

PUMS Accuracy of the Data (2006)

1. INTRODUCTION

The public use microdata sample (PUMS) are a subset of the 2006 American Community Survey (ACS) and Puerto Rico Community Survey (PRCS) samples. Unless otherwise specified, the term “ACS” in this document will refer to both the ACS and PRCS. The main difference from 2005 is the addition of the group quarters (GQ) population to PUMS. The 2006 PUMS data contain 1,277,561 housing unit records and 2,923,336 person records from households and 81,151 person records from GQs. For 2006, the ACS selected a sample of housing units (HUs) and GQs in all counties across the nation, and all municipios in Puerto Rico. Estimates from the PUMS file are expected to be different from the previously released ACS estimates because they are subject to additional sampling error and further data processing operations. The additional sampling error is a result of selecting the PUMS housing and person records through an additional stage of sampling. In the public use file, the basic unit is an individual housing unit, except for the sample from GQs. For the GQ sample, the basic unit is the person. The population sample is defined as all persons living in households selected in the housing unit sample, plus the persons selected from the GQ sample. Note that microdata records in this sample do not contain names, addresses, or any information that can identify a specific housing unit, GQ or person.

2. CONFIDENTIALITY OF THE DATA

The Census Bureau has implemented a series of steps to protect the confidentiality of the data. Title 13 United States Code, Section 9, prohibits the Census Bureau from publishing results in which an individual's data can be identified.

The Census Bureau’s internal Disclosure Review Board sets the confidentiality rules for all data releases. A checklist approach is used to ensure that all potential risks to the confidentiality of the data are considered and addressed.

- Title 13, United States Code: Title 13 of the United States Code authorizes the Census Bureau to conduct censuses and surveys. Section 9 of the same Title requires that any information collected from the public under the authority of Title 13 be maintained as confidential. Section 214 of Title 13 and Sections 3559 and 3571 of Title 18 of the United States Code provide for the imposition of penalties of up to five years in prison and up to \$250,000 in fines for wrongful disclosure of confidential census information.
- Disclosure Avoidance: Disclosure avoidance is the process for protecting the confidentiality of data. A disclosure of data occurs when someone can use published statistical information to identify an individual that has provided information under a pledge of confidentiality. For data tabulations the Census Bureau uses disclosure avoidance procedures to modify or remove the characteristics that put confidential information at risk for disclosure.

- **Data Swapping:** Data swapping is a method of disclosure avoidance designed to protect confidentiality in tables of frequency data (the number or percent of the population with certain characteristics). Data swapping is done by editing the source data or exchanging records for a sample of cases when creating a table. A sample of households is selected and matched on a set of selected key variables with households in neighboring geographic areas that have similar characteristics (such as the same number of adults and same number of children). Because the swap often occurs within a neighboring area, there is no effect on the marginal totals for the area or for totals that include data from multiple areas. Because of data swapping, users should not assume that tables with cells having a value of one or two reveal information about specific individuals. Data swapping procedures were first used in the 1990 Census, and were used again in Census 2000.
- **Synthetic Data:** The goals of using synthetic data are the same as the goals of data swapping, namely to protect the confidentiality in tables of frequency data. Persons are identified as being at risk for disclosure based on certain characteristics. The synthetic data technique then models the values for another collection of characteristics to protect the confidentiality of that individual.

Since microdata records are the actual housing unit and person records, the Census Bureau takes further steps to prevent the identification of specific individuals, households, or housing units. The main disclosure avoidance method used is to limit the geographic detail shown in the files. The smallest geographic unit that is identified is the Public Use Microdata Area (PUMA). PUMAs were created for the 2000 Census 5% PUMS data files. Maps for PUMAs can be found on the Census Bureau's website at <http://www.census.gov/geo/www/maps/puma5pct.htm>. The PUMAs used in the 2006 PUMS file will agree with these maps with the following exception: Due to the population displacement in the greater New Orleans area caused by Hurricane Katrina in 2005, three Louisiana PUMAs (01801, 01802, and 01905) had 2006 populations too low to release as separate PUMAs. For the 2006 ACS PUMS files, they were combined to form a single pseudo PUMA. These include PUMAs 01801 and 01802 within Orleans Parish, and PUMA 01905 made up of Jefferson (part), Plaquemines, and St. Bernard Parishes. They are identified on the 2006 ACS PUMS files with a PUMA code of 77777.

Other disclosure avoidance measures used include topcoding, age perturbation, and collapsing of detail for categorical variables.

3. SAMPLE DESIGN

The 2006 PUMS was designed to sample one percent of the housing units and one percent of the GQ persons in the United States, District of Columbia, and Puerto Rico. The PUMS sample sizes were based on the Population Estimates Program estimates for housing units and GQ persons.

Tables 1 and 2 show PUMS sample sizes next to the corresponding ACS estimates by state, D.C. and P.R. Table 1 shows housing units and Table 2 shows GQ persons.

Table 1. 2006 ACS Housing Unit Estimates and PUMS Sample Sizes

State	2006 ACS Estimate	2006 PUMS Sample Size	State	2006 ACS Estimate	2006 PUMS Sample Size
Alabama	2,110,139	21,102	Montana	432,080	4,321
Alaska	276,590	2,766	Nebraska	774,571	7,749
Arizona	2,605,095	26,053	Nevada	1,065,267	10,652
Arkansas	1,273,433	12,737	New Hampshire	589,840	5,899
California	13,174,781	131,744	New Jersey	3,472,782	34,727
Colorado	2,095,235	20,949	New Mexico	850,153	8,501
Connecticut	1,432,250	14,323	New York	7,907,514	79,075
Delaware	382,866	3,829	North Carolina	4,026,558	40,290
District of Columbia	282,900	2,829	North Dakota	306,982	3,079
Florida	8,531,860	85,335	Ohio	5,045,356	50,448
Georgia	3,873,405	38,732	Oklahoma	1,607,416	16,074
Hawaii	500,021	5,001	Oregon	1,586,600	15,865
Idaho	615,703	6,157	Pennsylvania	5,453,647	54,533
Illinois	5,199,743	51,996	Rhode Island	449,574	4,496
Indiana	2,756,583	27,564	South Carolina	1,975,816	19,757
Iowa	1,319,980	13,204	South Dakota	352,289	3,529
Kansas	1,207,391	12,080	Tennessee	2,681,320	26,812
Kentucky	1,888,336	18,882	Texas	9,224,920	92,244
Louisiana	1,829,933	18,301	Utah	901,322	9,013
Maine	691,164	6,912	Vermont	309,566	3,096
Maryland	2,300,749	23,006	Virginia	3,230,821	32,309
Massachusetts	2,709,208	27,090	Washington	2,699,658	26,994
Michigan	4,513,502	45,138	West Virginia	877,587	8,778
Minnesota	2,282,837	22,835	Wisconsin	2,532,958	25,341
Mississippi	1,241,439	12,415	Wyoming	239,088	2,392
Missouri	2,622,995	26,231	Puerto Rico	1,437,597	14,376

