This document was prepared by and for Census Bureau staff to aid in future research and planning, but the Census Bureau is making the document publicly available in order to share the information with as wide an audience as possible. Questions about the document should be directed to Kevin Deardorff at (301) 763-6033 or kevin.e.deardorff@census.gov

June 29, 2012

2010 CENSUS PLANNING MEMORANDA SERIES

No. 206

MEMORANDUM FOR The Distribution List

From: Burton Reist [signed]

Acting Chief, Decennial Management Division

Subject: 2010 Census Content Reinterview Survey Evaluation Report

Attached is the 2010 Census Content Reinterview Survey Evaluation Report. The Quality Process for the 2010 Census Test Evaluations, Experiments, and Assessments was applied to the methodology development and review process. The report is sound and appropriate for completeness and accuracy.

If you have any questions about this document, please contact Gianna Dusch at (301) 763-5432.

Attachment

2010 Census Content Reinterview Survey Evaluation Report

U.S. Census Bureau standards and quality process procedures were applied throughout the creation of this report.

FINAL

Gianna Dusch Fred Meier

Decennial Statistical Studies Division





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EXECUTIVE SUMMARY

The 2010 Content Reinterview Survey is an evaluation of the reliability of the census data items collected in the 2010 Census. The Census Bureau has conducted a Content Reinterview Survey for every census since 1950. The purpose of a Content Reinterview Survey is to evaluate the consistency of responses to the census questionnaire, covering self-response and enumerator-response. Assessing response error to questionnaire items aids both census planners and data users. Measuring response error for specific items helps census planners improve the quality of the items through additional testing.

This report addresses the following research questions:

- How consistent was the reporting of the census data items between the Content Reinterview Survey and the 2010 Census? What percent of responses to the 2010 Census changed in the reinterview for tenure, sex, age, relationship, Hispanic origin, and race?
- How did the inconsistency in the 2010 Census compare to the inconsistency in Census 2000?

For the 2010 Census Content Reinterview Survey, a systematic sample of households was drawn from the Universe Control and Management file prior to the 2010 Census data collection. The initial sample consisted of 11,000 households in the United States and 950 households in Puerto Rico. It was estimated that 10 percent of these households would be vacant or non-existent units. After accounting for noninterviews, the final number of cases sent to the content reinterview was 8,747.

Households selected for content reinterview were contacted over the phone using computer assisted telephone interviewing from June 1 through July 31, 2010. Each household with a valid address was mailed a letter prior to being called. During the call, respondents were re-asked the data items from the census questionnaire in order to assess the reliability of the 2010 Census data. The participation rates for the reinterview were 70.9 percent for stateside cases and 71.4 percent for cases in Puerto Rico.

Gross difference rates are a measure of the percentage of responses that differ between the original interview and reinterview. Overall gross difference rates for the data items ranged from 1.0 percent for sex to 6.0 percent for race for stateside cases. The highest gross difference rate for Puerto Rico was 22.2 percent for race.

As might be expected, there is a wide range in the gross differences from one data item to another. For stateside cases, the lowest is for the sex item at just 1.0 percent, meaning that only 1.0 percent of person records in the Content Reinterview Survey had a different response to the sex question compared to the 2010 Census. The highest gross difference rate for stateside cases is for the race item at 6.0 percent. The gross difference rates for tenure, relationship, age, and race are statistically significantly higher for the interviewer-enumerated census returns compared

to the self-enumerated census returns. This indicates that enumerator census data are more variable for these items, despite that the reinterview was also conducted by an interviewer (i.e., both were interviewer administered surveys). This is likely due to the fact that the majority of enumerator returns correspond to households that did not respond to the initial mail census and are thus harder to enumerate. However, we cannot differentiate what portion of the variability in the enumerator data resulted from interviewer effects.

For the tenure item, the gross difference rate was 1.9 percent for owners and for renters stateside and 8.9 percent for owners and for renters for Puerto Rico cases. The gross difference rate for stateside cases was significantly higher for interviewer-enumerated cases (3.2 percent) compared to self-enumerated cases (1.7 percent). The "Occupied without payment of rent" category had the highest Index of Inconsistency¹, which is the ratio of the simple response variance to total variance, in both the 2010 Census (60.2 percent) and Census 2000 (43.4).

The relationship category with the highest gross difference rate for overall stateside was the "Other nonrelative" category (1.9 percent). "Other relative" (3.8 percent) is the relationship category with the highest gross difference rate for CRS cases from Puerto Rico. Relationship was not collected as part of the Census 2000 Content Reinterview.

The sex item had a relatively low gross difference rate of 1.0 percent overall stateside and 0.7 percent for Puerto Rico. The Index of Inconsistency was low at 1.9 percent in the 2010 Census and 1.7 percent in Census 2000.

The gross difference rates for the age categories ranged from 0.2 percent to 0.5 percent overall for stateside respondents. The gross difference rate for the age range 0 through 4 was comparable to other categories, which may indicate that an instruction added to the 2010 Census questionnaire "Please report babies as age 0 when the child is less than 1 year old.", improved clarity. For Puerto Rico cases, the gross difference rates for age ranges are between 0.0 percent and 1.2 percent. The Index of Inconsistency was low for the age item in both the 2010 Census and Census 2000. In the 2010 Census, the Index of Inconsistency ranged from 1.9 percent for ages 5 and below to 2.7 percent for 16-35 years old. In Census 2000, the Index of Inconsistency ranged from 1.8 percent for ages 65 and older to 15.2 percent for ages 5 and below. The four broader age range categories were used in the content reinterview for Census 2000. Therefore, we used those age range categories for comparison.

The gross difference rates for Hispanic origin were relatively low for both self-enumerated and interviewer-enumerated stateside cases, which indicate relatively high reliability. For Hispanic and Not Hispanic, the stateside gross difference rate was 1.1 percent overall, 1.1 percent for self-

¹ We generally use GDRs in this study because the Content Reinterview Survey is not a perfect independent replication of the 2010 Census for several reasons (e.g., mode differences), so the simple response variance and related Index of Inconsistency are not optimal indicators of response error. However, Indices of Inconsistency were used in the Content Reinterview Survey analyses historically, so are used solely for comparisons to previous censuses in this report.

enumerated cases, and 1.4 percent for interviewer-enumerated cases. For Puerto Rico cases, the gross difference rates cannot be reported due to possibly unreliable results due to small cell sizes. The inconsistency level was low for the single-origin specified categories of Mexican, Puerto Rican, and Cuban of this item in both the 2010 Census and Census 2000. There was moderate inconsistency for the "Other Hispanic" answer category and high inconsistency for those reporting multiple Hispanic origins for both Census 2000 and the 2010 Census.²

For the race item, the gross difference rate was highest for those reporting White only, at 4.6 percent overall stateside. This was surprisingly higher than the stateside gross difference rate for two or more races, at 2.8 percent overall, which is presumably a less clearly defined category than the single-race White only category. In the 2010 Census, most of the race categories had medium or high Indices of Inconsistency. The categories with the lowest levels were Black or African American and Asian in both the 2010 Census (4.1 percent and 6.5 percent, respectively) and Census 2000 (4.8 percent and 7.2 percent, respectively).

For Puerto Rico cases, the gross difference rates are generally higher than stateside. The gross difference rate for the single-race White only category for Puerto Rico cases was 17.6 percent. Hispanic or Latino respondents tend to view Hispanic origin and race as the same construct, which can increase item nonresponse and confusion associated with the race item.

Overall, gross difference rates varied from one item to another, but are relatively low on the order of just a few percentage points or less. No gross difference rates stood out as problematic, so there are no specific recommendations for changes to the census questions. The higher gross difference rate for race appears to be driven by respondents of Hispanic or Latino origin.

The 2010 CRS showed the same or less inconsistency relative to the 2000 CRS for all items. Although they cannot be directly compared due to methodological differences, the trend is in the direction of higher quality.

² The Hispanic origin question did not state that the respondent should select one or more origins in either Census 2000 or the 2010 Census.

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1. Introduction

1.1 Purpose of Study

The 2010 Content Reinterview Survey (CRS) is an evaluation of the quality of data collected in the 2010 Census. Specifically, the goal of the CRS was to determine the reliability (i.e., consistency) of the census data items. The results provide data users with a measure of the reliability of the data collected, which is one measure of data quality. This, along with other measures of quality such as item nonresponse and response bias, allow users to make informed decisions about how errors in the data may affect the conclusions they draw from analyzing the data. Assessing response error to questionnaire items aids both census planners and data users. Measuring response error for specific items helps census planners improve the quality of the items through additional testing.

1.2 Background

The methods used to collect and process census data are complex and often subject to error. One particular type of error, response error, occurs when a respondent answers a question incorrectly. This can be due to flaws in the survey design, a misunderstanding of the question, misreporting by respondents, or interviewer effects. Response error in the decennial census has traditionally been measured through a content reinterview survey.

The Census Bureau first conducted a CRS for the 1950 Census and continued for each of the following censuses (U.S. Bureau of the Census, 1993). In the past, the CRS has attempted to measure both simple response variance and response bias. Response variance measures reliability, which is the variation in respondents' answers to a question when the question is asked repeatedly. Response bias measures a systematic pattern in the difference between respondents' answers and the correct response, or the accuracy of the response.

In the 1990 CRS, 10,698 households were interviewed out of an initial sample of 12,891 long-form³ census housing units (U.S. Bureau of the Census, 1993). A selection of data items from the long form were collected using telephone interviewing from September through December 1990 with personal visits for nonresponse followup. Person-level data were collected for all household members.

In the Census 2000 CRS, 19,897 households were interviewed out of an initial sample of 30,000 stateside long-form¹ cases (Singer and Ennis, 2003). CRS data were collected from late June through mid-November 2000 by personal visit and telephone. Data included short form and long form items. Only response variance was analyzed in the Census 2000 CRS. A household roster of up to 12 people was collected and person-level data were collected for one randomly selected person in the household.

³ The 1990 Census and Census 2000 collected self-response data using a short form, which collected largely demographic data, and a long form, which collected additional household and person level data on a sample basis.

The sample size for the 2010 Census CRS was 11,000 housing units in the United States and 950 housing units in Puerto Rico (Meier, 2010).⁴ Telephone interviews were conducted in June and July of 2010 and there was no personal visit followup. Person-level data were collected for up to two household members.

In 2010, the CRS was again used to measure response variance for census data items (i.e., tenure, sex, age, relationship, race, and Hispanic origin). Response bias for the race and Hispanic origin items were analyzed using a separate reinterview, the 2010 Census Alternative Questionnaire Experiment (AQE) reinterview, which focused on asking detailed, probing race and Hispanic origin questions (Compton, et al., 2010)⁵.

2. Methodology

For the 2010 Census CRS, a sample of housing units was selected from the Universe Control and Management (UC&M) file and the same data items from the census questionnaire were asked. This was done in order to assess the reliability of the 2010 Census data.

This test-retest approach is the methodology for measuring simple response variance. This approach attempts to replicate the same essential survey conditions as the original data collection, to the extent possible. To meet the necessary assumptions, the design focused on speaking to the same respondents in the reinterview who completed the original 2010 Census questionnaires⁶; using the same question wording and order as the original data collection; and using similar processing and coding procedures as the production 2010 Census.

The mode of the reinterview was different from that of the original 2010 Census data collection for many of the cases. Most of the original census data were collected via self-response paper questionnaire returns and personal visit enumerator-administered paper questionnaires from the Nonresponse Followup (NRFU) operation. Some of the original responses were collected by an agent via telephone by the Telephone Questionnaire Assistance (TQA) operation. The reinterview was conducted over the telephone in order to maintain sufficient response rates, compared to a self-response reinterview administration. Additionally, due to budget limitations, personal visit follow-ups for reinterview were not feasible. Also note that the questions used for the telephone reinterview (Dusch, 2011) were based on the questions used for the 2010 Census TQA data collection phase because both were administered by telephone.

⁴ This is the first time that there are no long-form items in the census. Since long-forms were mailed to one in six housing units on average in Census 2000, the 2000 CRS required a larger sample size for estimation of long-form item error rates.

⁵ The results of the AQE and related reinterview yield bias estimates for the Hispanic origin and race questions for the control group, as well as experimental treatments. Since the control group has the same questions as the 2010 Census mail out questionnaire, results provide bias estimates for the 2010 race and Hispanic origin mailout/mailback questionnaire items.

⁶In 2010, we excluded cases where we were unable to reinterview the same respondent who completed the Census form or interview.

Response variance is the key survey measure for the CRS. Contributors to response variance include, but are not limited to, the following: questionnaire design, interview administration mode, question wording, inadequate instruction, interviewer effects, and deliberate falsification by the respondent or interviewer. Processing errors within scanning, keying, and coding will also be reflected in the response variance. We are unable to parse out individual contributors to response variance.

2.1 Questions to Be Answered

This report addresses the following research questions.

