

2019 Census Test Report

A New Design for the 21st Century

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2019 Census Test

FINAL REPORT



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TABLE OF CONTENTS

EXECUTIVE SUMMARY	ix
1. INTRODUCTION	1
2. BACKGROUND	1
2.1 Citizenship Question	1
2.2 2019 Census Test Overview	2
2.2.1 Internet First Contact Strategy	3
2.2.2 Internet Choice Contact Strategy	4
2.2.3 Mail Schedule	5
3. METHODOLOGY.....	6
3.1 Research Questions	6
3.2 Sample Design.....	7
3.3 Unit Response Analysis	9
3.4 Item-Level Analysis	9
3.5 Partial Response (Breakoff) Analysis	11
3.6 Standard Errors	11
4. ASSUMPTIONS AND LIMITATIONS.....	12
4.1 Assumptions.....	12
4.2 Limitations.....	12
5. RESULTS	14
5.1 Overall Self-Response Rates (RQ1) and Self-Response Rates Over Time (RQ2a).....	14
5.2 Self-Response Rates by Mode (RQ2b)	15
5.3 Self-Response Rates by Contact and Language Strategy Areas (RQ2c).....	16
5.4 Self-Response Rates in Areas with Different Proportions of Noncitizens (RQ2d).....	16
5.5 Self-Response Rates by Historic Response Propensity (RQ2e).....	17
5.6 Self-Response Rates in Areas with Different Proportions of Foreign-Born Residents (RQ2f)	17
5.7 Self-Response Rates in Areas with Different Proportions of Hispanic Residents (RQ2g)	18
5.8 Self-Response Rates in Areas with Different Proportion of Asian Residents (RQ2h)	18
5.9 Self-Response Rates within Regional Census Center (RQ2i)	19
5.10 Self-Response Rates by Urban and Rural Areas (RQ2j)	20
5.11 Analyses of Demographic Characteristics.....	20
5.12 Item Nonresponse and Questionnaire Completeness (RQ4 and RQ5)	26
5.13 Citizenship Question Item Nonresponse Rate (RQ7).....	28

5.14	Partial Response (Breakoff) Analysis (RQ6)	28
6.	CONCLUSIONS	30
7.	ACKNOWLEDGEMENTS	31
8.	REFERENCES	32
	Appendix A. Images of the Paper Questionnaires.....	34
	Appendix B. Internet First Mail Materials.....	38
	Appendix C. Internet Choice Mail Materials	39
	Appendix D. Census Bureau 2020 Regional Census Center Boundaries	40
	Appendix E. Regional Census Center Analysis.....	41
	Appendix F. Demographic Distributions for All Household Members.....	43
	Appendix G. Item Nonresponse and Form Completeness By Sampling Strata	48

LIST OF TABLES

Table 1.	2019 Census Test Self-Response Contact Strategy Mail Materials and Mailout Dates....	6
Table 2.	provides the sample size for each stratum by treatment. Table 3 provides the sample size by contact strategy and language of the materials.....	8
Table 2.	Sample Size by Strata	8
Table 3.	Sample Size by Contact Strategy and Language of Materials	9
Table 4.	Total Self-Response Rates by Mailing	15
Table 5.	Total Self-Response Rates by Response Mode	15
Table 6.	Internet and TQA [†] Response Rates by Mailing	15
Table 7.	Mail Response Rates by Mailing	16
Table 8.	Total Self-Response Rates by Contact and Language Strategy Areas.....	16
Table 9.	Total Self-Response Rates for Areas with Different Proportions of Noncitizens	17
Table 10.	Total Self-Response Rates for Areas with Different Historic Response Propensities...	17
Table 11.	Total Self-Response Rates for Areas with Different Proportions of Foreign-Born Residents	18
Table 12.	Total Self-Response Rates for Areas with Different Proportions of Hispanic Residents	18
Table 13:	Total Self-Response Rates for Areas with Different Proportions of Asian Residents...	19
Table 14.	Total Self-Response Rates for Regional Census Center Areas	19
Table 15.	Total Self-Response Rates in Urban and Rural Areas.....	20
Table 16:	Average Household Size by Mode and Treatment	20
Table 17.	Tenure Response Distributions by Mode and Treatment	21

Table 18. Sex Response Distributions for Person 1 by Mode and Treatment	21
Table 19. Age Group Response Distributions for Person 1 by Mode and Treatment	22
Table 20. Percent of Person 1 Who Identified as Hispanic by Mode and Treatment	23
Table 21. Percent of Person 1 Who Identified as Hispanic by Detailed Hispanic Origin Group and Treatment	23
Table 22. Race Group Response Distributions for Person 1 by Mode and Treatment	24
Table 23. Detailed Asian Group Response Distributions for Person 1 by Mode and Treatment.....	25
Table 24. Item Nonresponse Rates for All Modes Combined by Treatment.....	26
Table 25. Item Nonresponse Rates for Mail Responses by Treatment	26
Table 26. Item Nonresponse Rates for Internet and TQA Responses by Treatment	27
Table 27. Questionnaire Completeness by Response Mode	27
Table 28. Citizenship Question Item Nonresponse Rate	28
Table 29. Breakoff Rates by Mode and Treatment.....	28
Table 30. Internet Breakoff Rates by Interview Section and Treatment.....	29
Table 31. Internet Breakoff Rate by Person Questions Screen	29
Table 32. TQA [†] Breakoff Rate by Interview Section and Treatment	30
Table B-1. Internet First Mail Materials by Mailing and Language Strategy	38
Table C-1. Internet Choice Mail Materials by Mailing and Language Strategy	39
Table E-1. Los Angeles RCC: Self-Response Rates by Contact and Language Strategy Areas	41
Table E-2. Los Angeles RCC: Self-Response Rates for Areas with Different Proportions of Noncitizens.....	41
Table E-3. New York RCC: Self-Response Rates by Contact and Language Strategy Areas.....	42
Table E-4. New York RCC: Self-Response Rates for Areas with Different Proportions of Noncitizens.....	42
Table F-1. Percent of Related Household Members by Mode and Treatment	43
Table F-2. Sex Response Distributions by Mode and Treatment	43
Table F-3. Age Group Response Distributions for All Modes Combined	43
Table F- 4. Age Group Response Distributions for the Mail Mode.....	44
Table F-5. Age Group Response Distributions for the Internet Mode.....	44
Table F-6. Hispanic Origin Response Distributions for All Persons.....	45
Table F-7. Detailed Hispanic Origin Group Distribution for All Persons	45
Table F-8. Race Group Response Distributions for All Persons	46
Table F-9. Detailed Asian Group Response Distributions for All Persons who are Asian Alone ..	47
Table G-1. Item Nonresponse Rates for All Modes in the High Sampling Stratum	48

Table G-2. Item Nonresponse Rates for All Modes in the Medium Sampling Stratum.....	48
Table G-3. Item Nonresponse Rates for All Modes in the Low Sampling Stratum.....	49
Table G-4. Form Completeness by Sampling Strata	49

LIST OF FIGURES

Figure 1. Citizenship Question on the Paper Questionnaire	2
Figure 2. Internet First Contact Strategy	4
Figure 3. Internet Choice Contact Strategy	5
Figure 4. Experiment and Control Final Weighted Response Rates over Time	14
Figure A-1. Control Questionnaire (in English) with the Citizenship Question	34
Figure A-2. Control Questionnaire (in Spanish) with the Citizenship Question	35
Figure A-3. Experimental Questionnaire (in English) without the Citizenship Question	36
Figure A-4. Experimental Questionnaire (in Spanish) without the Citizenship Question	37
Figure D-1. Map of the 2020 Regional Census Center Boundaries	40

EXECUTIVE SUMMARY

In 2018, the U.S. Census Bureau decided to test the operational implications of a proposed question on citizenship status on the 2020 Census. In particular, experts and stakeholders raised concerns that such a question could depress self-response rates, increase cost, and reduce the quality of the 2020 population count. An indirect study by Census Bureau researchers predicted that “adding a citizenship question to the 2020 Census would lead to lower self-response rates in households potentially containing noncitizens...” compared to households with all citizens (Brown, Heggeness, Dorinski, Warren, & Yi, 2018). However, the authors recommended the ideal analysis would be to conduct a randomized controlled experiment to compare response rates on questionnaires with and without a citizenship question.¹

The Census Bureau was interested in understanding whether the citizenship question would depress self-response rates and, if so, where that may occur. In particular, the Census Bureau wanted to know if it needed to adjust its planned hiring for enumerators in certain areas and possibly identify communities that would benefit from additional communications and partnership activity to mitigate impacts on self-response and encourage residents to open their doors for enumerators. Thus, the Census Bureau conducted the 2019 Census Test, a nationally representative randomized experiment designed to study the potential impact on self-response of including a citizenship question on the 2020 Census questionnaire.

Invitations to complete the 2019 Census Test were sent to 480,000 housing unit addresses across the country. These addresses were randomly assigned to one of two treatments, and residents were asked to respond to the 2019 Census Test questionnaire. One test questionnaire included the question on citizenship; the other test questionnaire did not. Both test questionnaires included all questions that are planned for the 2020 Census: age, sex, Hispanic origin, race, relationship, and homeownership status.

The major finding of the 2019 Census Test was that there was no statistically significant difference in overall self-response rates between treatments. The test questionnaire with the citizenship question had a self-response rate of 51.5 percent; the test questionnaire without the citizenship question had a self-response rate of 52.0 percent. Although these results differ from the predicted rates in Brown’s et al. study, the results of the two studies are not comparable since this study benefits from the randomized controlled design, which isolates the treatment effect.

However, in some areas and for some subgroups, there were statistically significant lower self-response rates for the test questionnaire with the citizenship question than for the test

¹ The term “questionnaire” refers to any mode of response, including paper forms, online response, and response via the telephone.

questionnaire without the citizenship question. These differences were observed for the following:

- Mail respondents
- Tracts designated to receive bilingual materials.
- Tracts with greater than 4.9 percent noncitizens.
- Tracts with greater than 49.1 percent Hispanic residents.
- Tracts with between 5.0-20.0 percent Asian residents.
- Housing units within the Los Angeles Regional Census Center and New York Regional Census Center boundaries.

In addition, the proportion of those who identified as Hispanic (and were listed as the first person on the questionnaire) was statistically significantly lower for the treatment with the citizenship question.

Additional analysis was conducted on partial internet responses, which are responses in which the respondent started but did not complete the questionnaire. Among internet respondents, there was a statistically higher rate of partial responses in the treatment with the citizenship question compared to the treatment without the citizenship question. Those breakoffs occurred during the collection of person demographics at a higher rate for the treatment with the citizenship question.

Although the 2020 Census will not include a citizenship question, results from this test may help inform operational decisions for future censuses and surveys. Based on the results of this experiment, had the citizenship question been included in the 2020 Census, it would not have affected staffing needs for the Nonresponse Followup operation, which is designed to collect responses from households that do not self-respond. Current plans for staffing for Nonresponse Followup would have sufficiently accounted for subgroup differences seen in this test. Note that this test did not include the Nonresponse Followup operation, so we are not able to measure the impact of a citizenship question for the completeness and accuracy of the 2020 Census overall. Furthermore, the results of the 2019 Census Test will not trigger a major change in our communications campaign strategy, which was built on prior research that indicated self-response differs across communities, and some populations may be fearful about participating in the census, regardless of the presence of a citizenship question.

1. INTRODUCTION

In 2018, the U.S. Department of Commerce announced plans to include a citizenship question on the 2020 Census questionnaire. In response to this change, the U.S. Census Bureau studied the quality of citizenship data by comparing self-reported responses from several surveys to administrative records on citizenship from the Social Security Administration. The results of the study suggested that “adding a citizenship question to the 2020 Census would lead to lower self-response rates in households potentially containing noncitizens...” compared to households with all citizens (Brown, Heggeness, Dorinski, Warren, & Yi, 2018). However, the authors noted that the analysis conducted was not the ideal method for studying the self-response effect of including a citizenship question on the 2020 Census questionnaire. They recommended a randomized control experiment to compare response rates on a questionnaire without a citizenship question to one with the citizenship question.²

In response to the recommendation, the Census Bureau conducted the 2019 Census Test, a nationally representative, self-response test designed to measure the effect of including a citizenship question on the 2020 Census questionnaire. The results of the test were intended to improve estimates of how many enumerators may be needed for Nonresponse Followup (NRFU), as well as how to better communicate and follow up with households that may not self-respond to the 2020 Census because of the presence of a citizenship question.

2. BACKGROUND

2.1 Citizenship Question

A question on citizenship has been asked in previous censuses, including in 1820, 1830, 1870, and 1890 to 1950 (U.S. Census Bureau, 2018c). From 1960 to 2000, only a sample of households (one-in-six for Census 2000) selected to complete the decennial long-form questionnaire was asked this question.³ Households receiving the decennial census short-form questionnaire from 1960 to 2000 were not asked this question. The American Community Survey, which replaced the decennial census long-form questionnaire, has included the citizenship question since its inception in 2005.⁴ As such, the citizenship question was not asked as part of the 2010 Census.

² For the purpose of this report, the term “questionnaire” refers to any mode of response: paper, online, and telephone.

³ The 1960 Census included a citizenship question for all housing units in New York and Puerto Rico, but was not included for other states or territories (U.S. Census Bureau, 1973).

⁴ The American Community Survey selects a sample of about 3.5 million housing unit addresses each year (about 295,000 each month).

When the 2019 Census Test was planned, the 2020 Census was intended to include questions on tenure, sex, age, date of birth, Hispanic origin, race, and citizenship. The 2019 Census Test was in process when the decision was made not to include a citizenship question on the 2020 Census, and the test continued as planned.

Figure 1 shows the citizenship question, as it was included on the paper questionnaire.⁵ It was the last question asked after collecting a person's name, relationship to first person rostered, sex, age, date of birth, Hispanic origin, and race. The paper questionnaire allowed up to 10 people to be included on the questionnaire, but only asked the citizenship question for the first six people.⁶ The internet and Telephone Questionnaire Assistance (TQA) instruments allowed up to 99 people to be included for each household and asked the citizenship question for all people. See Appendix A for images of the paper questionnaires. The question was the same for those responding online or by telephone.

Figure 1. Citizenship Question on the Paper Questionnaire

8. Is this person a citizen of the United States?

☐ Yes, born in the United States

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

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

☐ Yes, U.S. citizen by naturalization – *Print year of naturalization.*

☐ No, not a U.S. citizen

2.2 2019 Census Test Overview

The design of the 2019 Census Test mirrored the design of the 2020 Census self-response operations, to the extent possible. The NRFU operation was not conducted for this test.