Table 2. 2006 ACS GQ Universe Estimates and PUMS Sample Sizes

State	2006		State	2006	
	2006 ACS GQ Person Estimate	2006 PUMS GQ Person Sample Size		2006 ACS GQ Person Estimate	2006 PUMS GQ Person Sample Size
Alabama	115,155	1,152	Montana	25,102	252
Alaska	23,100	231	Nebraska	52,087	521
Arizona	109,501	1,096	Nevada	33,434	335
Arkansas	78,322	784	New Hampshire	37,347	374
California	863,207	8,633	New Jersey	197,712	1,978
Colorado	102,994	1,030	New Mexico	40,752	408
Connecticut	113,079	1,131	New York	603,275	6,033
Delaware	24,915	250	North Carolina	270,572	2,706
District of Columbia	35,225	353	North Dakota	27,521	276
Florida	412,218	4,123	Ohio	308,323	3,084
Georgia	272,931	2,730	Oklahoma	111,393	1,114
Hawaii	37,547	376	Oregon	79,987	800
Idaho	33,801	339	Pennsylvania	455,673	4,557
Illinois	323,647	3,237	Rhode Island	43,088	431
Indiana	178,789	1,788	South Carolina	142,974	1,430
Iowa	104,071	1,041	South Dakota	29,816	299
Kansas	82,162	822	Tennessee	152,407	1,525
Kentucky	114,777	1,148	Texas	594,214	5,943
Louisiana	122,467	1,225	Utah	42,646	427
Maine	37,484	375	Vermont	20,760	208
Maryland	141,501	1,416	Virginia	235,342	2,354
Massachusetts	215,883	2,159	Washington	140,607	1,407
Michigan	255,247	2,553	West Virginia	45,532	456
Minnesota	141,703	1,418	Wisconsin	159,885	1,599
Mississippi	94,247	943	Wyoming	14,146	142
Missouri	167,076	1,671	Puerto Rico	46,774	468

The PUMS sample was selected for HUs and GQ persons separately. The PUMS sample of persons in households was selected by keeping all persons in PUMS HUs. The systematic sampling method used sampling intervals chosen to yield the sample sizes given in Tables 1 and 2. The sampling interval for each state and HU/GQ sample is the ratio of the number of records available for sampling and the required sample size (sampling intervals are not rounded to integers).

The sampling for HUs was performed on ACS sample of HUs as follows:

1. Records of HUs were sorted by: PUMA, ACS weighting area, interview mode, type of vacant, tenure, building type, household type, householder demographics (race, Hispanic origin, sex and age), county, tract, and housing unit weight.
2. Systematic sampling was applied as described below:
 - a. Within each state, a random number is chosen between zero and the sampling interval. A counter is initialized with the random number.
 - b. At each record, the value of the counter is incremented by one and compared to the sampling interval.
 - i. If the counter's new value is greater than the sampling interval, the record is selected for the PUMS. The counter is decreased by the sampling interval with the new value passed to the next record.
 - ii. If the counter is less than the sampling interval, the record is not selected for the PUMS and the value of the counter is passed to the next record without altering its value.
3. All HUs selected for PUMS were placed in the PUMS HU sample file.
4. The PUMS HU sample file was matched to the ACS sample of persons. All persons in selected HUs were placed in the PUMS person sample.

The sampling for GQs was performed on the ACS sample of GQ persons as follows:

1. GQ persons were sorted by size of GQ (large vs. small), type of GQ, PUMA, demographics (race, Hispanic origin, sex and age), county, tract, and GQ person weight.
2. Systematic sampling was applied as described above under HUs.
3. All selected GQ persons were added to the PUMS person sample. A placeholder record was also placed in the PUMS HU file for each PUMS GQ person.

4. WEIGHTING AND ESTIMATION

4.1 Weighting

Weights for PUMS records are a product of the final full ACS weight, the PUMS subsampling factor and a ratio-estimate factor. The PUMS subsampling factors for HUs and GQs are the sampling intervals used to sample the PUMS HU or GQ person records within a state. For persons in HUs the PUMS subsampling factor was the same as the HU. The ratio-estimate factor is a simple ratio-estimate of PUMS to ACS estimates at the PUMA level for occupied/vacant HUs, male and female persons from HUs and at the state level for institutionalized/ noninstitutionalized persons from GQs.

The additional sampling causes PUMS estimates to be different from published ACS estimates that are based on the full set of data, except for characteristics controlled by the ratio-estimate factors. The ratio-estimate ensures that the 2006 PUMS will agree with 2006 ACS estimates for occupied/vacant HUs, and male and female persons in households at the United States, 50 states, District of Columbia, Puerto Rico, and PUMA levels. They

will also agree for institutionalized/ noninstitutionalized persons in GQs at the United States, 50 states, District of Columbia, and Puerto Rico levels.

See Reference [1] for a detailed description of how the original ACS weights are computed.

4.2 Estimation

To produce estimates or tabulations of characteristics from the PUMS, simply add the weights of all persons or HUs that possess the characteristic of interest. For instance, if the characteristic of interest is “total number of black teachers”, simply determine the race and occupation of all persons and cumulate the weights of those who match the characteristics of interest. To get estimates of proportions simply divide the weighted estimate of persons or HUs with a given characteristic by the weighted estimate of the base. For example, the proportion of “black teachers” is obtained by dividing the weighted estimate of black teachers by the estimate of teachers.

5. ERRORS IN THE DATA

Every sample survey is subject to two types of error: sampling error and nonsampling error.

5.1 Sampling Error

The data in the ACS products are estimates of the actual figures that would have been obtained by interviewing the entire population using the same methodology. The estimates from the chosen sample also differ from other samples of HUs and persons within those HUs. Sampling error in data arises due to the use of probability sampling, which is necessary to ensure the integrity and representativeness of sample survey results. The implementation of statistical sampling procedures provides the basis for the statistical analysis of sample data.

Estimates made with PUMS data are subject to additional sampling error because the PUMS data consists of a subset of the full ACS sample. Thus standard errors of PUMS estimates can be larger than standard errors that would be obtained using all of the ACS data.

5.2 Nonsampling Error

In addition to sampling error, data users should realize that other types of errors may be introduced during any of the various complex operations used to collect and process survey data. For example, operations such as data entry from questionnaires and editing may introduce error into the estimates. These and other sources of error contribute to the nonsampling error component of the total error of survey estimates. Nonsampling errors may affect the data in two ways. Errors that are introduced randomly increase the variability of the data. Systematic errors, which are consistent in one direction, introduce bias into the results of a sample survey. The Census Bureau protects against the effect of systematic errors on survey estimates by conducting extensive research and evaluation programs on sampling techniques, questionnaire design, and data collection and processing procedures. In addition, an important goal of the ACS is to

minimize the amount of nonsampling error introduced through nonresponse for sample HUs. One way of accomplishing this is by following up on mail nonrespondents during the CATI and CAPI phases.

More information about the control of nonsampling error can be found in reference [1].

6. CALCULATION OF STANDARD ERRORS

The standard error is a measure of the deviation of a sample estimate from the average of all possible samples. Sampling error and some types of nonsampling error are estimated by the standard error. The sample estimate and its estimated standard error permit the construction of interval estimates with a prescribed confidence that the interval includes the average result of all possible samples.

