

Attachment H

**Census Report “Evaluating Nonresponse Bias in the 2015 Food Security
Supplement to the Current Population Survey”**



MEMORANDUM FOR David Smallwood
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From: James Farber
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Subject: Evaluating Nonresponse Bias in the 2015 Food Security Supplement
to the Current Population Survey

The purpose of this memorandum is to report on analysis of various nonresponse estimates computed for the 2015 Food Security Supplement to the Current Population Survey and to provide nonresponse bias analysis tables for the 2011 through 2014 Food Security Supplements.

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Attachments (4):

Attachment A: Nonresponse Bias Analysis Tables for the 2014 Food Security Supplement
Attachment B: Nonresponse Bias Analysis Tables for the 2013 Food Security Supplement
Attachment C: Nonresponse Bias Analysis Tables for the 2012 Food Security Supplement
Attachment D: Nonresponse Bias Analysis Tables for the 2011 Food Security Supplement
Attachment E: Summary of Key Differences Between the Tables for 2011-2015

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Current Population Survey – Food Security Supplement

Demographic Statistical Methods Division

U.S. Census Bureau

Evaluating Nonresponse Bias in the 2015 Food Security Supplement to the Current Population Survey

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December 15, 2017

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1. Executive Summary

This report presents results of an analysis of various nonresponse estimates computed for the 2015 Food Security Supplement (FSS) to the Current Population Survey (CPS). The sample included all households who completed a CPS interview. A nonresponse bias analysis was conducted to determine whether nonresponse among different demographic groups may have biased estimates. We investigated overall response rates, demographic subgroup response rates, and demographic respondent and nonrespondent distributions.

Attached are similar tables found within this report using the data from the 2011, 2012, 2013, and 2014 FSSs.

Our key findings for the 2015 FSS are:

- The CPS household weighted response rate was 86.34 percent. The FSS household weighted response rate was 75.04 percent. Thus, the overall weighted response rate for the FSS sample was 64.79 percent.
- For the CPS household estimates, excluding blanks (no responses), there are significant differences in the response rates and respondent distributions for each of the variables that we investigated except gender of reference person. Excluding the blanks and missing values, the largest difference in response rates is seen for the age of reference person. The largest differences between respondent and nonrespondent distributions are within race, Hispanic origin, and age of reference person.
- For the FSS household estimates, excluding blanks, there are significant differences in the response rates and respondent distributions for each of the variables that we investigated except type of living quarters and gender of reference person. The largest difference in response rates is seen for the race of reference person. The largest difference between respondent and nonrespondent distributions is within age of reference person.
- For FSS household estimates for characteristics only available for CPS respondents, there are significant differences in the response rates and respondent distributions for each of the variables that we investigated. The largest differences in response rates, as well the largest difference in respondent and nonrespondent distributions, are seen within income. Note: the largest difference in response rates for measure of labor force of reference person is not significantly different from the largest difference in response rates for income.

2. Introduction

The Office of Management and Budget (OMB) provides guidelines for conducting a nonresponse bias study when the expected unit response rate of a survey is below 80 percent (OMB, 2006). The CPS household response rates have historically been above 80 percent, but the overall supplement response rates (which are the product of the CPS household and FSS household response rates) are below this threshold.

This document provides results from our evaluation of nonresponse in the 2015 FSS to the CPS and to provide nonresponse bias analysis tables for the 2011 through 2014 FSS. Its purpose is to determine the existence of potential nonresponse bias in the 2015 FSS.

3. Overview of the Current Population Survey

The monthly CPS collects primarily labor force data about the civilian noninstitutionalized population living in the United States. The institutionalized population, which is excluded from the population universe, is composed primarily of the population in correctional institutions and nursing homes (98 percent of the 4.0 million institutionalized people in Census 2010). Interviewers ask questions concerning labor force participation about each member 15 years old and over in sample households. For December 2015, the week containing the nineteenth of the month is the interview week. The week containing the twelfth is the reference week (i.e., the week about which the labor force questions are asked).

The CPS uses a multistage probability sample based on the results of the decennial census, with coverage in all 50 states and the District of Columbia. The sample is continually updated to account for new residential construction. When files from the most recent decennial census become available, the Census Bureau gradually introduces a new sample design for the CPS.

Every ten years, the CPS first-stage sample is redesigned¹ reflecting changes based on the most recent decennial census. In the first stage of the sampling process, primary sampling units (PSUs)² were selected for sample. In the 2010 sample design, the United States was divided into 1,987 PSUs. These PSUs were then grouped into 852 strata. Within each stratum, a single PSU was chosen for the sample, with its probability of selection proportional to its population as of the most recent decennial census. In the case of strata consisting of only one PSU, the PSU was chosen with certainty.

4. Overview of the 2015 Food Security Supplement to the Current Population Survey

In December 2015, in addition to the basic CPS questions, interviewers asked supplementary questions of how much households spent for food, their use of Federal and community food assistance programs, and whether they were able to afford enough food. The universe for this supplement are households eligible for the basic CPS. This supplement allows for proxy response. However, if at all possible, interviewers should interview the person within the

¹ For detailed information on the 2010 sample redesign, please see (BLS, April 2014).

² The PSUs correspond to substate areas (i.e., counties or groups of counties) that are geographically contiguous.

household who is responsible for buying or preparing food for the household. Households with incomes below 185 percent of the poverty threshold are asked all supplement questions, whereas households with incomes over 185 percent of the poverty threshold are asked only a few questions, unless their answers identify them as “food insufficient or experiencing some degree of food hardship” and make them eligible for the entire supplement (U.S. Census Bureau, 2016).

The key estimates include:

- Concern about food adequacy
- Money for food
- Access to food
- Use of emergency food
- Food assistance program participation
- Food intake reductions or hunger

Key domains for this supplement are:

- Households
- Families
- Unrelated Individuals
- Age

5. Discussion of Nonresponse in the 2015 Food Security Supplement to the Current Population Survey

Some degree of nonresponse bias and variance is a normal feature of almost all statistical surveys. The FSS produces food security estimates using the answers from responding households and persons. These food security estimates will be biased if answers from respondents differ from the potential answers of nonrespondents. The magnitude of the bias is a function of the response rate and differences between respondents and nonrespondents.

There were two ways that a household could be a nonrespondent to the FSS:

- The entire household did not respond to CPS (the occupants were not found at home after repeated calls or are unavailable for some other reason).
- The household responded to CPS but did not respond to the FSS interview.

Because the FSS is directly linked to the CPS response rate, the CPS and FSS attempt to minimize nonresponse bias by increasing response rates and adjusting weights for potential differences between respondents and nonrespondents. We try to increase response rates within CPS by conducting personal visit interviews for new and returning sample units, mailing advance letters for all sample units, providing a Spanish language questionnaire for potential respondents who do not speak English, allowing interpreters for potential respondents who do not speak English or Spanish, training field representatives to gain respondent cooperation, allowing proxy respondents in special circumstances, and mailing follow-up letters to nonresponding households. We also help minimize nonresponse bias by reducing respondent burden for the FSS by limiting the length of the survey.

We reduce the effects of respondent/nonrespondent differences through noninterview weighting adjustments. These adjustments group respondents and nonrespondents into adjustment cells, and the weights of the nonrespondents are reallocated to the respondents within the adjustment cells.

CPS noninterview adjustment cells are formed by noninterview cluster (NICL) and central city status. The NICLs are created based on sample PSUs that are similar in metropolitan status and population size within the same state (U.S. Census Bureau, 2006). Metropolitan status is defined as metropolitan or nonmetropolitan. Within metropolitan PSUs, a further breakdown into “central city” and “not central city” is defined. This results in 127 NICLs and 214 adjustment cells. These variables were chosen for the noninterview adjustment cells because they are thought to be correlated with the CPS variables of interest.

FSS noninterview adjustment cells are defined to be the same as the CPS noninterview adjustment cells.

Despite the measures taken to reduce nonresponse bias, there is likely still some amount of nonresponse bias that we cannot correct without knowing the food security of the nonrespondents.

6. Methods

Data

The data for this nonresponse bias analysis are from the December 2015 FSS to the CPS and the December 2015 CPS. The U.S. Census Bureau conducts the CPS every month, although this file has only December data. The December survey uses two sets of questions, the basic CPS and a set of supplemental questions. The CPS, sponsored jointly by the Census Bureau and the U.S. Bureau of Labor Statistics, is the country’s primary source of labor force statistics for the entire population. The U.S. Department of Agriculture sponsors the supplemental questions for December.

For a small number of variables, we had complete household information for all sample households, including respondents and nonrespondents. These variables were primarily limited to geographic and sampling data. There are also some variables with partial information for the nonrespondents. Normal CPS processing uses previous responses to demographic questions (when available) and does not re-ask those that are unlikely to change from interview to interview. Any variables that have never been answered are imputed using the hot deck imputation method. Hot deck imputation assigns a value collected for a person with similar characteristics to the missing value. Where possible, we did not use allocated or imputed values because we thought it would be better to use actual values for the nonrespondents when comparing respondents to nonrespondents. Edited values were only used for tenure and presence of children while investigating nonresponse bias within FSS households by domain for characteristics that were only available for CPS respondents.

Weights

In the detailed weighting process for the CPS, baseweights were adjusted with the weighting control factor (WCF), which accounts for subsampling in the field but does not include any nonresponse/noninterview or population coverage adjustments. This subsampling-adjusted baseweight is the weight used throughout this report for household calculations for CPS.

When computing rates and distributions for FSS households, the FSS baseweights, which are the noninterview-adjusted weights from CPS, were used. Note that FSS weights are higher than CPS weights because they include the CPS noninterview adjustment, which inflates weights back up to the eligible weighted CPS household sample.

All numbers presented in the report are weighted unless otherwise noted.

Universe for the Estimates

We analyzed nonresponse for households. Since one person in each household responded for the entire household, our analysis focused on household nonresponse within reference person demographics, HU characteristics, and geography.

7. Limitations

There are some limitations to this analysis which may affect the results. In particular:

1. Using past data to assign subgroup variables to nonrespondents is not necessarily accurate for households. Due to in-movers and out-movers, it is possible for demographic variables that we get from past data to be out of date. However, we do not believe our results need to be 100% accurate in order to show major differences between respondents and nonrespondents. This assumes that the demographics of neighborhoods do not change much in one and a half years.
2. Nonrespondents for CPS are never given the opportunity to respond to the FSS.

8. Response Rates

The response rates tell us the percentage of eligible sample cases that responded to the CPS and the FSS. It is useful to compare response rates for different subgroups to understand the magnitude of potential biases.

We produced weighted and unweighted response rates for the 2015 FSS by key domains and variables. The overall FSS response rate is the product of CPS household response and FSS household response rate.

Response rates are defined as:

$$RR = \frac{\sum_{i \in S} w_i R_i D_i}{\sum_{i \in S} w_i D_i}$$

where:

w_i = the appropriate weight (1 if unweighted) for the response rate calculation

R_i = the response indicator (1 for respondents, 0 for nonrespondents)

D_i = the domain indicator (1 if within domain of interest, 0 otherwise)

s = the set of all eligible households

Eligible households are all sample housing units (HUs) that did not receive Type B or Type C (out-of-scope) outcome codes. Persons within group quarters (GQs) are treated as individual HUs. The CPS interview data contains all eligible and non-eligible HUs, and the FSS interview data contains only eligible HUs to the CPS.

For the December 2015 CPS, there were 61,356 occupied HUs eligible for the household analysis. Of the 61,356 occupied households, 52,868 were interviewed. Of the 52,868 households that were interviewed for CPS, 39,948 also responded to the FSS.

Table 1 shows that the weighted percentage of households where at least one person responded to CPS is 86.34 percent. From those responding households, 75.04 percent of the weighted households responded to FSS, which is a comparable response rate to what is seen for other CPS supplements. This results in an overall weighted FSS response rate of 64.79 percent.

Attachments A, B, C, and D contain Tables 1 through 7 using U.S. Census Bureau internal data from CPS interviews for December 2014, December 2013, December 2012, and December 2011, respectively.

Table 1: 2015 Food Security Unit Response Rates

Response Category	Count	Weighted Sum ^{3*}	Response Rates	
			Unweighted*	Weighted*
Sampled CPS Households	73,942	136,720,437		
Eligible CPS Households	61,356	114,896,602		
CPS Household Response	52,868	99,206,383	86.17%	86.34%
Food Security Households	52,868	114,896,602		
Food Security Household Response	39,948	86,218,073	75.56%	75.04%
Overall Food Security Response			65.11%	64.79%

Source: U.S. Census Bureau internal data from December 2015 CPS interviews.

*May not sum to totals due to rounding.

Table 2 shows weighted response rates for all CPS households by domain. The standard error column shows the standard error of the response rate. Standard errors are conditional on the sample and represent expected variability in the response process, rather than traditional sampling error. Replicate weights were used to calculate the standard errors to account for the sample design.

³ For CPS households, CPS household weights prior to noninterview adjustments were used. For FSS households, the FSS baseweights, which are the noninterview-adjusted weights from CPS, were used. Note that FSS weights are higher than CPS weights because they include the CPS noninterview adjustment, which inflates weights back up to the eligible weighted CPS household sample. The CPS Household Response row and Food Security Households row are the same set of households but are presented twice to show the difference in weights used.