- How consistent was the reporting of the census data items between the CRS and the 2010 Census? What percent of responses to the 2010 Census changed in the reinterview for tenure, sex, age, relationship, Hispanic origin, and race?
- How did the inconsistency in the 2010 Census compare to the inconsistency in Census 2000?

2.2. Sample Design

The sample was selected from the UC&M file and excluded cases selected for the AQE and Census Coverage Measurement⁷. The sample was a systematic sample drawn prior to the 2010 Census data collection, thus the original census mode of enumeration for the CRS sample cases is proportional to the 2010 Census distribution.

2.3. Operational Details

Prior to the start of the 2010 Census, a systematic sample of 11,000 housing units in the United States and 950 housing unites in Puerto Rico was selected from the UC&M for the CRS. It was estimated that 10 percent of these housing units would be vacant or non-existent units (Meier, 2010). After accounting for noninterviews, it was estimated that the final number of completed content reinterviews would be about 6,930 households in the United States and 600 in Puerto Rico (Meier, 2010).

Of the cases selected in the CRS sample, those that responded to the census were sent for CRS interviewing. If a phone number was collected during enumeration, that number was used to contact respondents. Cases without a phone number collected during enumeration were sent to phone number lookup. Cases with valid phone numbers, from either the enumeration or the lookup, were sent a letter informing them that they would be contacted for reinterview. A total of 8,747 cases were sent for reinterview: 8,131 in the United States and 616 in Puerto Rico.

A Computer Assisted Telephone Interviewing (CATI) instrument was developed that asked the census items in a similar way to how they were asked in other decennial CATI operations

⁷ Census Coverage Measurement is a survey-based method to measure coverage error in the census.

(Dusch, 2011). Interviews were conducted during June and July, 2010. Interviewers were located at the three Census Bureau call centers, located in Hagerstown, MD; Jeffersonville, IN; and Tucson, AZ. Interviews were conducted in English and Spanish.

During the CATI interview, the interviewer attempted to speak with the person who completed the original census questionnaire or census interview in order to reduce variability due to respondent differences. The interview included the collection of the household roster and questions about the demographic characteristics of the respondent and, if applicable, one other randomly selected person in the household. The random selection occurred within the CATI instrument following the creation of the household roster for households with more than two people (Dusch, 2011).

In order to ensure that the CRS data were from the same household as the census data, the CRS roster was compared to the census roster. Persons who were in the CRS but were not on the sampled household's census roster were removed from the analysis.

Operationally, the CRS was conducted in conjunction with an AQE reinterview, which was a CATI interview conducted during the same time period. The AQE reinterview consisted of asking respondents detailed race and Hispanic origin questions to evaluate bias in those census data items, but used the same address verification and rostering approach as the CRS (Compton, et al., forthcoming). While the questions in the middle of the two reinterviews were different, the rostering, front and back of the interview were identical, so interviewers were trained to work on both surveys.

2.3.1 Coding

Raw data received from the CRS were not coded through 2010 Census processing. As a result, the Hispanic origin and race items from the reinterview were autocoded at Census Bureau Headquarters, with the residual write-ins requiring expert coding at the National Processing Center (NPC). Verification coding was required at a rate of 14 percent, with non-matching cases requiring adjudication (DMD, 2009). The quality control methodology for the expert coding was intended to ensure that, over the coding operation, no more than one percent error remained in the final residual codes forwarded back to processing for integration into the CRS response data. This was an acceptance sampling technique based on the Average Outgoing Quality Limit (AOQL) statistic. The AOQL methodology requires that any batch in which the initial quality control sample produces more than a specified number of errors must have all remaining non-

⁸ In order to provide a comprehensive estimate of simple response variance, one would also include results for cases where respondents were different between the original interview and the reinterview, as well as cases where the respondent was the same. In repeated trials of the survey within the super-population, there would be an effort to measure total response variability. However, for our application, which focuses on question reliability for one survey trial, we held the respondent constant in order to isolate the variability due to question quality. We were not attempting to measure variability due to unclear items across different trials of the survey (i.e., different respondents).

⁹ All write-ins requiring expert coding were up to 30 characters in length and required a three-digit code to be applied for each Hispanic origin and/or race indicated by the respondent. More than one code could be applied to a single write-in.

sample units of that batch verified (Wolfgang, 2009).

The length and type of expert coder training was similar to that provided to expert coders for the 2010 Census production coding. Since estimates of measurement error were based on the comparison of Hispanic origin and race responses for the 2010 Census and the reinterview, the expert coding training and procedures for the reinterviews were designed to be as similar as possible to the 2010 Census production.

2.3.2. Data Processing and Matching

Data received from the CRS did not go through 2010 Census processing. As a result, the data items from the reinterview were processed by Census Bureau Headquarters staff. The processing included applying a blank flag for records with insufficient information and minor data edits. Since survey measures are based on pre-processed survey responses, the data that were analyzed did not go through full 2010 Census production edit and imputation systems. The integrity of the error structure is more closely maintained by examining data prior to full edit and imputation. Thus, the reinterview data were compared to the 2010 Census data from the Decennial Response Files (DRF), rather than the Census Edited File data.

After the reinterview data were prepared for analysis, the persons from the completed reinterview cases were matched to the 2010 Census persons for corresponding households. Overall, 83.0 percent of the CRS respondents and 78.1 percent of the randomly selected persons were automatched to a corresponding census mail return (Compton and Bentley, 2011).

2.4. Evaluation Measures

This section contains the estimation strategy for response error.

2.4.1. Response Error Estimation

Data from the CRS CATI interviews¹⁰ were compared to data from the 2010 Census¹¹ to assess the reliability of the 2010 Census data using simple response variance. Response variance measures reliability, which is the variation in respondents' answers to a question when the question is asked repeatedly.

A comparison of the CRS phone reinterview responses with the 2010 Census responses for the same households yields estimates of the gross difference rates for each survey item. Simple response variance (SRV) measures the average variability, within units, of responses to the same question over repeated trials. It is a measure of the statistical dispersion. The index of inconsistency (index) and the gross difference rate (GDR) are the principal estimators of simple

¹⁰ CRS CATI interview data were provided by the Technologies Management Office once data collection was completed.

¹¹ Complete unedited Census data for CRS-designated cases from the Decennial Response File (DRF) was delivered by the Decennial Systems and Processing Office (DSPO). This file contained all extracted and/or keyed data from the census forms. It was used to match to the CRS data for analysis purposes.

response variance used in this analysis. The gross difference rates can be used to provide good estimates of SRV of 2010 Census items, provided key assumptions are met (U.S. Bureau of the Census, 1993).

For a particular question with C response categories (C= 2 or more), the gross difference for each question category is calculated using the percentages of respondents who were classified as in category C (e.g., Hispanic or non-Hispanic) compared with those not in category C in either the "interview" or "reinterview." An illustration of the two-by-two table is given in Table 1 below. Crosstabulation tables for each data item are provided in Appendix A.

Table 1. Two-by-Two Table of Census and Reinterview Responses

Reinterview	v Census Response			
Response	Yes	No	Total	
Yes	n_{II}	n ₁₂	n_{I}	
No	n_{21}	n_{22}	n_2 .	
Total	n _{•l}	n.2	n	

• The sample cell percentages are denoted by:

$$x_a = n_{11}/n$$
 $x_b = n_{12}/n$ $x_c = n_{21}/n$ $x_d = n_{22}/n$

- The proportion of units reporting the category on the census is $p_1 = (n_{11+} n_{21})/n$.
- The proportion of units reporting the category on the CRS is $p_2 = (n_{11+} n_{12})/n$.
- The proportion of units not reporting the category on the census is $q_1 = 1 p_1 = (n_{12+} n_{22})/n$.
- The proportion of units not reporting the category on the CRS is $q_2=1-p_2=(n_{21+}n_{22})/n$.

There are two types of errors: cases where a respondent reports a category in the census but reports a different category in the reinterview (estimated by n_{21}) and cases where a respondent does not report a category on the census but does report the category for the reinterview (estimated by n_{12}). The gross difference rate (GDR) is the sum of these error percentages, that is, GDR = $(x_c + x_b)$ (shown in gray shading in Table 1).

In general, the expected value of the GDR reflects the average SRV of the interview and reinterview measurement processes. The measurement process includes all aspects of the data collection methods, such as the mode of response, contact strategy, questionnaire design, and question wording and formatting. The calculations for the CRS are restricted to cases where we know that the same respondent answered the questions in both the original interview (2010 Census) and the CRS reinterview.

¹² As noted, this illustration and subsequent discussion applies to a simple random sample of units. The CRS, was a systematic sample, which can be thought of as a simple random sample.

All of the questions included on the 2010 Census paper questionnaire, as analyzed in this report, included more than two response options. The questions on tenure, sex, relationship, and Hispanic origin include the category "both [multiple] categories marked" in the census data and we considered this a distinct response option. There was no option to mark multiple categories in the reinterview, so cases with multiple categories marked for these data items were excluded from analysis for that item due to not having a corresponding reinterview response option. The specific response categories included in the GDR calculations for each question are shown below in Table 2.

Table 2. Categories for Each Item Included in Gross Difference Rates

Item	Categories				
Tenure	(a) Owned with Mortgage or Loan or Owned Free and Clear, (b) Rented or				
	Occupied without Payment				
Relationship to	(a) Husband or wife, (b) Biological son or daughter, (c) Adopted son or				
the householder	daughter, (d) Stepson or stepdaughter, (e) Brother or sister, (f) Father or				
	mother, (g) Grandchild, (h) Parent-in-law, (i) Son-in-law or daughter-in-law,				
	(j) Other relative, (k) Roomer or boarder, (l) Housemate or roommate, (m)				
	Unmarried partner, (n) Other nonrelative				
Sex	(a) Male, (b) Female				
Age	(a) 0-4, (b) 5-9, (c) 10-14, (d) 15-19, (e) 20-24, (f) 25-29, (g) 30-34, (h) 35-39,				
	(i) 40-44, (j) 45-49, (k) 50-54, (l) 55-59, (m) 60-64, (n) 65 and over				
Hispanic Origin	(a) Not Hispanic, (b) Hispanic or Latino, (c) Both not Hispanic and Hispanic				
	or Latino; Hispanic origin groups of (i) Mexican, (ii) Puerto Rican, (iii)				
	Cuban, (iv) Other Hispanic, (v) Multiple Hispanic				
Race	(a) White, (b) Black or African American, (c) American Indian or Alaska				
	Native (AIAN), (d) Asian, (e) Native Hawaiian or Other Pacific Islander				
	(NHOPI), (f) Some other race, (g) Two or More races				

Rather than showing all possible two-by-two gross difference rates for each question category for each item, the overall gross difference rate was calculated. Analogous to the GDR for the two-by-two table, the overall gross difference rate is simply the percent of cases where there is a disagreement in the interview/reinterview classification across all question categories. Unfortunately, we are not aware of any survey measurement literature that provides the expectation of this statistic as it relates to the measurement error model (Biemer, 2009). Biemer does provide an interpretation of the "L-fold Index of Inconsistency" (here L replaces C to indicate the number of question categories) in this context as the "weighted average reliability index" of a question with more than two categories. However, this applies to the individual two-by-two "Indices of Inconsistency" and not the individual two-by-two gross difference rates.

As such, the overall gross difference rates presented in this report most likely represent an "average" category SRV. That is, it represents the "average" SRV across the C question categories. The "averaging" parameter is, however, unknown. Question-level GDRs are used to evaluate whether the whole question has a problem, rather than, for example, just one category in a multi-category question.

The Index of Inconsistency is the ratio of the simple response variance to total variance. It shows the relative effect the simple response variance has on the resulting estimates. When the CRS is an independent replication of the census, then the total variance can be estimated by $\frac{1}{2}(p_1q_2+p_2q_1)$. Hence, the Index of Inconsistency is given by

$$\hat{I} = \frac{GDR/2}{\frac{1}{2}(p_1q_2 + p_2q_1)}$$

Historically, index values have been interpreted as shown in Table 3 (Singer & Ennis, 2003). A higher index value indicates a more problematic data item.

Table 3. Interpretation of Index of Inconsistency

Index value	Inconsistency Level	Interpretation
Less than 20	Low	Usually not a major problem
20 up to 50	Moderate	Somewhat problematic
Greater than 50	High	Very problematic

Since the CRS interview is not a perfect independent replication of the 2010 Census for several reasons (e.g., mode differences), the SRV and related Index of Inconsistency are not optimal indicators of response error (we generally reference GDRs in this study). Thus, Indices of Inconsistency are used solely for comparisons to previous censuses since the Index of Inconsistency was historically used for comparison.

2.4.2 Reinterview Nonresponse Bias Analysis

A portion of the 2010 Census paper questionnaire respondents did not respond to the phone reinterview, either by choice or due to unavailable phone numbers. Reinterview nonrespondents may have different characteristics compared to reinterview respondents. The degree to which these characteristics are related to how they respond to demographic survey questions could result in bias within the CRS response variance estimates due to reinterview nonresponse.

