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MEMORANDUM FOR ACS Research and Evaluation Workgroup

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Subject: 2024 ACS Mailout Timing Test Report

Attached is the American Community (ACS) Research and Evaluation report, 2024 ACS Mailout Timing Test Report. This report evaluates the effect on self-response and data collection costs when the mailout dates for the 5th mailing (Due Date Letter) and the 6th mailing (Computer Assisted Personal Interviewing [CAPI] Internet Letter) are moved up.

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2024 American Community Survey Mailout Timing Test

FINAL REPORT

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EXECUTIVE SUMMARY

The U.S. Census Bureau frequently tests potential improvements to the American Community Survey (ACS) mail contact strategy to increase survey participation and reduce survey costs. Since the implementation of the ACS in 2005, the mail contact strategy has undergone several changes and enhancements based on the results from various tests (National Academies of Sciences, 2019). However, during that time, one feature that has largely not been tested is the timing of the mailings. The 2024 ACS Mailout Timing Test tested small changes to the timing of two of the mailings—the Due Date Letter and the Computer Assisted Personal Interviewing (CAPI) Internet Letter.

The Due Date Letter is a pressure seal letter with a stated survey response due date, where the respondent is told they may be contacted by an interviewer (field representative) to complete the survey if they do not respond (see Appendix A). The Due Date Letter is sent as the 5th mailing to all mailable addresses in the third mailing universe. The 2024 ACS Mailout Timing Test tested mailing out the Due Date Letter four days earlier to provide more time for self-responses (particularly mail returns) to be received and processed before the CAPI sample is selected. The stated survey response due date was also moved up four days earlier.

The CAPI Internet Letter is a pressure seal letter sent to all mailable addresses in the CAPI sample (see Appendix B). This letter provides an internet user ID and instructions on how to respond online to avoid an in-person interview with a field representative. Due to the mailout schedule, it is likely some recipients receive the CAPI Internet Letter after they have already been contacted by a field representative, reducing the effectiveness of the letter. Therefore, the 2024 ACS Mailout Timing Test tested mailing out the CAPI Internet Letter two days earlier. The hope was that by sending the letter earlier, more households would self-respond prior to being contacted by field representatives and increase the portion of CAPI that self-responds.

Sending the Due Date Letter four days earlier was found to significantly increase self-response prior to the earlier CAPI cut date used in the test and prior to the production CAPI cut date that would have been used if not for the experiment. These increases in self-response were due to an increase in both internet response and mail response. However, due to the current cap on the size of the CAPI workload, the increase in self-response did not affect the size of the CAPI workload. The increase in self-response would have had to be much larger to reduce the CAPI workload below the cap. Additionally, due to the earlier cut date increasing the number of households being sent the Due Date Letter, there was an increase in mailing costs.

There was no evidence that sending the CAPI Internet Letter two days earlier increased self-response for the CAPI sample. Similarly, there was no difference found between treatments for most secondary metrics of interest, including refusal rates or the average number of contact attempts. However, the earlier mail date was found to increase the rate at which households

respond prior to first contact by a field representative. Despite the increase, the rate remains very small, so it seems even with the earlier mail date of the CAPI Internet Letter, most households that respond by internet are responding after they have been contacted by a field representative.

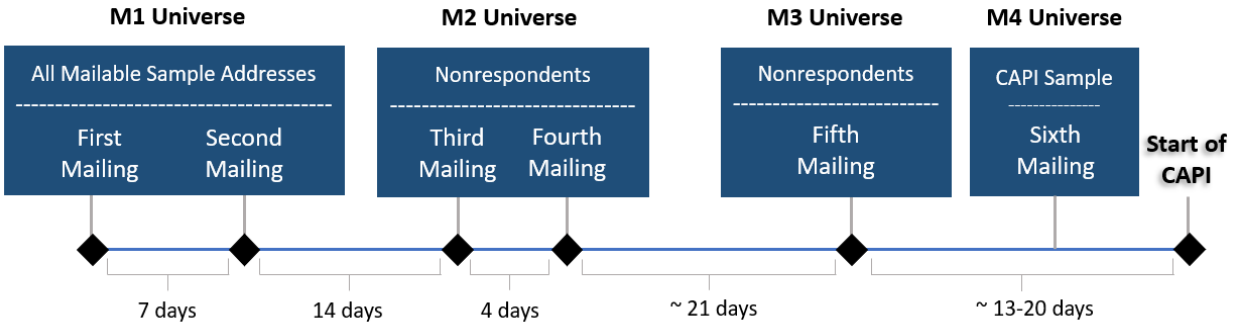
We do not recommend changing the mailout timing of the Due Date Letter or the CAPI Internet Letter. While mailing the Due Date Letter earlier did increase self-response before CAPI, it would increase costs due to mailing the Due Date Letter to more households. Due to the current cap on the size of the CAPI workload, the increase in self-response would have to be much larger to reduce CAPI costs by reducing the CAPI workload below the cap.

Mailing the CAPI Internet Letter earlier was not found to increase self-response. We recommend further research be done on the CAPI sample and the role the CAPI Internet Letter plays, as the results suggest that even with the earlier mailout, very few households are responding before their first contact by a field representative. Additional research is also needed to understand postal behavior for our mailings, such as how long it takes for households to receive ACS mailings.

1. INTRODUCTION

The U.S. Census Bureau frequently tests proposed changes to the American Community Survey (ACS) mail contact strategy, designed to increase survey participation and reduce data collection costs. Consequently, since the implementation of the ACS in 2005, the ACS mail contact strategy has undergone several changes and enhancements (National Academies of Sciences, 2019). As of 2024, the ACS mail contact strategy consists of four mailing universes and up to six different mailings before the start of the Computer Assisted Personal Interview (CAPI) nonresponse followup operation. See Figure 1. One area of potential improvement that has not been formally tested is the timing of these mailings.

Figure 1. 2024 ACS Mail Contact Strategy



The 5th ACS mailing in the ACS mail contact materials is the Due Date Letter (see Appendix A). This pressure seal letter is sent to all mailable addresses in the third mailing universe. It informs recipients that their survey response is due by the due date provided. We hypothesized that if we move up the mailout date for the Due Date letter, as well as the survey due date, it could potentially move response earlier, increasing the number of self-responses received before the creation of the CAPI sample and result in a reduction in data collection costs due to the smaller CAPI workload. However, due to the current cap on the size of the CAPI workload, the increase would have to be substantial to affect the size of the workload.

The 6th mailing in the ACS mail contact materials is the CAPI Internet Letter (see Appendix B). This pressure seal letter is sent to all mailable addresses in the CAPI sample (fourth mailing universe). Due to the short period between when the CAPI Internet Letter is mailed out and the start of CAPI (often one day), some recipients receive the CAPI Internet Letter after CAPI has already begun and after they have already been contacted by a field representative for an interview. We hypothesized that if we mail out the CAPI Internet Letter earlier, we could reduce the number of such cases and increase self-response before the more costly CAPI interviews.

The purpose of the 2024 ACS Mailout Timing Test is to determine the effect on ACS self-response and data collection costs if (1) the Due Date Letter is mailed earlier, and if (2) the CAPI Internet Letter is mailed earlier.

2. BACKGROUND

The ACS is an ongoing nationwide survey conducted by the Census Bureau monthly to collect detailed social, economic, housing, and demographic information from the population living in housing units and group quarters. The ACS provides:

- federal, state, tribal, and local governments information for administrating and evaluating government programs.
- data users with timely and comparable data across states, communities, and population groups.

2.1 ACS Data Collection

Data collection for the ACS occurs monthly and consists of two main phases: an approximate two-month self-response data collection phase and a one-month follow-up phase. During the self-response phase, ACS recipients are asked to respond to the survey by internet or paper questionnaire. This phase is followed by a one-month CAPI nonresponse followup operation, where Census Bureau field representatives attempt to complete a survey for a sub-sample of the nonmailable addresses and the nonrespondent mailable addresses. ACS recipients can also call a Telephone Questionnaire Assistance (TQA) line and speak with a live agent to report their data. That operation is available throughout the entire data collection period.

