CATI) and lasts about one month. Interviewers assist respondents in a variety of languages, if needed. If the follow-up operation determines that the ACS has an incorrect or non-functioning telephone number or we are unable

to gain a response from an address with a working phone number, the address becomes eligible for the final data collection phase, personal visit follow-up.

Personal Visit Follow-up - Sample addresses with incomplete mailing addresses that were ineligible for the first two phases of data collection and sample addresses that did not respond to any of the previous data collection operations are eligible for personal visit follow-up. Due to the high cost of personal visit interviewing, the ACS does not send all eligible addresses to personal visit follow-up. The ACS sub-samples eligible addresses at a rate of approximately one-in-three. This final data collection phase uses computer-assisted personal visit interviewing (CAPI) and takes about one month to complete. Contact attempts by interviewers can sometimes prompt an address to self-respond which results in the immediate removal of the address from this workload.

Schedule

Table 1 summarizes the 2013 ACS mail implementation strategy. We use the May 2013 panel's schedule as an example. The table lists the mail activities and the telephone follow-up operation. It also summarizes the timing of each of these activities relative to the timing of the initial mailing (e.g., we mailed the paper questionnaire 17 days after the initial mailing).

Table 1. Mail Implementation Dates for the May 2013 Panel

Activity	Days after initial mailing
Pre-notice letter	-4
Initial package with Internet response request	**0**
1st reminder postcard	3
Second package with paper questionnaire	17
2nd reminder postcard	21
3rd reminder postcard	39
Telephone follow-up begins	40

Source: May 2013 American Community Survey Sample Panel

METHODOLOGY

Self-Response Check-in Rates

We chose to limit our analysis to the first six sample panels in 2013 because the government shutdown in October 2013 caused disruptions in the 2013 ACS data collection activities, skewing response behavior and check-in information for the summer and fall sample panels. This report summarizes response information for those sample panels, which reflect data collected from January 2013 through August 2013. Given an average mail out to 287,000 addresses each month, the sample size for these six-month calculations is over 1.7 million housing unit addresses.

We calculated check-in rates to monitor levels of response in real time. We calculated three self-response check-in rates – total self-response, Internet self-response, and mail self-response. Each of these three rates defines response relative to the universe of addresses that we determined were eligible for mail delivery. This response rate is American Association for Public Opinion Research (AAPOR) response rate 2 (RR2). We chose to assume that all cases that we mailed to were eligible to respond rather than

estimating the subset of the mailable universe that might be either vacant or unsuccessfully delivered by the postal service. For this reason, our check-in rates are an imperfect measure of public cooperation, as they do not adjust for sample addresses that might not have been able to respond (e.g., those that were vacant, nonexistent, or addresses where the postal service had trouble delivering the mailing pieces). The total self-response check-in rate describes the effectiveness of the combined mailing strategy. The Internet and mail check-in rates sum to this total. Definitions for these three rates follow.

$$\textbf{Total self-response check-in rate} = \frac{\text{Internet, mail, and TQA responses}}{\text{Sample addresses eligible for mail out}} * 100$$

$$\textbf{Internet check-in rate} = \frac{\text{Internet responses}}{\text{Sample addresses eligible for mail out}} * 100$$

$$\textbf{Mail check-in rate} = \frac{\text{Mail (and TQA) responses}}{\text{Sample addresses eligible for mail out}} * 100$$

We also calculated the percent of self-response that came from the Internet mode. This rate provides insight into the mode choice of self-responding households. The definition of this rate follows.

$$\textbf{Percent Internet self-response} = \frac{\text{Internet responses}}{\text{Total mail, TQA, and Internet responses}} * 100$$

We weighted all estimates to reflect the probabilities of sample selection for each housing unit and used replicate weights to calculate standard errors. For additional information on replicate weights, see U.S. Census Bureau (2010). We make comparisons to the 2012 ACS (first six months). Tests for statistical significance use a 90 percent confidence level. We did not adjust for multiple comparisons. There are several limitations associated with these comparisons. We expect to see some differences in levels of response over time; we did not control for this in our analysis. While we attribute observed differences to the introduction of the new methods in 2013, some differences may be due to other factors.

