

U.S. Department of Health & Human Services

2016 ASR Annual Survey of Refugees Data File User's Guide

A Technical Research Manual

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Introduction

Since the 1980s, the Office of Refugee Resettlement¹ (ORR) has conducted the Annual Survey of Refugees (ASR), which collects information on refugees during their first five years after arrival in the U.S. The ASR is the only scientifically-collected source of national data on refugees' progress toward self-sufficiency and integration. ORR uses the ASR results alongside other information sources to fulfill its Congressionally-mandated reporting following the Refugee Act of 1980. Historically, the microdata from these surveys have generally been unavailable to researchers.

In the Spring of 2017 ORR completed its 50th Annual Survey of Refugees (ASR). The data from the ASR offer a window into respondents' first five years in the United States and shows the progress that refugee families made towards learning English, participating in the workforce, and establishing permanent residence. This user's guide presents basic information on the 2016 ASR public use data file.

The first section of the user's guide gives an overview of the survey, including descriptions of the sample design and data collection procedures. The next section discusses the structure of the ASR data file and describes the variables included on the data file. Section 3 explains how missing data were coded, and it includes recommendations on how to handle the missing data when conducting analysis. Sections 4 and 5 provide information on how to use the survey weights and procedures for calculating variances and standard errors of survey estimates. The appendices to this guide include data dictionaries that display both weighted and unweighted frequencies and a copy of the English version of the questionnaire.

The goal of this guide is to provide users with sufficient technical information about the data and the survey to properly access and analyze the public use data. Some subsections

¹ The Office of Refugee Resettlement (ORR) at the Administration for Children and Families in the U.S. Department of Health and Human Services (HHS) serves refugees and other humanitarian entrants, including asylees, Cuban and Haitian entrants, Special Immigrant Visa holders, Amerasians, victims of human trafficking, and unaccompanied children. By providing these arrived populations with critical resources, ORR promotes their economic and social well-being. The Annual Survey of Refugees focuses solely on those refugees who have come to the U.S. in the past five fiscal years.

are preceded by an icon that informs the reader about the nature of the subsequent material. Three are used, and they appear below along with an explanation:



Indicating critical points that all users should understand



Indicating useful tips, but not essential reading



Indicating sections meant primarily for advanced users

Section 1: Overview of the Design of the Survey

The 2016 ASR design² used a full cross sectional national sample of refugees entering within the past five years. This section documents the research design, data collection and data processing protocols. It also presents outcomes (e.g., sample sizes) and paradata results such as response rates.

The population of interest – the study population – for the 2016 ASR is defined as refugees entering the U.S. between FY 2011 and FY 2015, inclusive, who are at ages 16 and over at the time of the 2016 ASR interview³. Because the interviews were conducted in early 2017, the population includes a small number of refugees younger than 16 at the time of arrival to the U.S.

While this covers five distinct fiscal years of refugee entrants, there is special policy/analytic interest in collapsing years into three domains as follows:

- Cohort 1 – Refugees entering FY 2011 and FY 2012,
- Cohort 2 – Refugees entering FY 2013 and FY 2014, and
- Cohort 3 – Refugees entering FY 2015

Table 1 shows the distribution of the study population by fiscal year as well as cohort. About 325,000 refugees (of all ages) entered the U.S. in FY 2011-2015, with roughly equal numbers arriving annually in FY 2013-2015, and with roughly 20 percent

Table 1: Population Distribution of Refugees Arriving Between 2011 and 2015

| | Year of Arrival | Number of Refugees* | % of Refugees |
|--------------|-----------------|---------------------|---------------|
| Cohort 3 | 2015 | 69,933 | 22% |
| Cohort 2 | 2014 | 69,987 | 22% |
| | 2013 | 69,926 | 22% |
| Cohort 1 | 2012 | 58,238 | 18% |
| | 2011 | 56,424 | 17% |
| Total | | 324,508 | 100% |

* Source: FY 2011-2015 data compiled from Department of State admissions reports

² In ASR surveys prior to 2016, the ASR survey design was longitudinal, consisting of a cross-sectional sample of refugees arriving one year prior to the study and surveyed that year and followed for four subsequent waves, totaling five annual surveys.

³ Note that the ASR data files include person records of children under 16 at interview who entered the U.S. during the eligible FY window. However, only a small number of demographics (e.g., age, sex) were collected for these cases. The full set of substantive measures (e.g. language proficiency, education, labor force participation, etc.) were collected for eligible refugees 16 or over at the time of interview.

fewer annual entrants in FY 2011 and FY 2012. These refugees represent 138 countries and over 200 non-English languages.



“Refugees” are persons, not households. However, when refugees come to the U.S. they often enter with their family members. For an entering refugee family, there is a Principal Applicant (PA) whose refugee case is the basis for admission. This person is often the head of the household. Table 2 shows the distribution of PAs entering the U.S. between FY 2011-2015 by family size at arrival. Just under half of the roughly 141,000 PAs had families of two or more people.

| Table 2: Principal Applicants -- Cohorts 1-3 | | |
|--|---------|-------|
| Family Size | % | Cum % |
| 1 | 52% | 52% |
| 2 | 12% | 65% |
| 3 | 12% | 77% |
| 4 | 11% | 88% |
| 5 | 6% | 94% |
| 6 | 3% | 97% |
| 7+ | 3% | 100% |
| No. of Principal Applicants | 141,396 | |

The 2016 ASR targeted 1,500 completed interviews from refugee *households* entering the U.S. between FY 2011-2015. The sample was designed to allow for separate estimates and analyses from each of the three designated cohorts. Moreover, the design needed to accommodate both household and person-level analyses.

The sample was drawn as fresh cross sections by cohort; there was no longitudinal component. The survey objectives required that – in addition to primary stratification by cohort – the sample of households (i.e., PAs) be stratified at least by year of entry and geographic region of origin.

The 2016 ASR sampling frame was the ORR’s Refugee Arrivals Data System (RADS) dataset.

Sample Design

The 2016 ASR employed a stratified probability sample design of refugees. The first stage of selection was the household (PA), and the second stage was the selection of persons within households. Principal features of the sample design are highlighted below.

Sample Allocation to Cohorts.

The ASR design targeted equal numbers of household interviews by cohort. This is depicted in Table 3, which shows an allocation of 500 households per cohort. This means that there was an oversample of households for FY 2015, the most recent year of entry. This allocation prioritizes the statistical precision to cohorts. Within cohorts 1 and 2, the design maximizes precision by year of entry.

Table 3: 2016 ASR Target Number of Household Interviews by Cohort and Year of Arrival

| | A | B | C | D |
|------------------------|-------------------------------|-------------------------------------|--|---------------------|
| | Cohort Household Population % | 2016 Target HH Interviews by Cohort | Expected Interviews by Arrival Fiscal Year | Arrival Fiscal Year |
| Cohort 3: FY 2015 | 22% | 500 | 500 | 2015 |
| Cohort 2: FY 2013-2014 | 43% | 500 | 250 | 2014 |
| | | | 250 | 2013 |
| Cohort 1: FY 2011-2012 | 35% | 500 | 254 | 2012 |
| | | | 246 | 2011 |
| Total | 100% | 1,500 | 1,500 | |



Respondent Selection.

The ASR can be used for both household-level and person-level analyses. Although the Principal Applicant represented the household sampling unit, data were collected by proxy from all eligible refugees aged 16+ within each sampled household. Thus, the 2016 ASR sample design featured household-level element sampling and person-level clustered sampling. The PA served as the proxy informant for all eligible refugees within the household.

Population Coverage and Language Diversity.

An important design issue involved addressing the 200+ languages associated with the ASR population. Analysis of RADS data suggests that only 5 percent of cohort 2-3 refugees speak “good” English, suggesting that the clear majority of interviews needed to be in languages other than English. Table 4 tabulates primary language spoken by

refugees based on RADS data. We see that just over 70 percent of refugees speak 11 non-English languages, while about 75 percent of refugees speak one of 13 non-English languages. Unfortunately, it takes 208 languages to fully cover all refugees entering between FY 2011-2015.

The 2016 ASR was offered in 16 non-English languages (17 total languages, including English) identified in Table 4 (corresponding to rows 1 to 17). This achieved an overall coverage of 77 percent of the FY 2011-2015 refugee population. That is, an intentional non-coverage of 23 percent of the refugee population was accepted for the sake of feasibility.

| Table 4: Coverage of 2016 Refugees Primary Language Spoken by Refugees | | | |
|--|-------------------------|-------------------------------|---------------------------|
| Language Count | Primary Spoken Language | Primary Spoken Language Cum % | Primary Spoken Language % |
| 1 | Arabic | 19% | 19% |
| 2 | Nepali | 36% | 17% |
| 3 | Somali | 46% | 10% |
| 4 | Sgaw Karen | 53% | 8% |
| 5 | Spanish | 58% | 5% |
| 6 | Burmese | 60% | 2% |
| 7 | Farsi, Western | 63% | 2% |
| 8 | Kiswahili | 65% | 2% |
| 9 | Tedim | 67% | 2% |
| 10 | Tigrinya | 69% | 2% |
| 11 | Lai | 71% | 2% |
| 12 | Kinyarwanda | 73% | 2% |
| 13 | Chaldean* | 75% | 2% |
| 14 | English | 75% | 0.4% |
| 15 | Russian | 75% | 0.9% |
| 16 | Amharic | 76% | 0.5% |
| 17 | French | 77% | 0.3% |
| 18-208 | Remaining 191 languages | Not Covered for 2016 ASR | |
| * Interviewing in Chaldean will only be available via an interpreter. | | | |

Stratification.