2.2 ACS Mail Contact Strategy

The ACS data collection strategy first aims to obtain a self-response from residents in the mailable sampled addresses universe.[1] To encourage a self-response, the Census Bureau sends as many as six mailings to a mailable sampled address. The sooner a household responds to the ACS, the fewer mailings it receives. The list of mailable sampled addresses is updated three times during this phase to obtain new mailing universes of nonrespondent households.

The Census Bureau sends the first two mailings to all mailable addresses in the initial monthly sample. These addresses comprise the M1 mailing universe. Addresses in this universe for which a response is not received by a cutoff date after the second mailing comprise the M2 mailing universe. These addresses receive the 3rd and 4th mailings.

The M3 mailing universe is comprised of addresses that have not responded prior to a cutoff data set after the fourth mailing. These addresses are sent the 5th mailing about three weeks after the fourth mailing. The 5th mailing is the Due Date Letter, which asks recipients to respond to the ACS online, by mail, or by phone prior to the due date in the letter (see Appendix A).

[1] The ACS sample design is described in brief in Section 3.1.

A little more than two weeks after the Due Date Letter is mailed out, the 6th mailing, the CAPI Internet Letter is mailed out to all households in the CAPI sample that have a mailable address (M4 mailing universe).[2] The CAPI Internet Letter asks the recipients to respond online to avoid an in-person interview (see Appendix B). The CAPI operation begins a few days after the CAPI Internet Letter is mailed out.

Additional information about the ACS data collection strategy is found in the ACS and Puerto Rico Community Survey (PRCS) Design and Methodology Report (U.S. Census Bureau, 2024).

2.3 Literature Review

A due date in the 5th mailing of the ACS mail contact materials was the result of the 2019 ACS Due Dates Test. This test determined that having a due date placed on the inside and on the outside of this pressure seal letter increased self-response. The due date chosen for this test was a date 10 days after the fifth mailing was sent. This length of time provided sufficient time for the Due Date Letter to arrive at an address and for the recipient to respond by the due date (Risley & Oliver, 2021).

In production ACS, a gap of 10 days between the mailing of the fifth and the provided due date is not possible in every month. This is particularly problematic for paper returns. Ideally, the completed paper questionnaires would be received at the National Processing Center (NPC) before the CAPI sample is selected. However, there are relatively few days between the due date in the 5th mailing and the date the CAPI sample is selected (typically 3-5 days).

During the CAPI nonresponse followup operation, a series of letters are available to field representatives (FRs) that they can provide to nonrespondent households to motivate them to self-respond. One of these letters, the CAPI Internet Letter provides the recipient an internet user ID and instructions on how to respond online to avoid an in-person interview with a field representative .

Previously, some regional offices sent this letter to all mailable CAPI addresses and others sent it at the discretion of the field representatives. In 2020, to combat decreasing CAPI response, the ACS program standardized the use of the CAPI Internet Letter across all regions. Beginning in October 2020, the CAPI Internet Letter is now mailed from the NPC to all mailable addresses in the CAPI sample (Risley & Spiers, 2023). The CAPI Internet Letter is the 6th mailing in the ACS mail contact materials.

[2] The CAPI sample is a subsample of the remaining nonrespondent mailable addresses after the 5th mailing plus the sampled addresses that do not have a mailable address.

3. METHODOLOGY

3.1 Sample Design

The 2024 ACS Mailout Timing Test (MTT) was conducted using the May 2024 ACS production sample. The monthly ACS production sample of approximately 295,000 addresses is divided into 24 nationally representative groups, referred to as methods panel groups (MPGRPs). Each MPGRP consists of approximately 12,000 addresses. Of the 295,000 addresses in the ACS production sample, approximately, 291,000 addresses are part of the mailable self-response universe.

The MTT was comprised of two evaluation periods. The first period was used to evaluate mailing the Due Date Letter earlier (5th mailing). The second period was used to evaluate mailing the CAPI Internet Letter earlier (6th mailing). Different methodologies were employed to select the sample for each evaluation period.

For the first evaluation period of the test, the initial production sample was divided into two treatments, a control (Control 1) and a test (Treatment 1) treatment, where each treatment was randomly assigned twelve methods panel groups (approximately 145,500 mailing addresses per treatment). The data collection period for these samples spanned from the beginning of the data collection until the CAPI cut date.

Based on the sample design, the minimal detectable difference for the self-response rates for two equal size treatments, assuming a self-response rate of 50 percent, is 0.5 percentage points.

For the second evaluation period of the test, the cases in the CAPI sample were assigned evenly between a *new* control treatment (Control 2) and a *new* test treatment (Treatment 2) via systematic random sampling. To select the CAPI sample, the CAPI frame was sorted on the following variables:

- State
- County
- Special Data Collection Procedures Flag (SPDCP)[3]
- CAPI subsampling stratum
- Test Treatment
- Mailable Address Flag
- Continuous Measurement ID

[3] For housing units in the U.S., SPDCP is used to identify units in Remote Alaska and units outside of Remote Alaska that are in geographic areas where the CAPI subsampling rate is 100%.

This sort ensured Control 1 cases in the CAPI sample were evenly split between Control 2 and Treatment 2, and subsequently, Treatment 1 cases in the CAPI sample were evenly split between Control 2 and Treatment 2. The data collection period for these samples spanned from the CAPI cut date until the end of data collection.

For the CAPI sample, the minimal detectable difference between the two treatments, assuming a self-response rate of 24 percent, is 1.13 percent percentage points.

3.2 Experimental Design

The 2024 ACS Mailout Timing Test included two testing periods, as discussed in Section 3.1. The first period of testing spanned from the beginning of the data collection period for the May 2024 ACS panel until the CAPI cut, where the CAPI sample is selected from the nonrespondent address and unmailable addresses. This period was designed to evaluate the effect of mailing the Due Date Letter (5^{th} mailing) earlier. For this testing period, the experimental treatment, Treatment 1, mailed the Due Date Letter four days earlier than the control treatment, Control 1. This provided more time for self-responses (particularly mail returns) to be received and processed before the CAPI cut. See the mailout schedule in Table 1.

The second period of testing spanned from the CAPI cut date until the end of data collection. This period was designed to evaluate the effect of mailing the CAPI Internet Letter (6^{th} mailing) earlier. For this testing period, the experimental treatment, Treatment 2, mailed the CAPI Internet Letter two days earlier than the control treatment, Control 2.

Table 1. 2024 ACS MTT Treatments Before CAPI Cut

	M3 Universe and File Selection Date*	5^{th} Mailing Mail Date	Due Date in 5^{th} Mailing
Control 1	5/30/24	6/11/24	6/21/24
Treatment 1	5/30/24	6/07/24	6/17/24

*Note: A change from the planned 6/3/24 date for production.

Table 2. 2024 ACS MTT Treatments After CAPI Cut

Treatment*	CAPI Cut	6th Mailing Initial Mailout Date	6th Mailing Final Mailout Date
Control 2	6/24/24	6/28/24	7/01/24
Treatment 2	6/24/24	6/26/24	6/27/24

*Note: The treatments in this part of the test are different from those in the first part.

3.3 Research Questions

First Part of MTT (moving up the mailout date of the Due Date Letter):

RQ1. What is the effect of sending the Due Date Letter earlier on the number of addresses in the M3 universe?

RQ2. What is the effect of sending the Due Date Letter earlier on self-response, through the CAPI cut?

Second Part of MTT (moving up the mailout date of the CAPI Internet Letter):

RQ3. What is the effect of sending the CAPI Internet Letter earlier on the number of CAPI eligible cases?