Data collection for the 2019 Census Test began on June 13, 2019 and ended on August 15, 2019. Census Day was July 1, 2019. To encourage self-response, two mail contact strategies were used: Internet First and Internet Choice. These same contact strategies will be used during the 2020 Census.

⁵ This question is the same as asked in the American Community Survey.

⁶ Due to space constraints, persons 7-10 also were not asked Hispanic origin and race. Instead of the detailed relationship question, Persons 7-10 were asked if they were related to Person 1 or not.

Self-responses were accepted from internet, paper questionnaire, or TQA.⁷ The internet instrument was available in English and Spanish.⁸ The test also used English and bilingual mail materials.⁹ As was done for the 2010 Census and will be done for the 2020 Census, tracts in which at least 20 percent of the occupied housing units have at least one adult in the household who speaks Spanish and does not speak English “very well” were identified as bilingual areas (Bentley, 2008). All housing units in these tracts received bilingual materials. The English-only materials included a language assistance sheet that directed respondents to call for assistance. In addition to English, TQA supported 10 non-English languages: Spanish, Chinese (Mandarin and Cantonese), Vietnamese, Korean, Russian, Arabic, Tagalog, French, Haitian Creole, and Portuguese.¹⁰ The TQA interviewers used the same internet instrument for data collection that respondents used. The TQA interviewers were trained to modify question wording for an interviewer-administered interview.

2.2.1 Internet First Contact Strategy

The Internet First contact strategy emphasizes online response as the primary self-response option and includes up to five mailings. About 78 percent of the sampled housing units in the 2019 Census Test were sent mailings using the Internet First contact strategy; bilingual materials were sent to about 12 percent of the sampled housing units in Internet First areas.¹¹

The first mailing letter invites respondents to complete the census online. The subsequent mailings include a reminder letter, a reminder postcard, a paper questionnaire package, and a final reminder postcard.¹² All mailable housing unit addresses in this contact strategy receive the first two mailings.¹³ Subsequent contact with a household is dependent upon if and when the Census Bureau receives a response from the household. New mailing universes are created

⁷ For the 2020 Census, TQA is called Census Questionnaire Assistance (CQA). This operation is intended to support self-response by assisting respondents who have questions or encounter technical problems. Interviews are also accepted over the phone.

⁸ The 2020 Census will include an internet instrument in 12 non-English languages; questionnaire guides will also be available in 59 non-English languages, plus braille and large print. For more information about the 2020 Census non-English language support, see Kim, 2018.

⁹ Throughout this report, the term “bilingual” refers to materials that contain both English and Spanish wording.

¹⁰ Two languages that will be supported for the 2020 Census, Japanese and Polish, were not supported for the 2019 Census Test.

¹¹ For the purpose of the decennial census, geographic areas in the United States are assigned to one specific Type of Enumeration Area (TEA). The TEA assignment is based on address types and other characteristics of the area, including an assessment of the likelihood of residents to self-respond and the accessibility of the area. The TEA assignment determines the methodology used for frame creation and enumeration of people in the area. A majority of the country is enumerated using self-response mailout methods.

¹² Between one to two weeks after the fifth mailing in the 2020 Census, responding addresses will be removed to create the initial universe of addresses eligible for the NRFU operation. Note that the 2019 Census Test did not include the NRFU operation.

¹³ A mailable address is a complete city-style address including a house number, street name, and a ZIP code or a complete rural-route address including a rural-route number, box number, and a ZIP code (U.S. Census Bureau, 2014).

after the second, third, and fourth mailings to remove addresses of those who have already responded to the test.

The Census Bureau provides a telephone number in all mailings that respondents may use to complete the questionnaire over the telephone or to ask questions. Separate telephone numbers are provided for Spanish and each of the non-English languages supported in the test. See Figure 2 for a summary of the Internet First contact strategy. See Appendix B for the Internet First mail materials.

Figure 2. Internet First Contact Strategy

First Mailing	Second Mailing	Third Mailing*	Fourth Mailing*	Fifth Mailing*
<ul style="list-style-type: none"> • Invitation Letter • Language Assistance Sheet • FAQs Insert (Bilingual areas only)† 	<ul style="list-style-type: none"> • Reminder Letter 	<ul style="list-style-type: none"> • Reminder Postcard 	<ul style="list-style-type: none"> • Paper Questionnaire • Letter • Language Assistance Sheet • Business Reply Envelope • FAQs Insert (Bilingual areas only)† 	<ul style="list-style-type: none"> • Final Reminder Postcard

† The same FAQs are provided on the back of the English letters in nonbilingual areas.

* Mailed only to nonrespondents

During the 2020 Census, the mailings in this contact strategy will be delivered in four cohorts to more evenly distribute expected workloads for the Census Questionnaire Assistance operation and the processing systems. This staggered mail delivery approach was not employed in the 2019 Census Test because the lower volume of responses could be managed by the telephone center staff and processing systems.

2.2.2 Internet Choice Contact Strategy

The Internet Choice contact strategy is used in areas with low internet connectivity or areas with characteristics that make it less likely the recipients will complete the census questionnaire online. About 22 percent of sampled housing units in the test were designated for the Internet Choice contact strategy, and about 27 percent of these sampled housing units were sent bilingual materials.

In Internet Choice areas, a paper questionnaire is provided in the first mailing in addition to instructions for responding online. This mailing and subsequent mailings also provide a telephone number that the respondent may call to ask questions or complete the questionnaire over the phone.

Like the Internet First contact strategy, after the second mailing, subsequent contact with a household is dependent upon if and when the Census Bureau receives a response from the household. New mailing universes are created after the second, third, and fourth mailings to remove addresses of those who have already responded to the test. See Figure 3 for a summary of the Internet Choice Contact Strategy. See Appendix C for the Internet Choice mail materials.

Figure 3. Internet Choice Contact Strategy

First Mailing	Second Mailing	Third Mailing*	Fourth Mailing*	Fifth Mailing*
<ul style="list-style-type: none"> • Invitation Letter • Paper Questionnaire • Language Assistance Sheet • Business Reply Envelope • FAQs Insert (Bilingual areas only)[†] 	<ul style="list-style-type: none"> • Reminder Letter 	<ul style="list-style-type: none"> • Reminder Postcard 	<ul style="list-style-type: none"> • Replacement Paper Questionnaire • Letter • Language Assistance Sheet • Business Reply Envelope • FAQs Insert (Bilingual areas only)[†] 	<ul style="list-style-type: none"> • Final Reminder Postcard

[†] The same FAQs are provided on the back of the English letters in nonbilingual areas.

* Mailed only to nonrespondents

For more information about the 2020 Census Internet Self-Response operation, see the 2020 Census Detailed Operational Plan (U.S. Census Bureau, 2018b).

2.2.3 Mail Schedule

Mailings for the 2019 Census Test followed the mailing schedule outlined in Table 1. This mailing schedule follows the general plan for the 2020 Census mailings, but was adjusted to accommodate the July 4 holiday and the National Processing Center (NPC) work schedule.

Following the strategy planned for the 2020 Census, sampled addresses in areas designated to receive Internet Choice mailing materials received mailings following that approach. Sampled addresses in areas designated to receive Internet First mailing materials received mailings following that approach.

Table 1. 2019 Census Test Self-Response Contact Strategy Mail Materials and Mailout Dates

Strategy	Initial Mailing 6/13/2019¹	Second Mailing 6/17/2019	Third Mailing² 6/27/2019	Fourth Mailing² 7/10/2019	Fifth Mailing² 7/22/2019
INTERNET FIRST (English or bilingual)	Invitation Letter, Language Assistance Sheet, FAQ Insert ³	Reminder Letter	Reminder Postcard	Reminder Letter, Paper Questionnaire, Language Assistance Sheet, FAQ Insert ³	Reminder Postcard
INTERNET CHOICE (English or bilingual)	Invitation Letter, Paper Questionnaire, Language Assistance Sheet, FAQ Insert ³	Reminder Letter	Reminder Postcard	Reminder Letter, Paper Questionnaire, Language Assistance Sheet, FAQ Insert ³	Reminder Postcard

¹ Date indicates the day the mail materials were mailed from the National Processing Center.

² Sent to remaining nonresponding addresses after the creation of a new mailing universe following the previous mailing.

³ FAQ inserts were only included in bilingual areas. The FAQ information was available on the back of the letter in English-only materials.

3. METHODOLOGY

3.1 Research Questions

RQ1. What is the impact on unit self-response rates between treatments?

RQ2. What is the impact on unit self-response rates between treatments for subgroups of interest? Self-response rate comparisons were conducted between treatments within the following subgroups:

- a. Over time, at various points in time of data collection.
- b. Self-response mode.
- c. Contact and language strategy areas (Internet First/Internet Choice by English/bilingual).
- d. Areas with high, medium, and low proportions of noncitizens.
- e. Areas with historically high and low self-response rates.
- f. Areas with high, medium, and low proportions of foreign-born populations.
- g. Areas with high, medium, and low proportions of Hispanic residents.
- h. Areas with high, medium, and low proportions of Asian residents.
- i. Regional census center.
- j. Urban areas and rural areas.

RQ3. How do selected demographic characteristics compare between treatments for the responses received?

- a. Age groups
- b. Hispanic origin
- c. Race
- d. Relationship
- e. Sex
- f. Tenure
- g. Average household size

RQ4. What is the impact on item nonresponse between the treatments?

RQ5. What is the impact on questionnaire completeness between the treatments?

RQ6. For the treatment with the citizenship question, what is the item nonresponse rate for the citizenship question?

RQ7. How do breakoff rates between treatments compare for internet returns?

3.2 Sample Design

For the 2019 Census Test, we compared two treatments in a randomized controlled experiment. Half of the sample was sent the Control Treatment questionnaire, which included the citizenship question.¹⁴ The other half of the sample was sent the Experimental Treatment questionnaire, which did not include the citizenship question.

The sample size for this test was 480,000 mailable housing unit addresses. This sample size was designed to detect a difference of approximately 0.5 percentage points between the overall self-response rates of the Experimental and Control Treatments at the national level (80 percent power and $\alpha=0.1$). The target sample size for each treatment was 240,000 addresses. The sample allowed for additional analysis of subgroups.¹⁵

The sample was geographically stratified into three strata (high, medium, and low) for the purpose of oversampling areas with historically high proportions of noncitizens and historically low self-response rates. The strata were defined by the percent of noncitizens and low

¹⁴ When the 2019 Census Test was planned, the 2020 Census was intended to include the citizenship question. Therefore, this version was labeled the Control Treatment.

¹⁵ Subgroup analysis is not able to detect differences between treatments at the same level as the overall analysis.

response scores (LRS), a response propensity measure, at the census-tract level, using data from the Census Bureau’s planning database.¹⁶

The “High Stratum” consists of all tracts where the percent of noncitizens is greater than 11.1 percent. The “Medium Stratum” consists of all tracts where the percent of noncitizens is between 4.9 and 11.1 percent or an LRS score greater than 24.0 and not covered in the “High Stratum.”¹⁷ All remaining tracts were assigned to the “Low Stratum” group. This resulted in the following allocation:

- The “High Stratum” accounts for 19.6 percent of the occupied housing units.
- The “Medium Stratum” accounts for 27.9 percent of the occupied housing units.
- The “Low Stratum” accounts for 52.5 percent of the occupied housing units.

Within each stratum, the housing unit addresses were sorted geographically and then systematically sampled. Sampled housing unit addresses were assigned to one of the treatments, alternating the assignment between the Control and the Experimental Treatment as selections were made. For more details on the stratification, see Poehler, 2019.

Table 2 provides the sample size for each stratum by treatment. Table 3 provides the sample size by contact strategy and language of the materials.

Table 2. Sample Size by Strata

Sample Stratum	Control Treatment (With Citizenship Question)	Experimental Treatment (Without Citizenship Question)
High	80,000	80,000
Medium	80,000	80,000
Low	80,000	80,000
Total	240,000	240,000

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB-FY20-ACSO002-B0002

¹⁶ The Planning Database is a database that assembles a range of housing, demographic, socioeconomic, and census operational data. The 2018 Planning Database was used for this analysis, which contains data extracted from the 2010 Census and the 2012 – 2016 American Community Survey (U.S. Census Bureau, 2018a).

¹⁷ The low response score (LRS) indicates the propensity to self-respond. Higher scores mean there is a lower response propensity (Erdman & Bates, 2016).

Table 3. Sample Size by Contact Strategy and Language of Materials

Contact Strategy by Language	Control Treatment (With Citizenship Question)	Experimental Treatment (Without Citizenship Question)
Internet First – English	165,000	165,000
Internet First – Bilingual	22,000	22,000
Internet Choice – English	38,500	38,500
Internet Choice – Bilingual	14,500	14,500
Total	240,000	240,000

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB-FY20-ACSO002-B0002

3.3 Unit Response Analysis

All unit self-response rates computed for this report are weighted. The weight is the inverse of the probability of selection. A significance level of $\alpha=0.1$ was used when determining significant differences between treatments. Unless otherwise specified, comparisons were made using a two-sided t-test. The self-response rates were calculated for each treatment, using the following formula:

$$\text{Self-Response Rate} = \frac{\text{Unduplicated, sufficient internet, mail, and TQA responses}^{18}}{\text{Mailout Universe}}$$

If more than one sufficient response from an address was received, only the first sufficient response received was used in the calculations of self-response rates.¹⁹ The denominator (i.e., the mailout universe) consists of all sampled addresses. This approach was used for all self-response rate calculations.

3.4 Item-Level Analysis

Item-response analysis metrics computed for this report are weighted. The weight is the inverse of the probability of selection. A significance level of $\alpha=0.1$ was used when determining significant differences between treatments. Other than response distributions, comparisons were made using a two-sided t-test. For response distributions, Rao-Scott chi-square tests were used (Rao & Scott, 1987). For analyses that involve multiple comparisons, the Type I familywise error rate was adjusted using the Hochberg method (Hochberg, 1988). Item data were not

¹⁸ The internet response instrument includes an option to report an address as being a vacant housing unit. This is considered a valid response in the unit-level response rate calculations.

¹⁹ Note that the method used to identify one return, if multiple returns were received, is different than the one that will be used for the 2020 Census.

edited or imputed for this analysis, except for detailed Hispanic origin groups that were allocated if multiple Hispanic origins were identified.²⁰

Only occupied housing units were included in the analysis (vacant units were excluded). If more than one sufficient return was received, the return that had more complete data was used in the analysis. In the case of bilingual paper questionnaires, only one language of response (English or Spanish) was used in the analysis, even though it is possible for a respondent to answer questions in both languages. The responses were evaluated to determine whether there was more data in English or in Spanish, and the language with the most data was used.