Subnational Analysis

In addition to national-level findings, we summarized results at two subnational levels – state and segmentation group. The Census Bureau used eight unique segmentation groups to tailor outreach and promotions in the 2010 Census, customizing messages encouraging participation in the 2010 Census according to research indicating how best to reach each group. Researchers formed these segmentation

groups using census tract-level demographic, socioeconomic, housing, and mail response data from Census 2000 and 2007 and 2008 ACS response data. Each group contains housing units with similar characteristics such as housing vacancy, tenure, marital status, education, poverty, and unemployment level. For more information about each of these groups and how they were formed, please see the "2010 Census Integrated Communications Campaign Plan: The Success of the Census Is in Our Hands" at http://www.census.gov/2010census/partners/pdf/2010_ICC_Plan_Final_Edited.pdf .

Table 2 lists the eight segmentation groups, sorted by their estimated representation among total housing units. We based the estimated percent of all housing units on the weighted 2010 ACS sample. Note that the first three groups of average homeowners, advantaged homeowners, and average renters constitute over 72 percent of all housing units.

The 2011 Internet tests used these segmentation groups to stratify the nation. Specifically, the test designers expected households in the advantaged homeowners and single, unattached, mobile groups to have greater Internet access and use and analyzed the final results separately for these areas versus all other areas.

Table 2. Summary of Segmentation Groups

Segmentation Group	Percent of 2010 Housing Units*
Average (homeowner and older skewed)	32.6
Advantaged homeowners	25.0
Average (renter and younger skewed)	14.5
Single, unattached, mobile (renter skewed)	7.1
Economically disadvantaged (older, homeowner skewed)	5.7
Ethnic enclave (homeowner skewed)	2.9
Economically disadvantaged (renter skewed)	2.7
Ethnic enclave (renter skewed)	2.2

* The sum of this column will not total 100, as we were unable to assign some tracts to a segmentation group
Source: Baumgardner (2013)

RESULTS

National Level

Table 3 displays the self-response check-in rates for the first six sample panels in the 2013 and 2012 ACS. We group mail and TQA together because prior to 2013, self-response combined these two response options.

About 49.8 percent of the universe that was mailed a request to participate in the 2013 ACS responded by mail, TQA, or Internet. This total self-response check-in rate is significantly higher than the rate in 2012 (48.9 percent) that did not include an Internet response option. In addition, about 55.4 percent of the 2013 responses were Internet responses. Keep in mind that sample addresses without a self-response are eligible for follow-ups by telephone and/or personal visit.

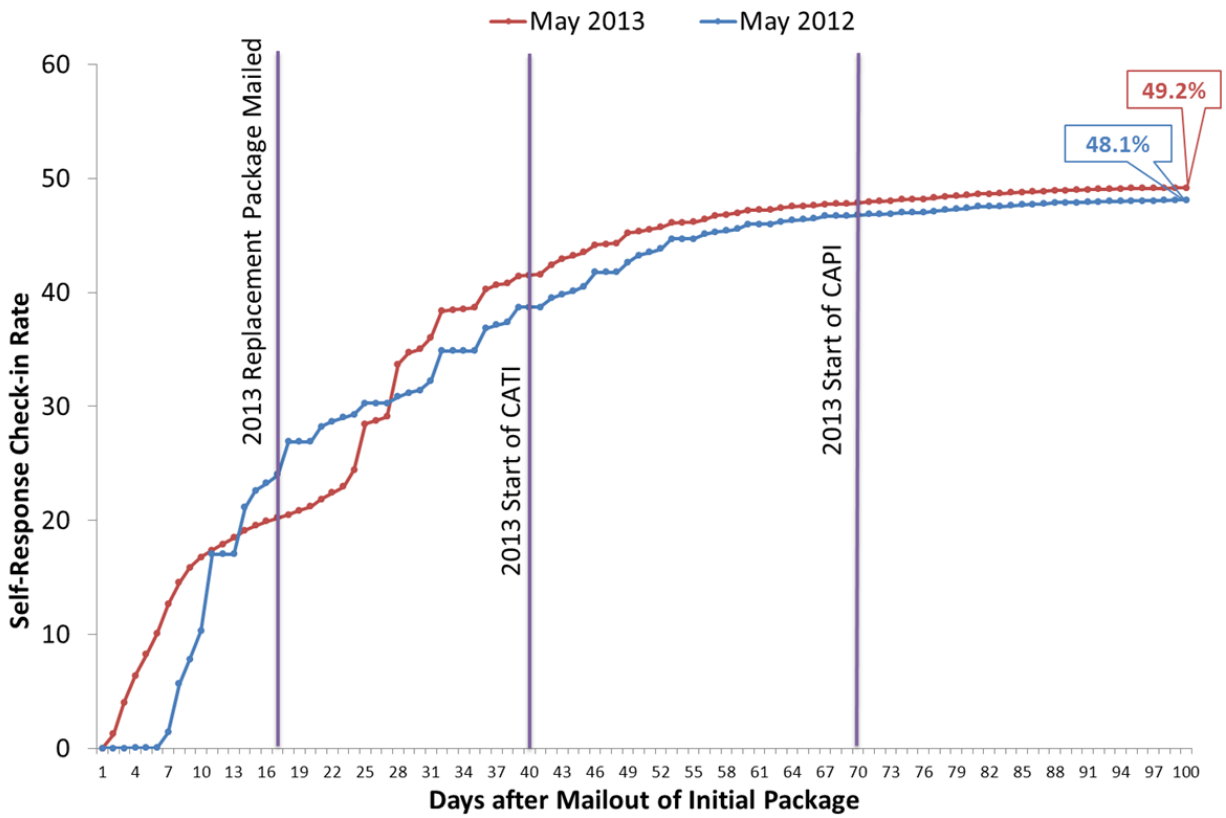
Table 3. Comparison of 2012 and 2013 Self-Response Check-in Rates