We attempt to assess the magnitude of the nonresponse bias of our estimates by comparing demographic characteristics of reinterview respondents and nonrespondents based on data from the 2010 Census, as shown in Tables 4 and 5.

The stateside demographic characteristics distributions of CRS respondents and non-respondents were comparable and within expected ranges, based on a similar comparison presented for the 2010 Census Quality Survey reinterview (Bentley et al., 2011). However, the CRS non-respondents had considerably higher item non-response compared to the CRS respondents for 2010 Census sex, Hispanic origin, race, tenure, and age items. This trend is not surprising since those who chose not to respond to the CRS may have been reluctant census responders and, thus, submitted the required form but with more items left blank. Distributions for Puerto Rico are more comparable than stateside.

¹³ Although the 2010 Census Quality Survey reinterview data were collected via self-enumeration modes (Internet

It was decided that there would not be adjustments to the sample weights or other non-response adjustments to the CRS reinterview estimates because the differences in characteristics (i.e., response proportions) between the CRS respondents and non-respondents are comparable, even in the presence of the unknown (i.e., blank) values. Although the overall differences in characteristic proportions for respondents compared to non-respondents may have affected estimates of the item GDRs, the differences are relatively small and not likely to critically affect the reinterview non-response bias. In addition, non-response adjustment would be difficult in light of the high proportion of unknown characteristic values for the CRS non-respondents and could introduce more error into the survey estimates.

and paper), the reinterview was conducted within the same timeframe following the 2010 Census and was based on similar methodology.

Table 4. Census Response Distributions for Matched CRS Respondents and CRS Non-

Respondents: Stateside

Variable	Response	CRS Respondents	CRS Non-Respondents	
Sex	Male	47.4	47.6	
	Female	50.8	49.0	
	Blank	1.8	3.4	
Hispanic Origin	Not Hispanic	82.0	74.8	
	Hispanic or Latino	14.4	18.8	
	Both Indicated	0.2	0.3	
	Blank	3.4	6.1	
Race	White	75.0	64.7	
	Black or African American	9.9	12.9	
	AIAN	0.5	1.1	
	Asian	4.4	4.1	
	NHOPI	0.1	0.3	
	Some other race	3.5	6.4	
	Two or More	4.0	4.4	
	Blank	2.6	5.9	
Tenure	Owned With Mortgage	49.3	35.8	
	Owned Without Mortgage	23.0	14.0	
	Rented	24.5	39.7	
	Occupied Without Payment	1.3	1.8	
	Two or More	+	0.3	
	Blank	1.7	8.3	
Age	0-4	5.5	7.1	
	5-9	6.1	7.3	
	10-14	6.7	6.9	
	15-19	6.2	6.2	
	20-24	5.5	6.6	
	25-29	5.5	6.7	
	30-34	5.8	6.4	
	35-39	6.1	6.3	
	40-44	6.5	6.2	
	45-49	7.3	6.4	
	50-54	7.5	5.8	
	55-59	7.3	4.5	
	60-64	6.5	3.6	
	65 and over	16.3	9.0	
	Blank	1.1	11.0	
Ave. HH Size		2.6	2.7	

Note: Data include all people listed on the 2010 Census return.

+ Cell statistic involves less than 10 housing units or people.

Source: 2010 Decennial Response File and 2010 Census Reinterview Survey data files, estimates are weighted.

Table 5. Census Response Distributions for Matched CRS Respondents and CRS Non-

Respondents: Puerto Rico

Variable	Response	CRS Respondents	CRS Non-Respondents	
Sex	Male	43.3	47.9	
	Female	53.6	48.5	
	Blank	3.1	3.6	
Hispanic Origin	Not Hispanic	+	2.2	
	Hispanic or Latino	98.4	96.1	
	Both Indicated	0.0	0.0	
	Blank	1.4	1.7	
Race	White	79.4	73.8	
	Black or African American	9.6	9.8	
	AIAN		1	
	Asian	0.0	# ()	
	NHOPI	0.0	0.0	
	Some other race	5.2	8.1	
	Two or More	3.4	3.9	
	Blank	2.4	3.5	
Tenure	Owned With Mortgage	37.4	25.7	
	Owned Without Mortgage	42.1	38.9	
	Rented	11.5	24.0	
	Occupied Without Payment	7.4	7.6	
	Two or More	+	+.	
	Blank	+	3.4	
Age	0-4	5.2	7.1	
	5-9	5.1	7.5	
	10-14	6.7	7.6	
	15-19	7.3	6.3	
	20-24	5.0	7.6	
	25-29	6.5	6.1	
	30-34	5.9	7.0	
	35-39	5.1	6.7	
	40-44	7.2	5.0	
	45-49	6.9	7.0	
	50-54	6.4	5.8	
	55-59	7.2	5.8	
	60-64	6.9	5.9	
	65 and over	16.8	11.9	
	Blank	1.8	2.8	
Ave. HH Size		2.6	2.7	

Note: Data include all people listed on the 2010 Census return.

+ Cell statistic involves less than 10 housing units or people.

Source: 2010 Decennial Response File and 2010 Census Reinterview Survey data files, estimates are weighted.

2.5. Variance Estimation

Simple random sample (SRS) variance estimation techniques were used for estimation of household-level or respondent-level item reliability. Since the primary unit of selection is the housing unit and the sample was selected systematically with no stratification, SRS variance estimation methodology is appropriate.

However, for person-level item estimation that includes all sampled persons in the household, replication variance estimation methodology, specifically jackknife, was used to account for the homogeneity of interview results within the households.

3. Limitations

- Reinterviews were conducted using CATI and were limited to those addresses with obtainable phone numbers. Phone numbers for cases where a phone number was not included in the original enumeration were being looked up based on the sampled address. The extent to which reliability results may differ for cases with and without phone numbers could affect the bias of our results. However, based on this specific study design, we cannot measure the presence or magnitude of this bias. Reinterviews for cases without phone numbers were not included in the study design due to cost and operational constraints.
- Reinterview data were not collected for everyone in a household when there were more than two people in the household. Data were collected for the respondent and one randomly selected person from the household roster. We do not expect the absence of results for all household members to substantially bias results since person-level error is thought to be homogenous. However, we cannot verify this assumption, based on the study design.
- The reinterview survey conditions do not mimic the original 2010 Census survey conditions, despite attempts to be consistent. For example, reinterviews for mail-back and personal visit cases were not conducted in the same mode as the initial data collection. In addition, processing and coding do not exactly mimic 2010 Census production processing. Thus, differences in indexes and GDRs may be elevated due to these different survey conditions, but we are not able to further study or explain this component.
- Comparison of 2010 Census and Census 2000 response error estimates are strongly limited by design differences including the mode of the reinterview, within household sampling, processing and coding differences, as well as time and survey population differences due to self-selection bias.

4. Results

The data items being addressed in this report include the following: tenure, relationship, sex, age, Hispanic origin, and race. ¹⁴ Each item is discussed separately in this section of the report by mode of data collection (self-administered or enumerator-administered).

Self-administered mode for this report includes Mailout/Mailback (MOMB) English, MOMB Bilingual, Update/Leave (UL), Be Counted, and Fulfillment. Enumerator-administered mode for this report includes Coverage Followup (CFU)¹⁵, Telephone Questionnaire Assistance (TQA), Nonresponse Followup (NRFU), and Update/Enumerate (UE).

In addition, differences in 2000 and 2010 survey implementation and survey questions are presented.

4.1. Reinterview Participation Rates

The final participation rates for the CRS are shown in Tables 6 and 7. The participation rate is the percent of nonblank ¹⁶ responses received divided by the number of housing units that received the survey materials. The rate excludes housing units from the calculation if no response was received and the survey mail was returned as undelivered as addressed (UAA). As such, the participation rate is a better gauge of survey "participation" than the response rate (the number of responses received divided by the total mailout size) since it attempts to control for housing unit vacancies¹⁷.

¹⁴ The within-household count item on the 2010 Census paper questionnaire will be excluded from this analysis. The rostering task for the phone reinterview follows a different approach since it is an automated-instrument. The within-household count is calculated rather than asked of respondents in order to reduce burden and take advantage of computer technology.

¹⁵ Although CFU primary returns are enumerator returns, it should be noted that the majority of the person-level data items on CFU returns are actually carried over from other returns (often self-response returns).

¹⁶ In order to qualify as "nonblank," at least two different data items must be completed.

¹⁷ An even better measure would be the "return rate" (the number of responses received divided by the number of occupied housing units in the sample), but since the CRS did not have a field followup operation to verify the true housing unit status (occupied, vacant, other) of each unit (as is done in the decennial census), the number of UAAs is used as a proxy.

Table 6. Final Participation Rates for CRS Overall and by Original Census Mode: Stateside

	Completed	Partial	Total
	Interviews	Interviews	
Overall	69.3	1.5	70.9
	(0.5)	(0.1)	(0.5)
Self-enumerated	71.5	1.5	73.0
	(0.6)	(0.1)	(0.6)
Interviewer-	57.1	1.7	58.8
enumerated	(0.8)	(0.2)	(0.8)

Source: 2010 Census Reinterview Survey data files, estimates are weighted with standard errors in parentheses. Includes cases that responded to the CRS but did not match the original census household.

Table 7. Final Participation Rates for CRS Overall: Puerto Rico

	Completed	Partial	Total
	Interviews	Interviews	
Overall*	69.5	1.9	71.4
	(1.5)	(0.4)	(1.5)

Source: 2010 Census Reinterview Survey data files, estimates are weighted with standard errors in parentheses. Includes cases that responded to the CRS but did not match the original census household.

A total of 5,365 households were interviewed in the United States and 415 households in Puerto Rico.

4.2. Overall Gross Difference Rates

The gross difference rates are a measure of the percent of people (i.e., matched cases) with a different response between the 2010 Census and the CRS. However, for each of these results the source of the difference could be random, systematic, or perhaps not a true error, but instead the result of an actual or perceived change over time. In addition, we cannot differentiate what portion of the variability in the enumerator data resulted from interviewer effects.

Table 8 shows the GDRs for each item for stateside CRS respondents overall and by original census mode. As might be expected, there is a wide range in the gross differences from one data item to another. The lowest is for the age item at just 0.9 percent, meaning that only 0.9 percent of person records in the CRS had a different response to the age question compared to the 2010 Census. The highest GDR is for the race item at 6.0 percent. The GDRs for tenure, age, and race are statistically significantly higher for the interviewer-enumerated compared to the self-enumerated census responses. This indicates that enumerator census data are more variable for these items, despite the fact that the reinterview was also conducted by an interviewer (i.e., both interviewer-administered surveys). This is likely due to the fact that the majority of enumerator returns correspond to housing units that did not respond to the initial mail census and are thus harder to enumerate. For the 2010 Census, enumerator returns had higher item nonresponse rates for the majority of household-level and person-level items when compared to returned paper

^{*}Cases in Puerto Rico were completed via one mode (i.e., interviewer-enumerated).

forms (Rothhaas et al., 2012).

Table 8. Gross Difference Rates for Each Item for CRS Respondents Overall and by

Original Census Mode: Stateside

**	Tenure	Relationship	Sex	Age	Hispanic or Latino	Race
Overall	1.9 (0.2)	5.8 (0.3)	1.0 (0.1)	0.9 (0.1)	1.1 (0.1)	6.0 (0.2)
Self-enumerated	1.7 (0.2)	5.1 (0.4)	1.1 (0.1)	0.8 (0.1)	1.1 (0.1)	5.5 (0.2)
Interviewer- enumerated	3.2 (0.7)	9.6 (1.1)	0.4 (0.2)	1.9 (0.3)	1.4 (0.3)	8.4 (0.6)

Source: 2010 Census Reinterview Survey data files, estimates are weighted for sex, age, Hispanic origin, and race, standard errors in parentheses.

Table 9 shows the gross difference rates for each item for CRS respondents from Puerto Rico. The highest GDR is for race (22.2 percent). Presumably, race GDRs are relatively high for Puerto Rico returns since past research has shown that Hispanic or Latino respondents tend to view Hispanic origin and race as the same construct (Humes, 2009). This likely increases confusion and, thus, response variance associated with the race item.

Table 9. Gross Difference Rates for Each Item for CRS Respondents Overall and by

Original Census Mode: Puerto Rico

	Tenure	Relationship	Sex	Age	Hispanic or Latino	Race
Puerto	8.9	11.0	0.7	1.5	0.6	22.2
Rico	(1.5)	(1.7)	(0.3)	(0.4)	(0.3)	(1.2)

Source: 2010 Census Reinterview Survey data files, estimates are weighted for sex, age, Hispanic origin, and race, standard errors in parenthesis.