For response distributions, the following formulae were used:

$$\text{Person-Level Item Response} = \frac{\text{Valid response for the category of interest}}{\text{All data-defined persons with a valid response for the question from unduplicated, sufficient returns}} \times 100$$

$$\text{Housing-Level Item Response} = \frac{\text{Valid response for the category of interest}}{\text{All unduplicated, sufficient returns with a valid response for the question}} \times 100$$

Missing and invalid responses were analyzed separately as part of item nonresponse analysis. The following formula was used to calculate item nonresponse rates:

$$\text{Item Nonresponse Rate} = \frac{\text{Number of missing or invalid responses to the item of interest}}{\text{Universe for the item of interest}} \times 100$$

The overall questionnaire completeness rate is the number of questions on the questionnaire that were answered among those that should have been answered. The following formula was used to calculate questionnaire completeness rates:

²⁰ If a respondent indicated multiple detailed Hispanic origin groups, their response was allocated to one detailed group based on a methodology that attempted to mirror the 2020 Census approach to the extent possible.

$$\text{Overall Questionnaire Completeness Rate} = \left(\frac{\text{Number of questions answered}}{\text{Number of questions that should have been answered}} \right) \times 100$$

3.5 Partial Response (Breakoff) Analysis

This analysis looks at the rate at which respondents began to respond but did not finish, referred to in this report as partial responses or breakoffs.

$$\text{Breakoff Rate} = \frac{\text{All internet or TQA returns that began to respond but did not reach the last screen of the internet questionnaire}}{\text{All internet or TQA returns that began to respond and did not complete a response by mail}} \times 100$$

Breakoff rates were examined separately for internet self-response and TQA interviews. Breakoffs were also analyzed after each screen in the interview.

Note that the definition of a breakoff means both sufficient and insufficient partial returns are included in this analysis, which is different from other sections of this report (which do not include insufficient partial returns). Breakoff rates were weighted using the inverse of the probability of selection. A significance level of $\alpha=0.1$ was used when determining significant differences between treatments. Comparisons were made using a two-sided t-test.

3.6 Standard Errors

All variances were estimated using the Successive Differences Replication method with replicate weights.²¹ The variance for each rate and difference was calculated using the formula below.

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

Where:

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

X_0 = the estimate calculated using the full sample

The standard error of the estimate (X_0) is the square root of the variance.

²¹ For more information on the Successive Differences Replication method, see U.S. Census Bureau, 2014.

4. ASSUMPTIONS AND LIMITATIONS

4.1 Assumptions

For this test, we assume there is no difference between treatments in mail delivery timing or subsequent response time. The two treatments had the same sample size and used 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

The following are the known limitations of applying the 2019 Census Test results to the 2020 Census:

1. The results of this test apply only to self-response mailout areas.
2. The environment in which this test was conducted differed from the 2020 Census, which includes advertising, word-of-mouth communication, and typically more media attention than is experienced during tests. For instance, the 2020 Census is projecting a national-level self-response rate of 60.5 percent prior to NRFU, which is about 10 percentage points higher than typically seen in middecade census tests.
3. The focus of this analysis is to understand how the citizenship question affects self-response rates prior to the NRFU operation. As such, the results of this test are limited to the self-response timeframe prior to the start of NRFU. The self-response rates discussed in this analysis do not try to mimic the final overall self-response of a census, which includes self-response received during NRFU and other field operations.
4. When responding online, respondents were required to enter a “Census ID” found in the mail materials sent to them. Without this ID, they were not be able to respond online. The 2020 Census will include both an ID response option and a non-ID response option, that allows for self-response by collecting a person’s address in lieu of providing a Census ID. This could mean that some people who tried to respond online were not able to respond or responded using a different mode than what they would use in the 2020 Census.
5. On June 11, 2019, the Census Bureau released a press statement communicating that a test for the 2020 Census was being conducted. This press statement, and subsequent news articles on the test, contained details about the test including the random assignment of households to the two treatments. Typically, experiments of this nature are conducted as blind experiments in order to avoid influencing the behavior of the

respondent and to avoid experimental biases. The Census Bureau does not have data on how many respondents were aware of the experimental design, but the degree to which this awareness was known and influenced respondent behavior may have impacted the results of this test.

6. Self-response may be lower for a census test with a July 1, 2019, Census Day, as many people are on vacation in the summer, compared to the 2020 Census with an April 1, 2020, Census Day.
7. The coverage of people in the 2020 Census may be different from the 2019 Census Test because of different living situations in the summer months compared to the spring. For example, college students are less likely to be living in a dorm in the summer and would be counted elsewhere; migrant workers are more likely to be in southern states in the spring and northern states in the summer.
8. The method to select a response for analysis, if multiple responses were received from the same sampled housing unit, are not the same as will be used for the 2020 Census. While different methods would not affect the overall response rate, it could affect subgroup analyses.

The following are the known limitations that may have affected conclusions of the 2019 Census Test:

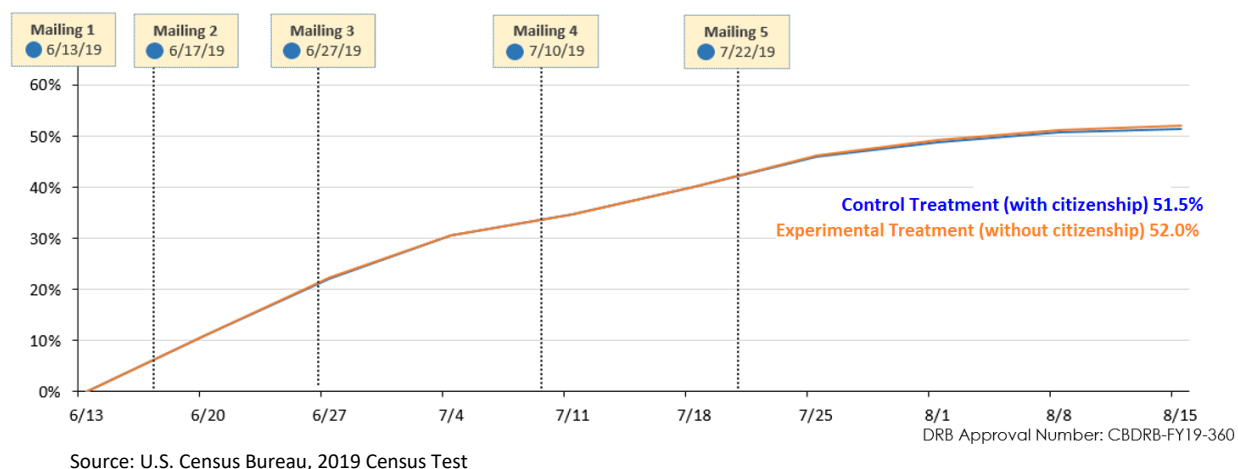
1. Media coverage related to the Supreme Court decision on whether or not to include a citizenship question on the 2020 Census questionnaire may have affected respondent behavior during this test. There was media coverage on the citizenship question both before and after the Supreme Court decision was made public on June 27, 2019. Public opinion on the topic may have influenced response behavior for this test. The degree to which public awareness and public opinion is different between this test and the 2020 Census may influence how applicable the results of this test are to the 2020 Census. The impact of media coverage may have also affected the treatments differently.
2. The 2019 Census Test did not provide the same level of language support that will be available in the 2020 Census, as described in Section 2.2. To the degree that needing non-English language materials to self-respond is correlated with citizenship status or sensitivity to answering the citizenship question, the results of this test may have been impacted.

5. RESULTS

5.1 Overall Self-Response Rates (RQ1) and Self-Response Rates Over Time (RQ2a)

The Experimental Treatment (without citizenship) had an overall-self-response rate of 52.0 percent; the Control Treatment (with citizenship) had an overall self-response rate of 51.5 percent. The overall difference in self-response rates between questionnaires with and without a citizenship question of less than 0.5 percentage points was not statistically significant (with a p-value of 0.16; see Table 4). Although these results differ from the predicted rates in the study by Brown et al., the results of the two studies are not comparable since this study benefits from the randomized controlled design, which isolates the treatment effect. Figure 4 shows the cumulative self-response rates over time.

Figure 4. Experiment and Control Final Weighted Response Rates over Time



Examining the overall rates at specific points in time also shows no significant differences, as seen in Table 4. The rates were compared on the date that the workload was established for the third, fourth, and fifth mailings, and on the last day of the test (i.e., the day the NRFU operation would have started).²²

²² Responses received by a specific date were included in the response rate calculations. The cutoff dates used for the analysis were as follows: for the third mailing, it was June 21; for the fourth mailing, it was July 3; and for the fifth mailing, it was July 15. Note that the fourth mailing cutoff was moved to July 2 because of workload and staffing concerns in NPC. For the analysis, we used the July 3 date as it better reflects the timing for the 2020 Census.

Table 4. Total Self-Response Rates by Mailing

Point in Data Collection Cycle	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Before the Third Mailing	10.9 (0.1)	10.8 (0.1)	<0.1 (0.1)	0.79
Before the Fourth Mailing	28.9 (0.1)	28.8 (0.1)	0.1 (0.2)	0.59
Before the Fifth Mailing	35.7 (0.1)	35.5 (0.1)	0.2 (0.2)	0.50
Overall Self-Response	52.0 (0.2)	51.5 (0.2)	0.5 (0.3)	0.16

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. No differences shown are statistically significant. Significance was tested based on a two-tailed t-test at the $\alpha=0.1$ level.

5.2 Self-Response Rates by Mode (RQ2b)

While there was no statistically significant difference in overall self-response between treatments, there was a significantly lower response in the mail mode in the Control Treatment (with the citizenship question), as shown in Table 5.

Table 5. Total Self-Response Rates by Response Mode

Response Mode	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Overall Self-Response	52.0 (0.2)	51.5 (0.2)	0.5 (0.3)	0.16
Internet	34.9 (0.1)	34.7 (0.1)	0.2 (0.2)	0.42
Telephone Questionnaire Assistance	1.1 (<0.1)	1.1 (<0.1)	> -0.1 (<0.1)	0.21
Mail	16.0 (0.1)	15.7 (0.1)	0.3 (0.2)	0.07*

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

Because there were no significant differences between treatments for internet self-response rates and for TQA response rates and because the number of responses received from TQA was small, internet and TQA data were combined for the remainder of the analysis.

Table 6 and Table 7 show response rate results by mode. There were no significant differences in response at specific points in time for the internet and TQA returns (combined). Mail response rates were only significantly different at the end of data collection.

Table 6. Internet and TQA[†] Response Rates by Mailing

Point in Data Collection Cycle	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Before the Third Mailing	10.7 (0.1)	10.6 (0.1)	0.1 (0.1)	0.73
Before the Fourth Mailing	25.4 (0.1)	25.2 (0.1)	0.1 (0.2)	0.54
Before the Fifth Mailing	31.3 (0.1)	31.1 (0.1)	0.2 (0.2)	0.48
Overall Internet and TQA Response	36.0 (0.1)	35.8 (0.1)	0.1 (0.2)	0.56

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. No differences shown are statistically significant. Significance was tested based on a two-tailed t-test at the $\alpha=0.1$ level. [†]TQA stands for

Table 7. Mail Response Rates by Mailing

Point in Data Collection Cycle	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Before the Third Mailing	0.2 (<0.1)	0.2 (<0.1)	>-0.1 (<0.1)	0.47
Before the Fourth Mailing	3.5 (<0.1)	3.5 (<0.1)	>-0.1 (0.1)	0.85
Before the Fifth Mailing	4.4 (0.1)	4.4 (<0.1)	>-0.1 (0.1)	0.98
Overall Mail Self-Response	16.0 (0.1)	15.7 (0.1)	0.3 (0.2)	0.07*

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

5.3 Self-Response Rates by Contact and Language Strategy Areas (RQ2c)

Bilingual mailout areas (both for Internet First and Internet Choice contact strategies) had statistically significantly lower self-response rates in the treatment with the citizenship question, as shown in Table 8.²³

Table 8. Total Self-Response Rates by Contact and Language Strategy Areas

Contact and Language Strategy	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Internet First English	56.1 (0.2)	55.7 (0.2)	0.4 (0.3)	0.21
Internet First Bilingual	37.9 (0.3)	36.9 (0.4)	1.0 (0.5)	0.06*
Internet Choice English	42.6 (0.4)	42.3 (0.4)	0.3 (0.8)	0.68
Internet Choice Bilingual	33.2 (0.4)	32.0 (0.4)	1.3 (0.5)	0.02*

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

5.4 Self-Response Rates in Areas with Different Proportions of Noncitizens (RQ2d)

Areas with different proportions of noncitizens were defined using the Census Bureau's 2018 planning database at the tract level and align with the sampling stratification definitions, as discussed in Section 3.2.

Areas with more than 4.9 percent noncitizens had lower self-response rates in the Control Treatment (with the citizenship question) than in the Experimental Treatment. Specifically, areas with more than 4.9 percent noncitizens but less than or equal to 11.1 percent were classified as "Medium" noncitizen areas and had a response rate difference of 0.5 percentage points; areas with more than 11.1 percent noncitizens were classified as "High" noncitizen areas and had a response rate difference of 0.9 percentage points between treatments.

²³ Contact and language strategies were defined at the tract level.

Table 9. Total Self-Response Rates for Areas with Different Proportions of Noncitizens

Noncitizen Proportions	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
High: Areas with more than 11.1 percent noncitizens	41.4 (0.2)	40.5 (0.2)	0.9 (0.3)	<0.01*
Medium: Areas with between 4.9-11.1 percent noncitizens	51.2 (0.2)	50.7 (0.2)	0.5 (0.2)	0.06*
Low: Areas with less than 4.9 percent noncitizens	55.7 (0.3)	55.4 (0.3)	0.3 (0.6)	0.58

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

5.5 Self-Response Rates by Historic Response Propensity (RQ2e)

The Census Bureau developed a low response score (LRS) to stratify geographic areas (tracts) according to propensity to self-response in sample surveys and censuses (Erdman & Bates, 2016). Hard-to-count areas have the highest LRS and the easiest-to-enumerate areas have the lowest scores. Areas with a score higher than 24 were classified as Low Response; areas with a score less than or equal to 24 were classified as High Response. As seen in Table 10, the difference between the treatments in both High and Low Response areas was statistically significant, with the Control Treatment having lower self-response rates.

Table 10. Total Self-Response Rates for Areas with Different Historic Response Propensities

Historic Response Propensity[†]	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
High Response Area	57.6 (0.1)	57.2 (0.2)	0.4 (0.2)	0.04*
Low Response Area	36.6 (0.1)	36.1 (0.2)	0.5 (0.2)	0.02*

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level. [†]High Response Areas have a Low Response Score of 24 or less; Low Response Areas have a Low Response Score of greater than 24.