Check-in Rate	2012	2013	Difference (2013-2012)	MOE of Difference
Total self-response	48.9	49.8	0.9*	0.1
Internet self-response	--	27.6	--	
Mail self-response**	48.9	22.2	--	
Percent Internet self-response	--	55.4	--	

*Statistically significant
**Includes a small number of telephone questionnaire assistance responses
Source: January-June 2012 American Community Survey Sample Panels, January-June 2013 American Community Survey Sample Panels

Figure 3 provides daily cumulative self-response check-in rates, highlighting key events that we know to influence patterns of response. We chose to display results for the May 2012 and 2013 sample panels because they were typical of the general pattern observed in all of the first six sample panels. The final May 2013 self-response check-in rate was 49.2 percent, significantly higher than the 48.1 percent self-response check-in rate observed in May 2012.

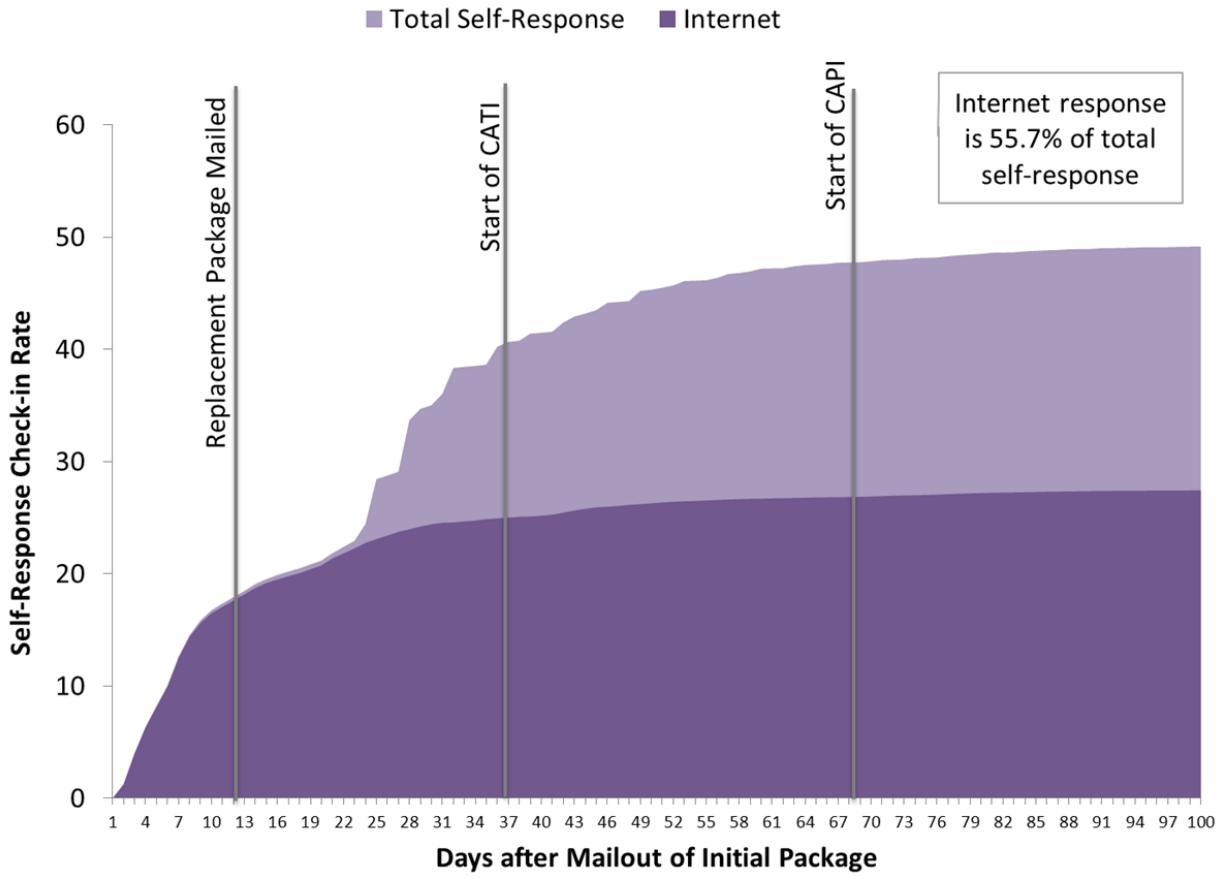
Figure 3. Comparison of 2012 and 2013 Daily Cumulative Self-response Check-in Rates