Table 2: Response Rates for December 2015 CPS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping^x
Type of Living Quarters					
Housing Unit	58,065	109,401,649	86.21%	0.161%	B
Non-Housing Unit ⁴	3,249	5,417,526	90.22%	0.631%	A
Blank ⁵	42	77,427	6.98%	4.880%	C
Principal City Status					
Principal City within CBSA/MSA	19,925	38,047,814	84.82%	0.289%	C
Not Part of a Principal City within CBSA/MSA	29,029	60,032,533	86.40%	0.239%	B
Outside of a CBSA/MSA	12,402	16,816,255	89.58%	0.415%	A
Region					
Northeast	10,550	20,386,340	83.87%	0.453%	C
Midwest	12,096	25,494,863	87.89%	0.332%	A
South	22,866	43,098,059	86.33%	0.294%	B
West	15,844	25,917,339	86.79%	0.313%	B
Urban/Rural Status					
Urban	46,752	91,564,538	85.77%	0.181%	B
Rural	13,635	21,645,150	89.04%	0.383%	A
Missing	969	1,686,914	83.11%	1.534%	C
Race of Reference Person					
White Only	44,250	81,988,642	93.83%	0.129%	A
Black Only	6,337	12,528,960	91.51%	0.426%	B
Asian Only	2,255	4,608,554	93.29%	0.574%	A
Other Race/Two or More Races	1,571	2,295,193	92.65%	0.742%	A, B
Blank	6,943	13,475,254	32.53%	0.732%	C
Gender of Reference Person					
Male	28,493	53,302,951	92.91%	0.176%	A
Female	28,493	53,527,431	92.81%	0.157%	A
Blank	4,370	8,066,219	0.07%	0.048%	B
Hispanic Origin of Reference Person					
Hispanic	6,014	13,195,689	92.54%	0.357%	B
Non-Hispanic	50,295	92,330,420	93.55%	0.117%	A
Blank	5,047	9,370,493	6.62%	0.442%	C
Age of Reference Person					
15-29	6,392	11,559,776	91.20%	0.397%	E
30-39	9,163	17,123,353	92.04%	0.327%	D, E
40-49	9,284	17,792,399	92.61%	0.297%	C, D
50-59	10,780	20,309,507	93.25%	0.276%	C
60-69	9,619	17,717,095	95.17%	0.251%	B
70+	9,136	17,140,926	97.28%	0.201%	A
Blank or Less than 15	6,982	13,253,545	29.81%	0.690%	F
Overall	61,356	114,896,602	86.34%	0.156%	

Source: U.S. Census Bureau internal data from December 2015 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table 5.

^x Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

⁴ Non-HUs include quarters within rooming or boarding homes; non-permanent units in transient hotels, motels, etc.; unoccupied sites for mobile homes, trailers, or tents; group quarters in school dormitories; and other units that are not defined to be housing units.

⁵ Blank indicates that the living quarters type was either not identified or was identified with an invalid code.

Excluding the blanks and missing values, largest difference in response rates for the CPS subgroups is 6.08 percent, seen for the age of reference person, where age group 70+ has a response rate of 97.28 percent versus 91.20 percent for age group 15-29. Additionally, households in non-HUs have a higher response rate than HUs, midwest had the highest response rate among the regions, rural has a higher response rate than urban, Asian only and White only have higher response rates than Black only (none of which are significantly different from other race/two or more races), non-Hispanic has higher response rates than Hispanic, and households with references person aged 70+ have the highest response rates among the age groups.

The response rate for blanks within the demographic subgroups is so low because these demographic items are collected during the interview, resulting in a large portion of the household nonrespondents falling within these blank categories instead of the categories where they belong. Any household with a blank value within the demographic subgroups above indicates that the household has not previously responded to the CPS or never provided responses to those demographic questions in previous interviews. The nonresponse in the non-blank demographic categories are from households which had previously responded to the CPS and provided a valid response (non-blank) within the demographic category.

Table 2 shows standard errors which facilitate hypothesis testing of differential response rates. However, the practical significance of response rate differences is usually driven more by the magnitude of the difference. Therefore, excluding blanks, if the nonrespondents are different from respondents, principal city status and age of reference person have the most potential for bias.

Table 3 shows weighted response rates for all FSS households by domain.

Table 3: Response Rates for 2015 FSS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping ^x
Type of Living Quarters					
Housing Unit	49,950	109,311,325	75.09%	0.299%	A
Non-Housing Unit ⁶	2,916	5,579,233	73.98%	1.111%	A
Blank ⁷	2	6,043	100.00%	0.000%	N ⁺
Principal City Status					
Principal City within CBSA/MSA	16,853	38,013,576	73.57%	0.489%	C
Not Part of a Principal City within CBSA/MSA	25,064	60,032,533	75.22%	0.358%	B
Outside of a CBSA/MSA	10,951	16,850,493	77.71%	0.909%	A
Region					
Northeast	8,811	20,378,347	72.72%	0.707%	C
Midwest	10,608	25,494,863	78.65%	0.541%	A
South	19,707	43,106,053	74.17%	0.453%	B
West	13,742	25,917,339	74.76%	0.612%	B
Urban/Rural Status					
Urban	40,040	91,418,066	74.54%	0.312%	B
Rural	12,014	21,866,967	77.17%	0.713%	A
Missing	814	1,611,569	74.31%	2.267%	A, B
Race of Reference Person					
White Only	41,455	88,884,720	76.60%	0.313%	B
Black Only	5,793	13,373,411	69.59%	0.681%	C
Asian Only	2,106	5,046,915	70.04%	1.235%	C
Other Race/Two or More Races	1,452	2,455,425	80.03%	1.215%	A
Blank	2,062	5,136,131	64.70%	1.232%	D
Gender of Reference Person					
Male	26,456	57,316,521	75.21%	0.375%	A
Female	26,410	57,573,238	74.88%	0.343%	A
Blank	2	6,842	53.06%	39.217%	A ⁺
Hispanic Origin of Reference Person					
Hispanic	5,562	14,276,574	73.85%	0.763%	B
Non-Hispanic	46,974	99,904,757	75.63%	0.304%	A
Blank	332	715,271	16.68%	2.924%	C
Age of Reference Person					
15-29	5,826	12,229,482	75.72%	0.679%	C
30-39	8,424	18,300,118	76.61%	0.544%	B, C
40-49	8,577	19,100,087	75.72%	0.530%	C
50-59	10,042	21,909,070	75.70%	0.546%	C
60-69	9,159	19,486,260	78.25%	0.445%	A
70+	8,864	19,283,847	77.36%	0.555%	A, B
Blank or Less than 15	1,976	4,587,738	37.59%	1.202%	D
Overall	52,868	114,896,602	75.04%	0.294%	

Source: U.S. Census Bureau internal data from December 2015 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table 6.

N indicates that the estimate is not comparable.

⁺ Exercise caution: The sample size is extremely small, leading to unreliable estimates.

^x Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

⁶ See footnote 4.

⁷ See footnote 5.

For the FSS household estimates, we have no significant differences among the gender response rates, and excluding the blanks, the response rates between the type of living quarters are not significantly different. Excluding the blanks and missing values, the largest difference in response rates for the FSS subgroups is 10.44 percent, seen for the race of reference person, where other race/two or more races has a response rate of 80.03 percent versus 69.59 percent for black only (not significantly different from Asian only). Additionally, households outside the CBSA/MSA have the highest response rate within principal city status, rural has higher response rates than urban, non-Hispanic has higher response rates than Hispanic, and households with reference person aged 60-69 have the highest response rates among the age groups (not significantly different from reference person aged 70+).

Again, although Table 3 shows standard errors which facilitate hypothesis testing, the practical significance of response rate differences is driven more by the magnitude of the difference than the sample size. Therefore, excluding blanks, if the nonrespondents are different from respondents, race of reference person has the most potential for bias.

Table 4 shows weighted response rates for all FSS households by domain for characteristics that were only available for CPS respondents.

Table 4: Response Rates for 2015 FSS Households for Characteristics Only Available for Responding CPS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping ^x
Tenure (Edited)					
Owned or Mortgage	35,107	75,519,119	76.02%	0.308%	A
Rented for Cash	17,006	37,938,239	73.11%	0.505%	B
No Cash Rent	755	1,439,245	74.60%	2.236%	A, B
Family Income					
Less than \$10,000	2,912	6,062,107	79.12%	1.025%	C
\$10,000-\$19,999.99	4,431	9,268,125	82.06%	0.669%	B
\$20,000-\$29,999.99	4,703	10,144,735	81.80%	0.697%	B
\$30,000-\$39,999.99	4,386	9,461,316	82.64%	0.630%	B
\$40,000-\$49,999.99	3,373	7,180,189	83.07%	0.710%	A, B
\$50,000-\$59,999.99	3,241	6,921,466	82.57%	0.735%	B
\$60,000-\$74,999.99	3,952	8,586,429	82.54%	0.713%	B
\$75,000-\$99,999.99	4,435	9,594,610	84.32%	0.622%	A
\$100,000-\$149,999.99	4,570	10,187,341	82.96%	0.598%	A, B
\$150,000+	3,740	8,589,036	83.16%	0.740%	A, B
Blank or Don't Know	2,060	4,586,740	50.86%	1.333%	D
Refused	11,065	24,314,509	53.12%	0.653%	D
Household Type					
Husband/Wife Primary Family	25,608	55,941,698	75.79%	0.338%	A
Unmarried Householder					
Primary Family	8,798	19,635,736	73.33%	0.575%	C
Primary Individual	18,380	39,173,946	74.81%	0.438%	B
Group Quarters with Family	13	19,468	56.38%	17.506%	A, B, C ⁺
Group Quarters without Family	69	125,754	82.28%	7.907%	A, B, C
Child(ren) Present (Edited)					
No	39,222	84,863,020	74.76%	0.321%	B
Yes	13,646	30,033,581	75.83%	0.475%	A
Measure of Labor Force of Reference Person					
Employed	31,385	68,285,842	75.05%	0.349%	B
Unemployed	1,326	2,917,619	77.98%	1.245%	A
Not in Labor Force	19,756	42,849,040	75.20%	0.426%	B
Blank	401	844,101	56.25%	3.062%	C
Overall	52,868	114,896,602	75.04%	0.294%	

Source: U.S. Census Bureau internal data from December 2015 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table 7.

⁺ Exercise caution: The sample size is small, leading to unreliable estimates.

^x Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

For the FSS household estimates of characteristics only available for CPS respondents, excluding the blanks, refusals, and GQ groups, the largest difference in response rates for any of the subgroups is 5.20 percent⁸, seen for the income variable, where the rates range from 79.12 percent for income less than \$10,000 to 84.32 percent for income \$75,000-\$99,999.99. (Note: Within household type, while the difference between husband/wife primary family and GQs with family is 25.90 percent, it is not significantly different from 0, which is why the largest difference is found within the income variable.) For the tenure category,

⁸ Excluding blanks, this difference is not significantly different from 2.93 percent, seen for the measure of labor force of reference person, where the rates range from 75.05 percent for employed to 77.98 percent for unemployed.

own/mortgage has a higher response rate than cash rent (neither are significantly different from no cash rent), and within the children present category, households having children had a higher response rate than households without children. Among the non-GQ households, husband/wife primary families had the highest response rate. For the measure of labor force of reference person category, unemployed reference persons had a higher response rate than reference person who were unemployed or not in the labor force.

Again, although Table 4 shows standard errors which facilitate hypothesis testing, the practical significance of response rate differences is driven more by the magnitude of the difference than the sample size. Therefore, excluding blanks, if the nonrespondents are different from respondents, among the categories in Table 4, income has the most potential for bias.

9. Respondent Distributions

Respondent and nonrespondent distributions show the relative percent of members of a domain subset within respondents and nonrespondents separately. This is different than the response rates, which are the relative percent of respondents within the different domain subsets. We used chi-square tests to determine if the respondent and nonrespondent distributions differed.

Respondent distributions are defined as:

$$RD = \frac{\sum_{i \in s} w_i R_i D_i}{\sum_{i \in s} w_i R_i}$$

This definition assumes the same eligibility criteria, weights, and indicators as the response rate calculations in the previous section. Nonrespondent distributions use the same formula, but with the R_i variable indicating nonrespondents instead of respondents. The chi-square test statistics were calculated using replicate weights to account for the sample design.

Table 5 shows the percent of total sample distribution as well as comparisons of respondent and nonrespondent distributions for CPS households within the different domain subgroups.

Table 5: Respondent and Nonrespondent Distributions for December 2015 CPS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Type of Living Quarters					
Housing Unit	95.22%	95.07%	96.16%	187.5428 (2) [28.9847 (1)]	< 0.0001 < 0.0001]
Non-Housing Unit	4.72%	4.93%	3.38%		
Blank	0.07%	0.01%	0.46%		
Principal City Status					
Principal City within CBSA/MSA	33.11%	32.53%	36.80%	73.2449 (2)	< 0.0001
Not Part of a Principal City within CBSA/MSA	52.25%	52.28%	52.03%		
Outside of a CBSA/MSA	14.64%	15.18%	11.17%		
Region					
Northeast	17.74%	17.23%	20.96%	55.7301 (3)	< 0.0001
Midwest	22.19%	22.59%	19.67%		
South	37.51%	37.51%	37.54%		
West	22.56%	22.67%	21.83%		
Urban/Rural Status					
Urban	79.69%	79.16%	83.07%	56.9957 (2) [47.8369 (1)]	< 0.0001 < 0.0001]
Rural	18.84%	19.43%	15.11%		
Missing	1.47%	1.41%	1.82%		
Race of Reference Person					
White Only	71.36%	77.55%	32.23%	14,363.5781 (4) [40.2352 (3)]	< 0.0001 < 0.0001]
Black Only	10.90%	11.56%	6.78%		
Asian Only	4.01%	4.33%	1.97%		
Other Race/ Two or More Races	2.00%	2.14%	1.08%		
Blank	11.73%	4.42%	57.94%		
Gender of Reference Person					
Male	46.39%	49.92%	24.09%	22,700.5337 (2) [0.1877 (1)]	< 0.0001 0.6649]
Female	46.59%	50.07%	24.54%		
Blank	7.02%	0.01%	51.37%		
Hispanic Origin of Reference Person					
Hispanic	11.48%	12.31%	6.27%	21,621.5060 (2) [7.7121 (1)]	< 0.0001 0.0055]
Non-Hispanic	80.36%	87.06%	37.96%		
Blank	8.16%	0.63%	55.77%		
Age of Reference Person					
15-29	10.06%	10.63%	6.49%	16,161.2963 (6) [270.7361 (5)]	< 0.0001 < 0.0001]
30-39	14.90%	15.89%	8.68%		
40-49	15.49%	16.61%	8.38%		
50-59	17.68%	19.09%	8.73%		
60-69	15.42%	17.00%	5.45%		
70+	14.92%	16.81%	2.97%		
Blank or Less than 15	11.54%	3.98%	59.29%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2015 CPS interviews.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks/missings are excluded from the chi-square test.