Independent samples were drawn by cohort. Within cohort strata, additional stratification used the following factors: year of arrival (for cohorts 1 and 2 only); geographic region, native language, age group, gender, and household size (i.e., family size at arrival (1, 2, 3+ persons)). We employed proportionate stratified sampling within cohorts to ensure that the resultant sample was representative of the refugee population.

Accounting for Nonresponse.

ASR studies have been subject to highly differential survey nonresponse rates due to such factors as the difficulty of tracing and the inability to conduct surveys in every language. To address this, expected response rates were determined and the corresponding sample sizes were built into the initial sampling plan. Table 5 presents the expected disposition of the ASR and associated sample sizes that would be required under those assumptions.

A total of 1,500 completed household interviews would require a sample of roughly 4,800 refugees, of which 1,585 would be successfully traced. Thus, the net yield is estimated to be $4,768/1500 = 3.2$ sampled Principal Applicants to yield one completed household interview. However, since there is always uncertainty associated with the fielding of a survey, replicated sampling was also used to ensure that the target of 1,500 was achieved.

Table 5: Expected Sample Sizes and Dispositions for the Proposed 2016 ASR

| Cohort | Fiscal Years of Arrival | Expected Tracing Effectiveness | Sample Drawn | Successfully Traced & Contacted | Respondent Participation | Expected Interviews |
|----------|-------------------------|--------------------------------|--------------|---------------------------------|--------------------------|---------------------|
| Cohort 3 | 2015 | 51.0% | 1000 | 510 | 98% | 500 |
| Cohort 2 | 2013-14 | 36.7% | 1432 | 526 | 95% | 500 |
| Cohort 1 | 2011-12 | 23.5% | 2336 | 549 | 91% | 500 |
| Total | | | 4,768 | 1,585 | | 1,500 |



Replicated Sampling.

A replicated sample design was used in the 2016 ASR. A replicated sample is simply a large random sample that is randomly partitioned (using the same stratification scheme as the original sample) into many smaller samples, each of which is a snapshot of the original large sample. Under this approach, an initial sample of $1.5 \times 4,800 = 7,200$ was drawn (with equal cohort sizes of 2,400 each). This larger sample was randomly split into 15 equal-sized replicates of 480 refugees by cohort, yielding 15 independent sample replicates per cohort. Note that ten replicates accounted for the 4,800 that are expected based on the assumptions of tracing and nonparticipation used in Table 5. We note that during the survey collection period, an additional two replicates were needed for the FY 2011-2012 cohort.

Replicated sampling allowed for managing the sample by cohort. The overall sample was managed via three releases of sample replicates into the field by cohort over the course of data collection. This allowed the sample to be fine-tuned, ensuring that adequate cohort level sample sizes were attained.

Design Summary.

Principal features of the final sample design are summarized in Table 6.

Survey Administration

The survey administration procedures for the 2016 ASR are detailed in this section.



Sample Management.

The 2016 ASR employed a sample management plan integrating the replicated sample design and field protocols to include locating subjects, contacting them and conducting telephone interviews.

At the beginning of data collection three replicates from each cohort were released to the field for processing. The progress of these replicates was monitored closely for three weeks (e.g., the percentage of sample that yielded interviews, the percentage that required additional tracing, percentages of refusals and no contacts), with separate reporting and assessments by cohort and overall. At the end of the three-week period an assessment was made regarding the following design and administrative procedures and a third and final set of replicates was released a month before the end of data collection.

| Table 6: Summary of 2016 ASR Sample Design Elements | |
|--|--|
| Design Issue | Design Approach |
| Survey Population Definition | Refugees aged 16 years old or over at the time of interview who arrived in the U.S. during FY 2011-2015 |
| Cohort Definition | Cohort 1: FY 2011-2012 arrivals Cohort 2: FY 2013-2014 arrivals Cohort 3: FY 2015 arrivals |
| Sampling Frame | RADS dataset |
| Sampling Unit | Refugee Households, achieved by sampling Principal Applicants (PA) |
| Sample Allocation to Cohorts | Equal allocation of 500 households to each cohort |
| Population Coverage | Refugees in the ASR from only the languages covered by the translations plus Chaldean (interpreter only), yielding a 77% refugee population coverage |
| Stratification | Cohort, year of arrival; geographic region, native language, age at arrival, gender, and family size at arrival (1, 2, 3+ persons) |
| Accounting for Nonresponse | Expect to use 4,800 households to produce 1,500 completed household interviews |
| Replicated Sampling | Draw an initial sample of 7,200 and partition into 15 equal-sized replicates; release replicates over the field period as needed in pursuit of sampling targets; supplement by adding replicates, if necessary |
| Respondent Selection & Interviewing | Use household selection to collect data on the PA, the PA's household, and all eligible adults aged 16+ within a household via proxy reporting by the PA |

Translation of Materials.

Survey instruments and materials for the ASR 2016 were translated into 16 different languages, including English. Additionally, the survey team retained an interpreter to conduct interviews in a 17th language, Chaldean.

The languages that were translated and available in CATI or hard copy (written only) form appear in Table 7 below. In total, these languages cover about 77 percent of the eligible adult refugee population. Letters of introduction, survey instruments and update return post cards were translated into the 16 languages (all but Chaldean). Russian, Amharic, and French were languages that had been used in earlier years of the ASR and were thus retained for the ASR 2016 despite their relatively low frequencies in the population.

Field Protocols.

In this section, we detail the protocols involved in fielding the Annual Survey of Refugees, beginning with managing the sample using paradata.

| Table 7: 2016 ASR Languages Available by Translation Mode | | | | | | |
|---|-------------------------|------------------|-------------------|----------------|-----------------------------------|--------------|
| Language Count | Primary Spoken Language | Translation Mode | ASR Refugee Cum % | ASR Refugee* % | % Normed to 17 Selected Languages | Cum % Normed |
| 1 | Arabic | CATI | 19% | 19% | 25% | 25% |
| 2 | Nepali | CATI | 36% | 17% | 22% | 47% |
| 3 | Somali | CATI | 46% | 10% | 13% | 60% |
| 4 | Sgaw Karen | CATI | 53% | 8% | 10% | 70% |
| 5 | Spanish | CATI | 58% | 5% | 7% | 77% |
| 6 | Burmese | CATI | 60% | 2% | 3% | 79% |
| 7 | Farsi, Western | CATI | 63% | 2% | 3% | 82% |
| 8 | Kiswahili | CATI | 65% | 2% | 3% | 85% |
| 9 | Tedim | Written | 67% | 2% | 3% | 87% |
| 10 | Tigrinya | Written | 69% | 2% | 3% | 90% |
| 11 | Lai | Written | 71% | 2% | 3% | 92% |
| 12 | Kinyarwanda | Written | 73% | 2% | 3% | 95% |
| 13 | Chaldean | Interpreter | 75% | 2% | 3% | 98% |
| 14 | English | CATI | 75% | 0.4% | 1% | 98% |
| 15 | Russian | Written | 75% | 0.9% | 1% | 99% |
| 16 | Amharic | Written | 76% | 0.5% | 1% | 100% |
| 17 | French | Written | 77% | 0.3% | 0% | 100% |
| * Source: RADS data | | | | | | |



Managing the Sample.

Implementation of the survey design called for careful release of sample replicates into the field over the data collection period. Weekly progress reports were prepared separately by replicate release to estimate sample productivity by cohort. The sampling management system reported statistics, such as:

- Percentage of sample by the amount and type (if any) of updated information obtained;
- Percentage of sample released, pending, and finalized;
- Percentage of sample by all intermediate and final dispositions;
- The sample's net yield (i.e., average number of sampled units per completed interview);
- Number of calls made, refusals incurred, and interviews completed;
- Demographics of completed interviews vs. entire sample; comparisons by respondent demographics (language, sex, country of origin, family size);
- Completed interviews by source of contact information.

These reports were generated for sample release by cohort and overall.



Tracing Sampled Subjects.

The RADS data included contact information for most of the sample.⁴ However, contact information for the vast majority of the sample was 2 to 5 years old. Even the most recent cohort had contact information over two years old. In consequence, a successful ASR was contingent upon locating the sampled subjects.

For the sake of efficiency, the entire sample (i.e., all replicates, regardless of their release) underwent tracing protocols prior to the commencement of field interviewing. This included the use of National Change of Address as well as TransUnion batch updates. For the first three released replicates, we also attempted manual TransUnion look-ups as well as Accurant (LexisNexis) batch updating. The results from this additional tracing proved ineffective, so this additional method was suspended for later replicates.

⁴ The exception was the FY 2011 cohort, which lacked some information that the other cohorts included. For most of the 2011 entrants, there were no street address details available through the 90-day updates information, although arrival city, state, and zip code were available from the admissions data.



Letters of Introduction.

Upon the release of a sample replicate into the field, an introduction letter containing a \$2 cash advance incentive was issued via first class postal service. Seventeen versions of this letter were prepared, and the letter sent to the sampled refugee was tailored to their specific primary language spoken as reported in RADS. A research study logo was developed to visually “brand” the survey and make it easier for refugees to distinguish ASR letters from junk mail or bills. The introductory letters themselves appeared in two languages – English plus the primary language spoken by the PA – and contained a call-in number that would allow the respondent to communicate in their primary spoken language as well as call-in options for their likely second and third languages, when applicable. It also contained an ASR-specific email address so that the refugee could communicate questions and/or updated contact information. The letter also contained a postage-free mail-back form for updating the refugee’s contact telephone number.



Outreach to Resettlement Agencies.