Table 10 shows the Index of Inconsistency for each item for the past four censuses, where data were available. Data are not directly comparable due to differing methodologies used for the CRS for each year.

Table 10. Index of Inconsistency of Each Item by Decade: Stateside

	Tenure	Sex	Age	Hispanic	Race
9				or Latino	
2010 ^a	9.6	1.9	2.1	7.7	16.4
	(8.7-10.5)	(1.7-2.3)	(1.8-2.3)	(6.9-8.5)	(15.5-17.4)
2000 ^b	19.4	1.7	7.8	17.2	23.1
	(18.8-20.0)	(1.5-1.9)	(7.4-8.2)	(16.1-18.4)	(22.2–24.2)
1990°	13.3	+	+	12.2	16.3
	(12.6-14.0)			(11.2-13.2)	(15.5-17.1)
1980 ^d	8	+ -	+	13	+
	(7.2-9.1)			(11.3-14.2)	2

a Source: 2010 Census Reinterview Survey data files, estimates are weighted for sex, age, Hispanic origin, and race, confidence interval in parenthesis.

Conclusions cannot be drawn based on the Indices of Inconsistency presented for the last four censuses; these data are provided only as an historical reference. However, it is interesting to look at the trend over the past 4 decades. Compared to Census 2000, the Indices of Inconsistency for the 2010 Census CRS were lower for every item except for sex, which remained the same. Relationship was not included in the CRS for the previous decades so it is not shown in the table.

4.3. Tenure

Tables 11 and 12 show the tenure item responses provided in the 2010 Census for each respondent against the responses that were given in the phone reinterview to look at the consistency of answers for the tenure item. For overall stateside, the GDR was 1.9 percent for both owners and renters. GDRs for tenure response categories were significantly higher for cases that were interviewer-enumerated for the Census. GDRs were significantly higher for Puerto Rico (8.9 percent for both owners and renters) cases when compared to stateside cases. For data items with two categories, the GDR is the same for both categories.

Table 11. Response Error Measures for Tenure by Category: Stateside

	Ov	erall	Self-En	umerated	Interviewer-Enumerated		
Census Response	Percent in CRS Category	Gross Difference Rate	Percent in CRS Category	Gross Difference Rate	Percent in CRS Category	Gross Difference Rate	
Owner	73.4	1.9 (0.2)	74.8	1.7 (0.2)	63.4	3.2 (0.7)	
Renter	26.6	1.9 (0.2)	25.2	1.7 (0.2)	36.6	3.2 (0.7)	

Source: 2010 Census Reinterview Survey data files, standard errors are in parentheses.

b Singer and Ennis, 2003

c U.S. Bureau of the Census, 1993

d U.S. Bureau of the Census, 1986

⁺ Data not available.

Table 12. Response Error Measures for Tenure by Category: Puerto Rico

Census Response	Percent in CRS Category	Gross Difference Rate	
Owner	80.3	8.9	
		(1.5)	
Renter	19.7	8.9	
		(1.5)	

Source: 2010 Census Reinterview Survey data files, standard errors are in parentheses.

There were a few differences in the wording for the tenure question in the 2010 Census compared with Census 2000. One was removal of the term "cash" and the other was inclusion of "including home equity loans" in the "Owned by you or someone in this household with a mortgage or loan" response category (Stokes, et al., 2012). The lower item nonresponse for the 2010 Census compared with Census 2000 in this experiment supports the low Indices of Inconsistency, indicating a good trend toward improved question wording. Table 13 shows the aggregate levels of inconsistency for the tenure question for the 2010 Census and Census 2000. The response category "Occupied without payment of rent" had the highest Index of Inconsistency both in the 2010 Census and in Census 2000. The 2010 Census and Census 2000 mailback forms are shown in Appendices B and C, respectively.

Table 13. Response Variance Measures for Tenure by Decade: Stateside

		2010 ^a		2000 ^b			
		Index of In	consistency		Index of Inconsistency		
Census Categories	Inconsistency Level	Estimate	90-Percent Confidence Interval	Inconsistency Level	Estimate	90-Percent Confidence Interval	
Owned with mortgage or loan	Low	8.9	8.0 to 10.0	Medium	20.7	20.0 to 21.5	
Owned free and clear	Low	12.2	10.9 to 13.6	Medium	27.7	26.8 to 28.8	
Rented	Low	4.5	3.8 to 5.4	Low	6.4	5.9 to 6.9	
Occupied without payment of rent	High	60.2	50.0 to 72.4	Medium	43.4	39.7 to 47.5	

a 2010 Census Reinterview Survey data files

b Singer and Ennis, 2003

4.4. Relationship

Table 14 shows the relationship item responses given to the 2010 Census for each respondent against the responses that were given in the phone reinterview to look at the consistency of answers¹⁸. The relationship category with the highest GDR was "Other nonrelative" overall stateside (1.9 percent), as well as for cases with self-enumerated (1.7 percent) and interviewer-enumerated (3.4 percent) census responses. The "Biological son or daughter" category had wording changes in the 2010 Census, compared to Census 2000, where "Natural-born" was changed to "Biological." In addition, the "Foster child" category, the write-in box for "Other relative," and the "If NOT RELATED" spanner above the nonrelative categories were removed in the 2010 Census. The 2010 Census form listed the response options in two columns of the same length instead of organizing the columns by related or not related as was done on the Census 2000 form (Stokes et al., 2012).

The relationship question was presented differently for the telephone administered versions than it was for paper versions. There was branching for the telephone administered versions of the question. Respondents were presented with a "Son or daughter" category instead of the different types of sons or daughters. If the "Son or daughter" category was selected, a follow-up question asked for the biological, adopted, or stepson or stepdaughter distinction. If no answer was provided for the follow-up question, the answer was imputed to "Biological son or daughter."

¹⁸ If more than one relationship category was marked in the 2010 Census data, the case was removed from analysis for this variable due to there not being a corresponding option for both responses in the reinterview.

Table 14. Response Error Measures for Relationship by Category: Stateside

TWO IN THE PO	Ove		Self-Enui		Interviewer- Enumerated	
Census Response	Percent in CRS Category	Gross Difference Rate	Percent in CRS Category	Gross Difference Rate	Percent in CRS Category	Gross Difference Rate
Husband or wife	30.2	0.9 (0.1)	31.2	0.8 (0.1)	24.3	1.5 (0.5)
Biological son or daughter	45.7	1.4 (0.2)	45.8	1.4 (0.2)	45.1	1.5 (0.5)
Adopted son or daughter	1.2	0.3 (0.1)	0.9	0.1 (0.1)	2.4	1.8 (0.5)
Stepson or stepdaughter	2.8	1.0 (0.2)	2.9	0.9 (0.2)	2.6	2.1 (0.6)
Brother or sister	2.2	0.5 (0.2)	2.3	0.5 (0.1)	1.6	0.5 (0.3)
Father or mother	1.3	0.3 (0.2)	1.2	0.4 (0.1)	1.8	0.2 (0.2)
Grandchild	3.6	0.2 (0.1)	3.7	0.2 (0.1)	3.3	0.0 (0.0)
Parent-in-law	0.6	0.1 (<0.1)	0.4	0.1 (0.1)	+	+
Son-in-law or daughter-in-law	0.3	0.0 (0.0)	+	+	+	*
Other relative	2.7	1.3 (0.2)	2.4	1.1 (0.2)	4.1	2.3 (0.6)
Roomer or boarder	0.7	1.0 (0.2)	0.7	0.8 (0.2)	+	+
Housemate or roommate	2.7	1.3 (0.2)	2.4	1.3 (0.2)	4.7	1.5 (0.5)
Unmarried partner	4.0	1.4 (0.2)	4.0	1.2 (0.2)	3.7	2.4 (0.6)
Other nonrelative	2.1	1.9 (0.2)	1.8	1.7 (0.2)	3.6	3.4 (0.7)

Source: 2010 Census Reinterview Survey data files, estimates are weighted with standard errors in parentheses. + Cell statistic involves less than 10 housing units or people.

As Table 15 shows, "Other relative" (3.8 percent) and "Husband or wife" (3.4 percent) are the relationship categories with the highest GDRs for CRS cases from Puerto Rico.

Table 15. Response Error Measures for Relationship by Category: Puerto Rico

Census Response	Percent in CRS Category	Gross Difference Rate
Husband or wife	24.7	3.4 (1.1)
Biological son or daughter	54.6	1.7 (0.8)
Adopted son or daughter	+	+
Stepson or stepdaughter	+	+
Brother or sister	4.1	0.0 (0.0)
Father or mother	+	+
Grandchild	+	+
Parent-in-law	+	+
Son-in-law or daughter-in-law	+	+
Other relative	4.5	3.8 (1.1)
Roomer or boarder	1 to	+ 615.00
Housemate or roommate	+	+
Unmarried partner	+ 6.5 + 3.12_5	+
Other nonrelative	+	+

Source: 2010 Census Reinterview Survey data files, estimates are weighted with standard errors in parentheses.

Relationship was not collected during the Census 2000 Content Reinterview, so no comparisons between 2000 and 2010 are possible.

4.5. Sex

Table 16 and 17 show the sex item responses given to the 2010 Census for each respondent against the responses that were given in the phone reinterview to look at the consistency of answers for the sex item¹⁹. The GDR for the sex item was 1.0 percent for stateside overall and 0.7 percent for Puerto Rico. Because sex is a two category variable, the GDR for both categories is the same.

⁺ Cell statistic involves less than 10 housing units or people.

¹⁹ If both Male and Female were marked in the 2010 Census data, the case was removed from analysis for this variable due to there not being a corresponding option for both responses in the reinterview.

Table 16. Response Error Measures for Sex by Category: Stateside

- Prince	Over	Overall		merated	Interviewer-Enumerated	
Census Response	Percent in CRS Category	Gross Difference Rate	Percent in CRS Category	Gross Difference Rate	Percent in CRS Category	Gross Difference Rate
Male	47.7	1.0 (0.1)	47.7	1.1 (0.1)	47.8	0.4 (0.2)
Female	52.3	1.0 (0.1)	52.3	1.1 (0.1)	52.2	0.4 (0.2)

Source: 2010 Census Reinterview Survey data files, estimates are weighted with standard errors in parentheses.

Table 17. Response Error Measures for Sex by Category: Puerto Rico

Census Response	Percent in CRS Category	Gross Difference Rate	
Male	44.0	0.7	
		(0.3)	
Female	56.0	0.7	
		(0.3)	

Source: 2010 Census Reinterview Survey data files, estimates are weighted with standard errors in parentheses.

Table 18 shows the aggregate levels of inconsistency for the sex question for the 2010 Census and Census 2000. The sex item had identical wording and format for both 2010 and 2000. The inconsistency level was low for this item in both 2010 and 2000.

Table 18. Response Variance Measures for Sex by Decade: Stateside

	2	010 Census ^a		Census 2000b			
		consistency		Index of Inconsistency			
Census categories	Inconsistency level	Estimate	90-percent confidence interval	Inconsistency level	Estimate	90-percent confidence interval	
Male	Low	1.9	1.7 to 2.3	Low	1.7	1.5 to 1.9	
Female	Low	1.9	1.7 to 2.3	Low	1.7	1.5 to 1.9	

a 2010 Census Reinterview Survey data files

4.6. Age

Table 19 shows the age item responses given to the 2010 Census for each respondent against the responses that were given in the phone reinterview to look at the consistency of answers for the age item. The GDRs for the age categories ranged from 0.2 percent to 0.5 percent overall for the age categories for stateside respondents. The GDR for ages 0 through 4 was comparable to other categories, which may indicate that an instruction to "Please report babies as age 0 when the child is less than 1 year old." that was added to the 2010 Census form improved clarity. The results from the AQE 2000 Replication Study also support this conclusion (Stokes et al., 2012).

b Singer and Ennis, 2003

Table 19. Response Error Measures for Age by Category: Stateside

	Ove	rall	Self-Enun	nerated	Interviewer-Enumerated	
Census Response	Percent in CRS Category	Gross Difference Rate	Percent in CRS Category	Gross Difference Rate	Percent in CRS Category	Gross Difference Rate
0-4	7.1	0.2 (<0.1)	6.7	0.2 (<0.1)	9.4	0.4 (0.1)
5-9	6.7	0.2 (<0.1)	6.6	0.2 (<0.1)	7.7	0.2 (0.1)
10-14	6.6	0.4 (0.1)	6.6	0.4 (0.1)	6.9	0.8 (0.2)
15-19	6.0	0.5 (0.1)	5.6	0.4 (0.1)	8.3	1.2 (0.3)
20-24	5.2	0.4 (0.1)	5.0	0.3 (<0.1)	6.7	1.0 (0.2)
25-29	5.7	0.4 (0.1)	5.3	0.3 (0.1)	7.8	0.8 (0.2)
30-34	5.6	0.4 (0.1)	5.6	0.3 (0.1)	5.5	0.8 (0.2)
35-39	5.6	0.3 (0.1)	5.4	0.3 (0.1)	6.6	0.5 (0.2)
40-44	6.5	0.3 (<0.1)	6.4	0.3 (<0.1)	6.7	0.5 (0.2)
45-49	6.4	0.4 (0.1)	6.3	0.3 (0.1)	7.3	0.6 (0.2)
50-54	7.3	0.5 (0.1)	7.2	0.5 (0.1)	7.7	0.8 (0.2)
55-59	7.0	0.5 (0.1)	7.3	0.4 (0.1)	4.8	1.0 (0.2)
60-64	6.4	0.4 (0.1)	6.9	0.4 (0.1)	3.7	0.2 (0.1)
65 and over	16.5	0.5 (0.1)	17.7	0.5 (0.1)	9.5	0.5 (0.2)

Source: 2010 Census Reinterview Survey data files, estimates are weighted with standard errors in parentheses.