RQ4. What is the effect of sending the CAPI Internet Letter earlier on the percent of CAPI respondents that self-respond?

RQ5. What is the effect of sending the CAPI Internet Letter earlier on CAPI refusal rates?

RQ6. What is the effect of sending the CAPI Internet Letter earlier on the average number of contact attempts?

RQ7. What is the effect on cost, relative to current production, of sending the CAPI Internet Letter earlier?

Exploratory Analysis:

- How often is a self-response received after the CAPI Internet Letter is mailed but before the initial contact by an FR?
- What is the effect on self-response of mailing both the Due Date Letter and CAPI Internet Letter early versus mailing one or neither of the letters early?
- Are there differences based on Regional Office and differences in demographics between treatments as well as between earlier and later responses?

3.4 Analysis Metrics

The metrics used to answer the research questions in Section 3.3 are provided in Sections 3.4.1 through 3.4.6. Section 3.5 discusses how the variances of the estimates were calculated. Section 3.6 discuss the weighting methodology. Section 3.7 discusses the adjustment procedure used for multiple comparisons.

3.4.1 Self-Response Return Rates Prior to CAPI Cut

Calculating self-response return rates allows us to evaluate the effect of sending the Due Date Letter earlier on self-response. These rates will be calculated for the data collection period from the start of data collection up until CAPI cut.

$$\text{Self-Response Return Rate} = \frac{\text{Number of mailable and deliverable sample addresses that either provided a nonblank[4] return by mail, a response by TQA, or a complete or sufficient partial[5] response by internet}}{\text{Total number of mailable, deliverable, and eligible[6] sample addresses}} * 100$$

3.4.2 Self-Response Return Rates after CAPI Cut

Calculating the self-response return rates allows us to evaluate the effect of sending the CAPI Internet earlier on self-response. These rates will be calculated for the data collection period from CAPI cut until the end of data collection.

$$\text{Self-Response Return Rate} = \frac{\text{Number of mailable and deliverable sample addresses in the CAPI sample that either provided a nonblank[4] return by mail, a response by TQA, or a complete or sufficient partial[5] response by internet}}{\text{Total number of mailable, deliverable, and eligible[6] sample addresses in the CAPI sample}} * 100$$

3.4.3 Refusal Rates after CAPI Cut

Calculating the rate at which CAPI cases ended in a refusal based on the CAPI outcome code, is another way to evaluate the effect of sending the CAPI Internet Letter earlier. In addition to encouraging response, there is the possibility that receiving the CAPI Internet Letter that tells

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

[5] In general, a sufficient partial internet response is one that has at least minimal information, which indicates an attempt to respond. The specific definition of a sufficient partial internet response is sensitive and for Census Bureau internal use only.

[6] Business addresses, addresses under construction, etc. are not eligible.

households that their house is going to receive an in-person visit will help add legitimacy to the FR's visit and reduce the number of refusals.

$$\text{Refusal Rate} = \frac{\text{Number of mailable and deliverable sample addresses in the CAPI sample that have a refusal CAPI outcome code}}{\text{Total number of mailable, deliverable, and eligible}^{7}\text{ sample addresses in the CAPI sample}} * 100$$

3.4.4 Average Number of Contact Attempts—CAPI Sample

The average number of interviewer (field representative) contact attempts per household during the CAPI operation is an additional measure to understand the earlier CAPI Internet Letter's effect on the CAPI nonresponse followup operation. The interviewer contacts will include both personal visits as well as phone contacts. The average will be across the entire mailable CAPI sample, with those self-responding before a first interviewer contact counting as zero contacts.

3.4.5 Cost Analysis

In evaluating moving up the mailout date for the CAPI Internet Letter, we must also consider the effect on cost of changing the timing of the mailings. Performing the universe cut earlier to mail out the letters earlier would potentially increase costs as the number of Due Date Letters mailed out or the number of CAPI eligible cases would increase. However, an increase in self-response prior to CAPI or an increase the portion of the CAPI sample that self-responds could potentially decrease costs.

The results from this test were applied to a full year of ACS sample to evaluate the effect on the cost of using the given experimental treatment methodology for an entire ACS data collection year. We will identify the estimated impact on CAPI costs and provide an estimate of the relative cost impact of sending the CAPI Internet Letter earlier. Since the cost model uses projected workload differences to project survey costs, this part of the analysis will not be weighted.

3.4.6 Exploratory Analysis

There will be additional exploratory analysis performed. Areas that will be part of the exploratory analysis include, trying to determine how often the letter arrives before first CAPI contact, differences based on Regional Office, and differences in demographics between treatments as well as between earlier and later responders.

[7] Business addresses, addresses under construction, etc. are not eligible.

3.5 Standard Error of the Estimates

We estimated all variances using the Successive Differences Replication method with replicate weights, the standard method used for the ACS.[8] The variance for each rate and difference was calculated using the following formula.

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

$$\mathrm{Var}(X_0) = \frac{4}{80}\sum_{r=1}^{80}(X_r - X_0)^2$$

where:

X_r = the estimate calculated using the r^{th} replicate

X_0 = the estimate calculated using the full sample

3.6 Weighting

All self-response analyses, except for the cost analysis, were weighted using the ACS base sampling weight (the inverse of the probability of selection). Cases in the CAPI subsample had their weight multiplied by a CAPI subsampling factor unless they were self-responses. All nonresponding addresses in the initial sample were eligible for the CAPI subsample, including unmailable and undeliverable addresses. Addresses eligible for CAPI were sampled at a rate of about one in three.

3.7 Multiple Comparison Adjustment

Some analyses in this report involved testing a set of hypotheses simultaneously. For these cases, we adjusted for the Type I familywise error rate at the 0.1 level of significance using the Hochberg method (Hochberg, 1988).

4. ASSUMPTIONS AND LIMITATIONS

4.1 Assumption

- A single ACS monthly sample is representative of an entire year (12 panels) and the entire frame sample, with respect to both response rates and cost, as designed.
- Any differences in field representative strategies do not affect individual treatments due to the randomization and representativeness of the method panel groups.

[8] See Chapter 12 of *American Community Survey and Puerto Rico Community Survey Design and Methodology* for details (U.S. Census Bureau, 2022).

- A single methods panel group (1/24 of the full monthly sample) is representative of the full monthly sample, as designed.
- We assume that there is no difference between treatments in mail delivery timing. The treatments will have the same sample size and use the same postal sort and mailout procedures. Previous research indicated that postal procedures alone could cause a difference in response rates at a given point in time between experimental treatments of different sizes, with response for the smaller treatments lagging (Heimel, 2016).

4.2 Limitations

- Group quarters and housing unit addresses from remote Alaska and Puerto Rico are not included in the universe of cases for the test.
- The relative cost analysis uses estimates to make cost projections. These estimates do not account for monthly variability in production costs, such as changes in staffing, production rates, or printing price adjustments.
- Starting the mailout of the CAPI Internet Letter earlier will change how the mailout is affected by the weekend. The time between mailout and delivery might be different due to one treatment having more cases in transit on Sunday. However, this does mimic how the change would work in practice most months.
- The CAPI workload selection occurred on June 24, 2024, for both treatments due to operational constraints. For the control treatment, this means there will be responses received between this date and the planned production CAPI workload selection date of June 26, 2024. The earlier CAPI workload selection date of June 24, 2024, resulted in the number of self-response returns being higher for the control treatment than it would be in production. In addition, the characteristics of those households selected for CAPI might differ slightly because of the earlier response.

5. RESULTS

To fully assess the effect of the changes to the timing of the 5th mailing (Due Date Letter) and the 6th mailing (CAPI Internet Letter) in the ACS mail contact materials, multiple metrics were examined. The main metrics, presented in Section 5.1, determine the effect of earlier mailout of the Due Date Letter and the CAPI Internet Letter on the number of mailouts sent and the effect on self-response.