Outreach to resettlement service providers was made via email contact. The communications informed both resettlement agencies and the State Refugee and Health Coordinators of the fielding of the survey and requested that they share the information with community-based service providers likely to interact with refugees presenting questions about the letter of introduction or phone call inquiries.



CATI Programming & Testing.

The hard copy questionnaire was programmed and tested to ensure proper flow and appropriate skip logic. The CATI program included nine distinct languages as shown under the “Translation Mode Column” of Table 7 (see languages corresponding to rows containing the word “CATI”).

A pretest of 9 subjects (the maximum allowed by OMB) in English was conducted to ensure the flow and comprehension of questions.



Hiring and Training of Interviewers.

ASR interviewers underwent a four-hour study-specific training in addition to the typical generic training undertaken by all interviewers. The study-specific training protocol covered orientation on refugee issues and the U.S. refugee resettlement system, led by Urban Institute project staff. It also covered securing survey participation, asking sensitive questions and averting refusals, topics of cultural sensitivity, refusal aversion techniques, and the intricacies of the survey questionnaire itself. The training included participation in multiple mock interviews in English and non-English languages.



Quality Control.

Quality control is an important part of ensuring data quality. About 7 percent of interviewer hours were ‘live-monitored’ to ensure fidelity to the protocol. As needed, interviewers who failed to follow procedures were re-trained or released, depending on the nature of the departure from protocol. A debrief of the interviewers was conducted at the end of data collection.



Post-Participation Fulfilment Protocols.

The 2016 ASR provided post-participation incentives (a \$25 gift card) via first class mail.

Specification of Field Period.

Tracing commenced in December 2016, letters of introduction were issued early January, and calling began in mid-January. The survey data collection period featured three releases of sample replicates and lasted three months, from January 16 to April 14, 2017.

Conducting Interviews.

Interviewing covered a thirteen-week calling period running mid-January through mid-April of 2017. The CATI sample management system executed a calling protocol that required ten call attempts across different times of day and different days of the week. For a given sampled subject, calling was deliberately spread over a couple of weeks including a rest for about one week before resuming dialing (as needed after the first five attempts and provided the short field period allows for a full week of “rest”). Also, whenever an updated telephone number was obtained, the calling algorithm was reset to allow a fresh set of ten call attempts.

As noted earlier, three sample replicates were initially released for continuous learning and for calibrating the amount of sample needed for our three sample cohorts. At two points in the field period, decisions were made about how many additional replicates needed to be released by sample cohort to achieve the 500/500/500 completed interview targets by cohort. The decision points were:

- (a) at the commencement of data collection;
- (b) at 4 weeks into data collection; and
- (c) at 8 weeks into data collection.

A high degree of attention to cultural sensitivity and relevance was integrated into field protocols. This included matching interviewer and subject gender to prevent male interviewers from calling female subjects. Moreover, religious holidays and other important calendar dates were loaded into the CATI sample management system so that interviewers did not call refugees on solemn religious holidays.

Results

The 2016 ASR field effort resulted in 1,500 completed refugee household/PA interviews and data from 4,037 eligible refugees. Table 8 presents the final dispositions from our sample of 6,167 Primary Applicants at the end of the field period. Final completed household interviews from the three cohorts (i.e., FY 2015, FY 2013-2014, FY 2011-2012) came within 5 percent of the desired target of 500 per cohort.

Response Rates.

An overall response rate of 24 percent was achieved. The response rate was driven by the ability to locate and speak to $(1500+468)/6176 = 32$ percent of the sample, **meaning that two thirds of the sample could either not be located, or (if located) could not be successfully contacted.**

The overall response rates decreased with time since arrival to the U.S., varying from 20 percent for FY 2011-2012 refugees to 25 percent for FY 2013-2014 refugees and a high of 31 percent for FY 2015 refugees.

The second set of rows in Table 8 (Screened Refugee, Not Interviewed) presents detailed dispositions among those who were contacted and verified, yet did not participate in the survey. **Just under a quarter of contacted refugees, $486/(1500+486) = 24$ percent, were contacted but did not participate; the noncooperation varied little by cohort.**

Table 8: 2016 Annual Survey of Refugee Final Dispositions

| 2016 ASR Final Dispositions | FY 2015 | | FY 2013-2014 | | FY 2011-2012 | | TOTAL | |
|---|------------|------------|--------------|------------|--------------|------------|--------------|------------|
| Disposition: | N | % | N | % | N | % | N | % |
| <i>Total Sample</i> | 1,700 | 100% | 1,908 | 100% | 2,568 | 100% | 6,176 | 100% |
| Completed Interview | 524 | 31% | 475 | 25% | 501 | 20% | 1,500 | 24% |
| Screened Refugee, not interviewed | 161 | 9% | 157 | 8% | 168 | 7% | 486 | 8% |
| <i>Refusal after screener</i> | 17 | 11% | 20 | 13% | 21 | 13% | 58 | 12% |
| <i>Breakoff</i> | 34 | 21% | 36 | 23% | 39 | 23% | 109 | 22% |
| <i>Callbacks (Screener Completed)</i> | 62 | 39% | 46 | 29% | 52 | 31% | 160 | 33% |
| <i>Answering machine</i> | 25 | 16% | 31 | 20% | 24 | 14% | 80 | 16% |
| <i>Physically or mentally unable/incompetent</i> | 0 | 0% | 0 | 0% | 1 | 1% | 1 | 0% |
| <i>Do not call (Final Refusal)</i> | 23 | 14% | 24 | 15% | 31 | 18% | 78 | 16% |
| Unable to Screen Refugee (Located) | 477 | 28% | 648 | 34% | 859 | 33% | 1,984 | 32% |
| <i>Always busy</i> | 18 | 4% | 33 | 5% | 42 | 5% | 93 | 5% |
| <i>No answer</i> | 143 | 30% | 233 | 36% | 306 | 36% | 682 | 34% |
| <i>Answering machine-don't know if household</i> | 158 | 33% | 205 | 32% | 286 | 33% | 649 | 33% |
| <i>Call blocking</i> | 16 | 3% | 16 | 2% | 17 | 2% | 49 | 2% |
| <i>Housing unit, unknown if eligible respondent</i> | 62 | 13% | 79 | 12% | 92 | 11% | 233 | 12% |
| <i>Callbacks (No Screener Completed)</i> | 71 | 15% | 73 | 11% | 105 | 12% | 249 | 13% |
| <i>No screener completed Other</i> | 9 | 2% | 9 | 1% | 11 | 1% | 29 | 1% |
| Unable to Find Refugee (Not Located) | 538 | 32% | 628 | 33% | 1,040 | 40% | 2,206 | 36% |
| <i>Fax/data line</i> | 1 | 0% | 1 | 0% | 2 | 0% | 4 | 0% |
| <i>Non-working number</i> | 179 | 33% | 224 | 36% | 357 | 34% | 760 | 34% |
| <i>Business, government office, other</i> | 6 | 1% | 6 | 1% | 18 | 2% | 30 | 1% |
| <i>No eligible respondent</i> | 64 | 12% | 73 | 12% | 55 | 5% | 192 | 9% |
| <i>Insufficient contact information</i> | 288 | 54% | 324 | 52% | 608 | 58% | 1,220 | 55% |

A review of the reasons for nonparticipation suggests that about half of contacted non-responders were refusals of some type: 12 percent refused after screening, 22 percent broke off from the interview itself, and 16 percent verified their identity but refused just before the formal screening was administered. Virtually all breakoffs occurred after the first few questions after screening.

The middle rows (Unable to Screen) of Table 8 reflect the difficulty in being able to contact respondents when contact information is available. There is no way of knowing whether the telephone numbers and addresses were associated with the sampled respondent because contact did not occur. Despite the ambitious calling protocol (i.e., up to 10 calls at different days and times for every telephone number associated with a respondent), the field team was unable to secure a contact with about a third of the

sample (32 percent). Reviewing the detailed dispositions suggests that two thirds of these 'unable to screen' cases (67 percent) involved ring, no answers or answering machines, despite the multiple calls made.

Finally, the bottom set of rows of Table 8 (Unable to Find) shows difficulty in locating respondents. Just over a third of the sample was unlocatable (36 percent); that is, the limited contact information that was available proved to be unproductive even when updated information was obtained. The ability to locate refugees decreased with time of arrival. Rates of 'unable to locate' varied from a high of 40 percent for FY 2011-2012 to a low of 30 percent for refugees in the FY 2015 cohort. Much of the variability was a result of limited contact information available from the RADS for the FY 2011 sampled subjects relative to all others. The detailed dispositions show that just over half of this 'unable to find' group (n=1,220 or 55 percent) simply had no telephone number to call (i.e., insufficient contact information). This includes a small portion of individuals for which neither address nor telephone number were available from the RADS (n=73) and therefore could not be traced. But most of the 'unable to find' cases were the result of exhausting available phone numbers and being placed into a pool for additional tracing, at which point no additional phone numbers were found.