For Puerto Rico cases, the GDRs for age ranges are between 0.0 percent and 1.2 percent, as shown in Table 20.

Table 20. Response Error Measures for Age by Category: Puerto Rico

Census Response	Percent in CRS Category	Gross Difference Rate
	6.6	0.1
0-4		(0.1)
251000	4.0	0.0
5-9		(0.0)
	6.7	0.7
10-14		(0.3)
	6.8	0.9
15-19		(0.3)
	5.3	0.2
20-24		(0.2)
	6.5	0.2
25-29		(0.2)
	4.6	0.1
30-34		(0.1)
	5.6	0.9
35-39		(0.3)
	7.1	0.7
40-44		(0.3)
	7.2	0.6
45-49		(0.3)
	5.9	0.4
50-54		(0.2)
	6.7	0.4
55-59		(0.2)
	6.2	0.8
60-64		(0.3)
	18.0	1.2
65 and over		(0.4)

Source: 2010 Census Reinterview Survey data files, estimates are weighted with standard errors in parentheses.

Table 21 shows the aggregate levels of inconsistency for the age question for the 2010 Census and Census 2000. An additional instruction to clarify how respondents should report babies' ages was included on the 2010 Census questionnaire when compared to the Census 2000 questionnaire. In addition, on the Census 2000 questionnaire, the date of birth question was placed below the age question for Person 1. Age and date of birth were next to each other on the 2010 Census questionnaire for Person 1 and for Person 2-6 in both 2010 and 2000 (Stokes et al., 2012). The inconsistency level was low for this item in both 2010 and 2000.

Table 21. Response Variance Measures for Age by Decade: Stateside

	2	010 Census ^a	-	Census 2000b			
		Index of Inconsistency Estimate 90-Percent Confidence Interval			Index of Inconsistency		
Census Categories ²⁰	Inconsistency Level			Inconsistency Level	Estimate	90-Percent Confidence Interval	
5 and below	Low	1.9	1.5 to 2.5	Low	15.2	14.0 to 16.4	
6-15	Low	2.5	2.0 to 3.0	Low	10.7	9.9 to 11.5	
16-35	Low	2.7	2.3 to 3.1	Low	9.4	8.8 to 10.0	
36-64	Low	2.6	2.3 to 3.0	Low	5.4	5.0 to 5.9	
65+	Low	2.0	1.6 to 2.4	Low	1.8	1.5 to 2.2	

a 2010 Census Reinterview Survey data files, estimates are weighted.

4.7. Hispanic Origin

Table 22 shows the Hispanic origin item responses given to the 2010 Census for each respondent against the responses that were given in the phone reinterview to look at the consistency of answers for the Hispanic origin item. In general, GDRs for Hispanic origin were relatively low for both self-enumerated and interviewer-enumerated cases, which indicate relatively high reliability.

The Hispanic origin question was presented differently for the telephone administered versions than it was for paper versions. The telephone versions asked a yes/no question about the person's Hispanic, Latino or Spanish origin. If yes was selected, a follow-up question was asked to collect a detailed Hispanic origin.

b Singer and Ennis, 2003

²⁰ The age categories for Table 21 are those that were used in the Census 2000 Content Reinterview analysis.

Table 22. Response Error Measures for Hispanic Origin by Category: Stateside

	Overall		Self-Enumerated		Interviewer-Enumerated	
Census Response	Percent in CRS Category	Gross Difference Rate	Percent in CRS Category	Gross Difference Rate	Percent in CRS Category	Gross Difference Rate
Not Hispanic	85.8	1.1 (0.1)	86.6	1.1 (0.1)	81.1	1.4 (0.3)
Hispanic or Latino	14.2	1.1 (0.1)	13.4	1.1 (0.1)	18.9	1.4 (0.3)
Mexican	9.3	1.2 (0.1)	8.4	1.1 (0.1)	14.2	2.1 (0.3)
Puerto Rican	1.2	0.2 (<0.1)	1.3	0.2 (<0.1)	0.7	0.8 (0.2)
Cuban	0.5	<0.1 (<0.1)	0.5	<0.1 (<0.1)	+	+
Other Hispanic	3.2	1.2 (0.1)	3.2	1.0 (0.1)	3.6	2.3 (0.4)
Multiple Hispanic	<0.1	0.1 (<0.1)	<0.1	0.1 (<0.1)	0.1	0.2 (0.1)
Both Hispanic and non-Hispanic	+	+	+	+	+	+

Source: 2010 Census Reinterview Survey data files, estimates are weighted with standard errors in parentheses. + Cell statistic involves less than 10 housing units or people.

The GDRs for Hispanic origin in Puerto Rico cases ranged from 0.0 percent for those reporting both Hispanic and not Hispanic to 1.0 percent for those reporting Puerto Rican, as shown in Table 23.

Table 23. Response Error Measures for Hispanic Origin by Category: Puerto Rico

Census Response	Percent in CRS Category	Gross Difference Rate	
Not Hispanic	4 / Long + 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1	+ 4	
Hispanic or Latino	99.8	0.6 (0.3)	
Mexican	+	+	
Puerto Rican	96.0	1.0 (0.3)	
Cuban	2.0	0.5 (0.2)	
Other Hispanic	1.6	0.1 (0.1)	
Multiple Hispanic	0.1	0.1 (0.1)	
Both Hispanic and non-Hispanic	0.0	0.0 (0.0)	

Source: 2010 Census Reinterview Survey data files, estimates are weighted with standard errors in parentheses.

Table 24 shows the aggregate levels of inconsistency for the Hispanic origin question for the 2010 Census and Census 2000. There were numerous changes to the Hispanic origin question between 2010 and 2000. In the 2010 Census, the question asked if the person was "of Hispanic, Latino, or Spanish origin" and in 2000 the question asked if the person was "Spanish/Hispanic/Latino." In addition, the Census 2000 form included an instruction to "Mark (X) the "No" box if **not** Spanish/Hispanic/Latino," which was not included on the 2010 Census form. Also, Hispanic origin examples were provided to the "Yes, another Hispanic, Latino, or Spanish origin" category in the 2010 Census but were not provided in Census 2000. The 2010 Census also included an instruction that was not included in Census 2000: "NOTE: Please answer BOTH question 5 about Hispanic origin and question 6 about race. For this census, Hispanic origins are not races." (Stokes et al., 2012). The inconsistency level was low for the single-origin specified categories (Mexican, Puerto Rican and Cuban) of this item in both 2010 and 2000. There was moderate inconsistency for the Other Hispanic answer category and high inconsistency for those reporting multiple Hispanic origins. Overall, it appears that responses were more consistent in 2010 than they were in 2000, indicating an improvement in the wording of the Hispanic origin question.

⁺ Cell statistic involves less than 10 housing units or people.

Table 24. Response Variance Measures for Hispanic Origin by Decade: Stateside

Census Categories	2010 Census ^a			Census 2000 ^b		
		Index of In	consistency		Index of Inconsistency	
	Inconsistency Level	Estimate	90-Percent Confidence Interval	Inconsistency Level	Estimate	90-Percent Confidence Interval
Not Hispanic	Low	4.6	4.0 to 5.3	Low	10.1	9.2 to 11.0
Mexican	Low	7.3	6.3 to 8.3	Low	13.4	12.2 to 14.8
Puerto Rican	Low	10.1	7.5 to 13.6	Low	14.2	11.5 to 17.6
Cuban	Low	2.4	1.0 to 6.0	Low	13.7	9.3 to 20.1
Other Hispanic	Low	19.4	17.0 to 22.2	Medium	33.8	30.7 to 37.3
Multiple non- Hispanic	N/A	N/A	N/A	High	100	42.5 to 100.0
Multiple Hispanic	High	100.0	59.8 to 100.0	High	80.5	62.4 to 100.0
Mixed non- Hispanic/Hispanic	N/A	N/A	N/A	High	98.6	88.0 to 100.0

a 2010 Census Reinterview Survey data files, estimates are weighted.

b Singer and Ennis, 2003

N/A: Not applicable

4.8. Race

Table 25 shows the race item responses given to the 2010 Census for each respondent against the responses that were given in the phone reinterview to look at the consistency of answers for the race item. The GDR was statistically significantly higher for those reporting White only compared to other response categories, at 4.6 percent overall stateside. The higher GDRs for White and some other race are driven by respondents who self-report as being of Hispanic or Latino origin. For respondents of Hispanic or Latino origin, the GDRs for White (23.3 percent) and some other race (23.4 percent) were much higher than they were for respondents who did not report being Hispanic or Latino (1.8 percent and 0.2 percent, respectively).

The race question was presented differently for the interviewer-administered questionnaire compared to the paper versions of the questionnaire. The telephone versions presented six response categories in the initial question: White; Black, African American or Negro; American Indian or Alaska Native; Asian; Native Hawaiian or other Pacific Islander; or Some other race. If American Indian was selected, a follow-up question was asked to determine an enrolled or principal tribe. If Asian or Native Hawaiian or Other Pacific Islander was selected, the respondent was asked follow-up questions about more detailed Asian or Native Hawaiian or Other Pacific Islander race categories, respectively. If some other race was selected, a follow-up question was asked to determine the other race.

Table 25. Response Error Measures for Race by Category: Stateside

	Overa	all	Self-Enun	nerated	Interviewer-Enumerated			
Census Response	Percent in CRS Category	Gross Difference Rate	Percent in CRS Category	Gross Difference Rate	CRS	Gross Difference Rate		
White	78.7	4.6 (0.2)	80.5	4.3 (0.2)	67.8	6.0 (0.6)		
Black or African American	9.6	0.7 (0.1)	9.0	0.6 (0.1)	13.5	1.2 (0.3)		
American Indian or Alaska Native	0.7	0.5 (0.1)	0.6	0.5 (0.1)	1.2	0.7 (0.2)		
Asian	4.4	0.6 (0.1)	3.9	0.5 (0.1)	7.0	0.7 (0.2)		
Native Hawaiian or Other Pacific Islander	+	+	+	+	+	+		
Other	3.7	3.1 (0.2)	3.1	2.7 (0.2)	7.1	5.5 (0.5)		
Two or more	2.6	2.8 (0.1)	2.7	2.7 (0.2)	2.4	3.6 (0.4)		

Source: 2010 Census Reinterview Survey data files, estimates are weighted with standard errors in parentheses.

Table 26 shows that for Puerto Rico cases, the GDRs are generally higher than stateside. Hispanic or Latino respondents tend to view Hispanic origin and race as the same construct, which can increase item nonresponse and confusion associated with the race item (Humes, 2009).

Table 26. Response Error Measures for Race by Category: Puerto Rico

Census Response	Percent in CRS Category	Gross Difference Rate
White	73.8	17.6 (1.4)
Black or African American	7.9	7.3 (0.9)
American Indian or Alaska Native	+	+
Asian	+.	+
Native Hawaiian or Other Pacific Islander	+	+
Other	14.6	14.7 (1.3)
Two or more	2.4	4.7 (0.7)

Source: 2010 Census Reinterview Survey data files, estimates are weighted with standard errors in parentheses.

Table 27 shows the aggregate levels of inconsistency for the race question for the 2010 Census and Census 2000. There were three changes to the race question between 2010 and 2000. First,

⁺ Cell statistic involves less than 10 housing units or people.

⁺ Cell statistic involves less than 10 housing units or people.

the instruction "to indicate what this person considers himself/herself to be" was removed for the 2010 Census. Second, the instruction to "Mark (X) one or more races." in Census 2000 was changed to "Mark (X) one or more boxes." in 2010. The third change was that the 2010 Census race question provided examples to the "Other Asian" and "Other Pacific Islander" response categories that were not provided in Census 2000 (Stokes et al., 2012). In the 2010 Census, most of the race categories had medium or high Indices of Inconsistency. The categories with the lowest levels were Black or African American (4.1 percent) and Asian (6.5 percent).