The chi-square tests for CPS households showed significant differences (at the $\alpha=0.10$ level) between respondent and nonrespondent distributions for all variables. Simply looking at the distributions for the race, gender, Hispanic origin, and age of reference person, you can tell

that there are big differences between the respondent and nonrespondent distributions, which corresponds to the magnitude of the chi-square test statistics (14,363.58, 22,700.53, 21,621.51, and 16,161.30, respectively). However, when you exclude the blanks from the chi-square test, the gender of the reference person no longer has a significant difference between the two distributions. Note: The chi-square tests only indicate that the distributions of respondents and nonrespondents differ but do not necessarily indicate a nonresponse bias problem. These differences will only cause bias if the respondents and nonrespondents report differing rates of food security.

Even though there are significant differences between the respondents and nonrespondents, the differences might not be large enough to cause meaningful differences in estimates. Furthermore, weighting adjustments might also minimize the impact of some differences. Because the CPS noninterview adjustments take NICL and central city status into account, the principal city status and region differences may be reduced within those adjustments.

Table 6 shows the percent of total sample distribution as well as comparisons of respondent and nonrespondent distributions for FSS households within the different domain subgroups.

Table 6: Respondent and Nonrespondent Distributions for 2015 FSS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Type of Living Quarters					
Housing Unit	95.14%	95.21%	94.94%	N/A (2)	N/A
Non-Housing Unit	4.86%	4.79%	5.06%	[1.0051 (1)]	0.3161]
Blank	0.01%	0.01%	0.00%		
Principal City Status					
Principal City within CBSA/MSA	33.09%	32.44%	35.04%		
Not Part of a Principal City within CBSA/MSA	52.25%	52.38%	51.87%	18.8838 (2)	< 0.0001
Outside of a CBSA/MSA	14.67%	15.19%	13.10%		
Region					
Northeast	17.74%	17.19%	19.38%		
Midwest	22.19%	23.26%	18.98%	54.4022 (3)	< 0.0001
South	37.52%	37.08%	38.83%		
West	22.56%	22.47%	22.81%		
Urban/Rural Status					
Urban	79.57%	79.04%	81.15%	12.9933 (2)	0.0015
Rural	19.03%	19.57%	17.41%	[11.1872 (1)]	0.0008]
Missing	1.40%	1.39%	1.44%		
Race of Reference Person					
White Only	77.36%	78.97%	72.52%		
Black Only	11.64%	10.79%	14.18%		
Asian Only	4.39%	4.10%	5.27%	243.4677 (4)	< 0.0001
Other Race/ Two or More Races	2.14%	2.28%	1.71%	[143.6142 (3)]	< 0.0001]
Blank	4.47%	3.85%	6.32%		
Gender of Reference Person					
Male	49.89%	50.00%	49.55%	1.1310 (2)	0.5681
Female	50.11%	50.00%	50.43%	[0.6275 (1)]	0.4283]
Blank	0.01%	Z%	0.01%		
Hispanic Origin of Reference Person					
Hispanic	12.43%	12.23%	13.02%	316.5346 (2)	< 0.0001
Non-Hispanic	86.95%	87.63%	84.90%	[5.2768 (1)]	0.0216]
Blank	0.62%	0.14%	2.08%		
Age of Reference Person					
15-29	10.64%	10.74%	10.35%		
30-39	15.93%	16.26%	14.92%		
40-49	16.62%	16.77%	16.17%	1,385.6153 (6)	< 0.0001
50-59	19.07%	19.24%	18.56%	[23.0130 (5)]	0.0003]
60-69	16.96%	17.68%	14.78%		
70+	16.78%	17.30%	15.22%		
Blank or Less than 15	3.99%	2.00%	9.98%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2015 CPS interviews.

Note: The chi-square test for type of living quarters could not be calculated due to a frequency of 0 within the blank/nonrespondent cell.

Z: value rounds to zero but is not zero.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks/missings are excluded from the chi-square test.

The chi-square tests for FSS households showed significant differences (at the $\alpha=0.10$ level) for the distributions of all variables except type of living quarters and gender of reference person. Simply looking at the distributions for age of the reference person, you can tell that there are big differences between the respondent and nonrespondent distributions, which correspond to the magnitude of the chi-square test statistic (1,385.62).

As mentioned for CPS household respondent distributions, the chi-square tests only indicate that the distributions of respondents and nonrespondents differ but do not necessarily indicate a nonresponse bias problem. Furthermore, weighting adjustments might minimize the impact of some differences. Because the FSS noninterview adjustments take NICL and central city status into account, the principal city status and region differences may be reduced within those adjustments.

Table 7 shows the percent of total sample distribution as well as comparisons of respondent and nonrespondent distributions for FSS households within the different domain subgroups for characteristics that were only available for CPS respondents.

Table 7: Respondent and Nonrespondent Distributions for 2015 FSS Households for Characteristics Only Available for Responding CPS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Tenure (Edited)					
Owned or Mortgage	65.73%	66.58%	63.15%	31.0653 (2)	< 0.0001
Rented for Cash	33.02%	32.17%	35.57%		
No Cash Rent	1.25%	1.25%	1.27%		
Family Income					
Less than \$10,000	5.28%	5.56%	4.41%	3,577.4282 (11) [28.3240 (9)]	< 0.0001 0.0008
\$10,000-\$19,999.99	8.07%	8.82%	5.80%		
\$20,000-\$19,999.99	8.83%	9.63%	6.44%		
\$30,000-\$19,999.99	8.23%	9.07%	5.73%		
\$40,000-\$19,999.99	6.25%	6.92%	4.24%		
\$50,000-\$19,999.99	6.02%	6.63%	4.21%		
\$60,000-\$19,999.99	7.47%	8.22%	5.23%		
\$75,000-\$19,999.99	8.35%	9.38%	5.25%		
\$100,000-\$19,999.99	8.87%	9.80%	6.05%		
\$150,000-\$19,999.99	7.48%	8.28%	5.04%		
Blank or Don't Know	3.99%	2.71%	7.86%		
Refused	21.16%	14.98%	39.75%		
Household Type					
Husband/Wife Primary Family	48.69%	49.18%	47.22%	17.3372 (4) {15.0907 (3)}	0.0017 0.0017
Unmarried Householder Primary Family	17.09%	16.70%	18.26%		
Primary Individual	34.10%	33.99%	34.41%		
Group Quarters with Family	0.02%	0.01%	0.03%		
Group Quarters without Family	0.11%	0.12%	0.08%		
Child(ren) Present (Edited)					
No	73.86%	73.59%	74.69%	4.4606 (1)	0.0347
Yes	26.14%	26.41%	25.31%		
Measure of Labor Force of Reference Person					
Employed	59.43%	59.44%	59.42%	56.9167 (3) [4.3552 (2)]	< 0.0001 0.1133
Unemployed	2.54%	2.64%	2.24%		
Not in Labor Force	37.29%	37.37%	37.06%		
Blank	0.73%	0.55%	1.29%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2015 CPS interviews.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks and refusals are excluded from the chi-square test.

{ } The values within braces are the chi-square statistic, df, and p-value when the GQ groups are combined.

The chi-square tests for FSS household estimates of characteristics only available for CPS respondents showed significant differences (at the $\alpha=0.10$ level) for the distributions of all variables. Simply looking at the distributions for family income, you can tell that there are big differences between the respondent and nonrespondent distributions, which correspond to the magnitude of the chi-square test statistic (3,577.43). Even after excluding the blanks and refusals, there is still a significant difference between the respondent and nonrespondent distributions for income. However, when you exclude the blanks from the chi-square test,

the unedited measure of the labor force of the reference person no longer has a significant difference between the two distributions.

As mentioned previously, the chi-square tests only indicate that the distributions of respondents and nonrespondents differ but do not necessarily indicate a nonresponse bias problem. Furthermore, weighting adjustments might minimize the impact of some differences.

10. Discussions and Conclusions

This analysis found evidence of potential nonresponse bias for both CPS and FSS households. For CPS, there is potential nonresponse bias for all investigated characteristics except possibly for gender of reference person. For FSS, there is potential nonresponse bias for all investigated characteristics except gender of reference person and type of living quarters.

Excluding the blanks and missing values, the largest difference in response rates for the CPS subgroups is 6.08 percent, seen for the age of reference person, where age group 70+ has a response rate of 97.28 percent versus 91.20 percent for age group 15-29. For respondent and nonrespondent distributions within CPS households, the largest differences are seen within race, Hispanic origin, and age of reference person.

Excluding the blanks and missing values, the largest difference in response rates for the FSS subgroups is 10.44 percent, seen for the race of reference person, where other race/two or more races has a response rate of 80.03 percent versus 69.59 percent for black only (not significantly different from Asian only). For respondent and nonrespondent distributions within FSS households, the largest difference is seen within age of reference person.

Among the estimates for the FSS households for characteristics only available for CPS respondents, the largest differences in response rates⁹ and between the respondent and nonrespondent distributions are seen within income.

Using the information learned from this analysis, discussions should be had with the sponsor regarding enhancements to the weighting process. The findings suggest that research be done into the possible inclusion of other geographic and demographic characteristics into the household noninterview adjustments for the FSS. Research could be conducted into whether the nonresponse adjustment should include the geographic and demographic characteristics that were investigated in this report to determine if they can help reduce the nonresponse bias. Some other potential characteristics that may be related to food security to consider including in the noninterview adjustment may be block and/or tract planning database variables, which would include geographic and demographic variables based on the location of the sampled household, such as percent of population that is Hispanic, percent of HUs where no one lives regularly (vacant HUs), percent of population that is below the poverty level. Note: planning database variables are estimates using American Community Survey or Census data.

⁹ See footnote 8.

11. References

Bureau of Labor Statistics. (April 2014). “Redesign of the Sample for the Current Population Survey.” http://www.bls.gov/cps/sample_redesign_2014.pdf

Office of Management and Budget. (2006). “Standards and Guidelines for Statistical Surveys.” https://georgewbush-whitehouse.archives.gov/omb/inforeg/statpolicy/standards_stat_surveys.pdf

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U.S. Census Bureau. (2016). “Current Population Survey Food Security Supplement.” <https://catalog.data.gov/dataset/current-population-survey-food-security-supplement>

All online references last accessed: October 31, 2017

Key differences between these 2014 tables and the 2015 tables are:

- For December 2015 CPS, there is no significant difference in response rates for gender of reference person, excluding blanks (Table 2). This is not the case for December 2014 CPS (Table A-2).
- For 2015 FSS, there is no significant difference in response rates for gender of reference person, excluding blanks (Table 3). This is not the case for 2014 FSS (Table A-3).
- For 2015 FSS within responding CPS households, there is a significant difference in response rates for child(ren) present (Table 4). This is not the case in 2014 FSS within responding CPS households (Table A-4).
- For December 2015 CPS, the respondent and nonrespondent distributions (excluding blanks/missings) are not significantly different at the $\alpha=0.10$ level for gender of reference person (Table 5). This is not the case for December 2014 CPS (Table A-5).
- For 2015 FSS, the respondent and nonrespondent distributions (excluding blanks/missings) are not significantly different at the $\alpha=0.10$ level for gender of reference person (Table 6). This is not the case for 2014 FSS (Table A-6).
- For 2015 FSS within responding CPS households, the respondent and nonrespondent distributions are significantly different at the $\alpha=0.10$ level for child(ren) present (Table 7). This is not the case for 2014 FSS within responding CPS households (Table A-7).
- For 2015 FSS within responding CPS households, the respondent and nonrespondent distributions (excluding blanks/missings) are not significantly different at the $\alpha=0.10$ level for measure of labor force of reference person (Table 7). This is not the case for 2014 FSS within responding CPS households (Table A-7).

Table A-1: 2014 Food Security Unit Response Rates

Response Category	Count	Weighted Sum ^{10*}	Response Rates	
			Unweighted*	Weighted*
Sampled CPS Households	73,842	132,791,561		
Eligible CPS Households	61,677	112,013,896		
CPS Household Response	53,901	98,076,311	87.39%	87.56%
Food Security Households	53,901	112,013,896		
Food Security Household Response	43,253	89,013,820	80.25%	79.47%
Overall Food Security Response			70.13%	69.58%

Source: U.S. Census Bureau internal data from December 2014 CPS interviews.

* May not sum to totals due to rounding.

¹⁰ See footnote 3.