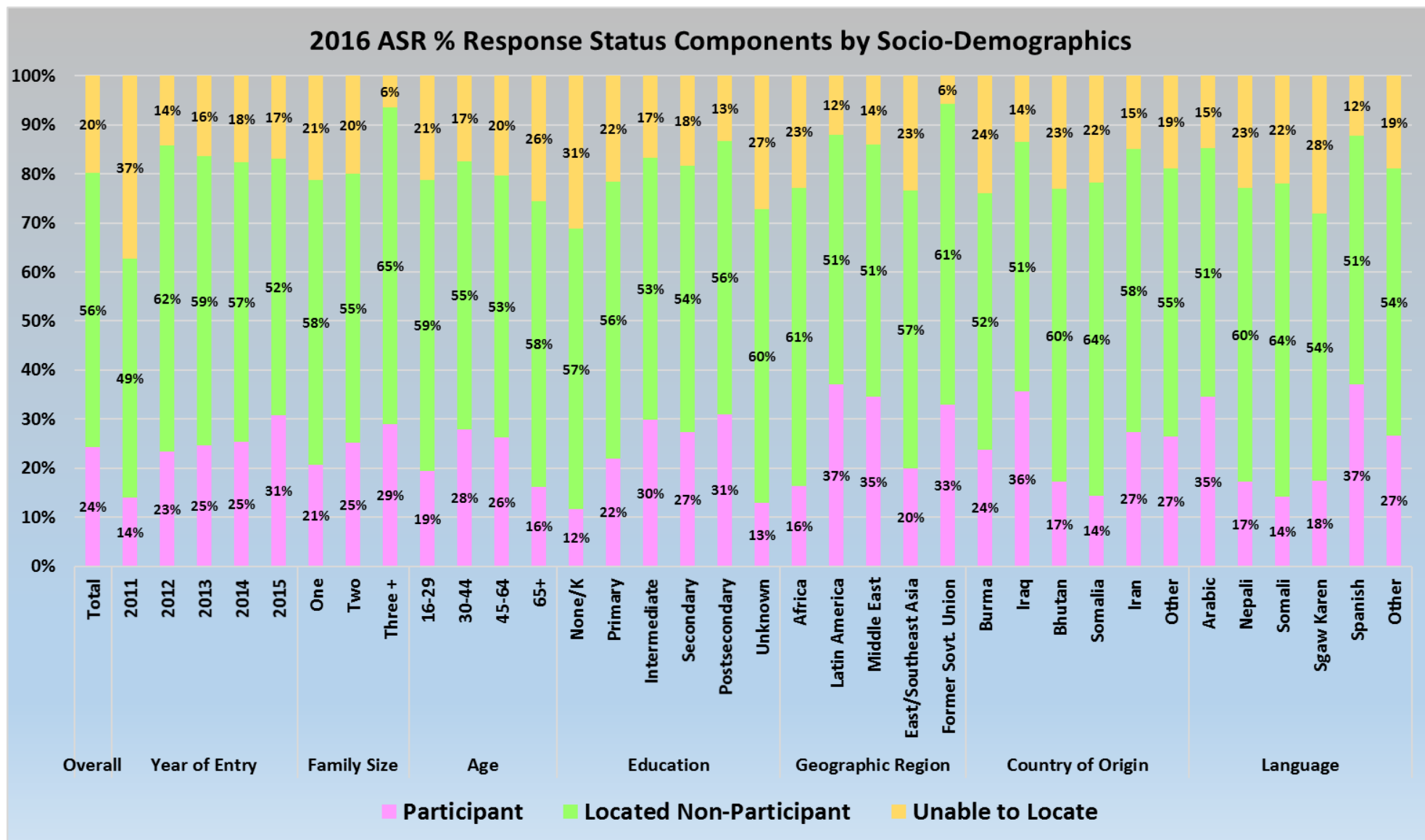


Nonresponse Analysis.

The variation in response rate components across selected demographic variables appears in Figure 1. The bottom of the graph shows the *overall response rate* in pink across a variety of demographic factors. Rates of '*unable to contact*' appear in yellow at the top of the graph for these subgroups, and percentages of the sample '*located but not interviewed*' in the middle bars (green).

Overall response rates. The leftmost bar shows an overall response rate of 24 percent. Overall response rates across subgroups shown visually reveal the monotonic increase in response rate by recency of arrival. The same increase is seen by family size – the larger the household, the more likely it was to locate and interview the sampled refugee. The graph also suggests that response rates were highest among middle aged subjects 30 to 64 years old; lowest response rates occurred for young adults and the elderly. Response rates were also associated with levels of education at the time of entry. Generally, the higher the refugee education level at arrival, the higher the response rate. Considerable variation in response rates was seen in terms of the refugee geographic region, country of origin and language, which are correlated characteristics. Refugees from Somalia and Bhutan incurred the lowest response rates, 14 and 17 percent, respectively. The highest response rates were seen for Latin American refugees (37 percent) and those from Iraq (36 percent).

Figure 1: ASR Response Rate Analysis



Turning to the top portion of the graph showing the percentage of the sample 'unable to locate,' we see striking variation by recency of arrival. Specifically, the sample of refugees arriving in FY 2011 was extremely difficult to locate (37 percent unlocatable) relative to other years of arrival, which experienced unlocatable rates in the teens. This is due to a limitation of the RADS contact information for FY 2011 arrivals. Single/non-family refugees and couples (each about 20% unlocatable) were much harder to locate than families of 3 or more (only 6% unable to locate). Other demographic subgroups that were particularly difficult to locate included elderly refugees 65 years old or over (26% unable to locate), refugees with no education (31% unable to locate), and refugees speaking Sgaw Karen (28% unable to locate).



Section 4 of this manual explains how to properly weight the data to get correct person-level or household-level estimates and provides a few examples.

Section 2: Types and Definitions of Variables on the Data File

The ASR data are organized into a person-level file where each person has one record in the data file. Household-level and administrative variables have been attached to each person's data record. This data structure was chosen because it is consistent with the way the data are collected in the survey and accommodates both person and household-level analysis.



It is important to understand that there are 3 types of person records included in the data file: 1) Persons who are not refugees who came to the U.S. during the past five years. These people are included on the data file because they live in the household, but they do not have person-level weights because they are not “eligible refugees” and are generally not included in any of the analyses; 2) Refugee children who are 15 years of age or younger at the time of survey administration. These individuals have person-level weights, but very little data was collected on them, so they are also usually not included in the analyses; 3) Refugees who are 16 or older at the time of survey administration who came to the U.S. during the past five years. These individuals have person-level weights and a full set of person measures that are either self-reported (in the case of respondents) or proxy reported (in the case of respondents' household members).

The ASR data file contains four types of variables:

1. **Survey variables** store information obtained directly from questions asked on the survey. The variable name for each survey variable begins with the letters “qn” and corresponds with the question number from the survey questionnaire. The questionnaire can be found in Appendix A.
2. **Constructed variables** summarize or combine information from survey variables. We have included in this dataset and user's guide only constructed variables that aggregate information from several survey variables to create more complex measures. Data users should check how constructed variables can meet their analytic needs before going directly to the use of survey variables, especially if they believe that the measure of interest involves multiple survey items. The variable name for each constructed variable begins with the letters “ui.” The constructed variables in the data file are all described in this section of the user's guide.

3. **Administrative variables** provide information that was not obtained directly from a respondent, such as the geographic location or information about the interviewing process itself such as language of the interview. Administrative variables include identifier variables, such as person or household ID. The administrative variables in the data file are all described in this section of the user's guide.
4. The variable name for each **weight variable** begins with the word "weight." For more information on weights, see chapter 4 of this guide.



The ASR has a complex survey design. To produce unbiased estimates from the 2016 ASR data, it is critical that researchers use the survey weights.

Constructed Variables

ui_lfp: This variable reports individuals' labor force participation status: in the labor force, not in the labor force, or doesn't know or refused to respond. It was created using responses to qn5a and qn13. Individuals are considered "in the labor force" if they report working at a job anytime the week before survey administration (qn5a) or looking for work during the four weeks before survey administration (qn13). Individuals are considered "not in the labor force" if they report not working at a job anytime the week before survey administration (qn5a) and not looking for work during the four weeks before survey administration (qn13) (or answer "don't know" or refuse to respond to qn13). Respondents who either don't know or refuse to respond to both qn5a and qn13 are marked "Don't know and/or refused" for *ui_lfp*.

ui_emprate: This variable reports individuals' employment status: employed, unemployed, not in the labor force, or doesn't know or refused to respond. It was created using responses to qn5a and qn13. Individuals are considered "employed" if they report working at a job anytime the week before survey administration (qn5a), "unemployed" if they report not working at a job anytime the week before survey administration (qn5a) and looking for work during the four weeks before survey administration (qn13), and "not in the labor force" if they report not working at a job anytime the week before survey administration (qn5a) and either report not looking for work during the four weeks before survey administration, don't know, or refuse to respond (qn13). Respondents who either don't know or refuse to respond to qn5a are marked "Don't know and/or refused" for *ui_emprate*.

ui_medicaidrma: This variable reports individuals' receipt of Refugee Medical Assistance (RMA)/Medicaid: receives RMA/Medicaid, doesn't receive RMA/Medicaid, or doesn't know or refused to respond. It was created using responses to qn29c and qn29d. Individuals are designated "Receives RMA/Medicaid" if they select "Medicaid or Refugee Medical Assistance" in response to qn29d. Individuals are designated "Does not receive RMA/Medicaid" if they select any qn29d response option(s) excluding "Medicaid or Refugee Medical Assistance," or if they answer "Not covered in any month" in response to qn29c. Respondents who either don't know or refuse to respond to both qn29d are marked "Don't know and/or refused" for *ui_medicaidrma*.

ui_lpr: This variable reports individuals' legal permanent residency (LPR) status and plans: has already adjusted LPR status, has not applied to adjust LPR status but plans to, has not applied to adjust LPR status and does not plan to, or doesn't know or refused to respond. It was created using responses to qn27a and qn27c. Individuals are designated "Already adjusted LPR status" if they report having applied to adjust their immigration status to LPR (qn27a) and designated "Plans to adjust LPR status in future" if they report not having applied to adjust their status