5.6 Self-Response Rates in Areas with Different Proportions of Foreign-Born Residents (RQ2f)

Areas with different proportions of foreign-born residents were defined using the Census Bureau's 2018 planning database at the tract level and grouped based on the distribution of foreign-born proportions by tract.

There were no significant differences in self-response rates between treatments by proportion of foreign-born residents.

Table 11. Total Self-Response Rates for Areas with Different Proportions of Foreign-Born Residents

Proportion of Foreign-Born Residents	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Areas with more than 15.0 percent foreign-born residents	46.1 (0.3)	45.5 (0.3)	0.6 (0.6)	0.27
Areas with between 5.0 to 15.0 percent foreign-born residents	54.8 (0.4)	54.1 (0.4)	0.7 (0.7)	0.30
Areas with less than 5.0 percent foreign-born residents	54.1 (0.4)	54.0 (0.4)	0.1 (0.7)	0.85

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. No differences shown are statistically significant. Significance was tested based on a two-tailed t-test at the $\alpha=0.1$ level.

5.7 Self-Response Rates in Areas with Different Proportions of Hispanic Residents (RQ2g)

Areas with different proportions of Hispanic residents were defined using the Census Bureau's 2018 planning database at the tract level. Tracts were grouped by proportion of Hispanic residents based on a cluster analysis.

The Control Treatment had statistically significantly lower self-response rates in areas where the proportion of Hispanic residents was greater than 49.1 percent.

Table 12. Total Self-Response Rates for Areas with Different Proportions of Hispanic Residents

Proportion of Hispanic Residents	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Areas with more than 49.1 percent Hispanic residents	36.6 (0.3)	35.5 (0.3)	1.1 (0.5)	0.02*
Areas with between 10.6-49.1 percent Hispanic residents	48.3 (0.2)	47.9 (0.2)	0.4 (0.3)	0.15
Areas with less than 10.6 percent Hispanic residents	55.9 (0.3)	55.4 (0.3)	0.4 (0.5)	0.41

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

5.8 Self-Response Rates in Areas with Different Proportion of Asian Residents (RQ2h)

The Control Treatment had statistically significantly lower self-response rates in areas where the percent of Asian residents was between 5 and 20 percent. Tracts were grouped by proportion of Asian residents based on a cluster analysis using the Census Bureau's 2018 planning database.

Table 13: Total Self-Response Rates for Areas with Different Proportions of Asian Residents

Proportion of Asian Residents	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Areas with more than 20 percent Asian residents	53.2 (0.5)	52.7 (0.4)	0.5 (0.7)	0.46
Areas with between 5-20 percent Asian residents	54.3 (0.2)	53.4 (0.2)	0.8 (0.3)	0.01*
Areas with less than 5 percent Asian residents	51.2 (0.3)	50.9 (0.3)	0.3 (0.5)	0.50

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

5.9 Self-Response Rates within Regional Census Center (RQ2i)

To manage fieldwork for the 2020 Census, the Census Bureau established six regional census centers (RCCs): Atlanta, Chicago, Dallas, Los Angeles, New York, and Philadelphia. See Appendix D for a map of the boundaries. The Control Treatment had statistically significantly lower self-response rates in the Los Angeles and New York RCC areas, as shown in Table 14.

Table 14. Total Self-Response Rates for Regional Census Center Areas

Regional Census Center	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Atlanta	46.1 (0.3)	45.9 (0.3)	0.2 (0.5)	0.67
Chicago	57.3 (0.4)	57.0 (0.4)	0.3 (0.6)	0.68
Dallas	48.8 (0.3)	48.8 (0.3)	<0.1 (0.4)	0.99
Los Angeles	53.0 (0.3)	51.9 (0.3)	1.1 (0.4)	0.01*
New York	52.0 (0.2)	51.3 (0.3)	0.7 (0.4)	0.05*
Philadelphia	55.3 (0.4)	54.7 (0.4)	0.5 (0.6)	0.40

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

Additional analysis was conducted to understand the factors that contributed to significant differences between the treatments, focusing on contacts and language strategy areas as well as areas with different proportions of noncitizens. For the Los Angeles Regional Census Center area, the results indicated statistically significant differences between treatments for all contact and language strategies, with the Control Treatment lower in all cases. Analysis of response rates by areas with different proportions of noncitizens showed statistically significantly lower response rates in areas with low and high proportions of noncitizens.

For the New York Regional Census Center area, the results indicated statistically significantly lower response rates in the Internet First English contact strategy. No other statistically significant differences were identified. See Appendix E for the results.

5.10 Self-Response Rates by Urban and Rural Areas (RQ2j)

There were no significant differences between treatments in urban and rural areas.²⁴

Table 15. Total Self-Response Rates in Urban and Rural Areas

Urban and Rural Status	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Urban Areas	51.6 (0.2)	51.0 (0.2)	0.6 (0.3)	0.12
Rural Areas	53.8 (0.3)	53.6 (0.3)	0.2 (0.5)	0.76

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. No differences shown are statistically significant. Significance was tested based on a two-tailed t-test at the $\alpha=0.1$ level.

5.11 Analyses of Demographic Characteristics

The sample design for this test used a random allocation of treatments to sample housing unit addresses to ensure similarities, to the extent possible, between the two treatment groups. As such, we assume that respondents in both treatment groups have similar demographic characteristics. Any differences in the demographic distributions may be attributed to the experimental difference in the treatments. For person demographics, we specifically looked at the demographic distributions of Person 1, the person to likely be the person completing the questionnaire (Hill, Lestina, Machowski, Rothhaas, & Royce, 2008). Examining Person 1 demographics focuses on the person who chose to respond. Only sufficient responses from occupied housing units were included in this analysis. Demographic distributions for everyone in the household were also examined and can be found in Appendix F.

Average household size was statistically significantly lower for the Control Treatment (with the citizenship question) than the Experimental Treatment. This difference was significant overall and for mail respondents. It was not statistically different for internet respondents. To the degree that the people listed in the treatments are different, demographic distributions may be affected.

Table 16: Average Household Size by Mode and Treatment

Response Mode	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
All Modes	2.44 (<0.1)	2.43 (<0.1)	0.01 (0.01)	0.03*
Mail	2.22 (<0.1)	2.19 (<0.1)	0.03 (0.01)	0.02*
Internet and TQA	2.55 (<0.1)	2.54 (<0.1)	0.01 (0.01)	0.21

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

²⁴ The Census Bureau defined urban as consisting of two types of geographies: “urbanized areas” have a population of 50,000 or more, and “urban clusters” have a population of at least 2,500 and less than 50,000. Areas not classified as urban were considered “rural” (Ratcliffe, Burd, Holder, & Fields, 2016).

There were no statistically significant differences in the distribution of tenure responses, overall or by mode, between treatments.

Table 17. Tenure Response Distributions by Mode and Treatment

Tenure and Mode	Experiment (no Citizenship)	Control (with Citizenship)	P-Value
All Modes	100.0	100.0	0.70
Owned	74.6 (0.2)	74.8 (0.2)	
Rented	25.4 (0.2)	25.2 (0.2)	
Mail	100.0	100.0	0.28
Owned	73.0 (0.3)	73.6 (0.3)	
Rented	27.0 (0.3)	26.4 (0.3)	
Internet and TQA	100.0	100.0	0.91
Owned	75.4 (0.2)	75.3 (0.2)	
Rented	24.6 (0.2)	24.7 (0.2)	

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level.

There were no statistically significant differences in the distribution of the sex of the respondent, overall or by mode, between treatments.

Table 18. Sex Response Distributions for Person 1 by Mode and Treatment

Sex and Mode	Experiment (no Citizenship)	Control (with Citizenship)	P-Value
All Modes	100.0	100.0	0.89
Male	52.4 (0.2)	52.4 (0.1)	
Female	47.6 (0.2)	47.6 (0.1)	
Mail	100.0	100.0	0.83
Male	57.8 (0.3)	57.9 (0.3)	
Female	42.2 (0.3)	42.1 (0.3)	
Internet and TQA	100.0	100.0	0.78
Male	50.1 (0.2)	50.0 (0.2)	
Female	49.9 (0.2)	50.0 (0.2)	

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level.

There were no statistically significant differences in the distribution of the age of the respondent, overall or by mode, between treatments.

Table 19. Age Group Response Distributions for Person 1 by Mode and Treatment

Age Group and Mode	Experiment (no Citizenship)	Control (with Citizenship)	P-Value
All Modes	100.0	100.0	0.84
0-4	0.1 (<0.1)	0.1 (<0.1)	
5-20	0.5 (<0.1)	0.4 (<0.1)	
21-29	7.0 (0.1)	7.0 (0.1)	
30-39	13.5 (0.1)	13.7 (0.1)	
40-52	19.8 (0.1)	19.8 (0.1)	
53-64	25.3 (0.2)	25.3 (0.1)	
65+	33.7 (0.2)	33.6 (0.2)	
Mail	100.0	100.0	0.62
0-4	0.2 (<0.1)	0.1 (<0.1)	
5-20	0.2 (<0.1)	0.3 (<0.1)	
21-29	3.1 (0.1)	3.0 (0.1)	
30-39	7.1 (0.2)	6.9 (0.2)	
40-52	13.6 (0.2)	13.3 (0.2)	
53-64	25.7 (0.3)	26.2 (0.3)	
65+	50.2 (0.4)	50.3 (0.3)	
Internet and TQA	100.0	100.0	0.65
0-4	0.1 (<0.1)	0.1 (<0.1)	
5-20	0.6 (<0.1)	0.5 (<0.1)	
21-29	8.8 (0.1)	8.8 (0.1)	
30-39	16.4 (0.1)	16.7 (0.2)	
40-52	22.6 (0.2)	22.8 (0.2)	
53-64	25.1 (0.2)	25.0 (0.2)	
65+	26.4 (0.2)	26.2 (0.2)	

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level. The age groupings used in Table 19 are not standard. They reflect the higher proportion of noncitizens in the U.S. who are 21-52.

The proportion of those who identified as Hispanic and were listed as Person 1 was statistically significantly lower overall and for the mail response mode for the Control Treatment (which contained the citizenship question).

Table 20. Percent of Person 1 Who Identified as Hispanic by Mode and Treatment

Hispanic Origin and Mode	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
All Modes: Hispanic	8.8 (0.1)	8.5 (0.1)	0.3 (0.2)	0.06*
Mail: Hispanic	9.7 (0.1)	9.2 (0.2)	0.5 (0.3)	0.05*
Internet and TQA: Hispanic	8.4 (0.1)	8.2 (0.1)	0.2 (0.2)	0.20

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

We also examined the distribution of detailed Hispanic origin groups of the respondent. There were no statistically significant differences in the distribution of detailed Hispanic origin groups of the respondent, overall or by mode, between treatments.

Table 21. Percent of Person 1 Who Identified as Hispanic by Detailed Hispanic Origin Group and Treatment

Detailed Hispanic Origin Group and Mode	Experiment (no Citizenship)	Control (with Citizenship)	P-Value
All Modes	100.0	100.0	0.57
Mexican	52.2 (0.5)	51.8 (0.5)	
Puerto Rican	12.3 (0.3)	11.9 (0.4)	
Cuban	6.1 (0.2)	6.5 (0.2)	
Other Hispanic Origin	29.3 (0.4)	29.8 (0.4)	
Mail	100.0	100.0	0.24
Mexican	55.7 (0.8)	55.1 (0.8)	
Puerto Rican	12.9 (0.6)	12.6 (0.6)	
Cuban	5.8 (0.3)	7.0 (0.4)	
Other Hispanic Origin	25.6 (0.7)	25.4 (0.7)	
Internet and TQA	100.0	100.0	0.84
Mexican	50.6 (0.6)	50.2 (0.5)	
Puerto Rican	12.0 (0.4)	11.6 (0.4)	
Cuban	6.3 (0.3)	6.3 (0.3)	
Other Hispanic Origin	31.2 (0.5)	31.9 (0.5)	

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level.

There were no statistically significant differences in the distribution of the race of the respondent, overall or by mode, between treatments.

Table 22. Race Group Response Distributions for Person 1 by Mode and Treatment

Race Group and Mode		Experiment (no Citizenship)	Control (with Citizenship)	P-Value
All Modes		100.0	100.0	0.85
	White Alone	78.0 (0.3)	78.1 (0.3)	
	Black Alone	6.9 (0.2)	7.0 (0.2)	
	Asian Alone	4.9 (0.1)	4.9 (0.1)	
	American Indian or Alaska Native Alone	0.5 (<0.1)	0.5 (<0.1)	
	Native Hawaiian or Pacific Islander Alone	0.1 (<0.1)	0.1 (<0.1)	
	Some Other Race Alone	2.8 (0.1)	2.6 (<0.1)	
	Two or More Races	6.9 (0.1)	6.8 (0.1)	
Mail		100.0	100.0	0.72
	White Alone	77.5 (0.4)	77.8 (0.5)	
	Black Alone	10.8 (0.4)	10.8 (0.4)	
	Asian Alone	2.8 (0.1)	2.7 (0.1)	
	American Indian or Alaska Native Alone	0.7 (0.1)	0.7 (<0.1)	
	Native Hawaiian or Pacific Islander Alone	0.1 (<0.1)	0.1 (<0.1)	
	Some Other Race Alone	2.8 (0.1)	2.6 (0.1)	
	Two or More Races	5.4 (0.1)	5.3 (0.1)	
Internet and TQA		100.0	100.0	0.85
	White Alone	78.2 (0.2)	78.3 (0.2)	
	Black Alone	5.2 (0.1)	5.3 (0.1)	
	Asian Alone	5.8 (0.1)	5.9 (0.1)	
	American Indian or Alaska Native Alone	0.5 (<0.1)	0.4 (<0.1)	
	Native Hawaiian or Pacific Islander Alone	0.1 (<0.1)	0.1 (<0.1)	
	Some Other Race Alone	2.8 (0.1)	2.7 (0.1)	
	Two or More Races	7.6 (0.1)	7.5 (0.1)	

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level.

We further examined detailed Asian groups, because data from the 2018 American Community Survey show that Asian residents account for 5.6 percent of population but 22.4 percent of noncitizens (U.S. Census Bureau, 2018d). As seen in Table 23, there were no significant differences in the distribution of detailed Asian groups of the respondent between treatments, overall or by mode.