Source: May 2012 American Community Survey Sample Panel, May 2013 American Community Survey Sample Panel

Figure 4 summarizes only the May 2013 results, highlighting the responses by mode of data collection. The dark purple indicates the Internet responses. The lighter purple reflects the total self-response and by subtraction, the graph displays the mail and TQA responses. In May 2013, the Internet check-in rate was 27.4 percent and Internet responses made up 55.7 percent of all self-responses. We received the majority of Internet responses in the first two weeks of data collection. The second mailing package with the paper questionnaire (that still encouraged Internet responses), subsequent mail reminders, and telephone and personal visit follow-up activities raised the total self-response check-in rate. Most of the increase was in the form of mail-returned forms but we also realized gains in Internet responses. The Internet check-in rate at the time of the second mailing was 19.8 percent, suggesting a 7.6 percentage point increase (38 percent increase) resulting from the additional requests for participation in the form of CATI calls and CAPI visits.

Figure 4. Daily Cumulative Self-response Check-in Rates by Mode: May 2013 ACS



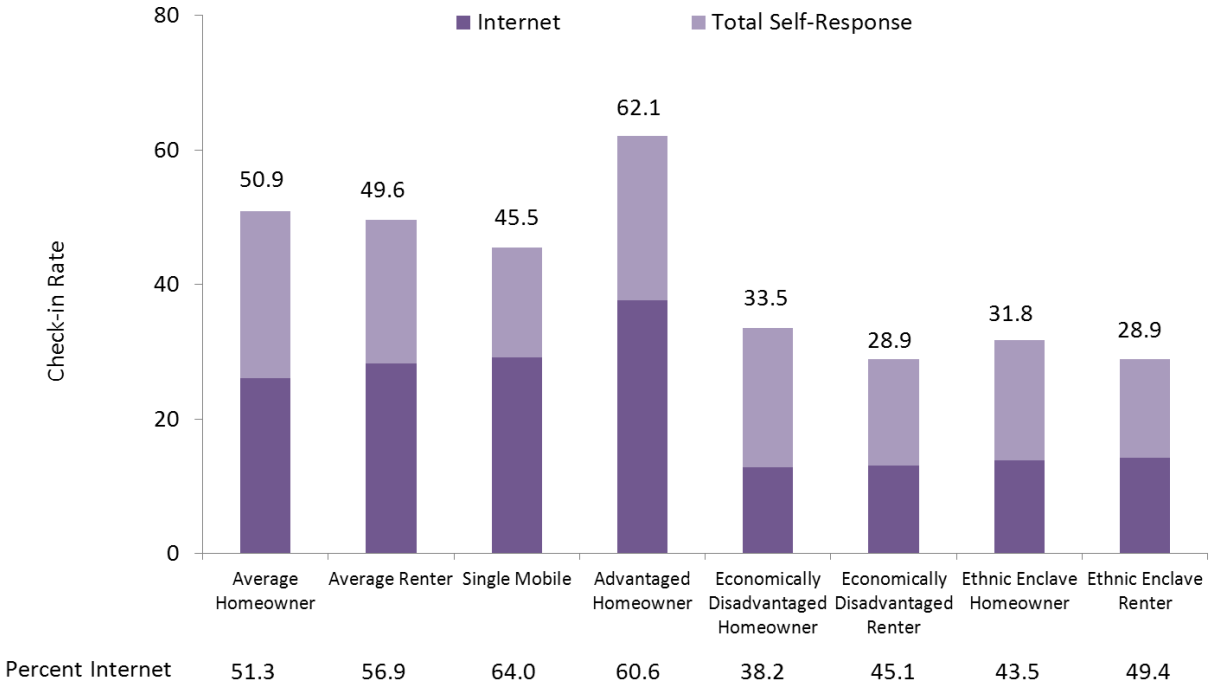
Source: May 2013 American Community Survey Sample Panel