(qn27a) but planning to in future (qn27c). Individuals are designated “Not applied to adjust, may not” if they report not having applied (qn27a) and not planning to (qn27c); report not having applied (qn27a) and answer “don’t know” or refuse to answer (qn27c); or answer “don’t know” to qn27a but select a response option for qn27c. Respondents who either don’t know or refuse to respond to both qn27a and qn27c are marked “Don’t know and/or refused” for *ui_lpr*.

ui_school: This variable reports individuals’ educational pursuits in the United States: pursuit of a high school degree, associate’s degree, bachelor’s degree, master’s/doctorate, professional school degree, certificate/license, other form of education, or doesn’t know or refused to respond. It was created using responses to qn25a and qn25c. The variable reports responses to qn25c, with the additional step of flagging as “None” individuals who report not attending school in the United States (qn25a) and flagging as “Don’t know and/or refused” individuals who answer “don’t know” or refuse to answer qn25a or qn25c. Note that “certificate/license” was not listed in the questionnaire and was back-coded from “other, specify” responses.

ui_agect_arrival: This is a categorical variable that reports individuals’ grouped ages at arrival in the United States. It was created using responses to qn1d and qn1jyear. Given that the survey was administered in 2017, the year respondents reported an individual arriving in the U.S. (qn1jyear) was subtracted from 2017 to find years in the U.S. This value was subtracted from individuals’ reported ages (qn1d) to find their age at arrival in the U.S. Finally, this value was grouped into categories: less than zero (0), zero to seventeen (1), eighteen to twenty-four (2), twenty-five to thirty-nine (3), forty to fifty-four (4), and fifty-five and up (5). Respondents who either don’t know or refuse to respond to qn1d are marked “Don’t know and/or refused” for *ui_agect_arrival*.

ui_cashassist: This variable reports households’ receipt of cash assistance: receives cash assistance, doesn’t receive cash assistance, or doesn’t know or refused to respond. It was created using responses to qn31a, qn32a, qn33a, and qn34a. A respondent’s household is designated “Receives cash assistance” if they report one or more persons in their household receiving TANF (qn31a), Refugee Cash Assistance (RCA) (qn32a), Supplemental Security Income (SSI) (qn33a), or General Assistance (GA) (qn34a) in the twelve months before survey administration. Households whose respondent either doesn’t know or refuses to respond to all four questions (qn31a, qn32a, qn33a, and qn34a) are marked “Don’t know and/or refused” for *ui_cashassist*. Remaining households are designated “Does not receive cash assistance.”

ui_soi_pubassist: This variable reports households’ receipt of public assistance: receives public assistance, doesn’t receive public assistance, or doesn’t know or refused to respond. It was created using responses to qn30a, qn31a, qn32a, qn33a, qn34a, and qn38a. A respondent’s household is designated “Receives public

assistance” if they report one or more persons in their household receiving food stamps (qn30a), TANF (qn31a), Refugee Cash Assistance (RCA) (qn32a), Supplemental Security Income (SSI) (q33a), or General Assistance (GA) (qn34a) or residing in public housing (qn38c) in the twelve months before survey administration. Otherwise, if more than two responses to the public assistance questions were missing, households were marked “Don’t know and/or refused” for *ui_soi_pubassist*. Households that reported not receiving any of the public assistance programs and had two or fewer missing responses were designated “Doesn’t receive public assistance.”

ui_soi: This variable reports households’ source(s) of income: receives earnings, receives public assistance, receives both, does not receive either, receives public assistance but missing earnings data, receives earnings but missing public assistance data, doesn’t receive public assistance but missing earnings data, or doesn’t know or refused to respond. The variable was created using responses to qn18c(a-e), qn30a, qn31a, qn32a, qn33a, qn34a, and qn38a. A respondent’s household is designated “Receives earnings” if they report one or more household members receiving income of \$800 or more (qn18c). A respondent’s household is designated “Receives public assistance” if they report one or more household members receiving food stamps (qn30a), TANF (qn31a), Refugee Cash Assistance (RCA) (qn32a), Supplemental Security Income (SSI) (q33a), or General Assistance (GA) (qn34a) or residing in public housing (qn38c) in the twelve months before survey administration. If both are true, households are designated “Receives both;” if neither is true, households are designated “Does not receive earnings or public assistance.” If a respondent reports their household receiving either public assistance or earnings, and doesn’t know or refuses to answer regarding the other, their household is designated either “Receives public assistance, but earnings missing” or “Receives earnings, but public assistance missing.” If a respondent reports their household not receiving public assistance and doesn’t know or refuses to answer regarding earnings, their household is designated “Doesn’t receive public assistance, but earnings missing.” Finally, if a respondent either doesn’t know, refuses to answer, or has a missing value for both the earnings and the public assistance questions, their household is designated “Don’t know and/or refused” for *ui_soi*.

ui_qn8a_annual: This variable reports estimated annual earnings from the individual’s primary job. It was calculated by converting responses to qn8a (pre-tax earnings from primary job) to annual levels using responses to qn8b (basis on which *qn8a* was computed: weekly, bi-monthly, monthly, or annually). Individuals who answered “weekly” to question 8b were assumed to work fifty weeks in a year. Individuals who answered “bi-monthly” and “monthly” to question 8b were assumed to work twelve months in a year.

ui_qn10a_annual: This variable reports estimated annual earnings from the individual’s secondary job. It was calculated by converting responses to qn10a

(pre-tax earnings from primary job) to annual levels using responses to *qn10b* (basis on which *qn10a* was computed: weekly, bi-monthly, monthly, or annually). Individuals who answered “weekly” to question 10b were assumed to work fifty weeks in a year. Individuals who answered “bi-monthly” and “monthly” to question 10b were assumed to work twelve months in a year.

ui_work: This variable reports individuals’ present and past work status in the U.S.: working now, not working now but worked in past, not working now and never worked in past, not working now but unsure about working in past, not working now and refused regarding past, don’t know for both, and refused for both. It was created using responses to *qn5a* and *qn11a*. Individuals are designated “Working now” if they report working at a job anytime the week before survey administration (*qn5a*). Individuals are designated “Not working now but worked in past” if they report not working at a job anytime the week before survey administration (*qn5a*) but working at some point since coming to the U.S. (*qn11a*). They are designated “Not working now and never worked in past” if they responded accordingly to *qn5a* and *qn11a*. They are designated “Not working now and unsure about working in past” or “Not working now and refused about past” if they reported not working anytime the week before survey administration (*qn5a*) and answered *qn11a* “don’t know” or “refused,” respectively. Respondents who either don’t know or refuse to respond to both *qn5a* and *qn11a* are marked “Don’t know and/or refused” for *ui_work*.

Administrative Variables

hhid: This number is used to identify which household each person lives in.

numpppl: The number of people residing in each household. Respondents could list up to five household members including themselves.

language: The language of survey administration. For sampling and survey administration purposes, language data was borrowed from the RADS. Respondents could request that the survey be administered to them in a different language. The *language* variable reflects these changes.

cohort: For sampling and analysis purposes, respondents were divided into cohorts by year of arrival. The three cohort groups are refugees who arrived in fiscal years 2011 and 2012, fiscal years 2013 and 2014, and fiscal year 2015.

personid: This number uniquely identifies individuals in the dataset. The variable was created by combining *hhid* and *qn1a*.



respondent: This binary variable flags survey respondents as “1” and the household members they listed and reported on as “0.” It is important to note that the survey respondents were the Principal Applicant (PA) whose refugee case is the basis for admission. This person is often the head of the household. The PAs provided self-reported data about themselves and proxy reported data for other household residents. To conduct household-level analysis it is recommended that you select only cases where this flag equals “1.”

Section 3: Dealing with Missing Respondent Data

Often when working with large federal data files such as the American Community Survey (ACS) or the Current Population Survey (CPS) it may seem as though most of the variables have no missing data. As with all surveys, however, some respondents either cannot answer or choose not to answer all the questions. The reason for most of the CPS variables having no missing data is this: when they are not obtained from the respondent, the answers are imputed by the Census Bureau through an elaborate imputation procedure.

Imputation did not occur for ASR questions. Therefore, most ASR questions have some missing data. For instance, if you add together the number of people who said yes or no for any yes/no question, that sum is almost always less than the total number of ASR respondents who were asked the question because of missing data. It is sometimes important to differentiate between two types of missing data: 1) data missing because the respondent does not provide a useable answer; or, 2) data missing by design because the respondent was purposely not asked the question (i.e., inapplicable).

The data file uses two codes to indicate when a respondent does not provide a useable response. When the answer to the ASR question ends with a "9" this indicates that the respondent refused to answer the item. This could simply be a "9" or it could be "99", "999", "9999", "99999" depending on the range of response options. For instance, the question that asks how well each person speaks English uses a "9" to indicate a refusal response while the question that asks about number of years of schooling uses a "99" to indicate a refusal. Similarly, when the answer to an ASR question ends with a "8", this indicates that the respondent said that they don't know the answer. Again, this could simply be a "8" or it could be "98", "998", "9998", "99998" depending on the range of response options. The data field is left empty or blank for variables that have missing data because the respondent did not get asked the question due to survey skip logic.

Usually researchers will exclude respondent missing data when calculating percentage estimates. This practice can be thought of as a form of pseudo-imputation—with the assumption that data missing from respondents would likely show a similar response pattern as the non-missing data.



To match the percentage estimates that are published in the Office of Refugee Resettlement Annual Report to Congress, you should exclude respondents' missing data.