Table A-2: Response Rates for December 2014 CPS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping^x
Type of Living Quarters					
Housing Unit	58,553	106,822,202	87.43%	0.187%	B
Non-Housing Unit ¹¹	3,087	5,119,044	91.07%	0.683%	A
Blank ¹²	37	72,651	25.43%	9.151%	C
Principal City Status					
Principal City within CBSA/MSA	19,597	36,295,447	86.52%	0.315%	C
Not Part of a Principal City within CBSA/MSA	28,678	57,067,389	87.45%	0.231%	B
Outside of a CBSA/MSA	13,402	18,651,060	89.90%	0.484%	A
Region					
Northeast	11,457	20,072,141	83.79%	0.440%	B
Midwest	12,842	25,253,261	88.53%	0.394%	A
South	22,041	41,786,724	88.09%	0.298%	A
West	15,337	24,901,770	88.72%	0.306%	A
Urban/Rural Status					
Urban	44,512	84,304,411	87.18%	0.198%	B
Rural	13,139	20,326,339	89.72%	0.397%	A
Missing	4,026	7,383,146	85.94%	0.646%	C
Race of Reference Person					
White Only	44,935	80,788,809	94.55%	0.134%	A
Black Only	6,323	12,245,388	92.58%	0.415%	C
Asian Only	2,295	4,421,669	94.10%	0.577%	A, B
Other Race/Two or More Races	1,540	2,208,697	93.31%	0.701%	B, C
Blank	6,584	12,349,334	33.47%	0.762%	D
Gender of Reference Person					
Male	28,924	52,495,216	93.91%	0.158%	A
Female	28,702	52,200,009	93.44%	0.162%	B
Blank	4,051	7,318,671	0.03%	0.021%	C
Hispanic Origin of Reference Person					
Hispanic	6,033	12,892,470	93.09%	0.388%	B
Non-Hispanic	50,925	90,636,797	94.32%	0.121%	A
Blank	4,719	8,484,630	6.96%	0.433%	C
Age of Reference Person					
15-29	6,633	11,678,587	91.83%	0.389%	E
30-39	9,177	16,883,352	93.07%	0.308%	D
40-49	9,583	17,784,729	93.60%	0.265%	D
50-59	11,157	20,225,358	94.34%	0.243%	C
60-69	9,346	16,680,016	96.04%	0.236%	B
70+	9,160	16,528,193	97.36%	0.186%	A
Blank or Less than 15	6,621	12,233,662	31.05%	0.617%	F
Overall	61,677	112,013,896	87.56%	0.185%	

Source: U.S. Census Bureau internal data from December 2014 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table A-5.

^x Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

¹¹ See footnote 4.

¹² See footnote 5.

Table A-3: Response Rates for 2014 FSS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping ^x
Type of Living Quarters					
Housing Unit	51,089	106,758,410	79.39%	0.261%	A
Non-Housing Unit ¹³	2,803	5,234,116	80.89%	0.955%	A
Blank ¹⁴	9	21,370	100.00%	0.000%	N ⁺
Principal City Status					
Principal City within CBSA/MSA	16,892	36,315,277	78.06%	0.443%	B
Not Part of a Principal City within CBSA/MSA	25,063	57,061,201	78.80%	0.308%	B
Outside of a CBSA/MSA	11,946	18,637,418	84.25%	0.742%	A
Region					
Northeast	9,564	20,072,141	77.94%	0.519%	C
Midwest	11,386	25,253,261	81.45%	0.621%	A
South	19,420	41,786,724	79.63%	0.457%	B
West	13,531	24,901,770	78.41%	0.570%	C
Urban/Rural Status					
Urban	38,756	84,235,496	78.76%	0.277%	B
Rural	11,699	20,533,685	82.84%	0.614%	A
Missing	3,446	7,244,716	78.15%	0.980%	B
Race of Reference Person					
White Only	42,408	87,060,508	80.73%	0.271%	A
Black Only	5,843	13,039,573	76.52%	0.666%	B
Asian Only	2,162	4,802,349	75.94%	1.084%	B
Other Race/Two or More Races	1,443	2,346,335	81.12%	1.236%	A
Blank	2,045	4,765,132	67.24%	1.183%	C
Gender of Reference Person					
Male	27,101	56,293,466	78.92%	0.368%	B
Female	26,798	55,718,397	80.02%	0.297%	A
Blank	2	2,034	0.00%	0.000%	N ⁺
Hispanic Origin of Reference Person					
Hispanic	5,599	13,742,852	77.95%	0.592%	B
Non-Hispanic	47,964	97,599,219	80.10%	0.268%	A
Blank	338	671,826	18.27%	2.556%	C
Age of Reference Person					
15-29	6,070	12,265,994	79.79%	0.689%	B
30-39	8,537	17,988,267	80.01%	0.539%	B
40-49	8,950	19,011,844	80.16%	0.519%	B
50-59	10,515	21,786,929	80.29%	0.521%	B
60-69	8,957	18,273,900	82.99%	0.454%	A
70+	8,910	18,345,606	82.22%	0.480%	A
Blank or Less than 15	1,962	4,341,357	42.68%	1.298%	C
Overall	53,901	112,013,896	79.47%	0.261%	

Source: U.S. Census Bureau internal data from December 2014 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table A-6.

N indicates that the estimate is not comparable.

⁺ Exercise caution: The sample size is extremely small, leading to unreliable estimates.

^x Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

¹³ See footnote 4.

¹⁴ See footnote 5.

Table A-4: Response Rates for 2014 FSS Households for Characteristics Only Available for Responding CPS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping [×]
Tenure (Edited)					
Owned or Mortgage	35,771	73,474,852	79.96%	0.304%	B
Rented for Cash	17,357	37,097,582	78.34%	0.422%	C
No Cash Rent	773	1,441,462	83.36%	1.612%	A
Family Income					
Less than \$10,000	3,275	6,718,702	83.03%	0.742%	D
\$10,000-\$19,999.99	4,827	9,874,916	85.82%	0.597%	B, C
\$20,000-\$29,999.99	4,970	10,117,035	87.58%	0.551%	A
\$30,000-\$39,999.99	4,808	10,086,378	87.13%	0.616%	A, B
\$40,000-\$49,999.99	3,565	7,232,210	85.97%	0.704%	B, C
\$50,000-\$59,999.99	3,344	6,772,380	86.71%	0.701%	A, C
\$60,000-\$74,999.99	4,079	8,334,511	87.45%	0.606%	A
\$75,000-\$99,999.99	4,636	9,369,489	87.16%	0.635%	A, B
\$100,000-\$149,999.99	4,615	9,528,595	86.65%	0.568%	A, C
\$150,000+	3,687	8,056,046	85.56%	0.647%	C
Blank or Don't Know	1,931	4,170,815	58.44%	1.426%	E
Refused	10,164	21,752,820	55.99%	0.708%	E
Household Type					
Husband/Wife Primary Family	26,259	54,789,600	79.76%	0.325%	B
Unmarried Householder					
Primary Family	8,912	18,952,790	78.27%	0.535%	C
Primary Individual	18,671	38,170,621	79.61%	0.395%	B
Group Quarters with Family	8	12,053	100.00%	0.000%	N ⁺
Group Quarters without Family	51	88,832	90.45%	5.032%	A
Child(ren) Present (Edited)					
No	39,772	82,033,372	79.48%	0.301%	A
Yes	14,129	29,980,524	79.44%	0.364%	A
Measure of Labor Force of Reference Person					
Employed	32,144	66,515,098	79.35%	0.352%	B
Unemployed	1,547	3,289,593	85.04%	0.994%	A
Not in Labor Force	19,796	41,387,810	79.65%	0.350%	B
Blank	414	821,395	56.91%	3.124%	C
Overall	53,901	112,013,896	79.47%	0.261%	

Source: U.S. Census Bureau internal data from December 2014 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table A-7.

N indicates that the estimate is not comparable.

⁺ Exercise caution: The sample size is small, leading to unreliable estimates.

[×] Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

Table A-5: Respondent and Nonrespondent Distributions for December 2014 CPS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Type of Living Quarters					
Housing Unit	95.37%	95.23%	96.33%	107.0932 (2)	< 0.0001
Non-Housing Unit	4.57%	4.75%	3.28%	[21.2686 (1)]	< 0.0001
Blank	0.06%	0.02%	0.39%		
Principal City Status					
Principal City within CBSA/MSA	32.40%	32.02%	35.11%		
Not Part of a Principal City within CBSA/MSA	50.95%	50.89%	51.37%	36.6337 (2)	< 0.0001
Outside of a CBSA/MSA	16.65%	17.10%	13.52%		
Region					
Northeast	17.92%	17.15%	23.35%		
Midwest	22.54%	22.79%	20.79%	107.8065 (3)	< 0.0001
South	37.30%	37.53%	35.71%		
West	22.23%	22.53%	20.16%		
Urban/Rural Status					
Urban	75.26%	74.94%	77.56%	42.5240 (2)	< 0.0001
Rural	18.15%	18.60%	14.99%	[33.9319 (1)]	< 0.0001
Missing	6.59%	6.47%	7.45%		
Race of Reference Person					
White Only	72.12%	77.88%	31.60%		
Black Only	10.93%	11.56%	6.52%		
Asian Only	3.95%	4.24%	1.87%	15,004.0635 (4)	< 0.0001
Other Race/ Two or More Races	1.97%	2.10%	1.06%	[31.6227 (3)]	< 0.0001
Blank	11.02%	4.21%	58.95%		
Gender of Reference Person					
Male	46.86%	50.26%	22.94%	47,930.0749 (2)	< 0.0001
Female	46.60%	49.73%	24.56%	[4.7499 (1)]	0.0293
Blank	6.53%	Z	52.50%		
Hispanic Origin of Reference Person					
Hispanic	11.51%	12.24%	6.39%	24,609.0812 (2)	< 0.0001
Non-Hispanic	80.92%	87.16%	36.97%	[10.4806 (1)]	0.0012
Blank	7.57%	0.60%	56.64%		
Age of Reference Person					
15-29	10.43%	10.93%	6.84%		
30-39	15.07%	16.02%	8.39%		
40-49	15.88%	16.97%	8.16%		
50-59	18.06%	19.45%	8.21%	19,475.2661 (6)	< 0.0001
60-69	14.89%	16.33%	4.74%	[263.9506 (5)]	< 0.0001
70+	14.76%	16.41%	3.13%		
Blank or Less than 15	10.92%	3.87%	60.52%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2014 CPS interviews.

Z: value rounds to zero but is not zero.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks/missings are excluded from the chi-square test.

Table A-6: Respondent and Nonrespondent Distributions for 2014 FSS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Type of Living Quarters					
Housing Unit	95.31%	95.22%	95.65%	N/A (2)	N/A
Non-Housing Unit	4.67%	4.76%	4.35%	[2.3893 (1)]	0.1222]
Blank	0.02%	0.02%	0.00%		
Principal City Status					
Principal City within CBSA/MSA	32.42%	31.85%	34.64%	61.3230 (2)	< 0.0001
Not Part of a Principal City within CBSA/MSA	50.94%	50.51%	52.59%		
Outside of a CBSA/MSA	16.64%	17.64%	12.76%		
Region					
Northeast	17.92%	17.58%	19.25%	21.2941 (3)	< 0.0001
Midwest	22.54%	23.11%	20.37%		
South	37.30%	37.38%	37.01%		
West	22.23%	21.94%	23.37%		
Urban/Rural Status					
Urban	75.20%	74.53%	77.80%	40.9023 (2)	< 0.0001
Rural	18.33%	19.11%	15.32%	[36.8120 (1)]	< 0.0001]
Missing	6.47%	6.36%	6.88%		
Race of Reference Person					
White Only	77.72%	78.96%	72.95%	227.2791 (4)	< 0.0001
Black Only	11.64%	11.21%	13.31%		
Asian Only	4.29%	4.10%	5.02%		
Other Race/ Two or More Races	2.09%	2.14%	1.93%		
Blank	4.25%	3.60%	6.79%		
Gender of Reference Person					
Male	50.26%	49.91%	51.60%	N/A (2)	N/A
Female	49.74%	50.09%	48.39%	[7.0552 (1)]	0.0079]
Blank	Z	0.00%	0.01%		
Hispanic Origin of Reference Person					
Hispanic	12.27%	12.04%	13.17%	583.4608 (2)	< 0.0001
Non-Hispanic	87.13%	87.83%	84.44%	[13.5478 (1)]	0.0002]
Blank	0.60%	0.14%	2.39%		
Age of Reference Person					
15-29	10.95%	11.00%	10.78%	1,301.6616 (6)	< 0.0001
30-39	16.06%	16.17%	15.64%		
40-49	16.97%	17.12%	16.40%		
50-59	19.45%	19.65%	18.67%		
60-69	16.31%	17.04%	13.52%		
70+	16.38%	16.95%	14.18%		
Blank or Less than 15	3.88%	2.08%	10.82%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2014 CPS interviews.

Note: The chi-square tests for type of living quarters and gender of reference person could not be calculated due to frequencies of 0 within the blank/nonrespondent cell and blank/respondent cell, respectively.

Z: value rounds to zero but is not zero.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks/missings are excluded from the chi-square test.