Table 23. Detailed Asian Group Response Distributions for Person 1 by Mode and Treatment

Detailed Asian Group and Mode	Experiment (no Citizenship)	Control (with Citizenship)	P-Value
All Modes	100.0	100.0	0.82
Chinese Alone	25.7 (0.6)	26.3 (0.5)	
Japanese Alone	2.0 (0.2)	2.1 (0.2)	
Korean Alone	6.6 (0.3)	6.0 (0.3)	
Vietnamese Alone	9.0 (0.3)	8.5 (0.4)	
Filipino Alone	15.6 (0.4)	15.5 (0.5)	
Asian Indian Alone	19.2 (0.4)	19.8 (0.6)	
Other Asian Alone	9.7 (0.4)	9.6 (0.4)	
Two or More Asian groups	12.1 (0.4)	12.2 (0.4)	
Mail	100.0	100.0	0.76
Chinese Alone	22.9 (1.2)	22.2 (1.3)	
Japanese Alone	9.8 (0.9)	9.8 (0.9)	
Korean Alone	9.2 (0.7)	7.9 (0.8)	
Vietnamese Alone	12.9 (0.9)	11.7 (1.0)	
Filipino Alone	20.1 (1.2)	22.5 (1.4)	
Asian Indian Alone	9.7 (0.8)	10.7 (0.9)	
Other Asian Alone	11.9 (0.9)	12.0 (0.9)	
Two or More Asian groups	3.4 (0.5)	3.2 (0.6)	
Internet and TQA	100.0	100.0	0.79
Chinese Alone	26.3 (0.6)	27.1 (0.6)	
Japanese Alone	0.4 (0.1)	0.5 (0.1)	
Korean Alone	6.1 (0.4)	5.6 (0.3)	
Vietnamese Alone	8.1 (0.3)	7.9 (0.4)	
Filipino Alone	14.6 (0.4)	14.0 (0.5)	
Asian Indian Alone	21.3 (0.5)	21.6 (0.7)	
Other Asian Alone	9.3 (0.4)	9.2 (0.4)	
Two or More Asian groups	14.0 (0.5)	14.0 (0.5)	

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level. These response distributions are among Person 1 respondents who identified as Asian alone.

5.12 Item Nonresponse and Questionnaire Completeness (RQ4 and RQ5)

There are numerous reasons respondents may submit a questionnaire but not answer all of the survey items. Some respondents may not know the answer to an item or may not want to respond for other reasons. Item nonresponse and questionnaire completeness analysis assesses the responses received for the items on the 2019 Census Test questionnaire. Only sufficient responses from occupied housing units were included in this analysis.²⁵ A missing or invalid response (such as an age of 167) was considered item nonresponse.

There were no significant differences in item nonresponse rates between treatments, for any item, overall or by mode.

Table 24. Item Nonresponse Rates for All Modes Combined by Treatment

Item	Experiment (no Citizenship)	Control (with Citizenship)	Difference	Adjusted P-Value
Number of People	0.6 (<0.1)	0.6 (<0.1)	<0.1 (<0.1)	0.93
Tenure	0.6 (<0.1)	0.6 (<0.1)	<0.1 (<0.1)	0.93
Phone Number	2.1 (<0.1)	2.1 (<0.1)	>-0.1 (0.1)	0.93
Name	0.4 (<0.1)	0.4 (<0.1)	<0.1 (<0.1)	0.93
Relationship	0.7 (<0.1)	0.6 (<0.1)	<0.1 (<0.1)	0.93
Sex	0.2 (<0.1)	0.2 (<0.1)	<0.1 (<0.1)	0.93
Age/Date of Birth [†]	0.3 (<0.1)	0.3 (<0.1)	>-0.1 (<0.1)	0.65
Hispanic Origin	1.8 (<0.1)	1.7 (<0.1)	<0.1 (0.1)	0.93
Race	1.7 (<0.1)	1.6 (<0.1)	0.1 (0.1)	0.45

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level. [†]If an age could not be calculated from the date of birth answers or an age was not provided, it was considered item nonresponse.

Table 25. Item Nonresponse Rates for Mail Responses by Treatment

Item	Experiment (no Citizenship)	Control (with Citizenship)	Difference	Adjusted P-Value
Number of People	1.9 (0.1)	1.8 (0.1)	0.1 (0.1)	0.89
Tenure	1.9 (0.1)	1.9 (0.1)	>-0.1 (0.1)	0.89
Phone Number	6.3 (0.1)	6.4 (0.1)	>-0.1 (0.2)	0.89
Name	0.8 (<0.1)	0.8 (<0.1)	<0.1 (0.1)	0.89
Relationship	2.4 (0.1)	2.3 (0.1)	0.1 (0.1)	0.89
Sex	0.6 (<0.1)	0.6 (<0.1)	<0.1 (<0.1)	0.89
Age/Date of Birth [†]	0.6 (<0.1)	0.7 (<0.1)	-0.1 (0.1)	0.57
Hispanic Origin	5.3 (0.1)	5.2 (0.1)	0.1 (0.2)	0.89
Race	3.9 (0.1)	3.6 (0.1)	0.3 (0.2)	0.52

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level. [†]If an age could not be calculated from the date of birth answers or an age was not provided, it was considered item nonresponse.

²⁵ A return that has enough questions answered is considered a sufficient response.

Table 26. Item Nonresponse Rates for Internet and TQA Responses by Treatment

Item [^]	Experiment (no Citizenship)	Control (with Citizenship)	Difference	Adjusted P-Value
Tenure	<0.1 (<0.1)	<0.1 (<0.1)	<0.1 (<0.1)	0.88
Phone Number	0.2 (<0.1)	0.2 (<0.1)	> -0.1 (<0.1)	0.88
Name	0.2 (<0.1)	0.2 (<0.1)	<0.1 (<0.1)	0.88
Relationship	<0.1 (<0.1)	0.1 (<0.1)	> -0.1 (<0.1)	0.88
Sex	<0.1 (<0.1)	<0.1 (<0.1)	<0.1 (<0.1)	0.88
Age/Date of Birth [†]	0.2 (<0.1)	0.2 (<0.1)	> -0.1 (<0.1)	0.88
Hispanic Origin	0.4 (<0.1)	0.4 (<0.1)	> -0.1 (<0.1)	0.88
Race	0.8 (<0.1)	0.8 (<0.1)	<0.1 (<0.1)	0.88

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level. [†]If an age could not be calculated from the date of birth answers or an age was not provided, it was considered item nonresponse. [^]The internet instrument required the respondent to provide a count of the number of people living in the household, so there was no missing data.

There were no significant differences in questionnaire completeness rates between treatments for overall response or by mode.

Table 27. Questionnaire Completeness by Response Mode

Response Mode	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
All Modes	99.1 (<0.1)	99.1 (<0.1)	> -0.1 (<0.1)	0.22
Mail	97.5 (<0.1)	97.6 (<0.1)	> -0.1 (0.1)	0.42
Internet	99.7 (<0.1)	99.7 (<0.1)	> -0.1 (<0.1)	0.80

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

We also examined item nonresponse rates and questionnaire completeness rates by sampling stratum. The results showed no significant differences in item nonresponse rates except in the medium sampling stratum. For that stratum, the Control Treatment (with the citizenship question) had a statistically significant lower item nonresponse rate for the demographic question about sex of person than the Experimental Treatment. The difference was 0.1 percentage points with a standard error of 0.1 and an adjusted p-value of 0.09. There were no significant differences in form completeness between treatments by sampling strata. See Appendix G for details.

5.13 Citizenship Question Item Nonresponse Rate (RQ7)

The item nonresponse rate for the citizenship question is shown in Table 28. The item nonresponse rates for the citizenship question in the 2019 Census Test are within the range of item nonresponse seen for other person-level questions asked on the questionnaire (as shown in Section 0).

Table 28. Citizenship Question Item Nonresponse Rate

Response Mode	2019 Census Test Control (with Citizenship)
All Modes	1.3 (<0.1)
Mail	2.4 (0.1)
Internet and TQA	0.8 (<0.1)

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

5.14 Partial Response (Breakoff) Analysis (RQ6)

The analysis of partial responses looks at the rate at which respondents began to respond, either online or via TQA, but did not get to the last screen in the internet instrument. Unlike other analyses in this report, insufficient partial returns are included in the partial response analysis. Insufficient partial returns are those returns that have so little data they are not considered a response. Only partial responses that had no other completed mail return were included in this analysis. About 45 percent (unweighted) of the partial responses included in this analysis were sufficient partials and included in the analysis in Sections 5.1 through 0.

Among internet self-respondents, there was a statistically significantly higher rate of respondents exiting the survey before completing it for the form that included the citizenship question, as shown in Table 29. Among TQA respondents, partial responses (breakoffs) were more likely to occur in the Experimental Treatment.

Table 29. Breakoff Rates by Mode and Treatment

Response Mode	Experimental (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Internet	2.7 (0.1)	3.3 (0.1)	-0.6 (0.1)	<0.01*
Telephone Questionnaire Assistance	4.9 (0.4)	3.9 (0.4)	1.0 (0.6)	0.07*

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Significance was tested based on a two-tailed t-test at the $\alpha=0.1$ level.

To understand the difference in partial responses, we looked at where in the interview the breakoffs were occurring. First, we looked at four sections of the interview:

- Initial Questions — questions that confirm the address and determine if the housing unit is occupied.
- Household Questions — respondent name, household roster (including undercount coverage questions), and tenure questions.
- Person Questions — all demographic questions (relationship, sex, date of birth, age, Hispanic origin, race, citizenship [Control Treatment only]) and the screen to add a person to the roster.
- Before Submitting — overcount coverage questions and count discrepancy check.

For internet self-response, breakoffs occurred at a higher rate in the person questions section for the Control Treatment and before submitting in the Experimental Treatment, as shown in Table 30.

Table 30. Internet Breakoff Rates by Interview Section and Treatment

Item	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Broke off in the initial questions	1.2 (<0.1)	1.2 (<0.1)	-0.1 (0.1)	0.17
Broke off in household questions	0.7 (<0.1)	0.7 (<0.1)	>-0.1 (<0.1)	0.50
Broke off in person questions	0.7 (<0.1)	1.2 (<0.1)	-0.4 (<0.1)	<0.01*
Broke off before submitting	0.1 (<0.1)	0.1 (<0.1)	>-0.1 (<0.1)	0.01*

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

Looking at the specific person question screens, breakoffs were more likely to occur on the last question asked of a person (race on the questionnaire without the citizenship question, and citizenship on the questionnaire with the question).

Table 31. Internet Breakoff Rate by Person Questions Screen

Screen	Experiment (no Citizenship)	Control (with Citizenship)
Add a person	<0.1 (<0.1)	<0.1 (<0.1)
Relationship	<0.1 (<0.1)	<0.1 (<0.1)
Sex	0.1 (<0.1)	0.2 (<0.1)
Date of Birth and Age	0.2 (<0.1)	0.2 (<0.1)
Hispanic origin	0.1 (<0.1)	0.1 (<0.1)
Race	0.3 (<0.1)	0.2 (<0.1)
Citizenship	n/a	0.4 (<0.1)

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

For TQA interviews, there were statistically significant higher breakoffs during the initial questions in the Experimental Treatment than the Control Treatment, as seen in Table 32.

Table 32. TQA[†] Breakoff Rate by Interview Section and Treatment

Item	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Broke off in the initial questions	4.3 (0.4)	3.4 (0.4)	0.9 (0.5)	0.09*
Broke off in household questions	0.4 (0.1)	0.2 (0.1)	0.1 (0.1)	0.33
Broke off in person questions	0.2 (0.1)	0.2 (0.1)	>-0.1 (0.1)	0.88
Broke off before submitting	0.0	0.0	n/a	n/a

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

[†]TQA stands for Telephone Questionnaire Assistance.

6. CONCLUSIONS

The major finding of the 2019 Census Test was that there was no statistically significant difference in overall self-response rates between treatments. However, in some areas and for some subgroups there were statistically significant lower self-response rates for the questionnaire with the citizenship question than for the questionnaire without the citizenship question. These differences were observed for the following:

- Mail respondents.
- Tracts designated to receive bilingual materials.
- Tracts with greater than 4.9 percent noncitizens
- Tracts with greater than 49.1 percent Hispanic residents.
- Tracts with between 5.0-20.0 percent Asian residents.
- Housing units within the Los Angeles Regional Census Center and New York Regional Census Center boundaries.

In addition, the proportion of those who identified as Hispanic (and were listed as the first person on the questionnaire) was statistically significantly lower for the treatment with the citizenship question.

Additional analysis of partial internet responses showed a statistically higher rate of partial responses in the treatment with the citizenship question compared to the treatment without the citizenship question. Those breakoffs occurred during the collection of person demographics at a higher rate for the treatment with the citizenship question.

Although the 2020 Census will not include a citizenship question, results from this test may help inform operational decisions for future censuses and surveys. Based on the results of this test,

had the citizenship question been included in the 2020 Census, it would not have affected staffing needs for the NRFU operation. Current plans for staffing for NRFU would have sufficiently accounted for subgroup differences seen in this test. Note that this test did not include the NRFU operation, so we are not able to measure the impact of a citizenship question for the completeness and accuracy of 2020 Census overall. Furthermore, the results of the 2019 Census Test will not trigger a major change in the 2020 Census communications campaign strategy, which was built on prior research that indicates that self-response differs across communities, and that some populations may be fearful about participating in the census regardless of the presence of a citizenship question.