Table 27. Response Variance Measures for Race by Decade: Stateside

	4	2010 Census	a	Census 2000b						
		Index of In	consistency	Index of Inconsistency						
Census Categories	Inconsistency Level	Estimate	90-Percent Confidence Interval	Inconsistency Level	Estimate	90-Percent Confidence Interval				
White	Low	13.6	12.7 to 14.6	Medium	20.3	19.4 to 21.3				
Black or African American	Low	4.1	3.5 to 4.9	Low	4.8	4.3 to 5.5				
American Indian or Alaska Native	Medium	42.0	34.1 to 51.6	Medium	38.3	32.1 to 45.6				
Asian	Low	6.5	5.3 to 7.9	Low	7.2	6.0 to 8.7				
Native Hawaiian or Other Pacific Islander	High	62.5	37.4 to 100.0	Medium	13.4	30.4 to 61.8				
Other	Medium	46.6	42.9 to 50.7	High	67.6	63.7 to 71.8				
Two or more	High	52.2	47.8 to 57.0	High	74.1	69.3 to 79.1				

a 2010 Census Reinterview Survey data files, estimates are weighted.

5. Conclusions and Recommendations

5.1. Conclusions

As might be expected, there is a wide range in the gross differences from one data item to another. For stateside cases, the lowest GDR is for the sex item at 1.0 percent. The highest GDR is for the race item at 6.0 percent. The GDRs for tenure, relationship, age, and race are significantly higher for the interviewer-enumerated census returns compared to the self-enumerated census returns. This indicates that enumerator census data are more variable for these items, despite the fact that the reinterview was also conducted by an interviewer (i.e., both are interviewer administered surveys). This is likely due to the fact that the majority of enumerator returns correspond to housing units that did not respond to the initial mail census and are thus harder to enumerate. However, we cannot differentiate what portion of the variability in the enumerator data resulted from interviewer effects.

For the tenure item, the GDR was 1.9 percent for owners and for renters stateside and 8.9 percent for Puerto Rico cases. The GDR for stateside cases was significantly higher for interviewer-enumerated cases (3.2 percent) compared to self-enumerated cases (1.7 percent). The "Occupied without payment of rent" category had the highest Index of Inconsistency in both the 2010 Census (60.2 percent) and Census 2000 (43.4 percent).

b Singer and Ennis, 2003

The relationship category with the highest GDR for overall stateside was "Other nonrelative" (1.9 percent). "Other relative" (3.8 percent) is the relationship category with the highest GDR for CRS cases from Puerto Rico. Note that one of the changes from Census 2000 to the 2010 Census was that "Biological" replaced "Natural-born" for the "Biological son or daughter" category description.

The sex item had a relatively low GDR of 1.0 percent overall stateside and 0.7 percent for Puerto Rico. The Index of Inconsistency, which is the ratio of the simple response variance to total variance, was 1.9 percent in 2010 and 1.7 percent in 2000.

The GDRs for the age categories ranged from 0.2 percent to 0.5 percent overall for the age categories for stateside respondents. The GDR for the age group 0 through 4 was comparable to other categories, which may indicate that an instruction to "Please report babies as age 0 when the child is less than 1 year old" that was added to the 2010 Census questionnaire improved clarity and, therefore, responses as well. For Puerto Rico cases, the GDRs for age ranges are between 0.0 percent and 1.2 percent. The Index of Inconsistency was low for the age item in both the 2010 Census and Census 2000.

The GDRs for Hispanic origin were relatively low for both self-enumerated and interviewer-enumerated stateside cases, which indicate relatively high reliability. For Hispanic or Not Hispanic, the overall stateside GDR was 1.1 percent, self-enumerated was 1.1 percent, and interviewer-enumerated was 1.4 percent. For Puerto Rico cases, the GDRs cannot be reported due to small cell sizes. The inconsistency level was low for the single-origin specified categories (Mexican, Puerto Rican and Cuban) of this item in both the 2010 Census and Census 2000. There was moderate inconsistency for the Other Hispanic answer category and high inconsistency for those reporting multiple Hispanic origins for both Census 2000 and the 2010 Census.

For the race item, the GDR was highest for those reporting only White at 4.6 percent overall stateside. This was surprisingly higher than the stateside GDR for two or more races, at 2.8 percent overall, which is presumably a less clearly defined category than the single-race White only category.

For Puerto Rico cases, the GDRs for race are generally higher than stateside. The GDR for the single-race White only category for Puerto Rico cases was 17.6 percent. Hispanic or Latino respondents tend to view Hispanic origin and race as the same construct, which can increase item nonresponse and confusion associated with the race item. In the 2010 Census, most of the race categories had medium or high Indices of Inconsistency. The categories with the lowest levels of inconsistency were Black or African American (4.1 percent) and Asian (6.5 percent).

5.2. Recommendations

Overall, GDRs varied from one item to another, but are relatively low on the order of just a few percentage points or less. No GDRs stood out as problematic, so there are no specific

recommendations for changes to the census questions. The higher GDR for race appears to be driven by respondents of Hispanic or Latino origin.

The AQE Race and Hispanic Origin report (Compton, et al., forthcoming) may provide further insight into the level of bias for this item. This coupled with the item nonresponse rates and gross difference rates for race provide a more complete picture of the data quality.

The 2010 CRS showed the same or less inconsistency relative to the 2000 CRS for all items. Although they cannot be directly compared due to methodological differences, the trend is in the direction of higher quality.

6. Related Assessments, Evaluations, and/or Experiments

The 2010 Race and Hispanic Origin Alternative Questionnaire Experiment.

The 2010 Census Program Item Nonresponse Assessment Report.

The 2010 Census Quality Survey.

The 2010 Census Alternative Questionnaire Experiment: Census 2000 Form Replication Panel.

7. References

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Appendix A: Crosstabulations

All tables in Appendix A are shown in weighted percentages because one or more cell sizes are too small to display actual counts. Tables may not sum to 100 percent due to rounding.

Table A1. Response Comparisons for Census and Reinterview for Tenure: Stateside Overall

	Census Classification											
Reinterview Classification	Total	Not Reported	Reported	Owner	Renter	Both Marked						
Total	100.0	1.8	98.1	72.4	25.8	0.1						
Not Reported	0.9	0.2	0.8	0.7	0.1	0.0						
Reported	99.1	1.6	97.3	71.6	25.7	0.1						
Item Responses	*											
Owner	72.7	1.2	71.4	70.6	0.8	0.1						
Renter	26.4	0.5	25.9	1.0	24.9	0.0						

Source: 2010 Census Reinterview Survey data files.

Table A2. Response Comparisons for Census and Reinterview for Tenure: Stateside Self-Enumerated Census Response

	Census Classification													
Reinterview Classification	Total	Not Reported	Reported	Owner	Renter	Both Marked								
Total	100.0	1.9	98.0	73.6	24.4	0.1								
Not Reported	0.9	0.2	0.8	0.7	0.1	0.0								
Reported	99.1	1.8	97.2	72.9	24.3	0.1								
Item Responses														
Owner	74.1	1.3	72.7	72.0	0.7	0.1								
Renter	25.0	0.5	24.5	0.9	23.6	0.0								

Table A3. Response Comparisons for Census and Reinterview for Tenure: Stateside Interviewer-Enumerated Census Response

	Census Classification											
Reinterview Classification	Total	Not Reported	Reported	Owner	Renter	Both Marked						
Total	100.0	0.5	99.1	63.5	35.5	0.5						
Not Reported	0.9	0.2	0.8	0.8	0.0	0.0						
Reported	99.1	0.3	98.3	62.7	35.5	0.5						
Item Responses			>									
Owner	62.9	0.2	62.2	61.0	1.3	0.5						
Renter	36.2	0.2	36.0	1.7	34.3	0.0						

Table A4. Response Comparisons for Census and Reinterview for Tenure: Puerto Rico

	Census Classification											
Reinterview Classification	Total	Not Reported	Reported	Owner	Renter	Both Marked						
Total	100.0	1.4	98.6	79.3	19.0	0.3						
Not Reported	0.0	0.0	0.0	0.0	0.0	0.0						
Reported	100.0	1.4	98.3	79.3	19.0	0.3						
Item Responses		729										
Owner	80.2	0.6	79.3	75.1	4.2	0.3						
Renter	19.8	0.8	19.0	4.2	14.8	0.0						

Table A5. Response Comparisons for Census and Reinterview for Relationship: Stateside

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Reinterview Classification	Total	Not Reported	Reported	Husband or wife	Biological son or daughter	Adopted son or daughter	Stepson or stepdaughter	Brother or sister	Father or mother	Grandchild	Parent-in-law	Son-in-law or daughter-in-law	Other relative	Roomer or boarder	Housemate or roommate	Unmarried partner	Other nonrelative	Multiple Responses
Total	100	0.7	98.9	29.9	45.5	1.4	2.7	2.2	1.3	3.5	0.5	0.3	2.1	0.7	2.4	4.2	2.1	0.3
Not Reported	0.7	0.0	0.1	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	< 0.1	0.1	0.0
Reported	99.3	0.7	98.2	29.7	45.2	1.4	2.7	2.2	1.3	3.5	0.5	0.3	2.1	0.7	2.4	4.2	2.0	0.3
Item Responses																		
Husband or wife	29.7	0.1	29.6	29.2	<0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Biological son or daughter	45.3	0.3	44.9	0.1	44.4	0.1	0.1	<0.1	<0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2
Adopted son or daughter	1.1	0.0	1.1	0.0	<0.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stepson or stepdaughter	2.8	0.0	2.8	0.0	0.3	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0
Brother or sister	2.0	0.1	2.1	0.0	0.2	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Father or mother	1.3	0	1.3	< 0.1	< 0.1	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	< 0.1	0.0
Grandchild	3.8	0.2	3.6	0.1	0.0	< 0.1	0.0	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parent-in-law	0.6	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Son-in-law or daughter-in-law	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Other relative	2.8	0.1	2.6	0.0	0.0	0.2	0.2	0.2	0.0	<0.1	0.0	0.0	1.7	<0.1	0.0	0.1	0.1	0.1
Roomer or boarder	0.7	0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	<0.1	0.2	0.0
Housemate or roommate	2.8	0.1	2.7	0.0	0.0	0.0	<0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.9	0.3	0.2	<0.1
Unmarried partner	4.0	0.1	3.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.3	0.2	0.0
Other nonrelative	2.1	0	2.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.2	1.1	0.0

Table A6. Response Comparisons for Census and Reinterview for Relationship: Stateside Self-Enumerated Census Response

									<u> </u>		11 5	e	٠					
1.5						,			Cens	sus C	lassi	ificat	lion					II.
Reinterview Classification	Total	Not Reported	Reported	Husband or wife	Biological son or daughter	Adopted son or daughter	Stepson or stepdaughter	Brother or sister	Father or mother	Grandchild	Parent-in-law	Son-in-law or daughter-in-law	Other relative	Roomer or boarder	Housemate or roommate	Unmarried partner	Other nonrelative	Multiple Responses
Total	100	0.7	98.8	30.9	45.7	1.0	2.6	2.3	1.2	3.5	0.3	0.2	2.0	0.5	2.1	4.4	2.0	0.4
Not Reported	0.7	0.0	0.7	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Reported	99.3	1.2	98.1	30.7	45.4	1.0	2.6	2.3	1.2	3.5	0.3	0.2	2.0	0.5	2.1	4.3	1.9	0.4
Item Responses																		
Husband or wife	30.7	0.1	30.7	30.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Biological son or daughter	45.3	0.3	44.9	0.2	44.5	<0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2
Adopted son or daughter	0.9	0.0	0.9	0.0	<0.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stepson or stepdaughter	2.8	0.0	2.8	0.0	0.3	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
Brother or sister	2.4	0.1	2.2	2.2	0.0	0.2	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Father or mother	1.2	0.0	1.2	< 0.1	0.1	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Grandchild	3.9	0.2	3.6	0.1	0.0	< 0.1	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parent-in-law	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Son-in-law or daughter-in-law	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Other relative	2.5	0.1	2.4	0.0	0.0	0.0	0.2	0.2	0.0	0.1	0.0	0.0	1.7	< 0.1	0.0	0.1	0.1	0.1
Roomer or boarder	0.7	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.2	0.0
Housemate or roommate	2.5	0.1	2.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.6	0.3	0.2	<0.1
Unmarried partner	4.0	0.1	3.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	3.5	0.2	0.0
Other nonrelative	1.8	0.0	1.8	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.1	1.0	0.0

Table A7. Response Comparisons for Census and Reinterview for Relationship: Stateside Interviewer-Enumerated Census Response