Two methods are provided for calculating the standard errors of PUMS estimates: replicate weights and generalized standard errors. Replicate weights are being provided with the 2006 PUMS as for the 2005 PUMS. Generalized standard errors is a method used by the Census PUMS and also in use by the ACS PUMS since 2000. **It is important to keep in mind that there will be differences between the standard error approximations computed by the two methods.** Generally, using the replicate weights will produce a more accurate estimate of a standard error.

Confidence Intervals: A sample estimate and its estimated standard error may be used to construct confidence intervals about the estimate. These intervals are ranges that will contain the average value of the estimated characteristic that results over all possible samples, with a known probability.

For example, if all possible samples that could result under the PUMS sample design were independently selected and surveyed under the same conditions, and if the estimate and its estimated standard error were calculated for each of these samples, then:

1. Approximately 68 percent of the intervals from one estimated standard error below the estimate to one estimated standard error above the estimate would contain the average result from all possible samples;
2. Approximately 90 percent of the intervals from 1.645 times the estimated standard error below the estimate to 1.645 times the estimated standard error above the estimate would contain the average result from all possible samples.
3. Approximately 95 percent of the intervals from two estimated standard errors below the estimate to two estimated standard errors above the estimate would contain the average result from all possible samples.

These intervals are referred to as 68 percent, 90 percent, and 95 percent confidence intervals, respectively. An example of how to construct a 90 percent confidence interval follows:

Add and subtract 1.645 times the standard error to the estimate to yield the lower and upper bounds of a 90% confidence interval around the estimate (EST).

$$LB = \text{Lower bound} = \text{EST} - 1.645 * \text{SE}(\text{EST})$$

$$UB = \text{Upper bound} = \text{EST} + 1.645 * \text{SE}(\text{EST})$$

The 90% confidence interval is the interval (LB, UB).

Limitations: The user should be careful when computing and interpreting confidence intervals.

1. The estimated standard errors included in this data product do not include all portions of the variability due to nonsampling error that may be present in the data. In particular, the standard errors do not reflect the effect of correlated errors introduced by interviewers, coders, or other field or processing personnel. Nor do they reflect the error from imputed values due to missing responses. Thus, the standard errors calculated represent a lower bound of the total error. As a result, confidence intervals formed using these estimated standard errors may not meet the stated levels of confidence (i.e., 68, 90, or 95 percent). Thus, some care must be exercised in the interpretation of the data in this data product based on the estimated standard errors.
2. Zero or small estimates; very large estimates — The value of almost all PUMS characteristics is greater than or equal to zero by definition. For zero or small estimates, use of the method given previously for calculating confidence intervals relies on large sample theory, and may result in negative values which for most characteristics are not admissible. In this case the lower limit of the confidence interval is set to zero by default. A similar caution holds for estimates of totals close to a control total or estimated proportions near one, where the upper limit of the confidence interval is set to its largest admissible value. In these situations the level of confidence of the adjusted range of values is less than the prescribed confidence level.

6.1 Calculating Standard Errors with Replicate Weights

Replicate weights are being provided with the 2006 PUMS files as they were for 2005. Replicate weights can be used to calculate what we refer to as direct standard errors. Standard errors for the published ACS tabulations are calculated using replicate weights. Direct standard errors will often be more accurate than generalized standard errors, although they may be more inconvenient for some users to calculate. The advantage of using replicate weights is that a single formula is used to calculate the standard error of many types of estimates.

Each housing unit and person record contains 80 replicate weights. For any estimate X, 80 replicate estimates are also computed using the replicate weights. For this discussion, we refer to X as the ‘full sample estimate.’ The first replicate estimate X_1 is computed using the first replicate weight, the second replicate estimate X_2 is computed using the second replicate weight,

and so on. Each replicate estimate is computed using the replicate weights in the same way that the full sample estimate X is computed, as described in Section 5.

The standard error of X can be computed after the replicate estimates X_1 through X_{80} are computed. The standard error is estimated using the sum of squared differences between each replicate estimate X_r and the full sample estimate X . The standard error formula is:

$$SE(X) = \sqrt{\frac{4}{80} \sum_{r=1}^{80} (X_r - X)^2}$$

If X is zero, then use the generalized variance method for zero estimates given in section 6.1, Standard Errors for Totals and Percentages, to approximate the standard error.

The standard error can be used to form a 90% confidence interval around the estimate (X) as follows:

$$\begin{aligned} \text{LB} &= \text{Lower bound} = X - 1.645 * SE(X) \\ \text{UB} &= \text{Upper bound} = X + 1.645 * SE(X) \end{aligned}$$

The 90% confidence interval is the interval (LB, UB).

6.2 Generalized Standard Errors

Standard Errors for Totals and Percentages

The design factors provided in Tables 3 through 3.52 in the appendix can be used to approximate the standard errors of most sample estimates of *totals* and *proportions*. Design factors are given by subject for the United States, all 50 states, the District of Columbia, and Puerto Rico. The term "subject" refers to a characteristic, such as age for persons and tenure for HUs. The design factors reflect the effects of the actual sample design and estimation procedures used for the ACS. To approximate the standard error use the following formulas:

$$\text{Total Formula: } SE(\hat{Y}) \doteq DF * \sqrt{99 * \hat{Y} \left(1 - \frac{\hat{Y}}{N}\right)}$$

Where:

- DF = Design Factor
- N = Size of Geographic Area
- \hat{Y} = Estimate of Characteristic Total

$$\text{Percent Formula: } SE(\hat{p}) \doteq DF * \sqrt{\frac{99}{B} * \hat{p}(100 - \hat{p})}$$

Where:

- DF = Design Factor

B = Base of Estimated Percentage
 \hat{p} = Estimated Percentage

The values of N and the design factor can be determined as follows:

1. For the value of N, obtain the number of persons, number of households or number of HUs, respectively for the geography(ies) you are interested in. If the estimate is of HUs then use the number of HUs; if the estimates is of families or households then use the number of households; otherwise use the number of persons.
2. Select the appropriate table from Tables 3 through 3.52. Use the table for the United States (Table 3) when estimating characteristics for the United States or geographic areas that cover more than one state. Use the table for a specific state (Tables 3.1-2.52) when estimating characteristics for that state or geographic areas that are contained entirely within that state.
3. Then use the selected table to obtain the appropriate design factor for the characteristic; for example, educational attainment or ancestry. If the estimate is a combination of two or more characteristics, we suggest the following guideline: Use the largest design factor for this combination of characteristics. **The only exception to this is for items crossed with race or Hispanic Origin. For an item(s) crossed with race or Hispanic Origin use the largest design factor not including the race or Hispanic Origin design factor.**

An inspection of the formulas used to calculate the simple random sampling standard errors suggests that when dealing with zero estimates or very small estimates of totals and percentages the standard error estimates approach zero. This is also the case for very large estimates of totals and percentages. Zero or small estimates, like any other sample estimates, are still subject to sampling variability and therefore an estimated standard error of zero or close to zero is not adequate. Use one of the following procedures for estimates of this type:

1. **An estimated total is less than 425 or within 425 of the total size of the tabulation area.** Use a basic standard error of 246. For estimated percentages that are less than 2 or greater than 98, use a value of 2 for the estimated percentage in the formula.
2. **The denominator of a percentage is zero.** There are no sample observations available to compute an estimate of a proportion or an estimate of its standard error.