Table A-7: Respondent and Nonrespondent Distributions for 2014 FSS Households for Characteristics Only Available for Responding CPS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Tenure (Edited)					
Owned or Mortgage	65.59%	66.00%	64.02%	17.3884 (2)	0.0002
Rented for Cash	33.12%	32.65%	34.93%		
No Cash Rent	1.29%	1.35%	1.04%		
Family Income					
Less than \$10,000	6.00%	6.27%	4.96%	3,774.8240 (11) [37.3832 (9)]	< 0.0001 < 0.0001]
\$10,000-\$19,999.99	8.82%	9.52%	6.09%		
\$20,000-\$19,999.99	9.03%	9.95%	5.46%		
\$30,000-\$19,999.99	9.00%	9.87%	5.64%		
\$40,000-\$19,999.99	6.46%	6.99%	4.41%		
\$50,000-\$19,999.99	6.05%	6.60%	3.91%		
\$60,000-\$19,999.99	7.44%	8.19%	4.55%		
\$75,000-\$19,999.99	8.36%	9.17%	5.23%		
\$100,000-\$19,999.99	8.51%	9.28%	5.53%		
\$150,000-\$19,999.99	7.19%	7.74%	5.06%		
Blank or Don't Know	3.72%	2.74%	7.54%		
Refused	19.42%	13.68%	41.62%		
Household Type					
Husband/Wife Primary Family	48.91%	49.09%	48.22%	N/A (4) {10.6672 (3)}	N/A 0.0137}
Unmarried Householder Primary Family	16.92%	16.67%	17.90%		
Primary Individual	34.08%	34.14%	33.84%		
Group Quarters with Family	0.01%	0.01%	0.00%		
Group Quarters without Family	0.08%	0.09%	0.04%		
Child(ren) Present (Edited)					
No	73.23%	73.24%	73.20%	0.0081 (1)	0.9281
Yes	26.77%	26.76%	26.80%		
Measure of Labor Force of Reference Person					
Employed	59.38%	59.30%	59.71%	103.3932 (3) [20.5905 (2)]	< 0.0001 < 0.0001]
Unemployed	2.94%	3.14%	2.14%		
Not in Labor Force	36.95%	37.04%	36.61%		
Blank	0.73%	0.53%	1.54%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2014 CPS interviews.

Note: The chi-square test for household type could not be calculated due to a frequency of 0 within the GQ with family/nonrespondent cell.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks and refusals are excluded from the chi-square test.

{ } The values within braces are the chi-square statistic, df, and p-value when the GQ groups are combined.

Key differences between these 2013 tables and the 2015 tables are:

- For December 2015 CPS, there is significant difference in response rates for Hispanic origin of reference person, excluding blanks (Table 2). This is not the case for December 2013 CPS (Table B-2).
- For 2015 FSS, there is significant difference in response rates for principal city status (Table 3). This is not the case for 2013 FSS (Table B-3).
- For 2015 FSS, there is no significant difference in response rates for gender of reference person, excluding blanks (Table 3). This is not the case for 2013 FSS (Table B-3).
- For December 2015 CPS, the respondent and nonrespondent distributions (excluding blanks/missings) are significantly different at the $\alpha=0.10$ level for Hispanic origin of reference person (Table 5). This is not the case for December 2013 CPS (Table B-5).
- For 2015 FSS, the respondent and nonrespondent distributions are significantly different at the $\alpha=0.10$ level for principal city status (Table 6). This is not the case for 2013 FSS (Table B-6).
- For 2015 FSS, the respondent and nonrespondent distributions (excluding blanks/missings) are not significantly different at the $\alpha=0.10$ level for gender of reference person (Table 6). This is not the case for 2013 FSS (Table B-6).
- For 2015 FSS within responding CPS households, the respondent and nonrespondent distributions (with GQ groups combined) are significantly different at the $\alpha=0.10$ level for household type (Table 7). This is not the case for 2013 FSS within responding CPS households (Table B-7).
- For 2015 FSS within responding CPS households, the respondent and nonrespondent distributions (excluding blanks/missings) are not significantly different at the $\alpha=0.10$ level for measure of labor force of reference person (Table 7). This is not the case for 2013 FSS within responding CPS households (Table B-7).

Table B-1: 2013 Food Security Unit Response Rates

Response Category	Count	Weighted Sum ^{15*}	Response Rates	
			Unweighted*	Weighted*
Sampled CPS Households	72,654	130,027,288		
Eligible CPS Households	59,759	108,047,388		
CPS Household Response	53,410	96,922,728	89.38%	89.70%
Food Security Households	53,410	108,047,389		
Food Security Household Response	42,147	85,019,318	78.91%	78.69%
Overall Food Security Response			70.53%	70.59%

Source: U.S. Census Bureau internal data from December 2013 CPS interviews.

* May not sum to totals due to rounding.

¹⁵ See footnote 3.

Table B-2: Response Rates for December 2013 CPS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping^x
Type of Living Quarters					
Housing Unit	56,948	103,015,202	89.55%	0.147%	B
Non-Housing Unit ¹⁶	2,735	4,902,128	93.55%	0.550%	A
Blank ¹⁷	76	130,058	65.08%	7.469%	C
Principal City Status					
Principal City within CBSA/MSA	19,499	35,937,244	88.86%	0.243%	C
Not Part of a Principal City within CBSA/MSA	28,021	54,929,762	89.59%	0.197%	B
Outside of a CBSA/MSA	12,239	17,180,383	91.83%	0.404%	A
Region					
Northeast	12,320	19,627,931	85.08%	0.399%	B
Midwest	14,090	24,721,632	90.45%	0.337%	A
South	19,002	39,557,362	90.89%	0.244%	A
West	14,347	24,140,464	90.76%	0.279%	A
Urban/Rural Status					
Urban	46,331	86,849,144	89.29%	0.154%	B
Rural	13,428	21,198,244	91.38%	0.353%	A
Race of Reference Person					
White Only	44,568	79,321,936	95.30%	0.111%	A
Black Only	5,937	12,064,561	93.95%	0.359%	B
Asian Only	2,224	4,161,550	95.06%	0.563%	A, B
Other Race/Two or More Races	1,475	2,223,255	94.38%	0.752%	A, B
Blank	5,555	10,276,086	38.32%	0.816%	C
Gender of Reference Person					
Male	28,354	51,060,524	94.73%	0.148%	A
Female	28,169	51,247,854	94.73%	0.148%	A
Blank	3,236	5,739,010	0.09%	0.066%	B
Hispanic Origin of Reference Person					
Hispanic	5,937	12,784,540	94.79%	0.291%	A
Non-Hispanic	49,997	88,543,453	95.15%	0.111%	A
Blank	3,825	6,719,395	8.30%	0.586%	B
Age of Reference Person					
15-29	6,271	11,149,853	94.45%	0.305%	C, D
30-39	9,042	16,486,139	93.79%	0.287%	D
40-49	9,892	18,185,607	94.34%	0.241%	D
50-59	11,090	19,888,352	94.95%	0.244%	C
60-69	8,948	15,989,538	96.89%	0.199%	B
70+	8,733	15,769,520	97.81%	0.179%	A
Blank or Less than 15	5,783	10,578,380	37.55%	0.850%	E
Overall	59,759	108,047,388	89.70%	0.140%	

Source: U.S. Census Bureau internal data from December 2013 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table B-5.

^x Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

¹⁶ See footnote 4.

¹⁷ See footnote 5.

Table B-3: Response Rates for 2013 FSS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping ^x
Type of Living Quarters					
Housing Unit	50,820	102,923,127	78.66%	0.240%	B
Non-Housing Unit ¹⁸	2,537	5,028,834	79.15%	1.027%	B
Blank ¹⁹	53	95,428	87.33%	4.916%	A
Principal City Status					
Principal City within CBSA/MSA	17,250	35,930,575	78.51%	0.430%	A
Not Part of a Principal City within CBSA/MSA	25,021	54,901,940	78.59%	0.313%	A
Outside of a CBSA/MSA	11,139	17,214,874	79.37%	0.915%	A
Region					
Northeast	10,441	19,627,931	77.03%	0.541%	B
Midwest	12,775	24,721,632	80.30%	0.486%	A
South	17,219	39,557,362	79.28%	0.432%	A
West	12,975	24,140,464	77.41%	0.515%	B
Urban/Rural Status					
Urban	41,230	86,711,148	78.25%	0.258%	B
Rural	12,180	21,336,241	80.46%	0.586%	A
Race of Reference Person					
White Only	42,370	84,152,559	79.80%	0.253%	A
Black Only	5,557	12,671,887	76.35%	0.686%	B
Asian Only	2,113	4,452,831	75.86%	1.080%	B
Other Race/Two or More Races	1,392	2,331,908	79.78%	1.482%	A
Blank	1,978	4,438,203	66.57%	1.294%	C
Gender of Reference Person					
Male	26,785	53,911,069	78.13%	0.293%	B
Female	26,623	54,130,203	79.25%	0.321%	A
Blank	2	6,116	0.00%	0.000%	N ⁺
Hispanic Origin of Reference Person					
Hispanic	5,620	13,517,612	77.08%	0.673%	B
Non-Hispanic	47,451	93,904,476	79.36%	0.242%	A
Blank	339	625,301	12.52%	2.071%	C
Age of Reference Person					
15-29	5,900	11,752,732	80.02%	0.602%	B
30-39	8,448	17,244,286	80.08%	0.493%	B
40-49	9,304	19,143,468	80.16%	0.516%	B
50-59	10,515	21,058,840	79.91%	0.468%	B
60-69	8,659	17,250,667	81.86%	0.510%	A
70+	8,537	17,177,697	80.43%	0.534%	B
Blank or Less than 15	2,047	4,419,699	38.37%	1.214%	C
Overall	53,410	108,047,389	78.69%	0.236%	

Source: U.S. Census Bureau internal data from December 2013 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table B-6.

N indicates that the estimate is not comparable.

⁺ Exercise caution: The sample size is extremely small, leading to unreliable estimates.

^x Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

¹⁸ See footnote 4.

¹⁹ See footnote 5.

Table B-4: Response Rates for 2013 FSS Households for Characteristics Only Available for Responding CPS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping ^x
Tenure (Edited)					
Owned or Mortgage	35,856	71,726,224	79.26%	0.286%	A
Rented for Cash	16,860	34,997,315	77.56%	0.417%	B
No Cash Rent	694	1,323,850	77.44%	1.817%	A, B
Family Income					
Less than \$10,000	3,081	6,403,275	81.54%	0.847%	D
\$10,000-\$19,999.99	4,754	9,879,454	85.41%	0.602%	C
\$20,000-\$29,999.99	4,909	9,909,735	85.52%	0.518%	B, C
\$30,000-\$39,999.99	4,670	9,439,860	86.72%	0.546%	A, C
\$40,000-\$49,999.99	3,419	6,773,123	87.43%	0.626%	A
\$50,000-\$59,999.99	3,353	6,612,555	86.83%	0.647%	A, B
\$60,000-\$74,999.99	4,004	7,870,043	86.91%	0.596%	A
\$75,000-\$99,999.99	4,530	8,877,888	87.35%	0.614%	A
\$100,000-\$149,999.99	4,312	8,553,757	87.58%	0.613%	A
\$150,000+	3,366	6,887,927	85.16%	0.740%	C
Blank or Don't Know	2,046	4,273,537	57.76%	1.260%	E
Refused	10,966	22,566,234	55.90%	0.627%	E
Household Type					
Husband/Wife Primary Family	26,169	52,691,131	79.16%	0.294%	A
Unmarried Householder					
Primary Family	8,824	18,600,115	77.77%	0.557%	B
Primary Individual	18,367	36,644,017	78.50%	0.413%	A, B
Group Quarters with Family	21	57,069	74.18%	8.999%	A, B ⁺
Group Quarters without Family	29	55,057	65.06%	16.544%	A, B ⁺
Child(ren) Present (Edited)					
No	39,444	79,122,293	78.35%	0.270%	B
Yes	13,966	28,925,096	79.61%	0.413%	A
Measure of Labor Force of Reference Person					
Employed	31,910	63,722,088	79.08%	0.285%	B
Unemployed	1,817	3,837,758	82.76%	0.986%	A
Not in Labor Force	19,266	39,661,117	78.14%	0.358%	C
Blank	417	826,425	55.58%	2.518%	D
Overall	53,410	108,047,389	78.69%	0.236%	

Source: U.S. Census Bureau internal data from December 2013 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table B-7.

⁺ Exercise caution: The sample size is small, leading to unreliable estimates.

^x Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

Table B-5: Respondent and Nonrespondent Distributions for December 2013 CPS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Type of Living Quarters					
Housing Unit	95.34%	95.18%	96.75%	59.0288 (2) [31.7686 (1)]	< 0.0001 < 0.0001]
Non-Housing Unit	4.54%	4.73%	2.84%		
Blank	0.12%	0.09%	0.41%		
Principal City Status					
Principal City within CBSA/MSA	33.26%	32.95%	35.97%	38.0232 (2)	< 0.0001
Not Part of a Principal City within CBSA/MSA	50.84%	50.77%	51.40%		
Outside of a CBSA/MSA	15.90%	16.28%	12.62%		
Region					
Northeast	18.17%	17.23%	26.32%	197.8466 (3)	< 0.0001
Midwest	22.88%	23.07%	21.23%		
South	36.61%	37.10%	32.39%		
West	22.34%	22.60%	20.06%		
Urban/Rural Status					
Urban	80.38%	80.01%	83.58%	25.1508 (1)	< 0.0001
Rural	19.62%	19.99%	16.42%		
Race of Reference Person					
White Only	73.41%	78.00%	33.49%	12,197.8081 (4) [16.7158 (3)]	< 0.0001 0.0008]
Black Only	11.17%	11.69%	6.56%		
Asian Only	3.85%	4.08%	1.85%		
Other Race/ Two or More Races	2.06%	2.16%	1.12%		
Blank	9.51%	4.06%	56.98%		
Gender of Reference Person					
Male	47.26%	49.91%	24.17%	21,706.9115 (2) [0.0008 (1)]	< 0.0001 0.9775]
Female	47.43%	50.09%	24.29%		
Blank	5.31%	0.01%	51.54%		
Hispanic Origin of Reference Person					
Hispanic	11.83%	12.50%	5.99%	19,548.5788 (2) [1.3533 (1)]	< 0.0001 0.2447]
Non-Hispanic	81.95%	86.92%	38.62%		
Blank	6.22%	0.58%	55.39%		
Age of Reference Person					
15-29	10.32%	10.86%	5.57%	14,714.3966 (6) [213.8015 (5)]	< 0.0001 < 0.0001]
30-39	15.26%	15.95%	9.21%		
40-49	16.83%	17.70%	9.25%		
50-59	18.41%	19.48%	9.02%		
60-69	14.80%	15.98%	4.47%		
70+	14.60%	15.91%	3.10%		
Blank or Less than 15	9.79%	4.10%	59.38%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2013 CPS interviews.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks are excluded from the chi-square test.