5.1 Research Questions 1-4—Self-Response Rates

Self-response rates are the primary metric we used to assess the effects of the earlier mailout of the Due Date Letter (5th mailing) and the CAPI Internet Letter (6th mailing). Earlier mailout was expected to decrease self-response at the time of the cut for the mailing, but hopefully increase the effect the mailing has on later self-response.

5.1.1 Research Question 1 – M3 Universe

What is the effect of sending the Due Date Letter earlier on the number of addresses in the M3 universe?

The purpose of this question is to assess the effect on the M3 workload of mailing the 5th mailing earlier. The expectation was that the M3 workload would increase. This analysis will provide the increase in households in the M3 universe.

Shown in Table 3, performing the M3 cut and mailing the 5th mailing earlier results in a difference in the M3 workload due to the statistically significant difference in the return rate for Treatment 1 on May 30, 2024, and Control 1 on June 3, 2024. [9]

When applied to an entirely monthly panel, the estimated difference of 1.7 percentage points would result in approximately 5,000 more addresses being included in the Due Date Letter mailing each month or 60,000 more over the entire year.[10] This will result in an increase in cost, discussed in section 5.4.1.

Table 3. Self-Response Rates on Date of M3 Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	35.4 (0.1)	37.1 (0.1)	-1.7 (0.2)	<0.01*
Internet	31.7 (0.1)	32.4 (0.1)	-0.7 (0.2)	<0.01*
Mail	3.5 (0.1)	4.4 (0.1)	-0.9 (0.1)	<0.01*
TQA	0.2 (<0.1)	0.3 (<0.1)	-0.1 (<0.1)	<0.01*

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

5.1.2 Research Question 2 – Self-Response

What is the effect of sending the Due Date Letter earlier on self-response, through the CAPI cut?

The purpose of this question is to determine the effect on self-response of sending the 5th mailing earlier.

Because potential changes to the CAPI cut date were also tested as part of this test, the treatments are compared for two different CAPI cut dates, the experimental date used in the

[9] Due to operational limitations, the Control treatment had the same cut date as the experimental treatment, May 30, 2024. However, we are still able to estimate the workload if the production cut date had been used.

[10] These estimates are obtained by applying the estimated difference of 1.7 percent to the size of the mailable universe for a month and for the entire year.

test, June 24, 2024, and the production date, June 26, 2024, that would have been used if not for the experiment.

Table 4 shows the self-response return rates as of June 24, 2024, the CAPI cut date used in the test as part of the experiment. The self-response return rate for Treatment 1 was found to be higher than the rate for Control 1; the difference was driven by higher response in both the internet and mail modes. Based on this result, there is evidence that mailing the Due Date Letter earlier was effective at increasing self-response before the CAPI cut.

Table 4. Self-Response Rates on Date of Experiment CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	48.7 (0.2)	47.2 (0.2)	1.5 (0.2)	<0.01*
Internet	38.5 (0.1)	37.7 (0.1)	0.8 (0.2)	<0.01*
Mail	9.8 (0.1)	9.1 (0.1)	0.7 (0.1)	<0.01*
TQA	0.5 (<0.1)	0.5 (<0.1)	<0.1 (<0.1)	0.55

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 5 shows the self-response return rates as of June 26, 2024, the CAPI cut date that would have been used if not for the testing of the timing of the CAPI Internet Letter. The self-response return rate for Treatment 1 was found to still be higher than the rate for Control 1.

Table 5. Self-Response Rates on Date of Production CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	49.3 (0.2)	48.3 (0.2)	1.0 (0.2)	<0.01*
Internet	38.6 (0.1)	38.0 (0.1)	0.7 (0.2)	<0.01*
Mail	10.2 (0.1)	9.9 (0.1)	0.3 (0.1)	0.09*
TQA	0.5 (<0.1)	0.5 (<0.1)	<0.1 (<0.1)	0.76

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

While self-response was higher for the earlier mailout treatment at both time points, the effect of this increase is unlikely to have a large an effect on CAPI as the results might suggest. Due to the cap on the CAPI workload, this increase in self-response at the time of the CAPI cut would not decrease the number of cases in the CAPI workload. The decrease in CAPI eligible cases would decrease the variances of estimates, however the effect would likely be small.

5.1.3 Research Question 3 – CAPI Eligible Cases

What is the effect of sending the CAPI Internet Letter earlier on the number of CAPI eligible cases?

There are pros and cons to mailing the CAPI Internet Letter earlier. The purpose of this question is to assess the disadvantage of the earlier mailout; that is, an earlier CAPI cut results in an increase in the number of CAPI eligible cases.[11] The benefit of the earlier mailing is presented in Section 5.1.4.

Control 2 and Treatment 2 were assigned only to cases that were selected for CAPI. Because of this, we are not able to compare return rates prior to the CAPI cut to answer this question. Instead, we nominally compared the Control 1 return rates at the two cut dates, June 24, 2024, and June 26, 2024.

Shown in Table 6, the difference in self-response return rates between those two time points for the Control 1 treatment is approximately 1.1 percentage points. While this difference is only nominal, as we did not test for significance, this difference would result in approximately 3,200 more cases to be eligible for CAPI each month or approximately 38,000 for the entire year.

Table 6 Self-Response Return Rates at CAPI Cut

Cut Date	Self-Response Return Rate
June 24, 2024	47.2 (0.2)
June 26, 2024	48.3 (0.2)

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Standard errors are in parentheses.

5.1.4 Research Question 4 – CAPI Self-Response

What is the effect of sending the CAPI Internet Letter earlier on the percent of CAPI respondents that self-respond?

Research question 3 examined the disadvantage of mailing the CAPI Internet Letter earlier; this question examines the potential benefits. The purpose of this question is to determine if sending the CAPI Internet Letter earlier had the desired effect of increasing the portion of the CAPI sample that self-responds.

[11] Due to the cap on the number of CAPI cases this would not affect the size of the CAPI workload, but an increase in the number of CAPI eligible cases due to the earlier CAPI cut date would potentially increase the variance of estimates.

Shown in Table 7, we see that overall, there was not a statistically significant difference in the percent of CAPI respondents that self-responded whether they were mailed the CAPI Internet Letter earlier or not.

However, Treatment 2 (sending the CAPI Internet Letter earlier) was found to have a significantly higher percent of CAPI cases that responded by mail. This result was unexpected, and it is unclear how the treatment differences would have caused an increase in mail response but not internet response. Notably, discussed in section 5.5.4, there is a geographic component to this. The same effect was only found for the two regional office areas closest to the national processing center, Chicago and Philadelphia.

Table 7. CAPI Sample Self-Response Rates

	Treatment 2	Control 2	Difference	P-Value
Overall Self-Response	30.2 (0.4)	29.2 (0.4)	0.9 (0.5)	0.20
Internet	25.2 (0.3)	24.9(0.4)	0.3 (0.5)	0.53
Mail	4.8 (0.2)	4.1 (0.2)	0.7 (0.2)	0.03*
TQA	0.2 (<0.1)	0.2 (<0.1)	<0.1 (<0.1)	0.53

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

5.2 Research Question 5—Refusal Rates

What is the effect of sending the CAPI Internet Letter earlier on CAPI refusal rates?

We hoped that the CAPI Internet Letter, in addition to convincing households to respond online, would increase compliance with field representatives by warning households that a field representative would be contacting them and increasing feelings that the field representative that contacts them later is legitimate. One potential way to measure if this was successful is by comparing the rate at which CAPI cases ended in a refusal, as increased feelings of legitimacy would hopefully decrease refusals.

Shown in Table 8, no significant difference was found in refusal rates between Treatment 2 and Control 2.

Table 8. Refusal Rates

	Treatment 2	Control 2	Difference	P-Value
Refusal Rate	17.3 (0.4)	16.7 (0.3)	0.6 (0.5)	0.23

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level.