Standard Errors for Sums and Differences

For the sum or difference between two estimates, the standard error is approximately the square root of the sum of the two individual standard errors squared:

$$SE(\hat{X} + \hat{Y}) = SE(\hat{X} - \hat{Y}) = \sqrt{[SE(\hat{X})]^2 + [SE(\hat{Y})]^2}$$

This method is, however, an approximation as the two estimates of interest in a sum or a difference are likely to be correlated. If the two quantities X and Y are positively correlated, this

method underestimates the standard error of the sum of X and Y and overestimates the standard error of the difference between the two estimates. If the two estimates are negatively correlated, this method overestimates the standard error of the sum and underestimates the standard error of the difference.

Standard Errors for Ratios

Frequently, the statistic of interest is the ratio of two variables, where the numerator is not a subset of the denominator. An example is the ratio of students to teachers in public elementary schools. The standard error of the ratio between two sample estimates is estimated as follows:

$$SE\left(\frac{\hat{X}}{\hat{Y}}\right) = \left(\frac{\hat{X}}{\hat{Y}}\right) * \sqrt{\frac{[SE(\hat{X})]^2}{\hat{X}^2} + \frac{[SE(\hat{Y})]^2}{\hat{Y}^2}}$$

If the ratio is a proportion, that is, the numerator is a subset of the denominator, then follow the procedure outlined for “totals and percentages.”

Standard Errors for Medians

The sampling variability of an estimated median depends on the form of the distribution and the size of its base. The standard error of an estimated median is approximated by constructing a 68 percent confidence interval. Estimate the 68 percent confidence limits of a median based on sample data using the following procedure.

1. Obtain the weighted frequency distribution for the selected variable. Cumulate these frequencies to yield the base.
2. Determine the standard error of a 50 percent proportion using the formula in the section “totals and percentages.”

$$SE(50\text{ percent}) = DF * \sqrt{\frac{99}{B} * 50^2}$$

3. Subtract from and add to 50 percent the standard error determined in step 2.

$$\begin{aligned} p_{\text{lower}} &= 50 - SE(50\text{ percent}) \\ p_{\text{upper}} &= 50 + SE(50\text{ percent}) \end{aligned}$$

4. Determine the categories in the distribution that contain p_{lower} and p_{upper} . If p_{lower} and p_{upper} fall in the same category, follow step 5. If p_{lower} and p_{upper} fall in different categories, go to step 6.

5. If p_lower and p_upper fall in the same category, do the following:

- Define A1 as the smallest value in that category.
- Define A2 as the smallest value in the next (higher) category.
- Define C1 as the cumulative percent of units strictly less than A1.
- Define C2 as the cumulative percent of units strictly less than A2.

Use the following formulas to determine the lower and upper bounds for a confidence interval about the median:

$$LowerBound = \left[\frac{p_lower - C1}{C2 - C1} \right] * (A2 - A1) + A1$$

$$UpperBound = \left[\frac{p_upper - C1}{C2 - C1} \right] * (A2 - A1) + A1$$

6. If p_lower and p_upper fall in different categories, do the following:

- For the category containing p_lower : Define A1, A2, C1, and C2 as described in step 5. Use these values and the formula in step 5 to obtain the lower bound.
- For the category containing p_upper : Define new values for A1, A2, C1, and C2 as described in step 5. Use these values and the formula in step 5 to obtain the upper bound.

7. Use the lower and upper bounds determined in steps 5 or 6 to calculate the standard error of the median.

$$SE(median) = \frac{1}{2} * (UpperBound - LowerBound)$$

Standard Errors for Means

A mean is defined here as the average quantity of some characteristic (other than the number of people, HUs, households, or families) per person, housing unit, household, or family. For example, a mean could be the average annual income of females age 25 to 34. The standard error of a mean can be approximated by the formula below. Because of the approximation used in developing this formula, the estimated standard error of the mean obtained from this formula will generally underestimate the true standard error.

$$SE(\bar{Y}) = DF * \sqrt{\frac{99}{B} * s^2}$$

Where: B is the base (denominator) of the mean, and s^2 is the sample variance of the characteristic based on weighted data. The value of s^2 can be computed using the formula:

$$s^2 = \frac{\sum_{i=1}^n w_i y_i^2 - \left(\sum_{i=1}^n w_i y_i \right)^2 / \sum_{i=1}^n w_i}{\left(\sum_{i=1}^n w_i \right) - 1}$$

Where:

w_i is the weight of the i^{th} sample record

y_i is the value of the characteristic for the i^{th} sample record

n is the number of sample records

Note that $\sum_{i=1}^n w_i$ is the weighted estimate of persons/HUs in the sample (ex. the number of females age 25 to 34, and $\sum_{i=1}^n w_i y_i$ is the weighted aggregate estimate for the characteristic of interest (ex. the aggregate income of females age 25 to 34).

Examples of Standard Error Calculations using Generalized Standard Error Formulas

We will present some examples based on the 2006 PUMS data to demonstrate the use of the generalized standard error formulas.

Example 1 – Using Design Factors to Estimate a Total

The estimated number of people 15 years or over who were never married is 1,833,910 from the PUMS data for the state of Virginia. To calculate the standard error, we use the total formula given in the section for Design Factor Method. In this formula, Y is our estimate of 1,833,910 and N is the total PUMS population for the state of Virginia, which is 7,642,884. The design factor (from Table 3.47) for “Marital Status” is 1.3.

$$SE = 1.3 * \sqrt{99 * 1,833,910 * \left(1 - \frac{1,833,910}{7,642,884} \right)} = 15,271.1253$$

To calculate the lower and upper bounds of the 90 percent confidence interval around 1,833,910 using the standard error, simply multiply 15,271.1253 by 1.645, then add and subtract the product from 1,833,910. Thus the 90 percent confidence interval for this estimate is [1,833,910 - 1.645(15,271.1253) to [1,833,910 + 1.645(15,271.1253)] or 1,808,789 to 1,859,031.

Example 2 – Using Design Factors to Estimate a Proportion or Percentage

The estimated percent of people 25 years or over with a bachelor’s degree or higher in Louisiana is 19.9572 from the PUMS data and the base of the estimated percentage is 2,745,697. To calculate the standard error, we use the percent formula given in the Design Factor Method section. The design factor (from Table 3.19) for “Educational Attainment” is 1.5.

$$SE = 1.5 * \sqrt{\frac{99}{2,745,697} * 19.9572 * (100 - 19.9572)} = 0.3600$$

To calculate the lower and upper bounds of the 90 percent confidence interval around 19.9572 percent using the standard error, simply multiply 0.3600 by 1.645, then add and subtract the product from 19.9572. Thus the 90 percent confidence interval for this estimated percentage is [19.9572 - 1.645(0.3600)] to [19.9572 + 1.645(0.3600)] or 19.37 to 20.55.