Table B-6: Respondent and Nonrespondent Distributions for 2013 FSS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Type of Living Quarters					
Housing Unit	95.26%	95.22%	95.40%	1.9102 (2)	0.3848
Non-Housing Unit	4.65%	4.68%	4.55%	[0.2265 (1)	0.6341]
Blank	0.09%	0.10%	0.05%		
Principal City Status					
Principal City within CBSA/MSA	33.25%	33.18%	33.53%	0.9431 (2)	0.6240
Not Part of a Principal City within CBSA/MSA	50.81%	50.75%	51.05%		
Outside of a CBSA/MSA	15.93%	16.07%	15.42%		
Region					
Northeast	18.17%	17.78%	19.58%	26.6025 (3)	< 0.0001
Midwest	22.88%	23.35%	21.15%		
South	36.61%	36.89%	35.60%		
West	22.34%	21.98%	23.68%		
Urban/Rural Status					
Urban	80.25%	79.81%	81.89%	11.2207 (1)	0.0008
Rural	19.75%	20.19%	18.11%		
Race of Reference Person					
White Only	77.88%	78.98%	73.83%	165.6895 (4)	< 0.0001
Black Only	11.73%	11.38%	13.01%		
Asian Only	4.12%	3.97%	4.67%		
Other Race/ Two or More Races	2.16%	2.19%	2.05%		
Blank	4.11%	3.48%	6.44%		
Gender of Reference Person					
Male	49.90%	49.54%	51.21%	N/A (2)	N/A
Female	50.10%	50.46%	48.77%		
Blank	0.01%	0.00%	0.03%		
Hispanic Origin of Reference Person					
Hispanic	12.51%	12.26%	13.45%	592.8209 (2)	< 0.0001
Non-Hispanic	86.91%	87.65%	84.17%		
Blank	0.58%	0.09%	2.38%		
Age of Reference Person					
15-29	10.88%	11.06%	10.20%	1,620.9468 (6)	< 0.0001
30-39	15.96%	16.24%	14.91%		
40-49	17.72%	18.05%	16.49%		
50-59	19.49%	19.79%	18.38%		
60-69	15.97%	16.61%	13.59%		
70+	15.90%	16.25%	14.60%		
Blank or Less than 15	4.09%	1.99%	11.83%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2013 CPS interviews.

Note: The chi-square test for gender of reference person could not be calculated due to a frequency of 0 within the blank/respondent cell.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks are excluded from the chi-square test.

Table B-7: Respondent and Nonrespondent Distributions for 2013 FSS Households for Characteristics Only Available for Responding CPS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Tenure (Edited)					
Owned or Mortgage	66.38%	66.87%	64.60%	14.0598 (2)	0.0009
Rented for Cash	32.39%	31.93%	34.11%		
No Cash Rent	1.23%	1.21%	1.30%		
Family Income					
Less than \$10,000	5.93%	6.14%	5.13%	4,056.4412 (11) [65.9528 (9)]	< 0.0001 < 0.0001]
\$10,000-\$19,999.99	9.14%	9.92%	6.26%		
\$20,000-\$19,999.99	9.17%	9.97%	6.23%		
\$30,000-\$19,999.99	8.74%	9.63%	5.44%		
\$40,000-\$19,999.99	6.27%	6.96%	3.70%		
\$50,000-\$19,999.99	6.12%	6.75%	3.78%		
\$60,000-\$19,999.99	7.28%	8.05%	4.47%		
\$75,000-\$19,999.99	8.22%	9.12%	4.88%		
\$100,000-\$19,999.99	7.92%	8.81%	4.61%		
\$150,000-\$19,999.99	6.37%	6.90%	4.44%		
Blank or Don't Know	3.96%	2.90%	7.84%		
Refused	20.89%	14.84%	43.21%		
Household Type					
Husband/Wife Primary Family	48.77%	49.06%	47.69%	6.4872 (4) {5.3871 (3)}	0.1656 0.1456}
Unmarried Householder Primary Family	17.21%	17.01%	17.96%		
Primary Individual	33.91%	33.84%	34.21%		
Group Quarters with Family	0.05%	0.05%	0.06%		
Group Quarters without Family	0.05%	0.04%	0.08%		
Child(ren) Present (Edited)					
No	73.23%	72.92%	74.39%	6.9965 (1)	0.0082
Yes	26.77%	27.08%	25.61%		
Measure of Labor Force of Reference Person					
Employed	58.98%	59.27%	57.89%	129.6623 (3) [18.6827 (2)]	< 0.0001 < 0.0001]
Unemployed	3.55%	3.74%	2.87%		
Not in Labor Force	36.71%	36.45%	37.64%		
Blank	0.76%	0.54%	1.59%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2013 CPS interviews.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks and refusals are excluded from the chi-square test.

{ } The values within braces are the chi-square statistic, df, and p-value when the GQ groups are combined.

Key differences between these 2012 tables and the 2015 tables are:

- For 2015 FSS, the respondent and nonrespondent distributions (excluding blanks/missings) are not significantly different at the $\alpha=0.10$ level for gender of reference person (Table 6). This is not the case for 2012 FSS (Table C-6).
- For 2015 FSS within responding CPS households, the respondent and nonrespondent distributions are significantly different at the $\alpha=0.10$ level for tenure (Table 7). This is not the case for 2012 FSS within responding CPS households (Table C-7).
- For 2015 FSS within responding CPS households, the respondent and nonrespondent distributions (excluding blanks/missings) are not significantly different at the $\alpha=0.10$ level for measure of labor force of reference person (Table 7). This is not the case for 2012 FSS within responding CPS households (Table C-7).

Table C-1: 2012 Food Security Unit Response Rates

Response Category	Count	Weighted Sum ^{20*}	Response Rates	
			Unweighted*	Weighted*
Sampled CPS Households	72,263	129,411,414		
Eligible CPS Households	59,759	107,888,749		
CPS Household Response	53,704	97,144,887	89.87%	90.04%
Food Security Households	53,704	107,888,749		
Food Security Household Response	43,942	87,847,406	81.82%	81.42%
Overall Food Security Response			73.53%	73.32%

Source: U.S. Census Bureau internal data from December 2012 CPS interviews.

* May not sum to totals due to rounding.

²⁰ See footnote 3.

Table C-2: Response Rates for December 2012 CPS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping^x
Type of Living Quarters					
Housing Unit	56,824	102,676,729	89.98%	0.143%	B
Non-Housing Unit ²¹	2,847	5,059,503	92.39%	0.704%	A
Blank ²²	88	152,517	55.32%	7.190%	C
Principal City Status					
Principal City within CBSA/MSA	19,399	35,573,619	88.81%	0.256%	C
Not Part of a Principal City within CBSA/MSA	27,902	54,735,677	90.14%	0.187%	B
Outside of a CBSA/MSA	12,458	17,579,453	92.22%	0.353%	A
Region					
Northeast	12,359	19,624,243	87.27%	0.390%	C
Midwest	14,091	24,715,110	90.96%	0.320%	A
South	18,990	39,526,802	90.76%	0.213%	A, B
West	14,319	24,022,593	90.19%	0.295%	B
Urban/Rural Status					
Urban	46,090	86,180,702	89.62%	0.155%	B
Rural	13,669	21,708,046	91.73%	0.291%	A
Race of Reference Person					
White Only	44,779	79,537,863	95.35%	0.110%	A
Black Only	5,932	12,069,571	93.38%	0.333%	C
Asian Only	2,179	4,034,039	94.02%	0.539%	B, C
Other Race/Two or More Races	1,487	2,176,711	95.28%	0.702%	A, B
Blank	5,382	10,070,565	41.36%	0.778%	D
Gender of Reference Person					
Male	28,632	51,446,267	94.71%	0.145%	A
Female	28,188	51,198,833	94.57%	0.147%	A
Blank	2,939	5,243,648	0.05%	0.051%	B
Hispanic Origin of Reference Person					
Hispanic	5,856	12,529,458	94.25%	0.363%	B
Non-Hispanic	50,457	89,246,579	95.06%	0.106%	A
Blank	3,446	6,112,712	8.14%	0.573%	C
Age of Reference Person					
15-29	6,625	11,874,827	93.61%	0.324%	D
30-39	9,144	16,501,896	93.72%	0.298%	D
40-49	10,278	18,782,626	94.25%	0.256%	D
50-59	11,165	20,032,892	94.98%	0.200%	C
60-69	8,911	15,882,394	96.60%	0.217%	B
70+	8,587	15,513,739	97.74%	0.181%	A
Blank or Less than 15	5,049	9,300,374	35.78%	0.709%	E
Overall	59,759	107,888,749	90.04%	0.143%	

Source: U.S. Census Bureau internal data from December 2012 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table C-5.

^x Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

²¹ See footnote 4.

²² See footnote 5.

Table C-3: Response Rates for 2012 FSS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping ^x
Type of Living Quarters					
Housing Unit	51,043	102,684,653	81.36%	0.224%	B
Non-Housing Unit ²³	2,607	5,110,086	82.47%	0.953%	B
Blank ²⁴	54	94,010	92.25%	4.110%	A
Principal City Status					
Principal City within CBSA/MSA	17,220	35,572,515	81.30%	0.380%	B
Not Part of a Principal City within CBSA/MSA	25,078	54,705,150	80.95%	0.336%	B
Outside of a CBSA/MSA	11,406	17,611,084	83.16%	0.656%	A
Region					
Northeast	10,734	19,624,243	79.12%	0.560%	C
Midwest	12,870	24,715,110	83.72%	0.440%	A
South	17,160	39,526,802	81.52%	0.422%	B
West	12,940	24,022,593	80.78%	0.469%	B
Urban/Rural Status					
Urban	41,228	86,079,702	81.11%	0.240%	B
Rural	12,476	21,809,046	82.66%	0.564%	A
Race of Reference Person					
White Only	42,614	84,012,912	82.60%	0.264%	A
Black Only	5,527	12,615,940	77.83%	0.689%	C
Asian Only	2,053	4,272,517	78.93%	1.089%	B, C
Other Race/Two or More Races	1,415	2,295,419	81.73%	1.371%	A, B
Blank	2,095	4,691,962	72.17%	1.110%	D
Gender of Reference Person					
Male	27,076	54,076,962	81.09%	0.277%	A
Female	26,627	53,808,880	81.76%	0.329%	A
Blank	1	2,907	0.00%	0.000%	N ⁺
Hispanic Origin of Reference Person					
Hispanic	5,515	13,215,624	80.73%	0.596%	B
Non-Hispanic	47,893	94,121,104	81.91%	0.246%	A
Blank	296	552,021	14.37%	2.416%	C
Age of Reference Person					
15-29	6,205	12,382,387	82.99%	0.546%	A, C
30-39	8,576	17,204,571	83.54%	0.480%	A
40-49	9,660	19,672,809	81.86%	0.422%	C
50-59	10,589	21,122,044	82.44%	0.427%	B, C
60-69	8,580	17,015,377	83.72%	0.435%	A
70+	8,387	16,799,896	82.99%	0.486%	A, B
Blank or Less than 15	1,707	3,691,665	40.43%	1.422%	D
Overall	53,704	107,888,749	81.42%	0.227%	

Source: U.S. Census Bureau internal data from December 2012 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table C-6.

N indicates that the estimate is not comparable.

⁺ Exercise caution: The sample size is extremely small, leading to unreliable estimates.

^x Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

²³ See footnote 4.

²⁴ See footnote 5.

Table C-4: Response Rates for 2012 FSS Households for Characteristics Only Available for Responding CPS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping [×]
Tenure (Edited)					
Owned or Mortgage	36,042	71,585,561	81.73%	0.293%	A
Rented for Cash	16,936	34,861,832	80.82%	0.362%	B
No Cash Rent	726	1,441,356	80.87%	1.785%	A, B
Family Income					
Less than \$10,000	3,401	7,005,328	85.90%	0.714%	E
\$10,000-\$19,999.99	5,032	10,285,677	87.57%	0.549%	C, D
\$20,000-\$29,999.99	5,191	10,519,664	88.12%	0.555%	A, C
\$30,000-\$39,999.99	4,904	9,811,107	87.89%	0.506%	B, C
\$40,000-\$49,999.99	3,613	7,222,021	88.67%	0.688%	A, C
\$50,000-\$59,999.99	3,529	6,891,757	89.47%	0.635%	A
\$60,000-\$74,999.99	4,233	8,186,706	88.13%	0.609%	A, C
\$75,000-\$99,999.99	4,678	9,236,390	88.38%	0.553%	A, C
\$100,000-\$149,999.99	4,339	8,574,543	88.89%	0.574%	A, B
\$150,000+	3,258	6,632,657	86.33%	0.673%	D, E
Blank or Don't Know	1,896	3,886,426	63.39%	1.453%	F
Refused	9,630	19,636,474	56.88%	0.636%	G
Household Type					
Husband/Wife Primary Family	26,414	52,827,843	81.97%	0.300%	B
Unmarried Householder					
Primary Family	8,940	18,710,955	81.17%	0.490%	B, C
Primary Individual	18,303	36,254,769	80.75%	0.377%	C
Group Quarters with Family	14	27,840	97.16%	2.276%	A ⁺
Group Quarters without Family	33	67,342	83.16%	8.902%	A, B, C
Child(ren) Present (Edited)					
No	39,389	78,547,270	81.01%	0.263%	B
Yes	14,315	29,341,478	82.54%	0.370%	A
Measure of Labor Force of Reference Person					
Employed	32,304	64,067,991	81.79%	0.246%	B
Unemployed	2,171	4,567,889	85.45%	0.792%	A
Not in Labor Force	18,842	38,505,975	80.76%	0.383%	C
Blank	387	746,894	59.55%	2.734%	D
Overall	53,704	107,888,749	81.42%	0.227%	

Source: U.S. Census Bureau internal data from December 2012 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table C-7.