5.3 Research Question 6—Average Number of Contact Attempts

What is the effect of sending the CAPI Internet Letter earlier on the average number of contact attempts?

Ultimately the goal of sending the CAPI Internet Letter is to reduce CAPI costs by reducing the number of contacts by field representatives. This metric examines how effective sending the letter earlier was at reducing the average number of contact attempts.

Shown in Table 9, there was no difference found in the average number of contact attempts. This is not too surprising as no difference was found in the self-response rate among CAPI cases in section 5.1.4.

Table 9. Average Number of Contact Attempts

	Treatment 2	Control 2	Difference	P-Value
Average Number of Contact Attempts	3.74 (0.03)	3.79 (0.03)	-0.05 (0.04)	0.18

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level.

5.4 Research Question 7—Cost Analysis

What is the effect on cost, relative to current production, of sending the Due Date Letter and the CAPI Internet Letter earlier?

Sending both the Due Date Letter and CAPI Internet Letter has both benefits and disadvantages. By examining these changes in terms of cost we can attempt to quantify the benefits and disadvantages.

5.4.1 Effect on Cost in Sending the Due Date Letter Earlier

Because the same mail materials were used for both Control 1 and Treatment 1, the only difference in cost is due to the difference in number of mailings sent out due to the mail date and cut date being two days earlier.[12] An increase in mailing workload would likewise increase three main components of cost:

- Printing, the cost of the additional material printed.
- Postage, the cost of mailing additional materials.
- Assembly, the labor cost of printing and mailing additional materials.

[12] Due to operational limitations, the Control 1 treatment had the same earlier cut date as Treatment 1, however we can estimate what the workload would have been by removing the cases that responded between the used cut date and the cut date that would have been used if not for the experiment.

Shown in Table 10, there is an estimated 1.7 percentage point difference in the self-response return rates between the two cut dates. These are cases that were sent the Due Date Letter that would not have been sent it if the original mailout date was used.

Table 10. Self-Response Rates on Date of M3 Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	35.4 (0.1)	37.1 (0.1)	-1.7 (0.2)	<0.01*

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level.

Shown in Table 11 is the estimated annual cost increase for each component caused by sending the Due Date Letter earlier. All together it is estimated that sending the Due Date Letter four days earlier would increase printing, postage, and assembly costs by $58,000 annually.

Table 11. Cost Increase from Earlier Due Date Letter

Component	Cost Increase
Printing	$9,000
Postage	$46,000
Assembly	$3,000
Printing, Postage, and Assembly	$58,000

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013

While section 5.1.2 showed that the earlier Due Date Letter increased self-response at the CAPI cut, that currently does not result in any cost savings. Because there is currently a cap on the CAPI workload, due to budgetary constraints, a reduction in the number of CAPI eligible cases does not necessarily reduce the CAPI workload. While theoretically a sufficiently large increase in self-response prior to the CAPI cut could reduce the CAPI workload below the cap and result in cost savings, the increase in self-response found in section 5.1.2 were relatively modest.

As discussed in section 5.1.2, the increase in self-response would likely have a positive effect on CAPI; by resulting in smaller variances for estimates, however, this does not affect cost.

5.4.2 Effect on Cost of Sending the CAPI Internet Letter Earlier

If not for the cap on the CAPI workload, sending the CAPI Internet Letter earlier would increase costs. Performing the CAPI selection earlier would cause more cases to be selected due to having more eligible. However, because of the cap on CAPI workload, the downside of having more cases eligible is less clear from a cost perspective and would likely have a negative effect on variances.

At the same time, Section 5.1.4 found that there was not sufficient evidence to conclude that sending the CAPI Internet Letter earlier increased self-response among the CAPI population. With no increased self-response among the CAPI population, there is not possible cost savings for the earlier letter.

5.5 Exploratory Analysis

In addition to the research questions discussed in the previous sections, there were a few supplemental questions that further explore the results.

5.5.1 Supplemental Question 1

How often is self-response received after the CAPI Internet Letter is mailed but before the initial contact by an FR?

The goal of mailing the CAPI Internet Letter earlier is to hopefully get households to respond before they are contacted by a field representative.

Shown in Table 12, Treatment 2 was found to increase the percentage of households that responded after the CAPI Internet Letter was mailed but before the first contact by a field representative. However, while this difference of one percentage point was statistically significant, the percentage remains small at 2.8 percent and is unlikely to be practically significant.

Table 12. Percent of CAPI Sample that Responds after the CAPI Internet Letter is Mailed but Before the First Field Representative Contact

	Treatment 2	Control 2	Difference	P-Value
Percent of CAPI Sample that Responds Before First Field Representative Contact	2.8 (0.1)	1.8 (0.1)	1.0 (0.2)	<0.01*

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level.

5.5.2 Supplemental Question 2

What is the effect on self-response of mailing both the Due Date Letter and CAPI Internet Letter early versus mailing one or neither of the letters early?

While the two parts of the test were envisioned as separate, it is possible the two changes, sending the Due Date Letter earlier and sending the CAPI Internet Letter earlier, had an interaction effect. By comparing the combination treatments, we can see if these combinations of treatments had an effect that is different from looking at the treatments individually.

Shown in Table 13, Table 14, and Table 15, there was no statistically significant difference found in self-response between sending both letters early (T2xT1) vs mailing one (T2xC1 and C2xT1) or neither of the letters early (C2xC1).

Table 13. CAPI Sample Self-Response Rates – Treatment 2 x Treatment 1 vs Treatment 2 x Control 1

	T2xT1	T2xC1	Difference	P-Value
Overall Self-Response	30.0 (0.6)	30.3 (0.5)	-0.2 (0.9)	0.79
Internet	25.6 (0.5)	24.9 (0.5)	0.7 (0.8)	0.78
Mail	4.4 (0.3)	5.2 (0.3)	-0.8 (0.4)	0.25
TQA	0.1 (<0.1)	0.2 (0.1)	-0.1 (0.1)	0.33

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 14. CAPI Sample Self-Response Rates – Treatment 2 x Treatment 1 vs Control 2 x Treatment 1

	T2xT1	C2xT1	Difference	P-Value
Overall Self-Response	30.0 (0.6)	28.8 (0.5)	1.2 (0.7)	0.33
Internet	25.6 (0.5)	24.9 (0.5)	0.7 (0.6)	0.56
Mail	4.4 (0.3)	3.8 (0.2)	0.5 (0.3)	0.33
TQA	0.1 (<0.1)	0.1 (<0.1)	<0.1 (<0.1)	0.70

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 15. CAPI Sample Self-Response Rates – Treatment 2 x Treatment 1 vs Control 2 x Control 1

	T2xT1	C2xC1	Difference	P-Value
Overall Self-Response	30.1 (0.6)	29.6 (0.5)	0.4 (0.8)	0.93
Internet	25.6 (0.5)	25.0 (0.6)	0.6 (0.7)	0.93
Mail	4.4 (0.3)	4.4 (0.3)	<0.1 (0.4)	0.93
TQA	0.1 (<0.1)	0.3 (0.1)	-0.2 (0.1)	0.05*

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

5.5.3 Supplemental Question 3A

Are there differences in results based on Regional Office?

Each of the areas overseen by a regional office is likely to have a difference in mail delivery timing. Because of this difference in timing, the changes to the mailout dates might affect each regional office area differently.

The results for research questions 2 and 4 for each regional office are shown in Appendix C. In general, the results for each regional office mimicked the overall results.

The earlier mailing of the Due Date Letter increased self-response at the time of the experimental cut for five of the six regional offices, with only Philadelphia's rate not statistically significant. For the production mailout date of the Due Date Letter, two of the regional offices, Atlanta and Chicago, remained statistically significant.