Example 3 – Calculating the Standard Error of a Median

The table below shows a weighted frequency distribution for adjusted household income in Massachusetts.

Adjusted Household Income	Frequency	Cumulative Frequency	Cumulative Percent
Less than \$10,000	183,889	183,889	7.52%
\$10,000 to \$14,999	129,763	313,652	12.82%
\$15,000 to \$19,999	112,584	426,236	17.42%
\$20,000 to \$24,999	107,421	533,657	21.81%
\$25,000 to \$29,999	102,164	635,821	25.99%
\$30,000 to \$34,999	107,616	743,437	30.39%
\$35,000 to \$39,999	100,128	843,565	34.48%
\$40,000 to \$44,999	102,163	945,728	38.66%
\$45,000 to \$49,999	92,887	1,038,615	42.45%
\$50,000 to \$59,999	195,065	1,233,680	50.43%
\$60,000 to \$74,999	249,304	1,482,984	60.62%
\$75,000 to \$99,999	326,251	1,809,235	73.95%
\$100,000 to \$124,999	230,084	2,039,319	83.36%
\$125,000 to \$149,999	139,716	2,179,035	89.07%
\$150,000 to \$199,999	140,242	2,319,277	94.80%
\$200,000 or more	127,213	2,446,490	100%

- The base is the cumulative sum of the weighted frequencies, which is 2,446,490
- Determine the standard error of a 50 percent proportion. For this example, the design factor for household income is 1.6 from Table 3.22.

$$SE(50\text{ percent}) = 1.6 * \sqrt{\frac{99}{2,446,490} * 50^2} = .51$$

- Calculate p_lower and p_upper.

$$\begin{aligned} p_{\text{lower}} &= 50 - SE(50\text{ percent}) = 49.49 \\ p_{\text{upper}} &= 50 + SE(50\text{ percent}) = 50.51 \end{aligned}$$

- Determine the categories that contain p_lower and p_upper. The first category with a cumulative percentage that is greater than 49.49 is \$50,000 to \$59,999. The first category with a cumulative percentage that is greater than 50.51 is also \$50,000 to \$59,999. Since p_lower and p_upper fall in separate categories, we use each category separately when following the instructions given in step 5 of the procedure for medians.
- For p_lower, define A1, A2, C1, and C2: A1 = 50,000, A2 = 60,000, C1 = 42.45 and C2 = 50.43. Calculate the lower bound using these values.

$$LowerBound = \left[\frac{49.49 - 42.45}{50.43 - 42.45} \right] * (60,000 - 50,000) + 50,000 = 58,822.1$$

- For p_upper, define A1, A2, C1, and C2: A1 = 60,000, A2 = 75,000, C1 = 50.43 and C2 = 60.62. Calculate the upper bound using these values.

$$UpperBound = \left[\frac{50.51 - 50.43}{60.62 - 50.43} \right] * (75,000 - 60,000) + 60,000 = 60,117.8$$

- Finally, calculate the standard error of the median:

$$SE(\text{median}) = \frac{1}{2} * (60,117.8 - 58,822.1) = 647.85$$

Example 4 – Calculating the Standard Error of a Mean

Suppose we wish to estimate mean adjusted person income of females age 25 to 34 in Alabama. The table below summarizes the computation of the terms in the formula for s^2 . The PUMS data for Alabama has 2,659 records for females age 25 to 34 that have a non-missing value for person income.

Sample Record	y_i	w_i	$w_i y_i$	$w_i y_i^2$
1	3,656	165	603,310	2,205,964,257
2	46,721	64	2,990,147	139,702,816,839
3	30,470	109	3,321,257	101,199,538,722
4	18,282	71	1,298,032	23,730,827,612
.				
.				
2,659	36,666	51	1,869,959	68,563,677,816
Total		295,252	5,465,673,817	201,505,350,476,672

The mean adjusted income is $\bar{Y} = \frac{5,465,673,817}{295,252} = 18,511.89$.

s^2 is computed as follows:

$$s^2 = \frac{201,505,350,476,672 - (5,465,673,817)^2 / 295,252}{295,252 - 1} = 339,796,900$$

The design factor for person income in Alabama, from Table 3.1, is 1.6. The standard error of the mean can now be calculated:

$$SE(\bar{Y}) = 1.6 * \sqrt{\frac{99}{295,252} * 339,796,900} = 540$$

7. WORKING WITH DOLLAR AMOUNTS

When working with dollar amounts, it is necessary to apply an adjustment factor. The factor is included in the PUMS datasets and is called ADJUST. The reason this adjustment is needed is because interviews in the ACS were conducted throughout the year. Application of the adjustment factor will convert dollar amounts to 2006 dollars. Note that the value of ADJUST is the same for all sample cases (its value for 2006 is 1015675, which is read as 1.015675). This is for disclosure avoidance reasons, that is, so that the month of interview cannot be identified by the adjustment factor.

When working with dollar amounts from different years, it is necessary to convert the amounts into dollars from a common year (after applying the adjustment factor described in the previous paragraph). We use the CPI-U-RS adjustment factors from the Bureau of Labor Statistics.

These factors can be found in the first table in the PDF file at:

http://www.bls.gov/cpi/cpiurs1978_2006.pdf. [For example, to express year 2000 dollars in terms of 2006 dollars, multiply the 2000 dollars by $296.1/252.9 = 1.17082$].

8. REFERENCES

[1]. ACS Accuracy of the Data (2006)

<http://www.census.gov/acs/www/Downloads/ACS/accuracy2006.pdf>

Table 3. Design Factors for Calculating PUMS Standard Errors – United States

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.1
Sex	1.1
Population of Two or More Races	2.3
White Alone	2.5
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Not Hispanic or Latino	2.5
Marital Status	1.7
Relationship	1.7
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.8
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.0
School Enrollment, Level of School, and Type of School	1.4
Educational Attainment	1.6
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.4
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	2.0
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.9
Age of Own Children by Living Arrangements and Employment Status of Parents	1.9
Age of Householder	1.7
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	3.0
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	3.5
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	2.0
Vacant	2.2
Rooms and Bedrooms	1.7
Occupants per Room	1.8
Units in Structure	1.8
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	2.0
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.5
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.9
Value	1.5
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	2.0

Table 3.1. Design Factors for Calculating PUMS Standard Errors – Alabama

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	1.7
Population by Tenure	3.0
Age	1.1
Sex	1.6
Population of Two or More Races	1.9
White Alone	2.5
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.5
Hispanic or Latino	2.1
Not Hispanic or Latino	2.7
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.3
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	2.0
Residence 1 Year Ago	3.0
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.2
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.8
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.0
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.2. Design Factors for Calculating PUMS Standard Errors – Alaska