								ı	Cens	sus C	lassi	ificat	tion					_ =
Reinterview Classification	Total	Not Reported	Reported	Husband or wife	Biological son or daughter	Adopted son or daughter	Stepson or stepdaughter	Brother or sister	Father or mother	Grandchild	Parent-in-law	Son-in-law or daughter-in-law	Other relative	Roomer or boarder	Housemate or roommate	Unmarried partner	Other nonrelative	Multiple Responses
Total	100	1.0	99.0	24.2	44.1	3.9	3.4	1.4	1.9	3.2	1.4	0.8	2.4	1.6	4.2	3.5	2.9	0.0
Not Reported	0.5	0.0	0.5	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Reported	99.5	1.0	98.6	24.1	44.0	3.9	3.4	1.4	1.9	3.2	1.4	0.8	2.4	1.6	4.2	3.5	2.7	0.0
Item Responses																·		
Husband or wife	24.1	0.2	23.9	23.3	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Biological son or daughter	45.3	0.8	44.5	0.0	43.5	0.5	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adopted son or daughter	2.4	0.0	2.4	0.0	0.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stepson or stepdaughter	2.6	0.0	2.6	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0
Brother or sister	1.6	0.0	1.6	0.0	0.3	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Father or mother	1.8	0.0	1.8	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grandchild	3.2	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parent-in-law	1.4	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Son-in-law or daughter-in-law	0.8	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Other relative	4.0	0.0	4.0	0.0	0.0	1.1	0.6	0.2	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0
Roomer or boarder	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.0
Housemate or roommate	4.7	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	3.7	0.2	0.2	0.0
Unmarried partner	3.7	0.0	3.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.5	0.0
Other nonrelative	3.5	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	0.8	1.4	0.0

Table A8. Response Comparisons for Census and Reinterview for Relationship: Puerto Rico

		Census Classification																
Reinterview Classification Total	Total	2.0 Not Reported	E.86 Reported	Husband or wife	Biological son or daughter	2. Adopted son or daughter	2. Stepson or stepdaughter	o Brother or sister	Eather or mother	5.5 Grandchild	2 Parent-in-law	Son-in-law or daughter-in-law	2 Other relative	o Roomer or boarder	Housemate or roommate	Unmarried partner	Other nonrelative	ن Multiple Responses
Not Reported	1.3	0.0	1.3	0.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Reported	98.7	1.7		21.3	51.3		3.7	4.0	2.3	5.7	0.7	0.0	0.7	0.0	0.0	5.3	0.3	0.5
Item Responses																		
Husband or wife	24.0	0.0	24.0	21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Biological son or daughter	54.0	1.0	53.0	0.0	51.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adopted son or daughter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stepson or stepdaughter	2.3	0.0	2.3	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brother or sister	4.7	0.7	4.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Father or mother	2.3	0.0	2.3	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grandchild	2.7	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parent-in-law	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Son-in-law or daughter-in-law	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other relative	4.3	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.7	0.0	0.7	0.0	0.0	0.0	0.0	0.0
Roomer or boarder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Housemate or roommate	1.0	0.0	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0
Unmarried partner	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Other nonrelative	1.3	0.0	1.3	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table A9. Response Comparisons for Census and Reinterview for Sex: Stateside

	Census Classification										
Reinterview Classification	Total	Not Reported	Reported	Male	Female						
Total	100	1.6	98.4	47.1	51.3						
Not Reported	0.2	0.0	0.2	0.1	0.1						
Reported	99.8	1.6	98.2	47.0	51.1						
Item Responses											
Male	47.5	0.7	46.8	46.4	0.4						
Female	52.3	0.9	51.4	0.6	50.8						

Table A10. Response Comparisons for Census and Reinterview for Sex: Stateside Self-Enumerated Census Response

		Census	Classification	n	
Reinterview Classification	Total	Not Reported	Reported	Male	Female
Total	100	1.8	98.2	47.0	51.2
Not Reported	0.2	0.0	0.2	0.1	0.2
Reported	99.8	1.8	98.0	46.9	51.0
Item Responses					
Male	47.5	0.8	46.7	46.3	0.4
Female	52.3	1.0	51.3	0.6	50.6

Table A11. Response Comparisons for Census and Reinterview for Sex: Stateside Interviewer-Enumerated Census Response

	Census Classification										
Reinterview Classification	Total	Not Reported	Reported	Male	Female						
Total	100	0.3	99.7	48.0	51.7						
Not Reported	0.4	0.0	0.4	0.3	0.1						
Reported	99.6	0.3	99.4	47.7	51.7						
Item Responses											
Male	47.6	0.1	47.5	47.4	0.1						
Female	52.0	0.2	51.9	0.3	51.5						

Table A12. Response Comparisons for Census and Reinterview for Sex: Puerto Rico

	Census Classification										
Reinterview Classification	Total	Not Reported	Reported	Male	Female						
Total	100	2.8	97.2	42.2	55.0						
Not Reported	0.4	0.0	0.4	0.0	0.4						
Reported	99.6	2.8	96.7	42.2	54.6						
Item Responses											
Male	43.6	1.0	42.6	42.0	0.6						
Female	55.9	1.8	54.1	0.1	54.0						

Table A13. Response Comparisons for Census and Reinterview for Age: Stateside

								(Censu	s Cla	ssific	ation					
Reinterview Classification	Total	Not Reported	Reported	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 and over
Total	100	0.4	99.6	7.0	6.7	7.1	5.8	5.2	5.8	5.6	5.6	6.4	6.6	7.4	7.2	6.5	16.7
NotReported	1.5	0.1	1.4	< 0.1	< 0.1	0.2	0.1	0.1	0.1	0.1	< 0.1	< 0.1	0.1	0.2	0.2	0.1	0.2
Reported	98.5	0.3	98.2	7.0	6.7	6.9	5.8	5.1	5.7	5.5	5.5	6.4	6.5	7.2	7.0	6.3	16.5
Item Responses																	
0-4	7.1	<0.1	7.0	6.9	<0.1	0.0	0.0	0.0	0.0	0.0	<0.1	<0.1	0.0	0.0	<0.1	0.0	<0.1
5-9	6.7	<0.1	6.7	< 0.1	6.6	< 0.1	< 0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	< 0.1
10-14	6.6	0.0	6.6	0.0	<0.1	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-19	6.0	<0.1	5.9	0.0	0.0	0.1	5.7	< 0.1	< 0.1	0.0	< 0.1	0.0	< 0.1	0.0	0.0	0.0	<0.1
20-24	5.2	0.0	5.2	0.0	0.0	0.1	0.1	5.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-29	5.7	<0.1	5.6	0.0	< 0.1	0.0	0.0	< 0.1	5.6	< 0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-34	5.6	<0.1	5.6	0.0	0.0	<0.1	0.0	0.0	0.1	5.4	0.1	<0.1	0.0	0.0	0.0	0.0	<0.1
35-39	5.6	< 0.1	5.6	< 0.1	0.0	0.0	< 0.1	0.0	0.0	0.1	5.4	0.0	0.0	0.0	0.0	< 0.1	0.0
40-44	6.5	<0.1	6.4	0.0	0.0	0.0	0.0	<0.1	0.0	0.0	< 0.1	6.3	0.1	0.0	<0.1	0.0	<0.1
45-49	6.4	<0.1	6.4	0.0	0.0	0.0	<0.1	0.0	0.0	0.0	0.0	< 0.1	6.3	< 0.1	< 0.1	< 0.1	0.0
50-54	7.3	<0.1	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<0.1	<0.1	7.1	0.1	0.0	<0.1
55-59	7.0	<0.1	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	6.8	< 0.1	<0.1
60-64	6.4	<0.1	6.4	<0.1	0.0	<0.1	0.0	0.0	0.0	<0.1	0.0	0.0	<0.1	0.0	<0.1	6.3	<0.1
65 and over	16.5	0.1	16.4	<0.1	0.0	0.0	0.0	0.0	0.0	0.0	< 0.1	< 0.1	<0.1	0.0	<0.1	< 0.1	16.3

Table A14. Response Comparisons for Census and Reinterview for Age: Stateside Self-Enumerated Census Response

									Cer	isus (Classi	ficati	on				
Reinterview Classification	Total	Not Reported	Reported	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	mento pue 39
Total	100	0.3	99.7	6.7	6.5	7.0	5.6	5.0	5.5	5.6	5.4	6.4	6.4	7.4	7.5	6.9	17.8
NotReported	1.5	0.1	1.5	< 0.1	< 0.1	0.2	0.1	0.1	0.1	0.1	< 0.1	< 0.1	0.1	0.2	0.2	0.1	0.2
Reported	98.5	0.2	98.2	6.7	6.5	6.8	5.5	5.0	5.4	5.5	5.4	6.3	6.4	7.2	7.3	6.8	17.6
Item Responses																	
0-4	6.7	<0.1	6.6	6.6	<0.1	0.0	0.0	0.0	0.0	0.0	<0.1	<0.1	0.0	0.0	0.0	0.0	<0.1
5-9	6.6	< 0.1	6.5	< 0.1	6.4	< 0.1	< 0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<0.1
10-14	6.6	0.0	6.6	0.0	<0.1	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-19	5.6	0.0	5.6	0.0	0.0	0.1	5.4	<0.1	< 0.1	0.0	< 0.1	0.0	0.0	0.0	0.0	0.0	0.0
20-24	5.0	0.0	5.0	0.0	0.0	0.0	0.1	4.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-29	5.3	0.0	5.3	0.0	0.0	0.0	0.0	< 0.1	5.0	< 0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-34	5.6	<0.1	5.6	0.0	0.0	<0.1	0.0	0.0	<0.1	5.4	0.1	<0.1	0.0	0.0	0.0	0.0	<0.1
35-39	5.4	0.0	5.4	< 0.1	0.0	0.0	< 0.1	0.0	0.0	0.1	5.3	0.0	0.0	0.0	0.0	< 0.1	0.0
40-44	6.4	<0.1	6.4	0.0	0.0	0.0	0.0	<0.1	0.0	0.0	<0.1	6.3	0.1	0.0	<0.1	0.0	<0.1
45-49	6.3	< 0.1	6.3	0.0	0.0	0.0	< 0.1	0.0	0.0	0.0	0.0	<0.1	6.2	< 0.1	0.0	< 0.1	0.0
50-54	7.2	<0.1	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<0.1	7.0	0.1	0.0	<0.1
55-59	7.3	<0.1	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	7.2	<0.1	<0.1
60-64	6.9	<0.1	6.9	<0.1	0.0	<0.1	0.0	0.0	0.0	<0.1	0.0	0.0	<0.1	0.0	<0.1	6.7	0.1
65 and over	17.7	0.1	17.6	< 0.1	0.0	0.0	0.0	0.0	0.0	0.0	< 0.1	< 0.1	< 0.1	0.0	<0.1	< 0.1	17.5

Table A15. Response Comparisons for Census and Reinterview for Age: Stateside Interviewer-Enumerated Census Response

	T					_									_	_	
									Cen	sus C	Classi	fication	0 n		E		
Reinterview Classification	Total	Not Reported	Reported	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 and over
Total	100	0.9	99.1	9.1	7.8	7.7	7.5	6.5	7.9	5.4	6.4	6.7	7.5	7.4	5.5	3.7	10.0
NotReported	1.4	0.1	1.3	0.0	0.0	0.1	0.1	0.3	0.1	0.1	0.1	0.2	0.0	0.2	0.1	0.1	0.0
Reported	98.6	0.8	97.8	9.1	7.8	7.6	7.4	6.2	7.8	5.3	6.3	6.6	7.5	7.2	5.4	3.7	10.0
Item Responses																	
0-4	9.4	0.0	9.4	9.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
5-9	7.7	0.0	7.7	0.0	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-14	6.9	0.0	6.9	0.0	0.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-19	8.3	0.2	8.1	0.0	0.0	0.3	7.3	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.3
20-24	6.7	0.0	6.7	0.0	0.0	0.4	0.1	6.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-29	7.8	0.2	7.5	0.0	0.1	0.0	0.0	0.1	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-34	5.5	0.2	5.3	0.0	0.0	0.0	0.0	0.0	0.2	5.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
35-39	6.6	0.1	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	6.2	0.0	0.0	0.0	0.0	0.0	0.0
40-44	6.7	0.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	6.5	0.2	0.0	0.0	0.0	0.0
45-49	7.3	0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	7.1	0.0	0.2	0.0	0.0
50-54	7.7	0.1	7.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	7.1	0.4	0.0	0.1
55-59	4.8	0.1	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	4.7	0.1	0.0
60-64	3.7	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.6	0.0
65 and over	9.5	0.0	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5