⁺ Exercise caution: The sample size is small, leading to unreliable estimates.

[×] Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

Table C-5: Respondent and Nonrespondent Distributions for December 2012 CPS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Type of Living Quarters					
Housing Unit	95.17%	95.10%	95.78%	72.6346 (2) [9.0544 (1)]	< 0.0001 0.0026]
Non-Housing Unit	4.69%	4.81%	3.58%		
Blank	0.14%	0.09%	0.63%		
Principal City Status					
Principal City within CBSA/MSA	32.97%	32.52%	37.04%	60.2820 (2)	< 0.0001
Not Part of a Principal City within CBSA/MSA	50.73%	50.79%	50.22%		
Outside of a CBSA/MSA	16.29%	16.69%	12.74%		
Region					
Northeast	18.19%	17.63%	23.25%	82.5535 (3)	< 0.0001
Midwest	22.91%	23.14%	20.80%		
South	36.64%	36.93%	34.01%		
West	22.27%	22.30%	21.94%		
Urban/Rural Status					
Urban	79.88%	79.50%	83.29%	39.5566 (1)	< 0.0001
Rural	20.12%	20.50%	16.71%		
Race of Reference Person					
White Only	73.72%	78.07%	34.39%	13,308.6592 (4) [43.8268 (3)]	< 0.0001 < 0.0001]
Black Only	11.19%	11.60%	7.44%		
Asian Only	3.74%	3.90%	2.25%		
Other Race/ Two or More Races	2.02%	2.13%	0.96%		
Blank	9.33%	4.29%	54.97%		
Gender of Reference Person					
Male	47.68%	50.16%	25.33%	22,179.3853 (2) [0.4829 (1)]	< 0.0001 0.4871]
Female	47.46%	49.84%	25.89%		
Blank	4.86%	Z%	48.78%		
Hispanic Origin of Reference Person					
Hispanic	11.61%	12.16%	6.70%	17,909.1271 (2) [4.7530 (1)]	< 0.0001 0.0292]
Non-Hispanic	82.72%	87.33%	41.03%		
Blank	5.67%	0.51%	52.26%		
Age of Reference Person					
15-29	11.01%	11.44%	7.07%	15,908.9147 (6) [210.4975 (5)]	< 0.0001 < 0.0001]
30-39	15.30%	15.92%	9.65%		
40-49	17.41%	18.22%	10.05%		
50-59	18.57%	19.59%	9.35%		
60-69	14.72%	15.79%	5.02%		
70+	14.38%	15.61%	3.26%		
Blank or Less than 15	8.62%	3.43%	55.59%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2012 CPS interviews.

Z: value rounds to zero but is not zero.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks are excluded from the chi-square test.

Table C-6: Respondent and Nonrespondent Distributions for 2012 FSS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Type of Living Quarters					
Housing Unit	95.18%	95.10%	95.49%	4.4383 (2)	0.1087
Non-Housing Unit	4.74%	4.80%	4.47%	[1.3521 (1)	0.2449]
Blank	0.09%	0.10%	0.04%		
Principal City Status					
Principal City within CBSA/MSA	32.97%	32.92%	33.19%		
Not Part of a Principal City within CBSA/MSA	50.71%	50.41%	52.01%	9.5214 (2)	0.0086
Outside of a CBSA/MSA	16.32%	16.67%	14.80%		
Region					
Northeast	18.19%	17.67%	20.44%		
Midwest	22.91%	23.55%	20.08%	41.6774 (3)	< 0.0001
South	36.64%	36.68%	36.45%		
West	22.27%	22.09%	23.03%		
Urban/Rural Status					
Urban	79.79%	79.48%	81.13%	6.3112 (1)	0.0120
Rural	20.21%	20.52%	18.87%		
Race of Reference Person					
White Only	77.87%	78.99%	72.94%		
Black Only	11.69%	11.18%	13.95%		
Asian Only	3.96%	3.84%	4.49%	147.7389 (4)	< 0.0001
Other Race/ Two or More Races	2.13%	2.14%	2.09%	[61.0095 (3)	< 0.0001]
Blank	4.35%	3.85%	6.52%		
Gender of Reference Person					
Male	50.12%	49.92%	51.02%	N/A (2)	N/A
Female	49.87%	50.08%	48.96%	[2.7654 (1)	0.0963]
Blank	Z%	0.00%	0.01%		
Hispanic Origin of Reference Person					
Hispanic	12.25%	12.14%	12.71%	569.3827 (2)	< 0.0001
Non-Hispanic	87.24%	87.76%	84.93%	[3.4271 (1)	0.0641]
Blank	0.51%	0.09%	2.36%		
Age of Reference Person					
15-29	11.48%	11.70%	10.51%		
30-39	15.95%	16.36%	14.13%		
40-49	18.23%	18.33%	17.80%		
50-59	19.58%	19.82%	18.50%	1,697.2412 (6)	< 0.0001
60-69	15.77%	16.22%	13.83%	[13.2286 (5)	0.0213]
70+	15.57%	15.87%	14.26%		
Blank or Less than 15	3.42%	1.70%	10.97%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2012 CPS interviews.

Note: The chi-square test for gender of reference person could not be calculated due to a frequency of 0 within the blank/respondent cell.

Z: value rounds to zero but is not zero.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks are excluded from the chi-square test.

Table C-7: Respondent and Nonrespondent Distributions for 2012 FSS Households for Characteristics Only Available for Responding CPS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Tenure (Edited)					
Owned or Mortgage	66.35%	66.60%	65.26%	4.1217 (2)	0.1273
Rented for Cash	32.31%	32.07%	33.36%		
No Cash Rent	1.34%	1.33%	1.38%		
Family Income					
Less than \$10,000	6.49%	6.85%	4.93%	3,848.2684 (11) [26.2447 (9)]	< 0.0001 0.0019]
\$10,000-\$19,999.99	9.53%	10.25%	6.38%		
\$20,000-\$19,999.99	9.75%	10.55%	6.24%		
\$30,000-\$19,999.99	9.09%	9.82%	5.93%		
\$40,000-\$19,999.99	6.69%	7.29%	4.08%		
\$50,000-\$19,999.99	6.39%	7.02%	3.62%		
\$60,000-\$19,999.99	7.59%	8.21%	4.85%		
\$75,000-\$19,999.99	8.56%	9.29%	5.36%		
\$100,000-\$19,999.99	7.95%	8.68%	4.75%		
\$150,000-\$19,999.99	6.15%	6.52%	4.52%		
Blank or Don't Know	3.60%	2.80%	7.10%		
Refused	18.20%	12.72%	42.24%		
Household Type					
Husband/Wife Primary Family	48.97%	49.29%	47.53%	10.5261 (4) {7.8583 (3)}	0.0324 0.0490}
Unmarried Householder Primary Family	17.34%	17.29%	17.58%		
Primary Individual	33.60%	33.33%	34.82%		
Group Quarters with Family	0.03%	0.03%	Z%		
Group Quarters without Family	0.06%	0.06%	0.06%		
Child(ren) Present (Edited)					
No	72.80%	72.43%	74.43%	12.4996 (1)	0.0004
Yes	27.20%	27.57%	25.57%		
Measure of Labor Force of Reference Person					
Employed	59.38%	59.65%	58.22%	126.6214 (3) [26.7450	< 0.0001 < 0.0001]
Unemployed	4.23%	4.44%	3.32%		
Not in Labor Force	35.69%	35.40%	36.96%		
Blank	0.69%	0.51%	1.51%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2012 CPS interviews.

Z: value rounds to zero but is not zero.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks and refusals are excluded from the chi-square test.

{ } The values within braces are the chi-square statistic, df, and p-value when the GQ groups are combined.

Key differences between these 2011 tables and the 2015 tables are:

- For 2015 FSS, the respondent and nonrespondent distributions are significantly different at the $\alpha=0.10$ level for principal city status (Table 6). This is not the case for 2011 FSS (Table D-6).
- For 2015 FSS within responding CPS households, the respondent and nonrespondent distributions (excluding blanks/missings) are not significantly different at the $\alpha=0.10$ level for measure of labor force of reference person (Table 7). This is not the case for 2011 FSS within responding CPS households (Table D-7).

Table D-1: 2011 Food Security Unit Response Rates

Response Category	Count	Weighted Sum ^{25*}	Response Rates	
			Unweighted*	Weighted*
Sampled CPS Households	71,982	128,975,102		
Eligible CPS Households	59,207	106,970,281		
CPS Household Response	53,446	96,515,523	90.27%	90.23%
Food Security Households	53,446	106,970,281		
Food Security Household Response	43,770	87,308,032	81.90%	81.62%
Overall Food Security Response			73.93%	73.64%

Source: U.S. Census Bureau internal data from December 2011 CPS interviews.

* May not sum to totals due to rounding.

²⁵ See footnote 3.

Table D-2: Response Rates for December 2011 CPS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping ^x
Type of Living Quarters					
Housing Unit	56,307	101,770,940	90.09%	0.136%	B
Non-Housing Unit ²⁶	2,836	5,099,943	93.23%	0.611%	A
Blank ²⁷	64	99,397	74.76%	7.910%	C
Principal City Status					
Principal City within CBSA/MSA	19,184	35,321,616	89.00%	0.246%	C
Not Part of a Principal City within CBSA/MSA	27,620	54,210,509	90.24%	0.195%	B
Outside of a CBSA/MSA	12,403	17,438,156	92.66%	0.353%	A
Region					
Northeast	12,278	19,591,878	88.31%	0.341%	C
Midwest	13,976	24,486,003	91.71%	0.274%	A
South	18,669	38,980,091	90.42%	0.263%	B
West	14,284	23,912,309	89.96%	0.294%	B
Urban/Rural Status					
Urban	45,621	85,419,020	89.73%	0.154%	B
Rural	13,586	21,551,261	92.19%	0.272%	A
Race of Reference Person					
White Only	44,398	78,753,944	95.36%	0.118%	A
Black Only	5,919	12,040,880	93.58%	0.311%	C
Asian Only	2,149	4,029,535	93.90%	0.602%	B, C
Other Race/Two or More Races	1,434	2,042,774	95.04%	0.750%	A, B
Blank	5,307	10,103,149	43.78%	0.892%	D
Gender of Reference Person					
Male	28,386	51,174,793	94.72%	0.162%	A
Female	28,035	50,691,742	94.77%	0.142%	A
Blank	2,786	5,103,746	0.09%	0.057%	B
Hispanic Origin of Reference Person					
Hispanic	5,552	11,927,076	94.27%	0.333%	B
Non-Hispanic	50,387	89,101,541	95.16%	0.114%	A
Blank	3,268	5,941,664	8.19%	0.571%	C
Age of Reference Person					
15-29	6,562	11,664,835	93.59%	0.358%	E
30-39	9,156	16,632,191	94.50%	0.244%	D
40-49	10,435	19,003,939	93.74%	0.267%	E
50-59	11,113	19,907,729	95.77%	0.217%	C
60-69	8,635	15,419,603	96.38%	0.231%	B
70+	8,530	15,400,566	97.57%	0.209%	A
Blank or Less than 15	4,776	8,941,419	34.82%	0.812%	F
Overall	59,207	106,970,281	90.23%	0.136%	

Source: U.S. Census Bureau internal data from December 2011 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table D-5.

^x Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

²⁶ See footnote 4.

²⁷ See footnote 5.

Table D-3: Response Rates for 2011 FSS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping ^x
Type of Living Quarters					
Housing Unit	50,761	101,679,154	81.57%	0.215%	A
Non-Housing Unit ²⁸	2,635	5,208,328	82.50%	0.930%	A
Blank ²⁹	50	82,799	80.43%	7.408%	A
Principal City Status					
Principal City within CBSA/MSA	17,070	35,318,528	80.82%	0.385%	B
Not Part of a Principal City within CBSA/MSA	24,935	54,184,961	81.89%	0.285%	A
Outside of a CBSA/MSA	11,441	17,466,792	82.40%	0.810%	A
Region					
Northeast	10,858	19,591,878	79.08%	0.546%	C
Midwest	12,871	24,486,003	84.02%	0.479%	A
South	16,854	38,980,091	81.65%	0.400%	B
West	12,863	23,912,309	81.19%	0.475%	B
Urban/Rural Status					
Urban	40,955	85,266,834	81.24%	0.212%	B
Rural	12,491	21,703,447	83.11%	0.533%	A
Race of Reference Person					
White Only	42,336	82,998,917	82.96%	0.246%	A
Black Only	5,524	12,598,316	77.70%	0.685%	C
Asian Only	2,020	4,253,758	78.54%	0.988%	B, C
Other Race/Two or More Races	1,362	2,158,759	81.28%	1.385%	A, B
Blank	2,204	4,960,530	71.84%	1.156%	D
Gender of Reference Person					
Male	26,869	53,670,453	81.65%	0.277%	A
Female	26,574	53,294,690	81.60%	0.282%	A
Blank	3	5,137	0.00%	0.000%	N ⁺
Hispanic Origin of Reference Person					
Hispanic	5,235	12,566,477	80.35%	0.768%	B
Non-Hispanic	47,932	93,864,304	82.14%	0.233%	A
Blank	279	539,500	20.85%	2.936%	C
Age of Reference Person					
15-29	6,150	12,122,686	84.55%	0.533%	A
30-39	8,645	17,466,937	83.03%	0.435%	B
40-49	9,769	19,743,802	81.89%	0.453%	C
50-59	10,631	21,133,803	82.88%	0.446%	B
60-69	8,323	16,447,312	83.76%	0.450%	A, B
70+	8,331	16,608,451	82.81%	0.483%	B, C
Blank or Less than 15	1,597	3,447,290	38.95%	1.391%	D
Overall	53,446	106,970,281	81.62%	0.214%	

Source: U.S. Census Bureau internal data from December 2011 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table D-6.