Subnational Level - Segmentation Group

Figure 5 displays the self-response check-in rates for each of the eight segmentation groups based on the January through June 2013 sample panels. The total self-response check-in rate for the advantaged homeowners group (at 62.1 percent) is the highest with two renter groups (ethnic enclave and economically disadvantaged) having the lowest rates (28.9 percent).

Figure 5 also indicates the proportion of each self-response rate that respondents completed by Internet versus mail. Four groups had proportions exceeding 50 percent – average homeowners, average renters, single mobiles, and advantaged homeowners. The highest rate, at 64 percent, was associated with the group reflecting the single, mobile population. None of these groups had dramatically low rates of Internet participation. About 38 percent of self-respondents in the economically disadvantaged homeowners group responded by Internet (the lowest observed proportion). It is interesting to observe that renters in each of the groups with the lowest self-response rates responded more often by Internet than the homeowners in the same groups (ethnic enclave – 49.4 versus 43.5; economically disadvantaged – 45.1 versus 38.2). This may be because the homeowner group includes older populations.

Figure 5. Self-Response Check-in Rates by Mode and Segmentation Group: January – June 2013 ACS



Source: January-June 2013 American Community Survey Sample Panels

To understand the effect of this change in data collection methodology on respondent behavior, we compared the 2012 and 2013 self-response check-in rates for each of the eight segmentation groups. Table 4 includes those rates, differences and the 90 percent margins of error for each difference. From these data, we see that the addition of an Internet response option had a positive effect on the groups with the highest self-response rates, making their rates even higher. We see a smaller, but significant increase in self-response for the single, unattached, mobile population. The change in methodology had a negative effect, however, on some of the groups with historically low self-response rates, making their rates even lower. This is important for us to understand. By pushing households to respond by the Internet, we may be discouraging some households from self-responding at all. This may be happening in the economically disadvantaged (homeowner skewed) and the ethnic enclave (homeowner skewed) groups. Nichols et al (2014-forthcoming) found that older adults and respondents with less than a high school education were more likely to respond to the ACS by mail despite the addition of an Internet response option. They also found evidence that the use of a push strategy to encourage Internet response might reduce their overall levels of self-response.

As noted in the background section, the ACS includes telephone and personal visit follow-up for sample addresses that choose not to self-respond. The gains and losses in self-response that we attribute to the introduction of an Internet response option and new mailing strategy imply reductions or increases in these follow-up workloads. We have no evidence that reductions in self-response equate to reductions in the final levels of survey response.

Table 4. Comparison of 2013 and 2012 Self-Response Check-in Rates by Segmentation Group

Segmentation Group	2012	2013	Difference (2013-2012)		MOE of Difference
Advantaged homeowners	60.7	62.1	1.4	*	0.2
Average (homeowner, older skewed)	50.9	50.9	0.0		0.2
Average (renter, younger skewed)	49.2	49.6	0.4	*	0.3
Single, unattached, mobile (renter skewed)	44.8	45.5	0.7	*	0.4
Economically disadvantaged (older, homeowner skewed)	34.5	33.5	-1.0	*	0.4
Ethnic enclave (homeowner skewed)	33.3	31.8	-1.5	*	0.6
Economically disadvantaged (renter skewed)	29.2	28.9	-0.3		0.6
Ethnic enclave (renter skewed)	28.6	28.9	0.2		0.6