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.6
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.5
Age	1.3
Sex	1.6
Population of Two or More Races	1.9
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.4
Hispanic or Latino	2.1
Marital Status	1.4
Relationship	1.2
Ancestry	2.0
Grandparents Responsible for Grandchildren	1.5
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.7
Linguistic Isolation	1.3
Place of Birth, Year of Entry, and Citizenship Status	1.6
Residence 1 Year Ago	2.5
School Enrollment, Level of School, and Type of School	1.4
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.4
Travel Time to Work	1.5
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.6
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.4

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.6
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.4
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.4
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.2
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.5
Households by Presence of Nonrelatives	1.8
Unmarried Partner Households	1.5
Tenure	1.4
Vacant	1.1
Rooms and Bedrooms	1.4
Occupants per Room	1.3
Units in Structure	1.4
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.2
Telephone Service Available	1.4
Vehicles Available	1.4
Plumbing Facilities and Kitchen Facilities	1.2
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.5
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.5
Value	1.3
Mortgage Status and Selected Monthly Owner Costs	1.2
Selected Physical and Financial Conditions	1.4

Table 3.3. Design Factors for Calculating PUMS Standard Errors – Arizona

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.2
Sex	1.6
Population of Two or More Races	2.2
White Alone	3.4
Black or African American Alone	1.1
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	2.1
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	2.0
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	2.0
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.5
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.7
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.4. Design Factors for Calculating PUMS Standard Errors – Arkansas

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	1.8
Population in Families	
Age	1.1
Sex	1.6
Population of Two or More Races	2.1
White Alone	2.5
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.0
Hispanic or Latino	2.0
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.7
Number of Women Who Had a Birth in the Past 12 Months	1.1
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	1.8
Residence 1 Year Ago	2.7
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.5
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.6
Private Vehicle Occupancy	1.6
Work Experience, Hours Worked per Week, and Weeks Worked	1.3
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.6
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.5
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.6
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.5
Telephone Service Available	1.6
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.0
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.7
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.7
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.6

Table 3.5. Design Factors for Calculating PUMS Standard Errors – California

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.3
Sex	1.6
Population of Two or More Races	2.2
White Alone	3.3
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.8
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	2.4
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.4
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	2.2
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.7
Type of Household Income	1.3
Poverty Status (Persons)	2.3
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	3.5
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.7
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.6. Design Factors for Calculating PUMS Standard Errors – Colorado

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.1
Age	1.1
Sex	1.6
Population of Two or More Races	2.0
White Alone	4.6
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.7
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	1.7
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.8
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.7
Vacant	1.9
Rooms and Bedrooms	1.7
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.3
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.7. Design Factors for Calculating PUMS Standard Errors – Connecticut

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.1
Age	1.2
Sex	1.6
Population of Two or More Races	2.1
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	1.9
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.4
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.7
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.8. Design Factors for Calculating PUMS Standard Errors – Delaware

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.6
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	2.8
Age	1.2
Sex	1.6
Population of Two or More Races	1.8
White Alone	3.3
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.8
Hispanic or Latino	2.4
Marital Status	1.4
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.2
Language Spoken at Home and Ability to Speak English	1.7
Linguistic Isolation	1.4
Place of Birth, Year of Entry, and Citizenship Status	2.0
Residence 1 Year Ago	2.9
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.3
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.6
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.6
Private Vehicle Occupancy	1.6
Work Experience, Hours Worked per Week, and Weeks Worked	1.3
Number of Workers in Family	1.4

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.3
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.6
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.4
HOUSING	
Households/Occupied Housing Units	2.5
Family Type, Household Type, and Household Size	1.5
Households by Presence of Nonrelatives	1.9
Unmarried Partner Households	1.6
Tenure	1.4
Vacant	1.3
Rooms and Bedrooms	1.4
Occupants per Room	1.4
Units in Structure	1.4
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.5
Telephone Service Available	1.5
Vehicles Available	1.4
Plumbing Facilities and Kitchen Facilities	1.5
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.6
Meals Included in Rent	1.5
Inclusion of Utilities in Rent	1.5
Value	1.3
Mortgage Status and Selected Monthly Owner Costs	1.3
Selected Physical and Financial Conditions	1.5

Table 3.9. Design Factors for Calculating PUMS Standard Errors – District of Columbia

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	1.6
Population by Tenure	2.6
Age	1.1
Sex	1.6
Population of Two or More Races	2.2
White Alone	1.3
Black or African American Alone	1.5
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.0
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	1.8
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	1.9
Residence 1 Year Ago	2.8
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.1
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	1.5
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.6
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.7
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.5
HOUSING	
Households/Occupied Housing Units	2.5
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	2.1
Unmarried Partner Households	1.5
Tenure	1.5
Vacant	1.8
Rooms and Bedrooms	1.5
Occupants per Room	1.8
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.5
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.7
Meals Included in Rent	1.5
Inclusion of Utilities in Rent	1.5
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.3
Selected Physical and Financial Conditions	1.5

Table 3.10. Design Factors for Calculating PUMS Standard Errors – Florida

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.1
Sex	1.6
Population of Two or More Races	2.2
White Alone	3.3
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	1.7
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	2.0
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	2.0
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.11. Design Factors for Calculating PUMS Standard Errors – Georgia

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.1
Sex	1.5
Population of Two or More Races	2.2
White Alone	2.1
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	1.8
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.7
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.12. Design Factors for Calculating PUMS Standard Errors – Hawaii

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.0
Age	1.3
Sex	1.6
Population of Two or More Races	2.3
White Alone	2.1
Black or African American Alone	1.7
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.0
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	1.8
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.1
School Enrollment, Level of School, and Type of School	1.4
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	1.7
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.5
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.6
HOUSING	
Households/Occupied Housing Units	2.5
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	2.1
Unmarried Partner Households	1.6
Tenure	1.5
Vacant	1.6
Rooms and Bedrooms	1.5
Occupants per Room	1.5
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.6
Telephone Service Available	1.5
Vehicles Available	1.5
Plumbing Facilities and Kitchen Facilities	1.9
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.6
Meals Included in Rent	1.5
Inclusion of Utilities in Rent	1.6
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.5

Table 3.13. Design Factors for Calculating PUMS Standard Errors – Idaho

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.6
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.6
Age	1.1
Sex	1.6
Population of Two or More Races	1.8
White Alone	3.4
Black or African American Alone	1.7
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.9
Hispanic or Latino	1.5
Marital Status	1.3
Relationship	1.4
Ancestry	2.0
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.1
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	1.9
Residence 1 Year Ago	2.6
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.5
Travel Time to Work	1.6
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.6
Private Vehicle Occupancy	1.5
Work Experience, Hours Worked per Week, and Weeks Worked	1.3
Number of Workers in Family	1.4

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.4
Age of Own Children by Living Arrangements and Employment Status of Parents	1.5
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.5
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.5
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	2.0
Unmarried Partner Households	1.6
Tenure	1.6
Vacant	1.6
Rooms and Bedrooms	1.5
Occupants per Room	1.5
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.4
Telephone Service Available	1.6
Vehicles Available	1.5
Plumbing Facilities and Kitchen Facilities	1.7
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.6
Meals Included in Rent	1.5
Inclusion of Utilities in Rent	1.6
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.6