Information that is missing by design is typically excluded by researchers when producing percentage estimates. For some analyses, however, sometimes the items that are purposely not asked can be interpreted as having a value. For

instance, question qn11a asks whether a person has ever worked since coming to the U.S. to stay. If you were to simply exclude all the missing data, you would conclude that the answer would be that 69.7% never worked since coming to the U.S. However, the answer you probably want to report is that only 30.4% of refugees never worked since coming to the U.S. This is because on an earlier question (qn5a) we learned that 1,592 people had a job last week and thus did not get asked about whether they have ever worked in the U.S. In this and many similar situations, you probably would want to interpret data that is missing by design as having a value.



Hence, when you have a question that has lots of missing data, consider checking the survey instrument (Appendix A) to see if respondents were not asked the question because of their response to a previous question.



Whenever you are doing statistical analysis with variables that have missing data, make sure you either understand how the missing data is being treated or include in your program explicit instructions about how missing data will be handled. Given the large sample size for many of the ASR variables, you may not notice the unintentional impact that values of 8, 9, 98, or 99 may have on estimates such as means, medians, and regression coefficients.

The next section of this report will show that when you exclude missing data, your weighted population estimates will no longer sum to the total refugee population and, therefore, will not produce accurate population estimates. The next section also explains, however, that there are acceptable procedures for producing reliable population estimates.

Section 4: Using the Survey Weights

Responses to ASR questions should be weighted to provide approximately unbiased aggregate estimates. The weights should be applied to all survey items in order to:

- Compensate for differential probabilities of selection for households and persons and
- Reduce biases occurring where nonrespondents have different characteristics than respondents.

Household- and person-level analytic weights were developed for the 2016 ASR to allow for valid statistical estimates of the target refugee population. Both sets of weights are comprised of two components – a base weight reflecting the selection probability and an adjustment that corrects for differential nonresponse and aligns the population to known totals from the sampling frame (RADS universe file).



Specifically, analytic weights incorporate:

- A **base (sampling) weight** which reflects the refugee household selection probability. The weight itself is simply the reciprocal of the probability of selection; because the sample allocations of each cohort were managed separately, the selection probabilities varied by the size of the population and the amount of sample released into the field;
- A **post-stratification adjustment** which corrects the sample for differential nonresponse⁵ across cohort and demographic subgroups as well as aligning the sample to known population distributions taken from the RADS.

An important technical point is that the selection probability of persons in the ASR is the same as the household selection probability because the household-level respondent (i.e., the PA) served as a proxy for providing data on all eligible household residents.



Household Analytic Weights.

The household analytic weight was formed by taking the product of the base weight and post-stratification adjustment. The post-stratification adjustment was

⁵ A separate nonresponse adjustment had been planned, but was not feasible. The reasons were the overwhelming nature of nonresponse stemming from being unable to locate subjects combined with a consistently high level of survey participation when subjects were contacted. There was virtually no useful information for nonresponse adjustment in the sample management system other than that which came from the RADS. Hence the post-stratification adjustment served both purposes of adjusting for nonresponse and aligning to population distributions.

created by applying an iterative proportional fitting algorithm called “raking” to the ASR household-level respondent data. This created weight adjustments that simultaneously align the sample to the refugee population distributions for several factors from the RADS data. Specific household-level post-stratification raking variables included:

- Year of entry
- Origin country collapsed to top 5 and all other
- Family size with 5+ collapsed into one category
- Volunteer agency collapsed to top 5 and all other
- U.S. state originally settled in collapsed to Census regions

Extreme weight adjustments, at both the top and bottom of the distribution of adjusted values, were trimmed to reduce the statistical variance associated with extreme weight values. Diagnostics comparing ASR weighted distributions to their corresponding RADS distributions were produced to verify that the final analytic household weight performed satisfactorily. Table 9 presents the results of that comparison.



Person Analytic Weights.

Similarly, the person-level analytic weight was formed by conducting the post-stratification raking procedure on a set of person-level RADS factors.⁶ These included:

- Year of entry
- Origin country collapsed to top 5 and all other
- Family size at arrival with 5+ collapsed into one category
- Voluntary agency collapsed to top 5 and all other
- U.S. state originally settled in collapsed to Census regions
- Age at arrival collapsed into 5 categories [0-15, 16-24, 25-39, 40-54, and 55+]
- Gender
- Ethnicity collapsed to top 7 and all other
- Reading proficiency in native language with missing and unknown combined
- Educational attainment collapsed into 6 categories (none/kindergarten, primary, intermediate, secondary, postsecondary, and unknown/missing)
- Language collapsed into top 5, unknown/missing, and all other.

⁶ Since the focus of the survey is on persons 16 years of age or older, the person-level post-stratification weighting was done separately for persons 15 years of age or younger versus persons 16 years of age or older.

**Table 9: 2016 ASR Household-level (PA) Distributions Using Analytic Weight
Compared to RADS Household (PA) Distributions**

| Variable | Category | 2016 ASR weighted | RADS principal applicant universe |
|-------------------------------|--|------------------------------|--|
| Fiscal year of arrival | 2011 | 17% | 17% |
| | 2012 | 19% | 19% |
| | 2013 | 22% | 22% |
| | 2014 | 21% | 21% |
| | 2015 | 20% | 20% |
| Origin country | BHUTAN | 16% | 16% |
| | BURMA | 24% | 24% |
| | IRAQ | 22% | 22% |
| | OTHER | 27% | 27% |
| | SOMALIA | 10% | 10% |
| Family size at arrival | 1 | 52% | 52% |
| | 2 | 12% | 12% |
| | 3 | 13% | 13% |
| | 4 | 11% | 11% |
| | 5+ | 12% | 12% |
| Region of placement | Northeast | 16% | 16% |
| | Midwest | 26% | 26% |
| | South | 33% | 33% |
| | West | 25% | 25% |
| Voluntary agency | CHURCH WORLD SERVICES | 10% | 10% |
| | INTERNATIONAL RESCUE COMMITTEE | 13% | 13% |
| | LUTHERAN IMMIGRATION AND REFUGEE SERVICE | 14% | 14% |
| | OTHER | 17% | 17% |
| | UNITED STATES COMMITTEE FOR REFUGEES AND IMMIGRANTS | 12% | 12% |
| | UNITED STATES CONFERENCE OF CATHOLIC BISHOPS | 26% | 26% |
| | WORLD RELIEF | 10% | 9% |

**Table 10a: 2016 ASR Weighted Distributions of Persons Aged 16+ Compared to
RADS Population Distributions**

| Variable | Category | 2016 ASR 16+ Person Weighted | RADS 16+ Person Level Universe |
|-------------------------------|--|---|---|
| Fiscal year of arrival | 2011 | 18% | 19% |
| | 2012 | 20% | 19% |
| | 2013 | 21% | 22% |
| | 2014 | 21% | 21% |
| | 2015 | 20% | 19% |
| Origin country | BURMA | 23% | 24% |
| | IRAQ | 23% | 23% |
| | BHUTAN | 18% | 18% |
| | SOMALIA | 9% | 9% |
| | CUBA | 5% | 5% |
| | OTHER | 22% | 22% |
| Family size at arrival | 1 | 30% | 30% |
| | 2 | 13% | 13% |
| | 3 | 16% | 16% |
| | 4 | 16% | 16% |
| | 5+ | 25% | 25% |
| Region of placement | Northeast | 16% | 16% |
| | Midwest | 26% | 26% |
| | South | 32% | 33% |
| | West | 25% | 25% |
| Voluntary agency | US CONFERENCE OF CATHOLIC BISHOPS | 25% | 25% |
| | LUTHERN IMMIGRATION AND REFUGEE SERVICE | 14% | 14% |
| | INTERNATIONAL RESCUE COMMITTEE | 12% | 13% |
| | US COMMITTEE FOR REFUGEES AND IMMIGRANTS | 12% | 12% |
| | CHURCH WORLD SERVICES | 10% | 10% |
| | OTHER | 27% | 27% |
| Age at Arrival* | 0-15* | 8% | 9% |
| | 16-24 | 25% | 26% |
| | 25-39 | 39% | 38% |
| | 40-54 | 18% | 18% |
| | 55+ | 10% | 10% |
| Gender | Male | 53% | 53% |
| | Female | 47% | 47% |
| Ethnicity | LHOTSAMPA | 18% | 18% |
| | ARAB | 16% | 15% |
| | CHIN | 9% | 10% |

| | | | |
|-----------------------|-------------------|-----|-----|
| | KAREN | 8% | 8% |
| | CUBAN | 5% | 5% |
| | CHALDEAN | 5% | 4% |
| | DAROD | 3% | 3% |
| | ALL OTHER | 36% | 37% |
| Native Reading | G | 65% | 64% |
| | N | 20% | 21% |
| | S | 15% | 15% |
| | U and Missing | 0% | 0% |
| Language | Arabic | 19% | 18% |
| | Nepali | 19% | 18% |
| | Somali | 9% | 9% |
| | Sgaw Karen | 7% | 7% |
| | Spanish | 6% | 6% |
| | Other | 40% | 43% |
| Education | None/Kindergarten | 3% | 3% |
| | Primary | 24% | 24% |
| | Intermediate | 15% | 15% |
| | Secondary | 29% | 29% |
| | Postsecondary | 15% | 15% |
| | Unknown/Missing | 14% | 15% |

* The age distribution was separately raked for all person records, regardless of age