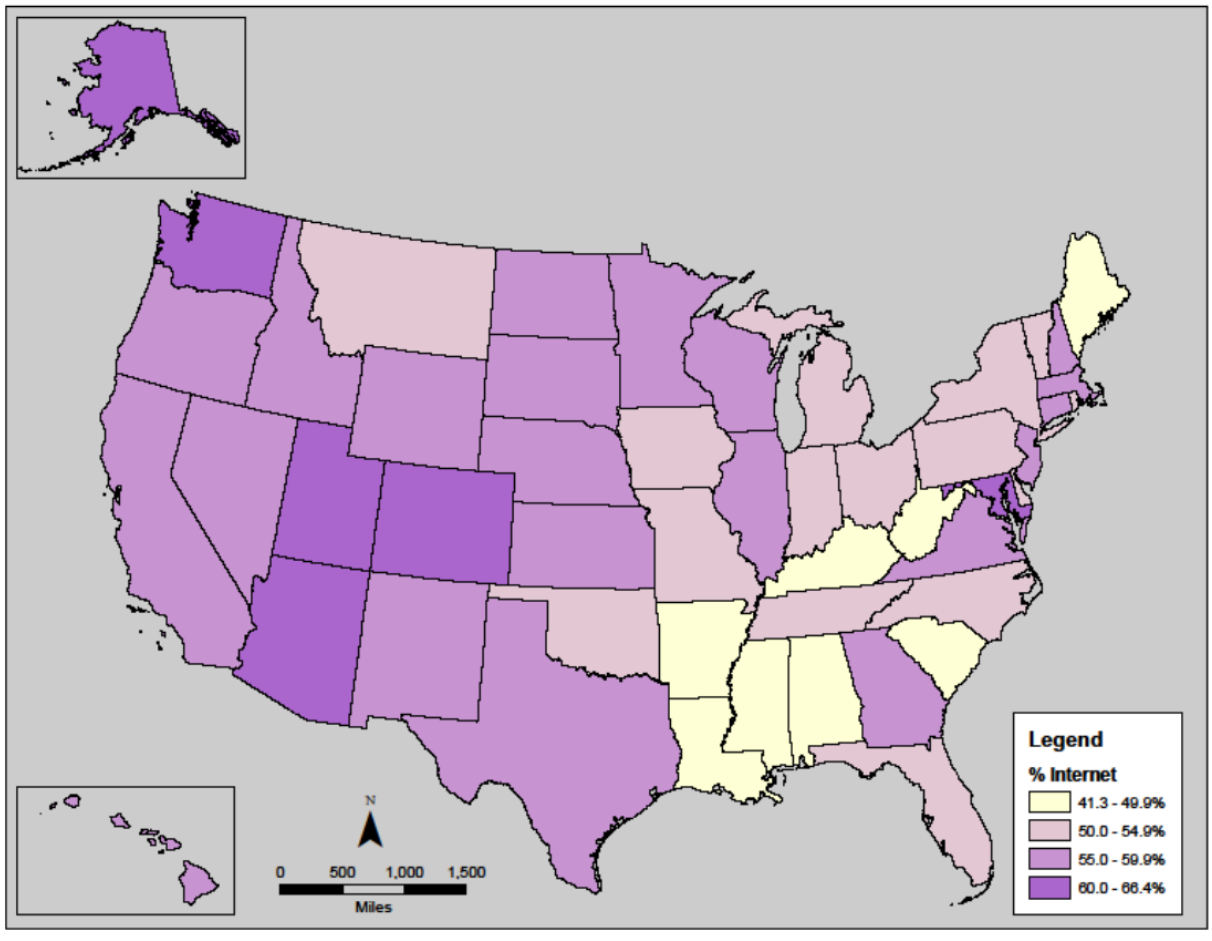
* Statistically significant

Source: January-June 2012 American Community Survey Sample Panels, January-June 2013 American Community Survey Sample Panels

Subnational Level - State Results

Figure 6 displays the proportion of self-responses in each state that were Internet responses. We used the first six monthly sample panels in 2013 for this analysis. Nationally, this rate was 55.4 percent. As was true for the eight segmentation groups, we see variation at the state-level. In states such as Utah, Colorado, Washington, Maryland, and the District of Columbia, 60 percent or more of the total self-response was by Internet. Our change in implementation strategy was very successful in these states. However, in states such as Mississippi, West Virginia, Arkansas, Alabama, and Louisiana less than 50 percent of the self-responses were by Internet. Here, paper responses were the predominant choice of self-response. Attachment A includes the state-level percent Internet self-responses in January through June 2013.

Figure 6. Percent Internet Self-Response: January – June 2013 ACS



Source: January – June 2013 American Community Survey Sample Panels

Table 5 compares the 2012 and 2013 self-response check-in rates for selected states – those with some of the greatest differences. Appendix B includes the 2012 and 2013 self-response check-in rates for each state, the differences between those two rates, and margins of error of those differences.