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8. REFERENCES

- Bentley, M. (2008). Specifications for Bilingual Form Distribution in the 2010 Census. *DSSD 2010 Decennial Census Memorandum Series #B-4*. U.S. Census Bureau.
- Brown, J., Heggeness, M., Dorinski, S., Warren, L., & Yi, M. (2018). *Understanding the Quality of Alternative Citizenship Data Sources for the 2020 Census*. Washington, D.C.: U.S. Census Bureau. Retrieved November 26, 2019, from <https://www2.census.gov/ces/wp/2018/CES-WP-18-38.pdf>
- Department of Commerce vs New York, 588 U.S. ____ (2019).
- Erdman, C., & Bates, N. (2016). The Low Response Score (LRS): A Metric to Locate, Predict, and Manage Hard-to-Survey Populations. *Public Opinion Quarterly*, 81(1), 144-156. Retrieved from <https://academic.oup.com/poq/article/81/1/144/2649123>
- Heimel, S. (2016). Postal Tracking Research on the May 2015 ACS Panel. *2016 American Community Survey Research and Evaluation Report Memorandum Series #ACS16-RER-01*.
- Hill, J., Lestina, F., Machowski, J., Rothhaas, C., & Royce, K. (2008). Study of Respondents Who List Themselves as Person 1. *Decennial Statistical Studies Division 2008 Memorandum Series #G-09*. U.S. Census Bureau.
- Hochberg, Y. (1988). A Sharper Bonferroni Procedure for Multiple Tests of Significance. *Biometrika*, 75(4), 800-802. Retrieved January 17, 2017, from http://www.jstor.org/stable/2336325?seq=1#page_scan_tab_contents
- Kim, J. (2018). 2020 Census Non-English language Support. *2020 Census Program Memorandum Series: 2018.06*. U.S. Census Bureau.
- Poehler, E. (2019). Sample Design Requirements for the 2019 Census Test. *DSSD 2019 American Community Survey Memorandum Series #ACS19-MP-01*. U.S. Census Bureau.
- Rao, J. N., & Scott, A. J. (1987). On Simple Adjustments to Chi-Square Tests with Sample Survey Data. *The Annals of Statistics*, 15(1), 385-397. Retrieved 26 2018, December, from <http://projecteuclid.org/euclid.aos/1176350273>

- Rao, J., & Scott, A. (1987). On Simple Adjustments to Chi-Square Tests with Sample Survey Data. *The Annals of Statistics*, 385-397.
- Ratcliffe, M., Burd, C., Holder, K., & Fields, A. (2016). *Defining Rural at the U.S. Census Bureau*. Retrieved December 26, 2018, from American Community Survey and Geography Brief: https://www2.census.gov/geo/pdfs/reference/ua/Defining_Rural.pdf
- Ratcliffe, M., Burd, C., Holder, K., & Fields, A. (2016). *Defining Rural at the U.S. Census Bureau*. Retrieved from American Community Survey and Geography Brief: https://www2.census.gov/geo/pdfs/reference/ua/Defining_Rural.pdf
- U.S. Census Bureau. (1973). *Population and Housing Inquiries in U.S. Decennial Censuses, 1790–1970. Working Paper No. 39*.
- U.S. Census Bureau. (2014). *American Community Survey Design and Methodology*. Retrieved November 26, 2019, from https://www2.census.gov/programs-surveys/acs/methodology/design_and_methodology/acs_design_methodology_report_2014.pdf
- U.S. Census Bureau. (2018a). *Planning Database*. Retrieved November 25, 2019, from <https://www.census.gov/topics/research/guidance/planning-databases.2018.html>
- U.S. Census Bureau. (2018b). *2020 Census Detailed Operational Plan for 12. Internet Self-response (ISR) Operation*. Retrieved October 2018, from <https://www.census.gov/programs-surveys/decennial-census/2020-census/planning-management/planning-docs/ISR-detailed-op-plan.html>
- U.S. Census Bureau. (2018c). *Questions Planned for the 2020 Census and American Community Survey*. Washington, D.C.: U.S. Census Bureau. Retrieved January 4, 2019, from <https://www2.census.gov/library/publications/decennial/2020/operations/planned-questions-2020-ac.pdf>
- U.S. Census Bureau. (2018d). *American Community Survey*. Retrieved from 2018 American Community Survey 1-Year Estimates, Table S0501; generated using data.census.gov: <https://data.census.gov>

Appendix A. Images of the Paper Questionnaires

Figure A-1. Control Questionnaire (in English) with the Citizenship Question

<p>1. Print name of Person 2</p> <p>First Name MI</p> <div style="border: 1px solid black; width: 250px; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; float: right; margin-top: -20px;"></div> <p>Last Name(s)</p> <div style="border: 1px solid black; width: 300px; height: 20px; margin-bottom: 5px;"></div> <p>2. Does this person usually live or stay somewhere else? Mark <input checked="" type="checkbox"/> all that apply.</p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> No </div> <div style="width: 50%;"> <input type="checkbox"/> Yes, for college </div> <div style="width: 50%;"> <input type="checkbox"/> Yes, with a parent or other relative </div> <div style="width: 50%;"> <input type="checkbox"/> Yes, for a military assignment </div> <div style="width: 50%;"> <input type="checkbox"/> Yes, at a seasonal or second residence </div> <div style="width: 50%;"> <input type="checkbox"/> Yes, for a job or business </div> <div style="width: 50%;"> <input type="checkbox"/> Yes, in a jail or prison </div> <div style="width: 50%;"> <input type="checkbox"/> Yes, in a nursing home </div> <div style="width: 50%;"> <input type="checkbox"/> Yes, for another reason </div> </div> <p>3. How is this person related to Person 1? Mark <input checked="" type="checkbox"/> ONE box.</p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Opposite-sex husband/wife/spouse </div> <div style="width: 50%;"> <input type="checkbox"/> Father or mother </div> <div style="width: 50%;"> <input type="checkbox"/> Opposite-sex unmarried partner </div> <div style="width: 50%;"> <input type="checkbox"/> Grandchild </div> <div style="width: 50%;"> <input type="checkbox"/> Same-sex husband/wife/spouse </div> <div style="width: 50%;"> <input type="checkbox"/> Parent-in-law </div> <div style="width: 50%;"> <input type="checkbox"/> Same-sex unmarried partner </div> <div style="width: 50%;"> <input type="checkbox"/> Son-in-law or daughter-in-law </div> <div style="width: 50%;"> <input type="checkbox"/> Biological son or daughter </div> <div style="width: 50%;"> <input type="checkbox"/> Other relative </div> <div style="width: 50%;"> <input type="checkbox"/> Adopted son or daughter </div> <div style="width: 50%;"> <input type="checkbox"/> Roommate or housemate </div> <div style="width: 50%;"> <input type="checkbox"/> Stepson or stepdaughter </div> <div style="width: 50%;"> <input type="checkbox"/> Foster child </div> <div style="width: 50%;"> <input type="checkbox"/> Brother or sister </div> <div style="width: 50%;"> <input type="checkbox"/> Other nonrelative </div> </div> <p>4. What is this person's sex? Mark <input checked="" type="checkbox"/> ONE box.</p> <div style="display: flex;"> <input type="checkbox"/> Male <input type="checkbox"/> Female </div> <p>5. What is this person's age and what is this person's date of birth? For babies less than 1 year old, do not write the age in months. Write 0 as the age.</p> <p style="text-align: center; font-size: small;">Print numbers in boxes.</p> <div style="display: flex; justify-content: space-between;"> <div>Age on July 1, 2019</div> <div>Month</div> <div>Day</div> <div>Year of birth</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="border: 1px solid black; width: 40px; height: 20px;"></div> <div style="border: 1px solid black; width: 30px; height: 20px;"></div> <div style="border: 1px solid black; width: 30px; height: 20px;"></div> <div style="border: 1px solid black; width: 60px; height: 20px;"></div> </div> <p>→ NOTE: Please answer BOTH Question 6 about Hispanic origin and Question 7 about race. For this census, Hispanic origins are not races.</p> <p>6. Is this person of Hispanic, Latino, or Spanish origin?</p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> No, not of Hispanic, Latino, or Spanish origin </div> <div style="width: 50%;"> <input type="checkbox"/> Yes, Mexican, Mexican Am., Chicano </div> <div style="width: 50%;"> <input type="checkbox"/> Yes, Puerto Rican </div> <div style="width: 50%;"> <input type="checkbox"/> Yes, Cuban </div> <div style="width: 50%;"> <input type="checkbox"/> Yes, another Hispanic, Latino, or Spanish origin – Print, for example, Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc. </div> </div> <div style="border: 1px solid black; width: 300px; height: 20px; margin-top: 5px;"></div>	<p>7. What is this person's race? Mark <input checked="" type="checkbox"/> one or more boxes AND print origins.</p> <div style="display: flex;"> <input type="checkbox"/> White – Print, for example, German, Irish, English, Italian, Lebanese, Egyptian, etc. </div> <div style="border: 1px solid black; width: 300px; height: 20px; margin-top: 5px;"></div> <div style="display: flex;"> <input type="checkbox"/> Black or African Am. – Print, for example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc. </div> <div style="border: 1px solid black; width: 300px; height: 20px; margin-top: 5px;"></div> <div style="display: flex;"> <input type="checkbox"/> American Indian or Alaska Native – Print name of enrolled or principal tribe(s), for example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc. </div> <div style="border: 1px solid black; width: 300px; height: 20px; margin-top: 5px;"></div> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"> <input type="checkbox"/> Chinese </div> <div style="width: 33%;"> <input type="checkbox"/> Vietnamese </div> <div style="width: 33%;"> <input type="checkbox"/> Native Hawaiian </div> <div style="width: 33%;"> <input type="checkbox"/> Filipino </div> <div style="width: 33%;"> <input type="checkbox"/> Korean </div> <div style="width: 33%;"> <input type="checkbox"/> Samoan </div> <div style="width: 33%;"> <input type="checkbox"/> Asian Indian </div> <div style="width: 33%;"> <input type="checkbox"/> Japanese </div> <div style="width: 33%;"> <input type="checkbox"/> Chamorro </div> <div style="width: 33%;"> <input type="checkbox"/> Other Asian – Print, for example, Pakistani, Cambodian, Hmong, etc. </div> <div style="width: 33%;"> <input type="checkbox"/> Other Pacific Islander – Print, for example, Tongan, Fijian, Marshallese, etc. </div> </div> <div style="border: 1px solid black; width: 300px; height: 20px; margin-top: 5px;"></div> <div style="display: flex;"> <input type="checkbox"/> Some other race – Print race or origin. </div> <div style="border: 1px solid black; width: 300px; height: 20px; margin-top: 5px;"></div> <p>8. Is this person a citizen of the United States?</p> <div style="display: flex;"> <input type="checkbox"/> Yes, born in the United States </div> <div style="display: flex;"> <input type="checkbox"/> Yes, born in Puerto Rico, Guam, the U.S. Virgin Islands, or Northern Marianas </div> <div style="display: flex;"> <input type="checkbox"/> Yes, born abroad of U.S. citizen parent or parents </div> <div style="display: flex;"> <input type="checkbox"/> Yes, U.S. citizen by naturalization – Print year of naturalization. </div> <div style="border: 1px solid black; width: 60px; height: 20px; margin-top: 5px;"></div> <div style="display: flex;"> <input type="checkbox"/> No, not a U.S. citizen </div> <p style="margin-top: 20px;">→ If more people were counted in Question 1 on the front page, continue with Person 3 on the next page.</p>
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Figure A-2. Control Questionnaire (in Spanish) with the Citizenship Question

1. Escriba el nombre de la Persona 2

Nombre Inicial

Apellido(s)

2. ¿Vive o se queda esta persona habitualmente en algún otro lugar? Marque ☒ todas las que correspondan.

☐ No

☐ Sí, para ir a la universidad

☐ Sí, por un destino militar

☐ Sí, por un empleo o negocio

☐ Sí, en un hogar de ancianos o nursing home

☐ Sí, con el padre, la madre u otro pariente

☐ Sí, en una vivienda de temporada o segunda residencia

☐ Sí, en una cárcel o prisión

☐ Sí, por alguna otra razón

3. ¿Cómo está esta persona relacionada con la Persona 1? Marque ☒ UNA casilla.

☐ Esposo(a) del sexo opuesto

☐ Pareja no casada del sexo opuesto

☐ Esposo(a) del mismo sexo

☐ Pareja no casada del mismo sexo

☐ Hijo(a) biológico(a) o de sangre

☐ Hijo(a) adoptivo(a)

☐ Hijastro(a)

☐ Hermano(a)

☐ Padre o madre

☐ Nieto(a)

☐ Suegro(a)

☐ Yerno o nuera

☐ Otro pariente

☐ Roommate o compañero(a) de casa

☐ Hijo(a) foster

☐ Otra persona que no es pariente

4. ¿Cuál es el sexo de esta persona? Marque ☒ UNA casilla.

☐ Masculino ☐ Femenino

5. ¿Cuál es la edad de esta persona y cuál es su fecha de nacimiento? Para bebés menores de un año, no escriba los meses de edad. Solo escriba 0.

Edad el 1 de julio de 2019 Escriba los números en las casillas.

años
 Mes
 Día
 Año de nacimiento

→ **NOTA: Conteste AMBAS preguntas, la Pregunta 6 sobre origen hispano y la Pregunta 7 sobre raza. Para este censo, origen hispano no es una raza.**

6. ¿Es esta persona de origen hispano, latino o español?

☐ No, no es de origen hispano, latino o español

☐ Sí, mexicano, mexicanoamericano, chicano

☐ Sí, puertorriqueño

☐ Sí, cubano

☐ Sí, de otro origen hispano, latino o español – Escriba, por ejemplo, salvadoreño, dominicano, colombiano, guatemalteco, español, ecuatoriano, etc. ¿

7. ¿Cuál es la raza de esta persona? Marque ☒ una o más casillas Y escriba los orígenes.

☐ Blanca – Escriba, por ejemplo, alemán, irlandés, inglés, italiano, libanés, egipcio, etc. ¿

☐ Negra o afroamericana – Escriba, por ejemplo, afroamericano, jamaquino, haitiano, nigeriano, etíope, somalí, etc. ¿

☐ Indígena de las Américas o nativa de Alaska – Escriba el nombre de la(s) tribu(s) en la(s) que está inscrita o la(s) tribu(s) principal(es), por ejemplo, Navajo Nation, Blackfeet Tribe, maya, azteca, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc. ¿

☐ China

☐ Filipina

☐ India asiática

☐ Otra asiática – Escriba, por ejemplo, pakistaní, camboyano, hmong, etc. ¿

☐ Vietnamita

☐ Coreana

☐ Japonesa

☐ Nativa de Hawái

☐ Samoana

☐ Chamorra

☐ Otra de las islas del Pacífico – Escriba, por ejemplo, tongano, fiyiano, de las Islas Marshall, etc. ¿

☐ Alguna otra raza – Escriba la raza o el origen. ¿

8. ¿Es esta persona ciudadana de los Estados Unidos?

☐ Sí, nacido(a) en los Estados Unidos

☐ Sí, nacido(a) en Puerto Rico, Guam, las Islas Virgenes de los EE. UU., o las Islas Marianas del Norte

☐ Sí, nacido(a) en el extranjero de padre o madre que es ciudadano(a) de los EE. UU.

☐ Sí, ciudadano(a) de los EE. UU. por naturalización – Escriba el año de naturalización. ¿

☐ No, no es ciudadano(a) de los EE. UU.

→ Si se contaron más personas en la Pregunta 1 de la primera página, continúe con la Persona 3 de la próxima página.