Mailing the CAPI Internet Letter earlier was not found to increase self-response in any of the six regional offices. However, for two of the six regional offices, Chicago and Philadelphia, there was statistically significant increase in mail response. Notably, these are the two regional offices closest to the national processing center.

5.5.4 Supplemental Question 3B

Are there differences in demographics between treatments?

A difference was found in the self-response when the Due Date Letter was mailed earlier. A difference in the demographics of those that responded might identify the demographics of those that responded due to the earlier letter.

Shown in Appendix D, there was no difference in demographics found between treatments.

5.5.5 Supplemental Question 3C

Are there differences in demographics between earlier and later response?

Unfortunately, resource constraints prevented the conduct of the analysis associated with this question.

6. CONCLUSIONS AND RECOMMENDATIONS

The Census Bureau employs a mail contact strategy to obtain self-response to the ACS. The Census Bureau sends households in the sample with a mailable address up to six mailings to motivate a self-response. The sooner a household responds to the survey, the fewer mailings it receives. Self-response is the desired form of survey response as it is less costly than CAPI.

The 2024 ACS Mailout Timing Test tested the effect on ACS self-response and data collection costs if the Due Date Letter (5th mailing) and the CAPI Internet Letter (6th mailing) in the ACS mail contact materials are mailed out earlier.

The Due Date Letter is the last mailing that nonrespondent households receive before the CAPI sample is selected. There are relatively few days between the due date in the Due Date Letter and the date the CAPI sample is selected (typically 3-5 days). This does not provide sufficient time for paper returns to be received before the CAPI cut. Consequently, households that may have responded by paper or even internet (if close to the CAPI cut date) may fall into the CAPI sample. A potential reduction in the number of cases that fall into the CAPI sample was the motivation behind mailing out the Due Date Letter earlier.

The CAPI Internet Letter is the last mailing in the ACS mail contact strategy. Due to the short period between when the CAPI Internet Letter is mailed out and the start of CAPI (often one day), some recipients receive the CAPI Internet Letter after CAPI has already begun and after they have already been contacted by a field representative for an interview. We hypothesized that if we mail out the CAPI Internet Letter earlier, we could reduce the number of such cases and increase self-response before the more costly CAPI interviews.

For this test, we calculated a variety of metrics to evaluate the effect of mailing out the Due Date Letter and the CAPI Internet Letter earlier. We present the most salient results below.

Sending the Due Date Letter four days earlier was found to significantly increase self-response prior to the earlier CAPI cut date used in the test and prior to the production CAPI cut date that would have been used if not for the experiment. These increases in self-response were due to an increase in both internet response and mail response.

Sending the CAPI Internet Letter two days earlier did not increase the portion of the mailable CAPI sample that self-responded. Similarly, there was no difference found in refusal rates or the average number of contact attempts. However, the earlier mail date was found to increase the rate at which households respond prior to first contact by a field representative. Despite the increase, the rate remains very small, so it seems even with the earlier mail date of the CAPI Internet Letter, most households in the CAPI sample that self-respond are responding after they have been contacted by a field representative.

Overall, the 2024 ACS Mailout Timing Test found some evidence that mailing out materials earlier increased self-response prior to CAPI. However, unless the slight increase in response before CAPI is determined to have additional benefits, we do not recommend mailing the Due Date Letter four days earlier due to the associated increase in cost due to mailing the Due Date Letter to more households. While it did increase self-response prior to CAPI, that did not reduce data collection costs due to the cap on the CAPI workload.

Additionally, we do not recommend mailing the CAPI Internet Letter earlier and instead recommend further research on the CAPI Internet Letter, such as moving the mailout date even earlier or finding ways to differentiate it from the previous five letters to make it more effective at increasing response prior to contact by a field representative. Further research is also needed on the postal timing of the mailings to better understand when households are receiving the mailings after mailout. The results from postal tracking research conducted nine years ago (see Heimel, 2016) may have changed.

7. REFERENCES

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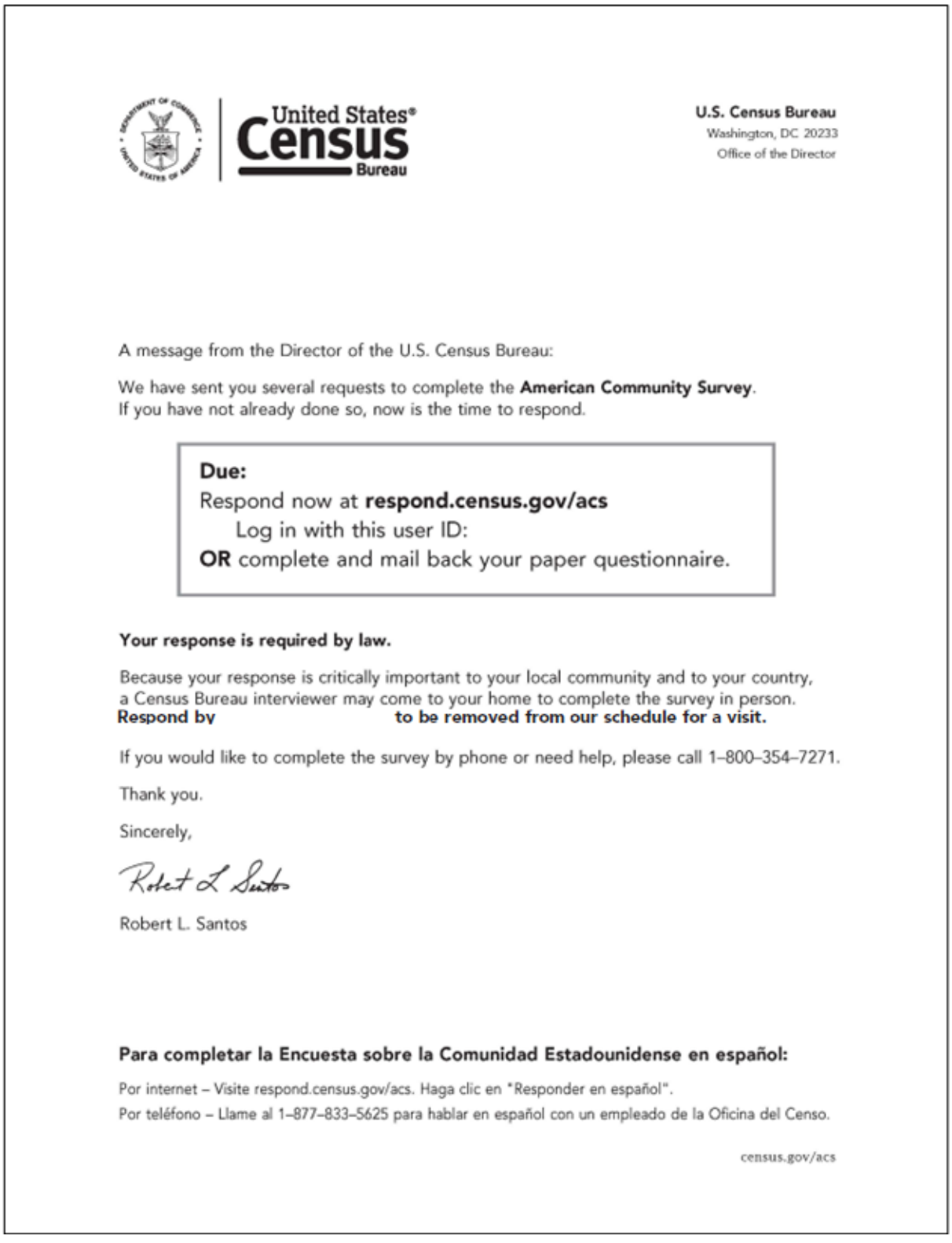
Appendix A. Due Date Letter in 5th Mailing of ACS Mail Contact Materials



United States® Census Bureau

U.S. Census Bureau
Washington, DC 20233
Office of the Director

A message from the Director of the U.S. Census Bureau:

We have sent you several requests to complete the **American Community Survey**. If you have not already done so, now is the time to respond.