States such as Wisconsin, South Dakota, and Maryland showed some of the greatest gains in total self-response with the addition of an Internet response option and new mailing strategy. Most of these states had relatively high self-response rates in 2012, suggesting that the addition of an Internet response option and new mailing strategy improved self-response in historically high-response areas. However, we also see that some states, such as Louisiana and Alabama lost ground. When we added an Internet response option and new mailing strategy in 2013, their self-response rates, which tended to be low in 2012, were slightly depressed. Analysis of results at sub-state levels is critical to understanding if the current implementation strategy is optimal throughout the country.

Table 5. Comparison of 2013 and 2012 Self-response Check-in Rates for Selected States

State	2012	2013	Difference (2013-2012)	MOE of Difference
Wisconsin	58.4	60.5	2.1*	0.6
South Dakota	52.5	54.5	2.0*	1.8
Maryland	52.0	54.0	2.0*	0.8
Colorado	51.2	53.2	2.0*	0.7
Utah	53.5	55.5	2.0*	1.1
Louisiana	39.5	38.6	-0.9*	0.7
Alabama	44.9	43.9	-1.0*	0.8

* Statistically significant
Source: January – June 2012 and 2013 American Community Survey

CONCLUSIONS

The 2013 implementation of an Internet response option and new mailing strategy realized the self-response check-in rate gains projected from our pre-production experiments. At the national level, we found about a 1 percentage point increase in overall self-response in the first six months of 2013. About 50 percent of the addresses that we determined were eligible for mailing survey requests for participation, responded by mail, TQA, or Internet. About 28 percent of the mail out universe responded by Internet (55 percent of all self-responses). These rates are an underestimate of response behavior since the denominator includes some addresses that may have had delivery problems by the postal service or addresses that are ultimately determined to be either vacant housing units or units that are ineligible for the survey. Future research will document the final response rates that eliminate these ineligible addresses and better address respondent behavior.

We observed subnational variations in total levels of self-response and in the proportion choosing to respond by Internet. We also found that providing only an Internet option in the first mailing had different results across the country. Some states and population groups experienced overall gains in self-response while others lost self-response. This is something we need to examine in more detail. We continue to research the characteristics of the population choosing to respond by Internet versus paper

under this implementation strategy and the specific populations that may benefit from an alternative initial mail option.

NEXT STEPS

Census staff is evaluating additional aspects of the 2013 Internet implementation. We continue to study patterns of self-response, choice of modes, and characteristics of households choosing mail versus Internet as their method of self-response. In addition to studying effects on self-response, we are analyzing data on the completeness of self-responses. Clark (2014) found that Internet responses had equal or reduced levels of nonresponse for most items with most nonresponse driven by Internet break-offs. Responses requiring a written entry performed better by Internet than mail.

The Census Bureau plans to conduct a 2014 experiment to look at possible methods to reduce Internet break-offs and increase item response by providing reminders in the form of email messages. We are also considering testing a targeted mailing of paper questionnaires in the initial mailing in selected areas in lieu of a push Internet strategy.

ACKNOWLEDGEMENTS

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ATTACHMENT A

Percent Internet Self-Response Rates by State – 2013 ACS

State	Percent Internet Self-Response	SE
Alabama	46.28	0.46
Alaska	61.91	1.52
Arizona	59.92	0.43
Arkansas	46.22	0.69
California	58.87	0.20
Colorado	63.41	0.42
Connecticut	56.47	0.48
Delaware	53.60	1.27
District of Columbia	64.65	1.30
Florida	54.52	0.25
Georgia	55.21	0.38
Hawaii	57.00	0.77
Idaho	57.93	1.02
Illinois	57.01	0.28
Indiana	51.58	0.46
Iowa	53.21	0.48
Kansas	55.09	0.57
Kentucky	47.49	0.52
Louisiana	47.09	0.58
Maine	48.24	0.79
Maryland	60.80	0.47
Massachusetts	59.16	0.43
Michigan	51.76	0.27
Minnesota	58.79	0.41
Mississippi	41.35	0.72
Missouri	52.55	0.42
Montana	52.99	1.12
Nebraska	56.51	0.72
Nevada	58.09	0.57
New Hampshire	57.32	0.96
New Jersey	58.58	0.29
New Mexico	55.64	0.79
New York	52.91	0.27
North Carolina	53.80	0.33
North Dakota	55.57	1.35
Ohio	50.77	0.29
Oklahoma	51.19	0.51
Oregon	58.59	0.54
Pennsylvania	52.33	0.27
Rhode Island	52.55	1.18
South Carolina	49.84	0.46
South Dakota	54.90	1.03
Tennessee	50.04	0.46
Texas	58.95	0.25
Utah	66.37	0.57
Vermont	53.29	1.00
Virginia	59.59	0.36
Washington	61.65	0.37
West Virginia	44.36	0.84
Wisconsin	56.12	0.30
Wyoming	57.64	1.45