Figure A-3. Experimental Questionnaire (in English) without the Citizenship Question

<p>1. Print name of Person 2</p> <p>First Name MI</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Last Name(s)</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>2. Does this person usually live or stay somewhere else? Mark <input checked="" type="checkbox"/> all that apply.</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes, for college</p> <p><input type="checkbox"/> Yes, for a military assignment</p> <p><input type="checkbox"/> Yes, for a job or business</p> <p><input type="checkbox"/> Yes, in a nursing home</p> </div> <div style="width: 45%;"> <p><input type="checkbox"/> Yes, with a parent or other relative</p> <p><input type="checkbox"/> Yes, at a seasonal or second residence</p> <p><input type="checkbox"/> Yes, in a jail or prison</p> <p><input type="checkbox"/> Yes, for another reason</p> </div> </div> <p>3. How is this person related to Person 1? Mark <input checked="" type="checkbox"/> ONE box.</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><input type="checkbox"/> Opposite-sex husband/wife/spouse</p> <p><input type="checkbox"/> Opposite-sex unmarried partner</p> <p><input type="checkbox"/> Same-sex husband/wife/spouse</p> <p><input type="checkbox"/> Same-sex unmarried partner</p> <p><input type="checkbox"/> Biological son or daughter</p> <p><input type="checkbox"/> Adopted son or daughter</p> <p><input type="checkbox"/> Stepson or stepdaughter</p> <p><input type="checkbox"/> Brother or sister</p> </div> <div style="width: 45%;"> <p><input type="checkbox"/> Father or mother</p> <p><input type="checkbox"/> Grandchild</p> <p><input type="checkbox"/> Parent-in-law</p> <p><input type="checkbox"/> Son-in-law or daughter-in-law</p> <p><input type="checkbox"/> Other relative</p> <p><input type="checkbox"/> Roommate or housemate</p> <p><input type="checkbox"/> Foster child</p> <p><input type="checkbox"/> Other nonrelative</p> </div> </div> <p>4. What is this person's sex? Mark <input checked="" type="checkbox"/> ONE box.</p> <p><input type="checkbox"/> Male <input type="checkbox"/> Female</p> <p>5. What is this person's age and what is this person's date of birth? For babies less than 1 year old, do not write the age in months. Write 0 as the age.</p> <p style="text-align: center;">Print numbers in boxes.</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Age on July 1, 2019</div> <div style="width: 10%;">Month</div> <div style="width: 10%;">Day</div> <div style="width: 20%;">Year of birth</div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 20%; border: 1px solid black; height: 20px;"></div> <div style="width: 10%; border: 1px solid black; height: 20px;"></div> <div style="width: 10%; border: 1px solid black; height: 20px;"></div> <div style="width: 20%; border: 1px solid black; height: 20px;"></div> </div> <p>years</p> <p>→ NOTE: Please answer BOTH Question 6 about Hispanic origin and Question 7 about race. For this census, Hispanic origins are not races.</p> <p>6. Is this person of Hispanic, Latino, or Spanish origin?</p> <p><input type="checkbox"/> No, not of Hispanic, Latino, or Spanish origin</p> <p><input type="checkbox"/> Yes, Mexican, Mexican Am., Chicano</p> <p><input type="checkbox"/> Yes, Puerto Rican</p> <p><input type="checkbox"/> Yes, Cuban</p> <p><input type="checkbox"/> Yes, another Hispanic, Latino, or Spanish origin – Print, for example, Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc.</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<p>7. What is this person's race? Mark <input checked="" type="checkbox"/> one or more boxes AND print origins.</p> <p><input type="checkbox"/> White – Print, for example, German, Irish, English, Italian, Lebanese, Egyptian, etc.</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p><input type="checkbox"/> Black or African Am. – Print, for example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc.</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p><input type="checkbox"/> American Indian or Alaska Native – Print name of enrolled or principal tribe(s), for example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><input type="checkbox"/> Chinese</p> <p><input type="checkbox"/> Filipino</p> <p><input type="checkbox"/> Asian Indian</p> <p><input type="checkbox"/> Other Asian – Print, for example, Pakistani, Cambodian, Hmong, etc.</p> </div> <div style="width: 30%;"> <p><input type="checkbox"/> Vietnamese</p> <p><input type="checkbox"/> Korean</p> <p><input type="checkbox"/> Japanese</p> </div> <div style="width: 30%;"> <p><input type="checkbox"/> Native Hawaiian</p> <p><input type="checkbox"/> Samoan</p> <p><input type="checkbox"/> Chamorro</p> <p><input type="checkbox"/> Other Pacific Islander – Print, for example, Tongan, Fijian, Marshallese, etc.</p> </div> </div> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p><input type="checkbox"/> Some other race – Print race or origin.</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>→ If more people were counted in Question 1 on the front page, continue with Person 3 on the next page.</p>
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Appendix B. Internet First Mail Materials

Table B-1. Internet First Mail Materials by Mailing and Language Strategy

Mailing	English Materials	Bilingual Materials
Initial Mailing	<ul style="list-style-type: none"> • Outgoing Envelope DM-EO-F1(E/S) • Invitation Letter DM-LF1 • Language Assistance Sheet DM-LI 	<ul style="list-style-type: none"> • Outgoing Envelope DM-EO-F1(E/S) • Invitation Letter DM-LF1(E/S) • Language Assistance Sheet DM-LI • FAQ Insert DM-FL(E/S)
Reminder Letter	<ul style="list-style-type: none"> • Outgoing Envelope DM-EO2(E/S) • Letter DM-LF2 	<ul style="list-style-type: none"> • Outgoing Envelope DM-EO2(E/S) • Letter DM-LF2(E/S)
Reminder Postcard	<ul style="list-style-type: none"> • Postcard DM-PF3 	<ul style="list-style-type: none"> • Postcard DM-PF3(E/S)
Questionnaire Package	<ul style="list-style-type: none"> • Outgoing Envelope DM-EO4(E/S) • Letter DM-L4 • Control Questionnaire DM-QA or Test Questionnaire DM-QB • Language Assistant Sheet DM-LI • Return Envelope DM-ER-IN(E/S) 	<ul style="list-style-type: none"> • Outgoing Envelope DM-EO4(E/S) • Letter DM-L4(E/S) • Control Questionnaire DM-QA(E/S) or Test Questionnaire DM-QB(E/S) • Language Assistant Sheet DM-LI • Return Envelope DM-ER-IN(E/S) • FAQ Insert DM-FA(E/S)
Final Reminder Postcard	<ul style="list-style-type: none"> • Postcard DM-P5 	<ul style="list-style-type: none"> • Postcard DM-P5(E/S)

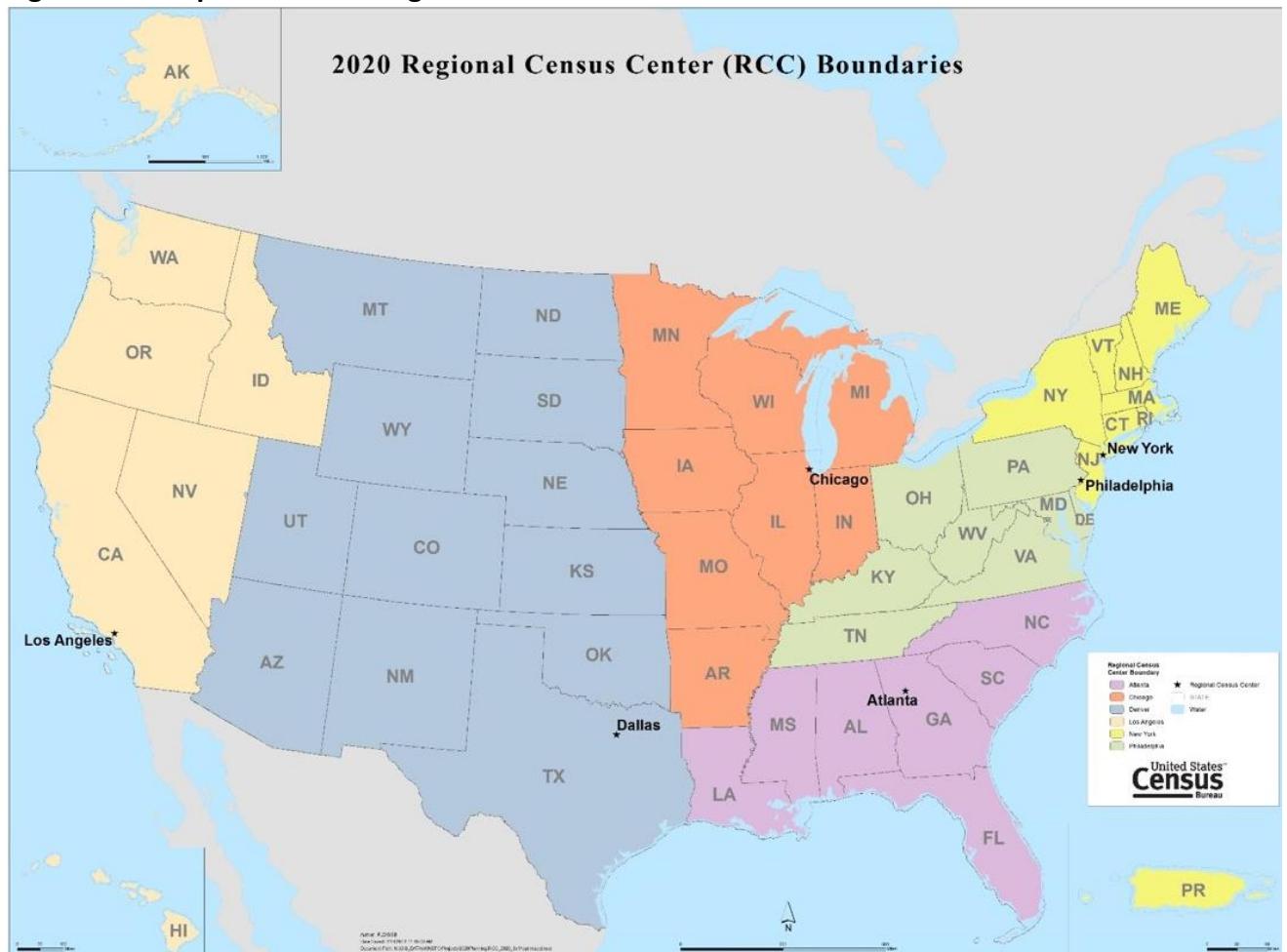
Appendix C. Internet Choice Mail Materials

Table C-1. Internet Choice Mail Materials by Mailing and Language Strategy

Mailing	English Materials	Bilingual Materials
Initial Questionnaire Package	<ul style="list-style-type: none"> • Outgoing Envelope DM-EO-C1(E/S) • Invitation Letter DM-LC1 • Control Questionnaire DM-QA or Test Questionnaire DM-QB • Language Assistant Sheet DM-LI • Return Envelope DM-ER-IN(E/S) 	<ul style="list-style-type: none"> • Outgoing Envelope DM-EO-C1(E/S) • Invitation Letter DM-LC1(E/S) • Control Questionnaire DM-QA(E/S) or Test Questionnaire DM-QB(E/S) • Language Assistant Sheet DM-LI • Return Envelope DM-ER-IN(E/S) • FAQ Insert DM-FA(E/S)
Reminder Letter	<ul style="list-style-type: none"> • Outgoing Envelope DM-EO2(E/S) • Letter DM-LC2 	<ul style="list-style-type: none"> • Outgoing Envelope DM-EO2(E/S) • Letter DM-LC2(E/S)
Reminder Postcard	<ul style="list-style-type: none"> • Postcard DM-PC3 	<ul style="list-style-type: none"> • Postcard DM-PC3(E/S)
Replacement Questionnaire Package	<ul style="list-style-type: none"> • Outgoing Envelope DM-EO4(E/S) • Letter DM-L4 • Control Questionnaire DM-QA or Test Questionnaire DM-QB • Language Assistant Sheet DM-LI • Return Envelope DM-ER-IN(E/S) 	<ul style="list-style-type: none"> • Outgoing Envelope DM-EO4(E/S) • Letter DM-L4(E/S) • Control Questionnaire DM-QA(E/S) or Test Questionnaire DM-QB(E/S) • Language Assistant Sheet DM-LI • Return Envelope DM-ER-IN(E/S) • FAQ Insert DM-FA(E/S)
Final Reminder Postcard	<ul style="list-style-type: none"> • Postcard DM-P5 	<ul style="list-style-type: none"> • Postcard DM-P5(E/S)

Appendix D. Census Bureau 2020 Regional Census Center Boundaries

Figure D-1. Map of the 2020 Regional Census Center Boundaries



Appendix E. Regional Census Center Analysis

Additional analysis for sampled housing units in the Los Angeles Regional Census Center area is shown in Table E-1 and Table E-2.

Table E-1. Los Angeles RCC: Self-Response Rates by Contact and Language Strategy Areas

Contact and Language Strategy	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Internet First English	56.7 (0.3)	55.9 (0.3)	0.8 (0.5)	0.09*
Internet First Bilingual	41.1 (0.6)	39.5 (0.6)	1.5 (0.8)	0.05*
Internet Choice English	47.3 (1.1)	44.6 (1.0)	2.8 (1.3)	0.04*
Internet Choice Bilingual	37.1 (0.7)	34.7 (0.7)	2.4 (0.9)	0.01*

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level. RCC means Regional Census Center.

Table E-2. Los Angeles RCC: Self-Response Rates for Areas with Different Proportions of Noncitizens

Proportion of Noncitizens	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
High: Areas with more than 11.1 percent noncitizens	45.5 (0.3)	43.8 (0.3)	1.7 (0.5)	<0.01*
Medium: Areas with between 4.9-11.1 percent noncitizens	55.2 (0.4)	55.5 (0.4)	-0.3 (0.5)	0.54
Low: Areas with less than 4.9 percent noncitizens	59.6 (0.6)	57.8 (0.6)	1.8 (0.8)	0.03*

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level. RCC means Regional Census Center.

Additional analysis for sampled housing units in the New York Regional Census Center area is shown in Table E-3 and Table E-4.

Table E-3. New York RCC: Self-Response Rates by Contact and Language Strategy Areas

Contact and Language Strategy	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Internet First English	56.5 (0.3)	55.7 (0.3)	0.8 (0.5)	0.09
Internet First Bilingual	33.9 (0.9)	33.9 (0.9)	> -0.1 (1.4)	0.99
Internet Choice English	40.8 (0.8)	40.5 (0.9)	0.3 (1.4)	0.85
Internet Choice Bilingual	29.5 (1.0)	27.4 (0.9)	2.0 (1.5)	0.18

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level. RCC means Regional Census Center.