Table 10b: 2016 ASR Weighted Distributions of Persons Under 16 Years Old Compared to RADS Population Distributions

| Variable | Category | 2016 ASR <16 Person Weighted | RADS <16 Person Level Universe |
|-----------------------|-----------------|--|--|
| Fiscal year | 2011 | 14% | 14% |
| | 2012 | 15% | 15% |
| | 2013 | 20% | 21% |
| | 2014 | 23% | 23% |
| | 2015 | 28% | 28% |
| Origin country | BURMA | 27% | 28% |
| | IRAQ | 22% | 22% |
| | BHUTAN | 12% | 12% |
| | SOMALIA | 14% | 13% |
| | CUBA | 3% | 3% |
| | OTHER | 22% | 22% |
| Family size | 1 | 1% | 1% |
| | 2 | 4% | 4% |
| | 3 | 17% | 17% |
| | 4 | 25% | 26% |
| | 5+ | 53% | 52% |
| Region | Northeast | 16% | 16% |

| | | | |
|-------------------------------|--|-----|-----|
| | Midwest | 28% | 27% |
| | South | 32% | 33% |
| | West | 24% | 24% |
| Volunteer Organization | US CONFERENCE OF CATHOLIC BISHOPS | 25% | 26% |
| | LUTHERN IMMIGRATION AND REFUGEE SERVICE | 15% | 14% |
| | INTERNATIONAL RESCUE COMMITTEE | 11% | 12% |
| | US COMMITTEE FOR REFUGEES AND IMMIGRANTS | 12% | 12% |
| | CHURCH WORLD SERVICES | 10% | 9% |
| | OTHER | 27% | 27% |
| Gender | Male | 52% | 52% |
| | Female | 48% | 48% |
| Ethnicity | LHOTSAMPA | 12% | 12% |
| | ARAB | 17% | 17% |
| | CHIN | 10% | 11% |
| | KAREN | 11% | 11% |
| | CUBAN | 3% | 3% |
| | CHALDEAN | 3% | 3% |
| | DAROD | 5% | 5% |
| | ALL OTHER | 39% | 38% |
| Native Reading | G | 11% | 10% |
| | N | 77% | 77% |
| | S | 11% | 12% |
| | U and Missing | 1% | 1% |
| Language | Arabic | 19% | 19% |
| | Nepali | 12% | 12% |
| | Somali | 13% | 13% |
| | Sgaw Karen | 9% | 9% |
| | Spanish | 3% | 3% |
| | Other | 44% | 44% |
| Education | None/Kindergarten | 18% | 18% |
| | Primary | 29% | 29% |
| | Intermediate | 1% | 1% |
| | Secondary | 1% | 1% |
| | Postsecondary | 0% | 0% |
| | Unknown/Missing | 52% | 51% |

As with the household analytic weight, extreme adjustments at both the top and bottom of the distribution of adjusted values were trimmed to reduce the statistical variance associated with extreme weight values. Diagnostics comparing person-level ASR weighted distributions to their corresponding RADS distributions were produced to verify that the final analytic household weight performed satisfactorily. Tables 10a and 10b present the results of that comparison.



Perhaps the most important task and one of the first tasks facing the data user will be determining whether you want to do person-level or household-level analysis.

For person-level analysis you would use the weight variable “Weight_person” or the weight variable “Weight_person_pop”. These two person-level weight variables will produce the same estimates. However, when using the “Weight_person” variable the frequency counts will sum to ASR sample size of 4,037 and when using the “Weight_person_pop” variable the frequency counts will sum to the population of 324,511.



For household-level analysis, you need to filter the data file so that you have one observation per household. The easiest way to do this is to select only observations where the value of the “respondent” variable is equal to 1.

After selecting 1,500 observations where the respondent variable equals 1, you would use the weight variable “Weight_household” or the weight variable “Weight_household_pop” to get household-level estimates. These two household-level weight variables will produce the same estimates. However, when using the “Weight_household” variable the frequency counts will sum to ASR sample size of 1,500 and when using the “Weight_household_pop” variable the frequency counts will sum to the population of 140,200.

The data file also includes 40 replicate weights for each of the four survey weights on the data file (Weight_person, Weight_person_pop, Weight_household, Weight_household_pop). Replicate weights were created to make it easier to estimate standard errors and confidence intervals which is covered in the section 5 of this user’s guide.

The following table (Table 11) presents an example of basic descriptive analysis using the person-level sample and population main weights. It shows the unweighted and the person-level weighted estimates for the number of refugees (16 years old or older at time of survey administration and entered the U.S. as refugees between 2011 and 2015) that had English language instruction before coming to the United States. The shaded portion of the table shows unweighted estimates, while the non-shaded region of the table shows the person-level weighted estimates.

| TABLE 11 | | | |
|---|-----------|---------|--------------------------------|
| Unweighted Frequency for having English language instruction before coming to the United States. | | | |
| Response Option | Frequency | Percent | Percent excluding missing data |
| 1= YES | 2,241 | 73.9 | 74.6 |
| 2= NO | 764 | 25.2 | 25.4 |
| 8= DON'T KNOW | 23 | 0.8 | - |
| 9=REFUSAL | 6 | 0.2 | - |
| Total | 3,033 | 100.0 | 100.0 |
| Weighted Frequency for having English language instruction before coming to the United States. (using the person-level sample weight, Weight_person) | | | |
| Response Option | Frequency | Percent | Percent excluding missing data |
| 1= YES | 2,054 | 72.1 | 72.8 |
| 2= NO | 768 | 26.9 | 27.2 |
| 8= DON'T KNOW | 19 | 0.7 | - |
| 9=REFUSAL | 8 | 0.3 | - |
| Total | 2,848 | 100.0 | 100.0 |
| Weighted Frequency for having English language instruction before coming to the United States. (using the person-level population weight, Weight_person_pop) | | | |
| Response Option | Frequency | Percent | Percent excluding missing data |
| 1= YES | 165,100 | 72.1 | 72.8 |
| 2= NO | 61,698 | 26.9 | 27.2 |
| 8= DON'T KNOW | 1,504 | 0.7 | - |
| 9=REFUSAL | 644 | 0.3 | - |
| Total | 228,946 | 100.0 | 100.0 |

The weighted frequency using the sample person-level weight sums to 2,848 rather than the unweighted sample size of 3,033. This means that children under 16 years of age are overrepresented in the unweighted sample relative to refugees 16 years old or older. The person-level weight adjusts so that all refugees 16 years old or older at time of survey administration that entered the country between 2011 and 2015 have the same probability of being in the sample. Note that the person-level sample and population weights will generate the same percent estimates, but the frequency counts for the person-level population weight sums to the overall estimate population of refugees 16 years old or older at time of survey administration who entered the U.S. as refugees between 2011 and 2015.

The following table (Table 12) shows the unweighted and the household-level weighted estimates for the number of refugee households in which one or more persons received food stamps in the past 12 months. The shaded portion of the table shows unweighted estimates, while the non-shaded region of the table shows the household-level weighted estimates.

| TABLE 12 | | | |
|--|-----------|---------|--------------------------------|
| Unweighted Frequency for the number of refugee households in which one or more persons in your household received food stamps in the past 12 months (filtering by respondent=1). | | | |
| Response Option | Frequency | Percent | Percent excluding missing data |
| 1= YES | 566 | 37.7 | 38.3 |
| 2= NO | 913 | 60.9 | 61.7 |
| 8= DON'T KNOW | 19 | 1.3 | - |
| 9=REFUSAL | 2 | 0.1 | - |
| Total | 1,500 | 100.00 | 100.0 |
| Weighted Frequency for the number of refugee households in which one or more persons in the household received food stamps in the past 12 months (using the household-level sample weight, Weight_household, and filtering the data by respondent=1). | | | |
| Response Option | Frequency | Percent | Percent excluding missing data |
| 1= YES | 647 | 43.1 | 43.9 |
| 2= NO | 827 | 55.1 | 56.1 |
| 8= DON'T KNOW | 24 | 1.6 | - |
| 9=REFUSAL | 2 | 0.2 | - |
| Total | 1,500 | 100.00 | 100.0 |
| Weighted Frequency for the number of refugee households in which one or more persons in your household received food stamps in the past 12 months (using the household-level population weight, Weight_household_pop, and filtering the data by respondent=1). | | | |
| Response Option | Frequency | Percent | Percent excluding missing data |
| 1= YES | 60,439 | 43.1 | 43.9 |
| 2= NO | 77,309 | 55.1 | 56.1 |
| 8= DON'T KNOW | 2,237 | 1.6 | - |
| 9=REFUSAL | 214 | 0.2 | - |
| Total | 140,200 | 100.00 | 100.0 |



By checking the frequency count, you usually can tell that you are looking at a population weighted estimate. A population weighted frequency count will have much larger numbers compared with the sample size.

Although a large frequency count tends to indicate a weighted population estimate, the statistical output is usually not helpful in determining whether the correct survey weight was applied. Table 13 demonstrates how similar the two sets of estimates are when the **wrong** weight is applied. The shaded portion of the table shows the estimate that would have resulted by incorrectly using the household-level population weight (Weight_household_pop) instead of the person-level population weight (Weight_person_pop). The percentage estimates are so similar that even an experienced researcher may be unable to tell just from the statistical output whether the appropriate weight was used.

| TABLE 13 | | | |
|---|-----------|---------|--------------------------------|
| Incorrectly Weighted Frequency “Within the past 12 months, has this person attended any job training program?” Using Household-level population weight | | | |
| Response Option | Frequency | Percent | Percent excluding missing data |
| 1= YES | 119,530 | 85.5 | 85.8 |
| 2= NO | 19,827 | 14.2 | 14.2 |
| 8= DON'T KNOW | 399 | .3 | |
| 9=REFUSAL | 92 | .1 | |
| Total | 139,848 | 100.0 | 100.0 |
| Correctly Weighted Frequency “Within the past 12 months, has this person attended any job training program?” Using Person-level population weight | | | |
| Response Option | Frequency | Percent | Percent excluding missing data |
| 1= YES | 196,168 | 85.7 | 87.2 |
| 2= NO | 28,790 | 12.6 | 12.8 |
| 8= DON'T KNOW | 3,179 | 1.4 | |
| 9=REFUSAL | 809 | .4 | |
| Total | 228,946 | 100.0 | 100.0 |

Based on the State Department admissions report there were 324,511 refugees (of all ages) that entered the U.S. in FY 2011-2015 and 228,946 of these would be 16 or older at the time of the survey. The person-level population weights can be used to estimate answers to survey questions like how many of these approximately 229,000 refugees 16 or older received a benefit or were working last week. When doing population estimates, however, you must be careful of how you handle missing data. Missing data typically occur when a person refuses to answer a question or does not know the answer to the question being asked. These situations are usually lumped together and classified as “missing data.” Refer to the previous section of the guide for more information on how missing data for the ASR variables have been coded.