Due:
Respond now at **respond.census.gov/acs**
Log in with this user ID:
OR complete and mail back your paper questionnaire.

Your response is required by law.

Because your response is critically important to your local community and to your country, a Census Bureau interviewer may come to your home to complete the survey in person.
Respond by **to be removed from our schedule for a visit.**

If you would like to complete the survey by phone or need help, please call 1–800–354–7271.

Thank you.

Sincerely,

Robert L. Santos

Robert L. Santos

Para completar la Encuesta sobre la Comunidad Estadounidense en español:

Por internet – Visite respond.census.gov/acs. Haga clic en "Responder en español".
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ACS-23PS(2024) (05-23-2023)

Appendix B. CAPI Internet Letter in 6th Mailing in the ACS Mail Contact Materials—New York Regional Office

United States® Census Bureau

U.S. Census Bureau
New York Regional Office
New York, NY 10005-3500

Dear Resident:

A U.S. Census Bureau employee may have recently contacted you to help you complete the **American Community Survey**. If you have responded, thank you. If you have not responded, we will contact you soon.

Please complete the survey today to avoid an in-person interview:

Go to: **respond.census.gov/acs**
Log in with your user ID:
Enter the user ID letters and numbers exactly as you see them above.

You are required by U.S. law to respond to this survey. The Census Bureau is required by law to keep your information confidential.

If a Census Bureau employee visits you, he or she will present a photo ID that includes their name, a Department of Commerce watermark, and an expiration date. He or she will have a laptop and will contact you between 9 a.m. and 9 p.m. You may also be contacted by phone.

The information from this survey helps identify needs such as affordable housing, job training, and emergency planning. Your response makes a difference! Thank you for helping your community prepare for a better future.

If you have any questions call us at 1–800–991–2520, option 1. We are happy to help you.

Sincerely,

Leila N. Dickerson
Regional Director

Para completar la Encuesta sobre la Comunidad Estadounidense en español:

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Por teléfono – Llame al 1–877–833–5625 para hablar en español con un empleado de la Oficina del Censo.

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Appendix C. Self-Response Results – Regional Office

C.1 Atlanta Regional Office

Table 16. Self-Response Rates on Date of Experiment CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	44.0 (0.3)	42.2 (0.4)	1.7 (0.5)	<0.01*
Internet	34.7 (0.4)	33.5 (0.3)	1.2 (0.5)	0.07*
Mail	8.8 (0.2)	8.2 (0.2)	0.5 (0.3)	0.14
TQA	0.5 (0.1)	0.5 (<0.1)	<0.1 (0.1)	0.66

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 17. Self-Response Rates on Date of Production CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	44.5 (0.3)	43.3 (0.4)	1.3 (0.5)	0.07*
Internet	34.8 (0.4)	33.8 (0.3)	1.0 (0.5)	0.19
Mail	9.3 (0.2)	9.0 (0.2)	0.3 (0.3)	0.68
TQA	0.5 (0.1)	0.5 (<0.1)	<0.1 (0.1)	0.68

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 18. CAPI Sample Self-Response Rates

	Treatment 2	Control 2	Difference	P-Value
Overall Self-Response	25.7 (0.9)	24.3 (0.7)	1.4 (1.1)	0.60
Internet	20.9 (0.9)	20.3 (0.7)	0.6 (1.1)	0.60
Mail	4.6 (0.4)	3.8 (0.3)	0.8 (0.6)	0.60
TQA	0.2 (0.1)	0.1 (0.1)	<0.1 (0.1)	0.60

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

C.2 Chicago Regional Office

Table 19. Self-Response Rates on Date of Experiment CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	55.9 (0.4)	53.8 (0.3)	2.1 (0.5)	<0.01*
Internet	43.1 (0.4)	42.0 (0.3)	1.1 (0.5)	0.06*
Mail	12.2 (0.2)	11.2 (0.2)	1.0 (0.4)	0.03*
TQA	0.5 (0.1)	0.5 (0.1)	<0.1 (0.1)	0.63

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 20. Self-Response Rates on Date of Production CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	56.5 (0.4)	55.0 (0.3)	1.5 (0.5)	0.02*
Internet	43.3 (0.4)	42.3 (0.3)	1.0 (0.5)	0.12
Mail	12.7 (0.2)	12.2 (0.2)	0.5 (0.4)	0.36
TQA	0.5 (0.1)	0.5 (0.1)	<0.1 (0.1)	0.68

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 21. CAPI Sample Self-Response Rates

	Treatment 2	Control 2	Difference	P-Value
Overall Self-Response	30.3 (1.1)	29.5 (1.1)	0.9 (1.5)	0.99
Internet	23.8 (1.1)	24.4 (1.0)	-0.7 (1.5)	0.99
Mail	6.3 (0.5)	4.8 (0.5)	1.5 (0.6)	0.07*
TQA	0.2 (0.1)	0.2 (0.1)	<0.1 (0.1)	0.99

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

C.3 Denver Regional Office

Table 22. Self-Response Rates on Date of Experiment CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	45.4 (0.4)	44.2 (0.4)	1.2 (0.5)	0.09*
Internet	36.7 (0.4)	35.9 (0.3)	0.9 (0.5)	0.19
Mail	8.3 (0.2)	8.0 (0.2)	0.3 (0.3)	0.64
TQA	0.4 (0.1)	0.4 (<0.1)	<0.1 (0.1)	0.80

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 23. Self-Response Rates on Date of Production CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	46.0 (0.3)	45.2 (0.4)	0.9 (0.5)	0.29
Internet	37.0 (0.4)	36.1 (0.3)	0.8 (0.5)	0.27
Mail	8.7 (0.2)	8.6 (0.2)	<0.1 (0.3)	0.99
TQA	0.4 (0.1)	0.4 (<0.1)	<0.1 (0.1)	0.99

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 24. CAPI Sample Self-Response Rates

	Treatment 2	Control 2	Difference	P-Value
Overall Self-Response	30.7 (0.9)	29.7 (0.9)	1.0 (1.3)	0.96
Internet	26.6 (0.9)	25.6 (0.9)	1.0 (1.3)	0.96
Mail	3.9 (0.4)	3.9 (0.4)	<0.1 (0.6)	0.96
TQA	0.2 (0.1)	0.2 (0.1)	-0.1 (0.1)	0.96

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

C.4 Los Angeles Regional Office

Table 25. Self-Response Rates on Date of Experiment CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	48.2 (0.3)	46.6 (0.4)	1.5 (0.5)	0.01*
Internet	39.1 (0.3)	38.6 (0.3)	0.5 (0.5)	0.56
Mail	8.7 (0.2)	7.6 (0.2)	1.1 (0.3)	<0.01*
TQA	0.4 (0.1)	0.4 (<0.1)	-0.1 (0.1)	0.56

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 26. Self-Response Rates on Date of Production CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	48.7 (0.3)	47.7 (0.4)	1.0 (0.5)	0.15
Internet	39.3 (0.3)	39.0 (0.3)	0.3 (0.5)	0.57
Mail	9.1 (0.2)	8.3 (0.2)	0.8 (0.3)	0.03*
TQA	0.4 (0.1)	0.4 (<0.1)	-0.1 (0.1)	0.57

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 27. CAPI Sample Self-Response Rates

	Treatment 2	Control 2	Difference	P-Value
Overall Self-Response	34.4 (1.0)	35.1 (1.1)	-0.8 (1.5)	0.93
Internet	30.4 (1.0)	30.5 (1.0)	-0.1 (1.4)	0.93
Mail	3.7 (0.4)	4.3 (0.5)	-0.6 (0.6)	0.93
TQA	0.2 (0.1)	0.3 (0.1)	<0.1 (0.1)	0.93