Table E-4. New York RCC: Self-Response Rates for Areas with Different Proportions of Noncitizens

Proportion of Noncitizens	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
High: Areas with more than 11.1 percent noncitizens	39.7 (0.4)	39.0 (0.4)	0.7 (0.6)	0.19
Medium: Areas with between 4.9-11.1 percent noncitizens	51.4 (0.5)	51.4 (0.5)	> -0.1 (0.6)	0.97
Low: Areas with less than 4.9 percent noncitizens	59.5 (0.4)	58.4 (0.5)	1.2 (0.7)	0.11

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level. RCC means Regional Census Center.

Appendix F. Demographic Distributions for All Household Members

Table F-1. Percent of Related Household Members by Mode and Treatment

Relationship and Mode	Experiment (no Citizenship)	Control (with Citizenship)	P-value
All Modes: Related	96.0 (0.1)	95.8 (0.1)	0.07*
Mail: Related	95.9 (0.1)	95.5 (0.1)	0.14
Internet: Related	96.1 (0.1)	95.9 (0.1)	0.19

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level.

Table F-2. Sex Response Distributions by Mode and Treatment

Sex and Mode	Experiment (no Citizenship)	Control (with Citizenship)	P-value
All Modes	100.0	100.0	0.75
Male	48.4 (0.1)	48.4 (0.1)	
Female	51.6 (0.1)	51.6 (0.1)	
Mail	100.0	100.0	0.56
Male	46.9 (0.2)	47.0 (0.2)	
Female	53.1 (0.2)	53.0 (0.2)	
Internet and TQA	100.0	100.0	0.90
Male	48.9 (0.1)	48.9 (0.1)	
Female	51.0 (0.1)	51.0 (0.1)	

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level.

Table F-3. Age Group Response Distributions for All Modes Combined

Age Group	Experiment (no Citizenship)	Control (with Citizenship)	χ^2
All Modes	100.0	100.0	1.00
0-4	4.8 (<0.1)	4.8 (<0.1)	
5-20	17.9 (0.1)	17.8 (0.1)	
21-29	9.7 (0.1)	9.7 (0.1)	
30-39	11.7 (0.1)	11.7 (0.1)	
40-52	15.6 (0.1)	15.6 (0.1)	
53-64	18.4 (0.1)	18.5 (0.1)	
65+	21.9 (0.1)	21.9 (0.1)	

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level. The age groupings used in Table 19 are not standard. They reflect the higher proportion of noncitizens in the U.S. who are 21-52.

Table F- 4 shows the distribution of age for the mail mode. A chi-square test indicated a statistically significant difference in the distribution of age between treatments. Two-tailed t-tests were conducted to determine the underlying cause of the difference.

Table F- 4. Age Group Response Distributions for the Mail Mode

Age Group	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
Mail Mode	100.0	100.0	n/a	n/a
0-4	3.7 (0.1)	3.5 (0.1)	0.1(0.1)	0.24
5-20	14.6 (0.2)	14.1 (0.2)	0.5(0.2)	0.02*
21-29	7.0 (0.1)	7.2 (0.1)	-0.2(0.2)	0.24
30-39	8.2 (0.1)	8.0 (0.1)	0.2(0.2)	0.20
40-52	12.8 (0.2)	12.6 (0.1)	0.2(0.2)	0.39
53-64	20.4 (0.2)	20.9 (0.2)	-0.5(0.3)	0.06*
65+	33.3 (0.3)	33.6 (0.3)	-0.3(0.4)	0.39

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level. The χ^2 p-value for this comparison was 0.05. Because the distribution was determined to be significant, each category was evaluated using a two tailed t-test at the $\alpha=0.1$ level. The age groupings used Table 19 are not standard. They reflect the higher proportion of noncitizens in the U.S. who are 21-52.

Table F-5. Age Group Response Distributions for the Internet Mode

Age Group	Experiment (no Citizenship)	Control (with Citizenship)	P-Value
Internet and TQA	100.0	100.0	0.88
0-4	5.2 (0.1)	5.3 (0.1)	
5-20	19.1 (0.1)	19.2 (0.1)	
21-29	10.8 (0.1)	10.7 (0.1)	
30-39	13.1 (0.1)	13.1 (0.1)	
40-52	16.7 (0.1)	16.8 (0.1)	
53-64	17.6 (0.1)	17.5 (0.1)	
65+	17.5 (0.1)	17.4 (0.1)	

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level. The age groupings used are not standard. They reflect the higher proportion of noncitizens in the U.S. who are 21-52.

Table F-6. Hispanic Origin Response Distributions for All Persons

Hispanic Origin and Mode	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-value
All Modes: Hispanic	12.0 (0.1)	11.4 (0.1)	0.5(0.2)	0.01*
Mail: Hispanic	13.1 (0.2)	12.5 (0.2)	0.6(0.3)	0.06
Internet and TQA: Hispanic	11.5 (0.1)	11.1 (0.2)	0.5(0.2)	0.03

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.

Table F-7. Detailed Hispanic Origin Group Distribution for All Persons

Detailed Hispanic Origin Group and Mode	Experiment (no Citizenship)	Control (with Citizenship)	P-Value
All Modes	100.0	100.0	0.54
Mexican	56.2 (0.4)	55.8 (0.5)	
Puerto Rican	11.0 (0.3)	10.7 (0.3)	
Cuban	4.8 (0.1)	5.1 (0.2)	
Other Hispanic Origin	28.0 (0.4)	28.5 (0.4)	
Mail			0.03
Mexican	60.4 (0.8)	59.2 (0.7)	
Puerto Rican	11.0 (0.5)	11.0 (0.5)	
Cuban	4.4 (0.3)	5.8 (0.3)	
Other Hispanic Origin	24.1 (0.7)	23.9 (0.7)	
Internet and TQA			0.52
Mexican	54.5 (0.5)	54.4 (0.5)	
Puerto Rican	11.0 (0.4)	10.5 (0.4)	
Cuban	5.0 (0.2)	4.7 (0.2)	
Other Hispanic Origin	29.6 (0.5)	30.4 (0.5)	

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level.

Table F-8. Race Group Response Distributions for All Persons

Race and Mode		Experiment (no Citizenship)	Control (with Citizenship)	P-Value
All Modes		100.0	100.0	0.73
	White Alone	73.4 (0.3)	73.7 (0.3)	
	Black Alone	6.9 (0.2)	6.9 (0.2)	
	Asian Alone	6.1 (0.1)	6.1 (0.1)	
	American Indian or Alaska Native Alone	0.6 (<0.1)	0.6 (<0.1)	
	Native Hawaiian or Pacific Islander Alone	0.1 (<0.1)	0.1 (<0.1)	
	Some Other Race Alone	3.8 (0.1)	3.5 (0.1)	
	Two or More Races	9.1 (0.1)	9.0 (0.1)	
Mail		100.0	100.0	0.78
	White Alone	73.9 (0.5)	74.4 (0.5)	
	Black Alone	11.1 (0.4)	11.1 (0.4)	
	Asian Alone	3.7 (0.1)	3.5 (0.1)	
	American Indian or Alaska Native Alone	0.8 (0.1)	0.9 (0.1)	
	Native Hawaiian or Pacific Islander Alone	0.1 (<0.1)	0.1 (<0.1)	
	Some Other Race Alone	3.8 (0.1)	3.5 (0.1)	
	Two or More Races	6.7 (0.1)	6.5 (0.1)	
Internet and TQA		100.0	100.0	0.69
	White Alone	73.3 (0.3)	73.5 (0.3)	
	Black Alone	5.3 (0.1)	5.4 (0.1)	
	Asian Alone	6.9 (0.1)	7.0 (0.1)	
	American Indian or Alaska Native Alone	0.6 (<0.1)	0.5 (<0.1)	
	Native Hawaiian or Pacific Islander Alone	0.1 (<0.1)	0.1 (<0.1)	
	Some Other Race Alone	3.8 (0.1)	3.6 (0.1)	
	Two or More Races	10.0 (0.1)	9.9 (0.1)	

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level.

Table F-9. Detailed Asian Group Response Distributions for All Persons who are Asian Alone

Detailed Asian Group and Mode	Experiment (no Citizenship)	Control (with Citizenship)	P-value
All Modes	100.0	100.0	0.70
Chinese Alone	23.3 (0.6)	24.2 (0.5)	
Japanese Alone	1.3 (0.1)	1.4 (0.1)	
Korean Alone	5.4 (0.3)	4.8 (0.2)	
Vietnamese Alone	8.6 (0.4)	8.1 (0.4)	
Filipino Alone	16.8 (0.5)	16.9 (0.5)	
Asian Indian Alone	19.7 (0.4)	19.9 (0.6)	
Other Asian Alone	11.1 (0.5)	10.7 (0.5)	
Two or More Asian groups	13.8 (0.5)	14.0 (0.5)	
Mail	100.0	100.0	0.57
Chinese Alone	21.8 (1.2)	21.4 (1.4)	
Japanese Alone	6.2 (0.6)	6.5 (0.6)	
Korean Alone	7.9 (0.7)	7.3 (0.7)	
Vietnamese Alone	14.4 (1.2)	12.6 (1.0)	
Filipino Alone	21.1 (1.4)	24.3 (1.3)	
Asian Indian Alone	9.6 (0.9)	10.4 (0.9)	
Other Asian Alone	15.7 (1.3)	14.1 (1.1)	
Two or More Asian groups	3.4 (0.5)	3.4 (0.5)	
Internet and TQA	100.0	100.0	0.81
Chinese Alone	23.6 (0.6)	24.7 (0.6)	
Japanese Alone	0.4 (0.1)	0.4 (0.1)	
Korean Alone	4.8 (0.3)	4.3 (0.2)	
Vietnamese Alone	7.4 (0.3)	7.3 (0.3)	
Filipino Alone	16.0 (0.5)	15.6 (0.6)	
Asian Indian Alone	21.7 (0.5)	21.6 (0.7)	
Other Asian Alone	10.2 (0.5)	10.1 (0.5)	
Two or More Asian groups	15.9 (0.6)	15.9 (0.5)	

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

Note: Minor additive discrepancies are due to rounding. Standard errors are in parentheses. An asterisk (*) indicates a statistically significant result. Statistical significance was determined by comparing distributions using a Rao-Scott chi-square test at the $\alpha=0.1$ level.

Appendix G. Item Nonresponse and Form Completeness By Sampling Strata

Table G-1. Item Nonresponse Rates for All Modes in the High Sampling Stratum

Item	Experiment (no Citizenship)	Control (with Citizenship)	Difference	Adjusted P-Value
Number of People	0.7 (<0.1)	0.7 (<0.1)	<0.1 (0.1)	0.99
Tenure	0.8 (<0.1)	0.8 (<0.1)	<0.1 (0.1)	0.99
Phone Number	2.2 (0.1)	2.2 (0.1)	> -0.1 (0.1)	0.99
Name	0.4 (<0.1)	0.3 (<0.1)	<0.1 (<0.1)	0.99
Relationship	0.7 (0.1)	0.8 (0.1)	> -0.1 (0.1)	0.99
Sex	0.3 (<0.1)	0.3 (<0.1)	> -0.1 (0.1)	0.99
Age and Date of Birth	0.4 (<0.1)	0.5 (<0.1)	> -0.1 (<0.1)	0.99
Hispanic origin	1.9 (0.1)	2.0 (0.1)	> -0.1 (0.1)	0.99
Race	3.9 (0.1)	3.7 (0.1)	0.1 (0.2)	0.99

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level. The Hochberg multiple comparisons procedure places a cap on the adjusted p-values, which results in many adjusted p-values being equal. The cap ensures that the order of the values does not change after adjustment.

Table G-2. Item Nonresponse Rates for All Modes in the Medium Sampling Stratum

Item	Experiment (no Citizenship)	Control (with Citizenship)	Difference	Adjusted P-Value
Number of People	0.6 (<0.1)	0.6 (<0.1)	> -0.1 (0.1)	0.96
Tenure	0.7 (<0.1)	0.6 (<0.1)	<0.1 (0.1)	0.96
Phone Number	2.1 (0.1)	2.2 (0.1)	> -0.1 (0.1)	0.96
Name	0.4 (<0.1)	0.4 (<0.1)	<0.1 (0.1)	0.96
Relationship	0.8 (<0.1)	0.8 (<0.1)	> -0.1 (0.1)	0.96
Sex	0.2 (<0.1)	0.2 (<0.1)	0.1 (<0.1)	0.09*
Age and Date of Birth	0.4 (<0.1)	0.4 (<0.1)	> -0.1 (<0.1)	0.96
Hispanic origin	2.1 (0.1)	2.1 (0.1)	0.1 (0.1)	0.96
Race	1.8 (0.1)	1.7 (0.1)	0.1 (0.1)	0.96

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level. The Hochberg multiple comparisons procedure places a cap on the adjusted p-values, which results in many adjusted p-values being equal. The cap ensures that the order of the values does not change after adjustment.

Table G-3. Item Nonresponse Rates for All Modes in the Low Sampling Stratum

Item	Experiment (no Citizenship)	Control (with Citizenship)	Difference	Adjusted P-Value
Number of People	0.5 (<0.1)	0.5 (<0.1)	<0.1 (<0.1)	0.96
Tenure	0.6 (<0.1)	0.6 (<0.1)	> -0.1 (0.1)	0.96
Phone Number	2.1 (0.1)	2.1 (0.1)	<0.1 (0.1)	0.96
Name	0.3 (<0.1)	0.3 (<0.1)	<0.1 (<0.1)	0.96
Relationship	0.6 (<0.1)	0.5 (<0.1)	<0.1 (<0.1)	0.96
Sex	0.2 (<0.1)	0.2 (<0.1)	<0.1 (<0.1)	0.96
Age and Date of Birth	0.2 (<0.1)	0.3 (<0.1)	> -0.1 (<0.1)	0.96
Hispanic origin	1.6 (0.1)	1.5 (<0.1)	0.1 (0.1)	0.96
Race	1.0 (<0.1)	0.9 (<0.1)	0.1 (0.1)	0.96

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level. The Hochberg multiple comparisons procedure places a cap on the adjusted p-values, which results in many adjusted p-values being equal. The cap ensures that the order of the values does not change after adjustment.

Table G-4. Form Completeness by Sampling Strata

Sampling Stratum	Experiment (no Citizenship)	Control (with Citizenship)	Difference	P-Value
High	98.7 (<0.1)	98.7 (<0.1)	<0.1 (<0.1)	0.66
Medium	99.0 (<0.1)	99.0 (<0.1)	> -0.1 (<0.1)	0.42
Low	99.3 (<0.1)	99.3 (<0.1)	> -0.1 (<0.1)	0.22

Source: U.S. Census Bureau, 2019 Census Test; DRB Approval Number: CBDRB- FY20-ACSO002-B0002

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 $\alpha=0.1$ level.