Table A16. Response Comparisons for Census and Reinterview for Age: Puerto Rico

									Cen	sus C	Classi	ficati	on				
Reinterview Classification	Total	Not Reported	Reported	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 and over
Total	100	0.6	99.4	6.7	4.0	7.4	7.3	5.5	6.3	4.7	6.1	7.5	7.1	5.9	6.5	6.5	17.9
NotReported	2.7	0.0	2.7	0.1	0.0	0.3	0.7	0.0	0.0	0.1	0.4	0.3	0.0	0.0	0.1	0.2	0.3
Reported	97.3	0.6	96.7	6.6	4.0	7.1	6.6	5.5	6.3	4.6	5.6	7.2	7.1	5.9	6.4	6.3	17.6
Item Responses														lu-			
0-4	6.6	0.0	6.6	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-9	4.0	0.0	4.0	0.0	4.0	0.0	0.0	- 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-14	6.7	0.0	6.7	0.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-19	6.8	0.0	6.8	0.0	0.0	0.2	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-24	5.3	0.0	5.3	0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-29	6.5	0.0	6.5	0.0	0.0	0.0	0.0	0.2	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-34	4.6	0.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35-39	5.6	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.1	0.1	0.0	0.0	0.0	0.0
40-44	7.1	0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	7.0	0.0	0.0	0.0	0.0	0.0
45-49	7.2	0.0	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	6.8	0.1	0.0	0.0	0.0
50-54	5.9	0.1	5.8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0	0.0
55-59	6.7	0.1	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	6.4	0.1	0.0
60-64	6.2	0.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	0.2
65 and over	18.0	0.3	17.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	17.4

Table A17. Response Comparisons for Census and Reinterview for Hispanic Origin: Stateside

					-					
				C	ensus	Classif	ication			
Reinterview Classification	Total	Not Reported	Reported	Not Hispanic	Hispanic or Latino	Mexican	Puerto Rican	Cuban	Other Hispanic	Multiple Hispanic
Total	100	2.9	97.1	83.1	13.9	9.0	1.2	0.5	3.2	0.1
Not Reported	0.8	0.1	0.8	0.6	0.2	0.1	< 0.1	< 0.1	< 0.1	0.0
Reported	99.2	2.9	96.3	82.6	13.7	8.9	1.2	0.5	3.2	0.1
Item Responses										
Not Hispanic	85.0	2.4	82.6	82.0	0.6	0.3	<0.1	<0.1	0.2	0.0
Hispanic or Latino	14.1	0.4	13.7	0.5	13.2	8.6	1.2	0.5	2.9	0.1
Mexican	9.2	0.3	8.9	0.2	8.7	8.3	0.0	0.0	0.3	<0.1
Puerto Rican	1.2	0.1	1.2	0.1	1.1	0	1.1	0.0	< 0.1	<0.1
Cuban	0.5	0	0.5	<0.1	0.5	<0.1	0.0	0.5	0.0	
Other Hispanic	3.2	<0.1	3.1	0.2	2.9	0.2	0.1	0.0	2.6	0.0
Multiple Hispanic	0.1	<0.1	<0.1	0.0	<0.1	<0.1	0.0	0.0	0.0	0.0

Table A18. Response Comparisons for Census and Reinterview for Hispanic Origin: Stateside Self-Enumerated Census Response

				C	nene (Classifi	cation			
Reinterview Classification	Total	Not Reported	Reported	Not Hispanic	Hispanic or Latino	Mexican	Puerto Rican	Cuban	Other Hispanic	Multiple Hispanic
Total	100	3.3	96.7	83.6	13.1	8.1	1.2	0.5	3.3	<0.1
Not Reported	0.8	0.1	0.7	0.5	0.1	0.1	< 0.1	< 0.1	< 0.1	0.0
Reported	99.2	3.2	96.1	83.1	13.0	8.0	1.2	0.5	3.2	< 0.1
Item Responses										
Not Hispanic	85.9	2.7	83.2	82.6	0.6	0.3	<0.1	< 0.1	0.2	0.0
Hispanic or Latino	13.4	0.5	12.9	0.5	12.4	7.7	1.2	0.5	3.0	<0.1
Mexican	8.4	0.3	8.1	0.2	7.9	7.5	0.0	0.0	0.3	< 0.1
Puerto Rican	1.3	0.1	1.2	0.1	1.2	0.0	1.2	0.0	0.0	<0.1
Cuban	0.5	0.0	0.5	< 0.1	0.5	< 0.1	0.0	0.5	0.0	0.0
Other Hispanic	3.1	<0.1	3.1	0.2	2.9	0.2	<0.1	0.0	2.7	0.0
Multiple Hispanic	<0.1	0.0	<0.1	0.0	<0.1	<0.1	0.0	0.0	0.0	0.0

Table A19. Response Comparisons for Census and Reinterview for Hispanic Origin: Stateside Interviewer-Enumerated Census Response

				Ce	nene (Classifi	cation			
Reinterview Classification	Total	Not Reported	Reported	Not Hispanic	Hispanic or Latino	Mexican	Puerto Rican	Cuban	Other Hispanic	Multiple Hispanic
Total	100	1.0	99.0	80.1	18.8	14.5	1.0	0.4	2.8	0.1
Not Reported	1.2	0.0	1.2	0.8	0.5	0.4	0	0.0	0.1	0.0
Reported	98.8	1.0	97.7	79.4	18.3	14.2	1.0	0.4	2.7	0.1
Item Responses	7.1									
Not Hispanic	80.0	0.8	79.2	78.6	0.6	0.4	0.0	0.0	0.2	0.0
Hispanic or Latino	18.8	0.3	18.5	0.8	17.7	13.8	1.0	0.4	2.5	0.1
Mexican	13.9	0.0	13.9	0.4	13.5	13.0	0.0	0.0	0.4	0.1
Puerto Rican	0.7	0.0	0.7	0.1	0.6	0.0	0.4	0.0	0.2	0.0
Cuban	0.4	0.0	0.4	0.0	0.4	0.0	0.0	0.4	0.0	0.0
Other Hispanic	3.5	0.1	3.5	0.3	3.1	0.7	0.5	0.0	2.0	0.0
Multiple Hispanic	0.3	0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0

Table A20. Response Comparisons for Census and Reinterview for Hispanic Origin: Puerto Rico

				Ce	ensus (Classifi	cation			
Reinterview Classification	Total	Not Reported	Reported	Not Hispanic	Hispanic or Latino	Mexican	Puerto Rican	Cuban	Other Hispanic	Multiple Hispanic
Total	100	0.2	99.8	0.6	99.2	0.1	95.5	1.8	1.7	0.1
Not Reported	1.0	0.0	1.0	0.0	1.0	0.0	1.0	0.0	0.0	0.0
Reported	99.0	0.2	98.8	0.6	98.2	0.1	94.5	1.8	1.7	0.1
Item Responses										
Not Hispanic	0.2	0.0	0.2	0.1	0.1	0.0	0.0	0.1	0.0	0.0
Hispanic or Latino	98.8	0.2	98.5	0.4	98.1	0.1	94.5	1.7	1.7	0.1
Mexican	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Puerto Rican	95.1	0.2	94.8	0.4	94.4	0.0	94.2	0.0	0.1	0.1
Cuban	2.0	0.0	2.0	0.0	2.0	0.0	0.3	1.7	0.0	0.0
Other Hispanic	1.6	0.0	1.6	0.0	1.6	0.0	0.0	0.0	1.6	0.0
Multiple Hispanic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table A21. Response Comparisons for Census and Reinterview for Race: Stateside

				Reported White Black or African American American Indian or Alaska Native Asian Native Hawaiian or Islander Other Pacific Other Two or more								
Reinterview Classification	Total	Not Reported	Reported	White	Black or African American	American Indian or Alaska Native	Asian	Native Hawaiian or Other Pacific	Other	Two or more		
Total	100	2.8	97.2	76.3	9.7	0.6	4.5	0.0	3.1	2.9		
Not Reported	1.6	0.2	1.3	0.7	0.2	0.1	0.1	0.0	0.1	< 0.1		
Reported	98.4	2.6	95.9	75.6	9.4	0.5	4.5	0.1	3.0	2.8		
Item Responses				υ,								
White	77.0	1.2	74.8	73.6	0.2	< 0.1	0.1	<0.1	1.0	0.9		
Black or African American	9.4	0.1	9.3	<0.1	9.0	0.0	0.1	0.0	<0.1	0.1		
American Indian or Alaska Native	0.7	0.0	0.7	0.1	0.0	0.3	0.1	0.0	<0.1	0.1		
Asian	4.2	< 0.1	4.2	< 0.1	0.0	0.0	4.1	0.0	0.0	0.1		
Native Hawaiian or Other Pacific Islander	<0.1	0.0	<0.1	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1		
Other	4.6	1.2	3.4	1.2	< 0.1	< 0.1	< 0.1	< 0.1	1.8	0.2		
Two or more	2.5	<0.1	2.5	0.7	0.2	< 0.1	0.1	0.0	0.1	1.3		

Table A22. Response Comparisons for Census and Reinterview for Race: Stateside Self-Enumerated Census Response

						Census	Class	ification		
Reinterview Classification	Total	Not Reported	Reported	White	Black or African American	American Indian or Alaska Native	Asian	Native Hawaiian or Other Pacific Islander	Other	Two or more
Total	100	3.0	97.0	78.2	9.1	0.5	4.0	0.0	2.4	2.8
Not Reported	1.4	0.3	1.1	0.7	0.2	0.1	0.1	0.0	0.1	< 0.1
Reported	98.6	2.7	95.9	77.5	8.9	0.4	4.0	<0.1	2.4	2.7
Item Responses										
White	78.7	1.3	77.4	75.4	0.1	< 0.1	0.1	<0.1	0.8	0.9
Black or African American	8.7	0.1	8.6	<0.1	8.5	0.0	<0.1	0.0	<0.1	0.1
American Indian or Alaska Native	0.6	0.0	0.6	0.1	0.0	0.3	0.1	0.0	0.1	0.1
Asian	3.8	< 0.1	3.7	< 0.1	0.0	0.0	3.6	0.0	0.0	0.1
Native Hawaiian or Other Pacific Islander	<0.1	0.0	<0.1	0.0	0.0	0.0	0.0	<0.1	0.0	<0.1
Other	4.1	1.3	2.9	1.2	< 0.1	0.1	0.0	0.0	1.4	0.2
Two or more	2.6	< 0.1	2.6	0.7	0.3	< 0.1	0.1	0.0	0.1	1.3

Table A23. Response Comparisons for Census and Reinterview for Race: Stateside Interviewer-Enumerated Census Response

				Census Classification									
Reinterview Classification	Total	Not Reported	Reported	White	Black or African American	American Indian or Alaska Native	Asian	Native Hawaiian or Other Pacific Islander	Other	Two or more			
Total	100	1.7	98.3	65.2	13.1	1.0	7.5	0.0	7.4	3.6			
Not Reported	2.6	0.2	2.4	0.7	0.5	0.3	0.1	0.0	0.7	0.1			
Reported	97.4	1.5	95.9	64.5	12.6	0.8	7.4	0.3	6.7	3.6			
Item Responses										19			
White	66.6	0.4	66.1	62.5	0.3	0.0	0.0	0.0	2.2	1.2			
Black or African American	13.3	0.3	13.0	0.1	12.3	0.0	0.2	0.0	0.0	0.5			
American Indian or Alaska Native	1.2	0.0	1.2	0.2	0.0	0.8	0.0	0.0	0.0	0.3			
Asian	6.8	0.0	6.8	0.0	0.0	0.0	6.8	0.0	0.0	0.0			
Native Hawaiian or Other Pacific Islander	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Other	7.2	0.8	6.4	1.1	0.0	0.0	0.2	0.3	4.3	0.4			
Two or more	2.4	0.1	2.3	0.7	0.0	0.0	0.2	0.0	0.2	1.2			

Table may not sum to 100 percent due to rounding. Source: 2010 Census Reinterview Survey data files.

Table A24 Response Comparisons for Census and Reinterview for Race: Puerto Rico

				Census Classification										
Reinterview Classification	Total	Not Reported	Reported	White	Black or African American	American Indian or Alaska Native	Asian	Native Hawaiian or Other Pacific Islander	Other	Two or more				
Total	100	1.3	98.7	81.8	8.6	0.2	0.0	0.0	5.5	2.5				
Not Reported	2.1	0.0	2.1	1.7	0.1	0.1	0.0	0.0	0.4	0.0				
Reported	97.9	1.3	96.5	80.2	8.5	0.1	0.0	0.0	5.0	2.5				
Item Responses														
White	73.0	1.1	71.9	67.9	1.2	0.0	0.0	0.0	1.3	1.3				
Black or African American	7.7	0.0	7.7	1.2	4.6	0.1	0.0	0.0	1.0	0.7				
American Indian or Alaska Native	0.3	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0				
Asian	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0				
Native Hawaiian or Other Pacific Islander	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0				
Other	14.5	0.2	14.2	9.4	2.0	0.0	0.0	0.0	2.5	0.3				
Two or more	2.4	0.0	2.4	1.4	0.7	0.0	0.0	0.0	0.2	0.1				

Table may not sum to 100 percent due to rounding. Source: 2010 Census Reinterview Survey data files.

Appendix B: 2010 Census Mailback Questionnaire

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