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

C.5 New York Regional Office

Table 28. Self-Response Rates on Date of Experiment CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	47.8 (0.3)	46.4 (0.4)	1.4 (0.6)	0.09*
Internet	38.0 (0.4)	37.2 (0.4)	0.8 (0.6)	0.30
Mail	9.2 (0.2)	8.8 (0.3)	0.4 (0.3)	0.30
TQA	0.6 (0.1)	0.5 (0.1)	0.1 (0.1)	0.43

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 29. Self-Response Rates on Date of Production CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	48.2 (0.3)	47.4 (0.4)	0.8 (0.6)	0.75
Internet	38.0 (0.4)	37.4 (0.4)	0.6 (0.6)	0.81
Mail	9.6 (0.2)	9.5 (0.3)	0.1 (0.3)	0.84
TQA	0.6 (0.1)	0.5 (0.1)	0.1 (0.1)	0.84

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 30. CAPI Sample Self-Response Rates

	Treatment 2	Control 2	Difference	P-Value
Overall Self-Response	30.1 (1.0)	29.3 (1.2)	0.7(1.6)	0.70
Internet	25.3 (1.0)	24.8 (1.1)	0.6 (1.5)	0.70
Mail	4.7 (0.5)	4.2 (0.5)	0.4 (0.7)	0.70
TQA	<0.1 (<0.1)	0.3 (0.1)	-0.3 (0.1)	0.19

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

C.6 Philadelphia Regional Office

Table 31. Self-Response Rates on Date of Experiment CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	51.9 (0.4)	51.0 (0.4)	0.8 (0.6)	0.44
Internet	39.8 (0.4)	39.6 (0.3)	0.3 (0.5)	0.99
Mail	11.5 (0.2)	10.9 (0.2)	0.6 (0.3)	0.31
TQA	0.6 (0.1)	0.6 (0.1)	<0.1 (0.1)	0.99

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 32. Self-Response Rates on Date of Production CAPI Cut

	Treatment 1	Control 1	Difference	P-Value
Overall Self-Response	52.4 (0.4)	52.0 (0.4)	0.4 (0.6)	0.85
Internet	40.0 (0.4)	39.8 (0.3)	0.2 (0.5)	0.85
Mail	11.9 (0.2)	11.7 (0.2)	0.2 (0.3)	0.85
TQA	0.6 (0.1)	0.6 (0.1)	<0.1 (0.1)	0.85

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Table 33. CAPI Sample Self-Response Rates

	Treatment 2	Control 2	Difference	P-Value
Overall Self-Response	30.7 (0.9)	28.5 (1.0)	2.2 (1.4)	0.36
Internet	24.8 (0.9)	24.5 (1.0)	0.3 (1.5)	0.84
Mail	5.7 (0.5)	3.9 (0.4)	1.8 (0.6)	0.01*
TQA	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)	0.84

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013
Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two tailed t-test at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method.

Appendix D. Demographic Comparison

D.1 Experimental M3 Cut

Table 34. Comparison of Demographic Distributions, Self-Responses before the 5th Mailing Experimental Cut Date

Item	Treatment 1	Control 1
AGE (*p*-value)		0.90
Under 18 years old	0.1 (<0.1)	0.1 (<0.1)
18 to 29 years old	8.1 (0.1)	8.1 (0.1)
30 to 49 years old	28.7 (0.2)	28.3 (0.2)
50 to 64 years old	26.4 (0.2)	26.2 (0.2)
65 years old or older	36.6 (0.2)	37.3 (0.2)
SEX (*p*-value)		0.90
Male	48.4 (0.2)	48.4 (0.2)
Female	51.6 (0.2)	51.6 (0.2)
HISPANIC ORIGIN (*p*-value)		0.90
Hispanic or Latino	9.4 (0.1)	9.2 (0.1)
Not Hispanic or Latino	90.6 (0.1)	90.8 (0.1)
RACE (*p*-value)		0.90
White alone	80.7 (0.2)	80.8 (0.1)
Black or African American alone	6.5 (0.1)	6.4 (0.1)
Other race alone	9.3 (0.1)	9.3 (0.1)
Two or more races	3.5 (0.1)	3.5 (0.1)
EDUCATIONAL ATTAINMENT (*p*-value)		0.90
High school, GED†, or less	24.3 (0.2)	24.0 (0.2)
Some college or associate's degree	28.4 (0.2)	28.3 (0.2)
Bachelor's degree or more	47.3 (0.2)	47.6 (0.2)
BUILDING TYPE (*p*-value)		0.90
One-family home	75.8 (0.2)	76.0 (0.2)
Apartment	19.7 (0.2)	19.7 (0.2)
Other (boat, van, etc.)	4.5 (0.1)	4.3 (0.1)
TENURE (*p*-value)		0.54
Owned with a mortgage	47.1 (0.2)	46.6 (0.3)
Owned free and clear	28.8 (0.2)	29.3 (0.2)
Rented	22.8 (0.2)	22.7 (0.2)
Occupied without payment of rent	1.2 (<0.1)	1.4 (0.1)

†General Educational Development

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. For overall item distributions, significance was tested based on Rao-Scott chi-squared tests of independence at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method. For items with statistically significantly different distributions, significance for individual response categories was tested based on a two-tailed t-test at the α=0.1 level.

D.2 Production M3 Cut

Table 35. Comparison of Demographic Distributions, Self-Responses before the 5th Mailing Experimental Cut Date

Item	Treatment 1	Control 1
AGE (*p*-value)		0.98
Under 18 years old	0.1 (<0.1)	0.1 (<0.1)
18 to 29 years old	8.1 (0.1)	8.0 (0.1)
30 to 49 years old	28.6 (0.2)	28.2 (0.2)
50 to 64 years old	26.4 (0.2)	26.3 (0.2)
65 years old or older	36.7 (0.2)	37.4 (0.2)
SEX (*p*-value)		0.98
Male	48.4 (0.2)	48.4 (0.2)
Female	51.6 (0.2)	51.6 (0.2)
HISPANIC ORIGIN (*p*-value)		0.98
Hispanic or Latino	9.4 (0.1)	9.3 (0.1)
Not Hispanic or Latino	90.6 (0.1)	90.7 (0.1)
RACE (*p*-value)		0.98
White alone	80.6 (0.2)	80.7 (0.1)
Black or African American alone	6.5 (0.1)	6.5 (0.1)
Other race alone	9.4 (0.1)	9.3 (0.1)
Two or more races	3.5 (0.1)	3.5 (0.1)
EDUCATIONAL ATTAINMENT (*p*-value)		0.98
High school, GED†, or less	24.3 (0.2)	24.2 (0.2)
Some college or associate's degree	28.5 (0.2)	28.4 (0.2)
Bachelor's degree or more	47.2 (0.2)	47.4 (0.2)
BUILDING TYPE (*p*-value)		0.98
One-family home	75.8 (0.2)	76.0 (0.2)
Apartment	19.7 (0.2)	19.6 (0.2)
Other (boat, van, etc.)	4.5 (0.1)	4.4 (0.1)
TENURE (*p*-value)		0.49
Owned with a mortgage	47.2 (0.2)	46.6 (0.3)
Owned free and clear	28.8 (0.2)	29.3 (0.2)
Rented	22.8 (0.2)	22.7 (0.2)
Occupied without payment of rent	1.2 (<0.1)	1.4 (0.1)

†General Educational Development

Source: U.S. Census Bureau, American Community Survey, 2024 ACS Mailout Timing Test, CBDRB-FY25-ACSO003-0013

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. For overall item distributions, significance was tested based on Rao-Scott chi-squared tests of independence at the α=0.1 level. P-values were adjusted for multiple comparisons using the Hochberg method. For items with statistically significantly different distributions, significance for individual response categories was tested based on a two-tailed t-test at the α=0.1 level.