Table 3.14. Design Factors for Calculating PUMS Standard Errors – Illinois

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.2
Sex	1.6
Population of Two or More Races	2.2
White Alone	3.3
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.7
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	1.8
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.8
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.15. Design Factors for Calculating PUMS Standard Errors – Indiana

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.9
Age	1.1
Sex	1.6
Population of Two or More Races	2.1
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	1.8
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.1
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	1.9
Residence 1 Year Ago	2.8
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.6
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.5
Work Experience, Hours Worked per Week, and Weeks Worked	1.3
Number of Workers in Family	1.4

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.6
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.7
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.4
Telephone Service Available	1.6
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.2
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.6
Meals Included in Rent	1.6
Inclusion of Utilities in Rent	1.7
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.6

Table 3.16. Design Factors for Calculating PUMS Standard Errors – Iowa

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.4
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.2
Age	1.2
Sex	1.6
Population of Two or More Races	1.8
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.5
Hispanic or Latino	1.2
Marital Status	1.3
Relationship	1.4
Ancestry	1.8
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.7
Linguistic Isolation	1.4
Place of Birth, Year of Entry, and Citizenship Status	1.7
Residence 1 Year Ago	2.3
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.1
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.3
Travel Time to Work	1.5
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.4
Private Vehicle Occupancy	1.4
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.2

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.3
Person Earnings/Income	1.6
Type of Household Income	2.0
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.3
Ratio of Income to Poverty Level	2.2
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.6
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.4
Households by Presence of Nonrelatives	1.6
Unmarried Partner Households	1.4
Tenure	1.3
Vacant	1.9
Rooms and Bedrooms	1.3
Occupants per Room	1.8
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.3
House Heating Fuel	1.3
Telephone Service Available	1.4
Vehicles Available	1.3
Plumbing Facilities and Kitchen Facilities	1.9
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.5
Meals Included in Rent	1.3
Inclusion of Utilities in Rent	1.4
Value	1.2
Mortgage Status and Selected Monthly Owner Costs	1.2
Selected Physical and Financial Conditions	1.4

Table 3.17. Design Factors for Calculating PUMS Standard Errors – Kansas

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.5
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.8
Age	1.1
Sex	1.6
Population of Two or More Races	1.8
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.1
Marital Status	1.3
Relationship	1.4
Ancestry	1.9
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.2
Language Spoken at Home and Ability to Speak English	1.7
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	1.8
Residence 1 Year Ago	2.8
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.3
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.4
Travel Time to Work	1.6
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.6
Work Experience, Hours Worked per Week, and Weeks Worked	1.2
Number of Workers in Family	1.3

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.4
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.5
Type of Household Income	2.0
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.4
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.5
HOUSING	
Households/Occupied Housing Units	2.5
Family Type, Household Type, and Household Size	1.5
Households by Presence of Nonrelatives	2.1
Unmarried Partner Households	1.5
Tenure	1.6
Vacant	1.9
Rooms and Bedrooms	1.5
Occupants per Room	1.5
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.4
Telephone Service Available	1.6
Vehicles Available	1.4
Plumbing Facilities and Kitchen Facilities	2.0
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.5
Value	1.3
Mortgage Status and Selected Monthly Owner Costs	1.3
Selected Physical and Financial Conditions	1.6

Table 3.18. Design Factors for Calculating PUMS Standard Errors – Kentucky

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.0
Age	1.1
Sex	1.6
Population of Two or More Races	1.9
White Alone	3.4
Black or African American Alone	1.9
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.0
Hispanic or Latino	1.8
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.3
Language Spoken at Home and Ability to Speak English	1.8
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	2.1
Residence 1 Year Ago	3.1
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.6
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.7
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.2
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.6
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.6
Vacant	1.9
Rooms and Bedrooms	1.7
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.5
Telephone Service Available	1.7
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.2
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.6
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.6

Table 3.19 Design Factors for Calculating PUMS Standard Errors – Louisiana

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	1.9
Population by Tenure	3.4
Age	1.1
Sex	1.6
Population of Two or More Races	2.2
White Alone	2.1
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.0
Hispanic or Latino	2.0
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	1.4
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.1
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.8
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.7
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.3
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.20. Design Factors for Calculating PUMS Standard Errors – Maine

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.6
Age	1.3
Sex	1.6
Population of Two or More Races	1.3
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.5
Hispanic or Latino	1.5
Marital Status	1.4
Relationship	1.4
Ancestry	1.9
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.3
Place of Birth, Year of Entry, and Citizenship Status	1.8
Residence 1 Year Ago	2.4
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.6
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.4
Travel Time to Work	1.5
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.4
Work Experience, Hours Worked per Week, and Weeks Worked	1.5
Number of Workers in Family	1.4

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.7
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.7
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.3
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.5
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	1.9
Unmarried Partner Households	1.6
Tenure	1.5
Vacant	1.3
Rooms and Bedrooms	1.4
Occupants per Room	1.8
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.3
Telephone Service Available	1.5
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	1.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.6
Meals Included in Rent	1.5
Inclusion of Utilities in Rent	1.5
Value	1.3
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.4

Table 3.21. Design Factors for Calculating PUMS Standard Errors – Maryland

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.1
Sex	2.0
Population of Two or More Races	2.2
White Alone	2.5
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	1.7
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	1.8
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	3.5
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.7
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.22. Design Factors for Calculating PUMS Standard Errors – Massachusetts

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.2
Sex	1.6
Population of Two or More Races	2.2
White Alone	5.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	1.8
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.6
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	2.0
Poverty Status (Persons)	1.8
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	3.5
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.23. Design Factors for Calculating PUMS Standard Errors – Michigan

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.9
Age	1.2
Sex	1.6
Population of Two or More Races	1.9
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	1.8
Marital Status	1.3
Relationship	1.4
Ancestry	1.9
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.3
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.4
Place of Birth, Year of Entry, and Citizenship Status	2.1
Residence 1 Year Ago	3.0
School Enrollment, Level of School, and Type of School	1.4
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.4
Travel Time to Work	1.6
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.3
Number of Workers in Family	1.4

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.4
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.7
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.7
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.6
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.6
Vacant	1.7
Rooms and Bedrooms	1.5
Occupants per Room	1.8
Units in Structure	1.6
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.5
Telephone Service Available	1.6
Vehicles Available	1.4
Plumbing Facilities and Kitchen Facilities	1.9
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.6
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.6
Value	1.3
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.5

Table 3.24. Design Factors for Calculating PUMS Standard Errors – Minnesota

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.8
Age	1.3
Sex	1.6
Population of Two or More Races	1.9
White Alone	3.4
Black or African American Alone	2.4
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.3
Marital Status	1.3
Relationship	1.4
Ancestry	1.8
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.1
Language Spoken at Home and Ability to Speak English	1.8
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	1.9
Residence 1 Year Ago	2.6
School Enrollment, Level of School, and Type of School	1.4
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.3
Travel Time to Work	1.5
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.4
Private Vehicle Occupancy	1.6
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.3