Source: January – June 2013 American Community Survey Sample Panels

ATTACHMENT B

Comparison of 2012 and 2013 Self-Response Rates – State Level

State	2012 self-response	2012 SE	2013 self-response	2013 SE	Difference 2013-2012		Difference SE
Alabama	44.89	0.33	43.86	0.33	-1.03	*	0.47
Alaska	36.70	0.83	38.59	0.94	1.90		1.25
Arizona	44.75	0.31	45.94	0.27	1.19	*	0.41
Arkansas	44.37	0.44	44.47	0.40	0.10		0.60
California	47.01	0.12	48.70	0.14	1.69	*	0.18
Colorado	51.19	0.33	53.18	0.29	1.99	*	0.44
Connecticut	52.69	0.45	53.93	0.38	1.24	*	0.59
Delaware	48.60	0.68	48.83	0.81	0.23		1.06
District of Columbia	48.07	0.68	49.26	0.83	1.19		1.08
Florida	44.30	0.19	44.50	0.19	0.20		0.26
Georgia	42.88	0.25	44.34	0.27	1.46	*	0.37
Hawaii	48.70	0.72	48.82	0.71	0.12		1.01
Idaho	51.20	0.72	52.70	0.74	1.50		1.03
Illinois	52.24	0.21	53.36	0.18	1.11	*	0.27
Indiana	54.50	0.31	55.29	0.33	0.79	*	0.46
Iowa	57.83	0.35	58.99	0.40	1.15	*	0.53
Kansas	53.90	0.42	55.40	0.40	1.50	*	0.58
Kentucky	52.11	0.39	51.89	0.38	-0.22		0.54
Louisiana	39.55	0.33	38.64	0.31	-0.90	*	0.45
Maine	45.87	0.64	44.77	0.55	-1.10		0.84
Maryland	52.04	0.34	54.04	0.37	2.01	*	0.50
Massachusetts	53.07	0.29	54.43	0.31	1.35	*	0.43
Michigan	53.28	0.19	54.13	0.21	0.85	*	0.29
Minnesota	60.14	0.29	61.78	0.32	1.64	*	0.43
Mississippi	40.14	0.43	39.16	0.44	-0.98		0.61
Missouri	52.35	0.35	53.61	0.29	1.27	*	0.45
Montana	46.99	0.66	47.23	0.66	0.24		0.93
Nebraska	56.80	0.48	56.94	0.48	0.14		0.68
Nevada	42.13	0.54	43.44	0.43	1.31	*	0.69
New Hampshire	49.49	0.71	51.43	0.61	1.94	*	0.94
New Jersey	50.53	0.23	51.49	0.23	0.97	*	0.32
New Mexico	40.17	0.54	40.18	0.46	0.01		0.71
New York	45.58	0.19	46.44	0.16	0.87	*	0.25
North Carolina	47.21	0.22	48.01	0.25	0.80	*	0.34
North Dakota	51.79	0.74	52.78	0.79	0.98		1.08
Ohio	54.92	0.23	55.09	0.23	0.18		0.33
Oklahoma	43.59	0.35	43.51	0.35	-0.08		0.49
Oregon	54.77	0.33	55.39	0.37	0.62		0.50
Pennsylvania	56.38	0.18	56.87	0.18	0.49	*	0.26
Rhode Island	49.86	0.68	49.20	0.73	-0.66		1.00
South Carolina	45.20	0.38	45.06	0.35	-0.13		0.52
South Dakota	52.49	0.76	54.53	0.80	2.04	*	1.10
Tennessee	49.15	0.34	49.33	0.32	0.18		0.47
Texas	41.08	0.17	42.80	0.17	1.72	*	0.24
Utah	53.53	0.47	55.51	0.50	1.98	*	0.69
Vermont	45.43	0.61	46.00	0.63	0.57		0.88
Virginia	53.98	0.30	55.16	0.26	1.17	*	0.40
Washington	53.60	0.34	55.22	0.33	1.62	*	0.47
West Virginia	45.49	0.50	46.23	0.55	0.74		0.74
Wisconsin	58.37	0.25	60.46	0.29	2.09	*	0.38
Wyoming	40.39	0.97	41.93	1.00	1.53		1.40

*Statistically significant

Source: January – June 2013 American Community Survey Sample Panels