N indicates that the estimate is not comparable.

⁺ Exercise caution: The sample size is extremely small, leading to unreliable estimates.

^x Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

²⁸ See footnote 4.

²⁹ See footnote 5.

Table D-4: Response Rates for 2011 FSS Households for Characteristics Only Available for Responding CPS Households

Characteristic	Unweighted Households	Weighted Households*	Weighted Response Rate (%)	Standard Error (%)	Significance Grouping [×]
Tenure (Edited)					
Owned or Mortgage	36,182	71,705,134	81.99%	0.250%	A
Rented for Cash	16,557	33,883,724	80.79%	0.354%	B
No Cash Rent	707	1,381,423	82.77%	1.531%	A, B
Family Income					
Less than \$10,000	3,430	7,056,158	84.37%	0.738%	E
\$10,000-\$19,999.99	5,264	10,723,830	87.83%	0.506%	B, C, D
\$20,000-\$29,999.99	5,152	10,472,197	86.82%	0.555%	D
\$30,000-\$39,999.99	4,917	9,799,131	87.33%	0.532%	D
\$40,000-\$49,999.99	3,552	6,961,920	89.05%	0.558%	A
\$50,000-\$59,999.99	3,538	6,997,425	88.90%	0.613%	A, C
\$60,000-\$74,999.99	4,315	8,397,841	89.36%	0.492%	A
\$75,000-\$99,999.99	4,485	8,871,528	89.01%	0.563%	A, B
\$100,000-\$149,999.99	4,111	8,009,206	89.48%	0.547%	A
\$150,000+	3,016	6,191,828	87.43%	0.722%	C, D
Blank or Don't Know	1,899	3,843,176	61.61%	1.271%	F
Refused	9,767	19,646,041	58.62%	0.688%	G
Household Type					
Husband/Wife Primary Family	26,447	52,796,322	82.16%	0.270%	A
Unmarried Householder	8,833	18,321,760	79.98%	0.507%	B
Primary Family	18,130	35,772,699	81.66%	0.336%	A
Primary Individual	13	31,524	75.34%	9.030%	A, B ⁺
Group Quarters with Family	23	47,976	82.78%	9.566%	A, B ⁺
Group Quarters without Family					
Child(ren) Present (Edited)					
No	38,971	77,408,984	81.26%	0.265%	B
Yes	14,475	29,561,297	82.57%	0.354%	A
Measure of Labor Force of Reference Person					
Employed	32,159	63,422,068	82.16%	0.263%	B
Unemployed	2,444	5,044,325	83.69%	0.889%	A
Not in Labor Force	18,488	37,857,018	80.79%	0.350%	C
Blank	355	646,870	60.43%	2.931%	D
Overall	53,446	106,970,281	81.62%	0.214%	

Source: U.S. Census Bureau internal data from December 2011 CPS interviews.

* May not sum to totals due to rounding. For weighted percent of total sample, see Table D-7.

⁺ Exercise caution: The sample size is small, leading to unreliable estimates.

[×] Within each characteristic, response rates identified with the same letter are not significantly different at the $\alpha=0.10$ level. A indicates the highest response rates, B indicates the next highest rates, etc.

Table D-5: Respondent and Nonrespondent Distributions for December 2011 CPS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Type of Living Quarters					
Housing Unit	95.14%	95.00%	96.46%	26.8536 (2) [18.8691 (1)]	< 0.0001 < 0.0001]
Non-Housing Unit	4.77%	4.93%	3.30%		
Blank	0.09%	0.08%	0.24%		
Principal City Status					
Principal City within CBSA/MSA	33.02%	32.57%	37.16%	64.4473 (2)	< 0.0001
Not Part of a Principal City within CBSA/MSA	50.68%	50.69%	50.59%		
Outside of a CBSA/MSA	16.30%	16.74%	12.25%		
Region					
Northeast	18.32%	17.93%	21.90%	56.2852 (3)	< 0.0001
Midwest	22.89%	23.27%	19.42%		
South	36.44%	36.52%	35.70%		
West	22.35%	22.29%	22.97%		
Urban/Rural Status					
Urban	79.85%	79.42%	83.89%	53.5985 (1)	< 0.0001
Rural	20.15%	20.58%	16.11%		
Race of Reference Person					
White Only	73.62%	77.81%	34.95%	10,491.5877 (4) [36.3750 (3)]	< 0.0001 < 0.0001]
Black Only	11.26%	11.67%	7.40%		
Asian Only	3.77%	3.92%	2.35%		
Other Race/ Two or More Races	1.91%	2.01%	0.97%		
Blank	9.44%	4.58%	54.33%		
Gender of Reference Person					
Male	47.84%	50.22%	25.86%	22,548.6033 (2) [0.0597 (1)]	< 0.0001 0.8070]
Female	47.39%	49.77%	25.37%		
Blank	4.77%	Z%	48.77%		
Hispanic Origin of Reference Person					
Hispanic	11.15%	11.65%	6.53%	18,185.3438 (2) [7.0650 (1)]	< 0.0001 0.0079]
Non-Hispanic	83.30%	87.85%	41.29%		
Blank	5.55%	0.50%	52.18%		
Age of Reference Person					
15-29	10.90%	11.31%	7.15%	14,075.5021 (6) [180.1130 (5)]	< 0.0001 < 0.0001]
30-39	15.55%	16.28%	8.75%		
40-49	17.77%	18.46%	11.38%		
50-59	18.61%	19.75%	8.05%		
60-69	14.41%	15.40%	5.34%		
70+	14.40%	15.57%	3.59%		
Blank or Less than 15	8.36%	3.23%	55.74%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2011 CPS interviews.

Z: value rounds to zero but is not zero.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks are excluded from the chi-square test.

Table D-6: Respondent and Nonrespondent Distributions for 2011 FSS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Type of Living Quarters					
Housing Unit	95.05%	95.00%	95.28%	1.0072 (2)	0.6043
Non-Housing Unit	4.87%	4.92%	4.64%	[0.9522 (1)]	0.3292]
Blank	0.08%	0.08%	0.08%		
Principal City Status					
Principal City within CBSA/MSA	33.02%	32.69%	34.45%		
Not Part of a Principal City within CBSA/MSA	50.65%	50.82%	49.91%	4.5178 (2)	0.1045
Outside of a CBSA/MSA	16.33%	16.48%	15.63%		
Region					
Northeast	18.32%	17.74%	20.85%		
Midwest	22.89%	23.56%	19.90%	44.7775 (3)	< 0.0001
South	36.44%	36.46%	36.37%		
West	22.35%	22.24%	22.88%		
Urban/Rural Status					
Urban	79.71%	79.34%	81.35%	11.0281 (1)	0.0009
Rural	20.29%	20.66%	18.65%		
Race of Reference Person					
White Only	77.59%	78.87%	71.91%		
Black Only	11.78%	11.21%	14.29%		
Asian Only	3.98%	3.83%	4.64%	188.0986 (4)	< 0.0001
Other Race/ Two or More Races	2.02%	2.01%	2.06%	[85.5954 (3)]	< 0.0001]
Blank	4.64%	4.08%	7.10%		
Gender of Reference Person					
Male	50.17%	50.19%	50.09%	N/A (2)	N/A
Female	49.82%	49.81%	49.88%	[0.0215 (1)]	0.8835]
Blank	Z%	0.00%	0.03%		
Hispanic Origin of Reference Person					
Hispanic	11.75%	11.56%	12.56%	351.7495 (2)	< 0.0001
Non-Hispanic	87.75%	88.31%	85.27%	[4.9394 (1)]	0.0263]
Blank	0.50%	0.13%	2.17%		
Age of Reference Person					
15-29	11.33%	11.74%	9.53%		
30-39	16.33%	16.61%	15.07%		
40-49	18.46%	18.52%	18.18%	1,703.3365 (6)	< 0.0001
50-59	19.76%	20.06%	18.40%	[17.8574 (5)]	0.0031]
60-69	15.38%	15.78%	13.59%		
70+	15.53%	15.75%	14.52%		
Blank or Less than 15	3.22%	1.54%	10.70%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2011 CPS interviews.

Note: The chi-square test for gender of reference person could not be calculated due to a frequency of 0 within the blank/respondent cell.

Z: value rounds to zero but is not zero.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks are excluded from the chi-square test.

Table D-7: Respondent and Nonrespondent Distributions for 2011 FSS Households for Characteristics Only Available for Responding CPS Households

Characteristic	% of Total Sample*	Household Respondent %*	Household Nonrespondent %*	Chi-Square Statistic (df)	P-value
Tenure (Edited)					
Owned or Mortgage	67.03%	67.34%	65.69%	9.6869 (2)	0.0079
Rented for Cash	31.68%	31.36%	33.10%		
No Cash Rent	1.29%	1.31%	1.21%		
Family Income					
Less than \$10,000	6.60%	6.82%	5.61%	3,853.2497 (11) [61.9517 (9)]	< 0.0001 < 0.0001]
\$10,000-\$19,999.99	10.03%	10.79%	6.64%		
\$20,000-\$19,999.99	9.79%	10.41%	7.02%		
\$30,000-\$19,999.99	9.16%	9.80%	6.32%		
\$40,000-\$19,999.99	6.51%	7.10%	3.88%		
\$50,000-\$19,999.99	6.54%	7.12%	3.95%		
\$60,000-\$19,999.99	7.85%	8.60%	4.54%		
\$75,000-\$19,999.99	8.29%	9.04%	4.96%		
\$100,000-\$19,999.99	7.49%	8.21%	4.28%		
\$150,000-\$19,999.99	5.79%	6.20%	3.96%		
Blank or Don't Know	3.59%	2.71%	7.50%		
Refused	18.37%	13.19%	41.34%		
Household Type					
Husband/Wife Primary Family	49.36%	49.69%	47.90%	20.0066 (4) {18.1695 (3)}	0.0005 0.0004}
Unmarried Householder Primary Family	17.13%	16.78%	18.65%		
Primary Individual	33.44%	33.46%	33.37%		
Group Quarters with Family	0.03%	0.03%	0.04%		
Group Quarters without Family	0.04%	0.05%	0.04%		
Child(ren) Present (Edited)					
No	72.36%	72.04%	73.79%	8.5649 (1)	0.0034
Yes	27.64%	27.96%	26.21%		
Measure of Labor Force of Reference Person					
Employed	59.29%	59.68%	57.53%	89.9370 (3) [15.4464 (2)]	< 0.0001 0.0004]
Unemployed	4.72%	4.84%	4.18%		
Not in Labor Force	35.39%	35.03%	36.98%		
Blank	0.60%	0.45%	1.30%		
Overall	100%	100%	100%		

Source: U.S. Census Bureau internal data from December 2011 CPS interviews.

* May not sum to totals due to rounding.

[] The values within brackets are the chi-square statistic, df, and p-value when the blanks and refusals are excluded from the chi-square test.

{ } The values within braces are the chi-square statistic, df, and p-value when the GQ groups are combined.

In the following tables, the key differences between all 5 years of tables are summarized.

Note: within each of Tables E-1 and E-2, a reference to tables within the report refers to both that report table as well as the corresponding tables within the attachments. For example, Table 2 references Tables 2, A-2, B-2, C-2, and D-2.

In Table E-1, an X indicates that, excluding blanks/missings, there were no significant differences in response rates for the identified characteristic for that year. This table includes all characteristics that had no significant differences in response rates (excluding blanks/missings) for any of the years, not just those that were different between the years.

Table E-1: Summary of Key Differences Between 2011-2015 Response Rate Results

Characteristic	2015	2014	2013	2012	2011
December CPS (Table 2)					
Gender of Reference Person	X		X	X	X
Hispanic Origin of Reference Person			X		
FSS (Table 3)					
Type of Housing Unit	X	X	X	X	X
Principal City Status			X		
Gender of Reference Person	X			X	X
FSS within Responding CPS Households (Table 4)					
Child(ren) Present (Edited)		X			

Source: U.S. Census Bureau internal data from December of 2011, 2012, 2013, 2014, and 2015 CPS interviews.

In Table E-2, an X indicates that, excluding blanks/missings, the respondent and nonrespondent distributions were not significantly different for the identified characteristic for that year. This table includes all characteristics that had no significant differences in distributions (excluding blanks/missings) for any of the years, not just those that were different between the years.

Table E-2: Summary of Key Differences Between 2011-2015 Respondent and Nonrespondent Distribution Results

Characteristic	2015	2014	2013	2012	2011
December CPS (Table 5)					
Gender of Reference Person	X		X	X	X
Hispanic Origin of Reference Person			X		
FSS (Table 6)					
Type of Housing Unit	X	X	X	X	X
Principal City Status			X		X
Gender of Reference Person	X				X
FSS within Responding CPS Households (Table 7)					
Tenure (Edited)				X	
Household Type			X		
Child(ren) Present (Edited)		X			
Measure of Labor Force of Reference Person	X				

Source: U.S. Census Bureau internal data from December of 2011, 2012, 2013, 2014, and 2015 CPS interviews.