If you do not consider the missing data, then your population counts will total to less than the overall population of 228,946 refugees 16 or older. For instance, in our table 12 example, the estimated total number of refugees who reported having English language instruction before coming to the United States equaled just 165,100 because it does not account for the missing data. Also, if you do not omit the missing data, you would estimate that 72.1% of the refugee population reporting having English language instruction before coming to the United States. Yet most researchers exclude missing data when estimating the percentage of the population. Hence, they would report that 72.8% of the refugees 16 or older had English language instruction before coming to the United States.



If you do decide to exclude the missing data, then a more accurate population estimate will be obtained by multiplying the percentage that excludes missing data by the total population. For instance, when we exclude the missing data from the previous example, we see that 72.8% of the refugees 16 or older had English language instruction before coming to the United States. This proportion translates to approximately 166,673 ($.728 \times 228,946$ refugees) 16 or older had English language instruction before coming to the United States as opposed to the estimate of 165,100 shown in table 12. Again, this difference occurs because the population estimates in table 12 do not adjust for the missing data.

Section 5: Procedures for Estimating Standard Errors

The sample of households and persons surveyed for the 2016 Annual Survey of Refugees (ASR) is just one of many possible samples that could have been drawn. Sampling error refers to error in survey estimates that arise from the fact that estimates are based on a sample of observations rather than the whole population. This form of error is usually expressed in terms of the sampling variance or standard error of an estimate, which is simply the square root of the sampling variance. Standard errors are required to calculate margins of error (i.e., the half width of a confidence interval) or to conduct hypothesis tests or tests of statistical significance. A clear presentation of estimates from a survey or hypothesis test should include measures of uncertainty associated with using a sample for inference, as opposed to using the entire population.

This section explains the process of obtaining standard errors for the 2016 ASR estimates. The 2016 ASR sample and respondents are subsets of all refugees who entered the country between 2011 and 2015. Although survey estimates obtained from the default options in most statistical packages will be correct, the associated standard error estimates will often understate the true standard errors because they do not account for the weighting, clustering of persons within households and survey design (e.g., oversampling and stratification).

Stratification generally leads to a gain in efficiency over simple random sampling. On the other hand, clustering usually leads to deterioration in efficiency. This latter effect arises because of the positive intra-cluster correlation (i.e., similarity) among the subjects within the sampling clusters. For example, respondents from the same household are expected to have a higher likelihood of having the same ethnicity, religion, and country of origin than respondents selected at random from the list of all refugees that arrived during the target period. The cluster effect is larger for larger households because the survey sampled every eligible refugee from the same household, and this clustering effect increases the variance over what would pertain in a simple random sampling of refugees.

To determine the total effect of any complex survey design on the sampling variance, users must first calculate the variance associated with an estimate assuming a complex sample design. Then users calculate the variance expected from a simple random sample design. The ratio of the complex variance estimate over the variance associated with a simple design is what is called the design effect, often referred to as the DEFF, and it measures the overall efficiency of the survey weights and sample design.

In a wide range of situations, the adjusted standard error of a statistic should be calculated by multiplying the usual formula by the square root of the DEFF. Thus, the formula for computing the 95% confidence interval around a percentage is:

$$\hat{p} \pm \left(deft \times 1.96 \sqrt{\frac{\hat{p}(1 - \hat{p})}{n}} \right)$$

where p is the sample estimate, n is the unweighted number of sample cases in the group being considered, and $deft$ is the square root of DEFF.

The remainder of this section discusses how to use the replicate weights that are included on the data file to estimate the overall average design effect and to estimate design effect separately for each estimate. Both household-level and person-level replicate weights are included on the data file and can be used to obtain standard errors reflecting the complexity of the ASR sample design. However, for researchers who may not have access to the necessary computer hardware and software or technical ability to use these replicate weights to calculate standard errors appropriately, you should at least use the overall estimated average design effect to obtain approximate standard errors for survey estimates.

The overall square root of the average design effect for household-level analysis is 1.14. For person-level analysis that includes *persons of all ages*, the overall square root of the average design effect is 1.41. For *persons 16 or older*, the square root of the average design effect is 1.19.



Multiplying your standard error estimates by the square root of the overall design effect will provide much more appropriate standard error estimates associated with your ASR estimates than incorrectly using the simple random sample estimates of variance, e.g., using $[p \times (1-p)]/n$ as the variance of a proportion p .



Still, it is important to keep in mind that each survey estimate has its own design effect. Therefore, the design effect for receiving food stamps may be higher or lower for, say, families with children compared to families without children or for any other subgroup of the population. If getting more precise standard estimates is a concern, then follow the instructions in the remainder of this section on how to use the replicate weights to estimate standard errors.

We now discuss how to calculate standard errors for the ASR estimates using the 40 replicate weights that are included on the 2016 ASR data files. Table 14 shows the names of the 40 replicate weights for each of the four main survey weights on the data file.

Table 14

| | Person-level sample weights | Person-level population weights | Household-level sample weights | Household-level populations weights |
|---|--|--|--|--|
| Main Weight Variable | Weight_person | Weight_person_pop | Weight_household | Weight_household_pop |
| Replicate Weight Variables | Weight_person_R1 through Weight_person_R40 | Weight_person_pop_R1 through Weight_person_pop_R40 | Weight_household_R1 through Weight_household_R40 | Weight_household_pop_R1 through Weight_household_pop_R40 |

The basic idea behind replication is to draw subsamples from the sample, compute the estimate from each of the subsamples, and estimate the variance from the variability of the subsample estimates. Specifically, subsamples of the original full sample are selected to calculate subsample estimates of a parameter for which a full-sample estimate of interest has been generated. The variability of these subsample estimates around the estimate for the full sample provides an estimate of the standard error of the estimate. The subsamples are called replicates and the estimates from the subsamples are called replicate estimates.

Although the logic behind using replicate weights is not unduly complicated, it can be computer-intensive to produce standard errors using the replicate weights. To use the replicate weights, users can either use specialized software designed to make use of replicate weights when generating standard errors— examples include SUDAAN and WesVar— or use specialized advanced sampling modules in software such as Stata, SAS, or SPPS. Below is an example of using Stata survey commands to estimate means:

Survey set:

```
svyset _n [iweight=Weight_person] , jkrweight(Weight_person_R1 Weight_person_R2
Weight_person_R3 Weight_person_R4 Weight_person_R5 Weight_person_R6
Weight_person_R7 Weight_person_R8 Weight_person_R9 Weight_person_R10
Weight_person_R11 Weight_person_R12 Weight_person_R13 Weight_person_R14
Weight_person_R15 Weight_person_R16 Weight_person_R17 Weight_person_R18
Weight_person_R19 Weight_person_R20 Weight_person_R21 Weight_person_R22
Weight_person_R23 Weight_person_R24 Weight_person_R25 Weight_person_R26
Weight_person_R27 Weight_person_R28 Weight_person_R29 Weight_person_R30
Weight_person_R31 Weight_person_R32 Weight_person_R33 Weight_person_R34
Weight_person_R35 Weight_person_R36 Weight_person_R37 Weight_person_R38
Weight_person_R39 Weight_person_R40) vce(linearized)
```

Estimate mean w/ SE:

```
svy, vce(jackknife): mean varname
```

Example:

Below, we calculate the standard error for the mean of *numpp1* (number of people in the household) in Stata.

Survey set:

```
svyset _n [iweight=Weight_person] , jkrweight(Weight_person_R1 Weight_person_R2
Weight_person_R3 Weight_person_R4 Weight_person_R5 Weight_person_R6
Weight_person_R7 Weight_person_R8 Weight_person_R9 Weight_person_R10
Weight_person_R11 Weight_person_R12 Weight_person_R13 Weight_person_R14
Weight_person_R15 Weight_person_R16 Weight_person_R17 Weight_person_R18
Weight_person_R19 Weight_person_R20 Weight_person_R21 Weight_person_R22
Weight_person_R23 Weight_person_R24 Weight_person_R25 Weight_person_R26
Weight_person_R27 Weight_person_R28 Weight_person_R29 Weight_person_R30
Weight_person_R31 Weight_person_R32 Weight_person_R33 Weight_person_R34
Weight_person_R35 Weight_person_R36 Weight_person_R37 Weight_person_R38
Weight_person_R39 Weight_person_R40) vce(linearized)
```

Estimate mean w/ SE:

```
svy, vce(jackknife): mean numpp1
```

Output:

Survey: Mean estimation

```
Number of strata =          1          Number of obs   =          4,037
                                Population size = 4,037.0011
                                Replications   =           40
                                Design df      =           39
```

| | Jackknife | | | |
|--------|-----------|-----------|----------------------|----------|
| | Mean | Std. Err. | [95% Conf. Interval] | |
| numpp1 | 3.846531 | .0214852 | 3.803073 | 3.889989 |