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.7
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.4
Type of Household Income	2.0
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.4
Ratio of Income to Poverty Level	2.3
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.6
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.5
Households by Presence of Nonrelatives	1.9
Unmarried Partner Households	1.5
Tenure	1.4
Vacant	1.6
Rooms and Bedrooms	1.3
Occupants per Room	1.8
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.3
House Heating Fuel	1.2
Telephone Service Available	1.4
Vehicles Available	1.3
Plumbing Facilities and Kitchen Facilities	1.7
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.5
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.5
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.2
Selected Physical and Financial Conditions	1.4

Table 3.25. Design Factors for Calculating PUMS Standard Errors – Mississippi

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	1.7
Population by Tenure	3.0
Age	1.1
Sex	1.1
Population of Two or More Races	2.2
White Alone	2.1
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.8
Hispanic or Latino	2.0
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.3
Language Spoken at Home and Ability to Speak English	1.1
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	2.1
Residence 1 Year Ago	3.0
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.2
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.7
Vacant	1.9
Rooms and Bedrooms	1.7
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.5
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.1
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.7
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.26. Design Factors for Calculating PUMS Standard Errors – Missouri

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.0
Age	1.1
Sex	1.6
Population of Two or More Races	1.9
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.9
Hispanic or Latino	1.8
Marital Status	1.4
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.3
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	2.1
Residence 1 Year Ago	2.9
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.6
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.6
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.4

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	2.0
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.6
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.6
HOUSING	
Households/Occupied Housing Units	2.5
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.7
Vacant	1.9
Rooms and Bedrooms	1.7
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.4
Telephone Service Available	1.7
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.1
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.7
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.6

Table 3.27. Design Factors for Calculating PUMS Standard Errors – Montana

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.6
Age	1.2
Sex	1.6
Population of Two or More Races	1.8
White Alone	3.4
Black or African American Alone	1.1
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.1
Hispanic or Latino	1.5
Marital Status	1.4
Relationship	1.4
Ancestry	1.8
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.3
Place of Birth, Year of Entry, and Citizenship Status	1.7
Residence 1 Year Ago	2.4
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.4
Travel Time to Work	1.5
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.4

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.6
Type of Household Income	2.0
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.4
Ratio of Income to Poverty Level	2.3
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.6
HOUSING	
Households/Occupied Housing Units	2.5
Family Type, Household Type, and Household Size	1.4
Households by Presence of Nonrelatives	1.7
Unmarried Partner Households	1.4
Tenure	1.4
Vacant	1.3
Rooms and Bedrooms	1.4
Occupants per Room	1.8
Units in Structure	1.4
Year Structure Built and Year Householder Moved Into Unit	1.3
House Heating Fuel	1.3
Telephone Service Available	1.4
Vehicles Available	1.3
Plumbing Facilities and Kitchen Facilities	1.3
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.5
Meals Included in Rent	1.4
Inclusion of Utilities in Rent	1.4
Value	1.3
Mortgage Status and Selected Monthly Owner Costs	1.3
Selected Physical and Financial Conditions	1.4

Table 3.28. Design Factors for Calculating PUMS Standard Errors – Nebraska

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.3
Age	1.3
Sex	1.6
Population of Two or More Races	2.0
White Alone	3.4
Black or African American Alone	2.4
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.0
Hispanic or Latino	2.4
Marital Status	1.4
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.1
Language Spoken at Home and Ability to Speak English	1.8
Linguistic Isolation	1.3
Place of Birth, Year of Entry, and Citizenship Status	1.7
Residence 1 Year Ago	3.0
School Enrollment, Level of School, and Type of School	1.4
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.3
Travel Time to Work	1.4
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.4
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.2

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.6
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.7
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.3
Ratio of Income to Poverty Level	2.2
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.3
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.4
Households by Presence of Nonrelatives	2.0
Unmarried Partner Households	1.4
Tenure	1.4
Vacant	1.6
Rooms and Bedrooms	1.3
Occupants per Room	1.8
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.3
House Heating Fuel	1.3
Telephone Service Available	1.4
Vehicles Available	1.3
Plumbing Facilities and Kitchen Facilities	1.9
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.4
Meals Included in Rent	1.3
Inclusion of Utilities in Rent	1.3
Value	1.2
Mortgage Status and Selected Monthly Owner Costs	1.2
Selected Physical and Financial Conditions	1.4

Table 3.29. Design Factors for Calculating PUMS Standard Errors – Nevada

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.2
Sex	1.6
Population of Two or More Races	2.2
White Alone	3.6
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	2.1
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.0
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	1.8
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.8
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.8
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.30. Design Factors for Calculating PUMS Standard Errors – New Hampshire

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.6
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.8
Age	1.1
Sex	1.6
Population of Two or More Races	1.6
White Alone	3.4
Black or African American Alone	1.5
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.0
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.2
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	1.9
Residence 1 Year Ago	2.8
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.5
Travel Time to Work	1.6
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.6
Work Experience, Hours Worked per Week, and Weeks Worked	1.3
Number of Workers in Family	1.4

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.6
Age of Own Children by Living Arrangements and Employment Status of Parents	1.6
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.5
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.6
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.6
HOUSING	
Households/Occupied Housing Units	2.5
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	2.1
Unmarried Partner Households	1.6
Tenure	1.5
Vacant	1.5
Rooms and Bedrooms	1.5
Occupants per Room	1.5
Units in Structure	1.6
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.4
Telephone Service Available	1.6
Vehicles Available	1.5
Plumbing Facilities and Kitchen Facilities	1.7
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.7
Meals Included in Rent	1.5
Inclusion of Utilities in Rent	1.6
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.5

Table 3.31. Design Factors for Calculating PUMS Standard Errors – New Jersey

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.2
Sex	1.6
Population of Two or More Races	2.2
White Alone	3.3
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	2.0
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	3.8
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.32. Design Factors for Calculating PUMS Standard Errors – New Mexico

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.3
Age	1.1
Sex	1.6
Population of Two or More Races	2.2
White Alone	2.4
Black or African American Alone	1.1
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.3
Marital Status	1.3
Relationship	1.4
Ancestry	2.0
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.4
Language Spoken at Home and Ability to Speak English	1.7
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	1.7
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.6
HOUSING	
Households/Occupied Housing Units	1.9
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.7
Vacant	1.8
Rooms and Bedrooms	1.6
Occupants per Room	1.6
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.7
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	1.8
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.7
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.33. Design Factors for Calculating PUMS Standard Errors – New York

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.2
Sex	1.6
Population of Two or More Races	2.2
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	1.8
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	1.9
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.9
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.34. Design Factors for Calculating PUMS Standard Errors – North Carolina

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.1
Age	1.1
Sex	1.1
Population of Two or More Races	2.2
White Alone	2.1
Black or African American Alone	1.7
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.2
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.1
Residence 1 Year Ago	3.0
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.7
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.8
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.2
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.7
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.7
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.2
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.7
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.35. Design Factors for Calculating PUMS Standard Errors – North Dakota

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.2
Age	1.2
Sex	1.6
Population of Two or More Races	1.6
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	1.0
Marital Status	1.3
Relationship	1.4
Ancestry	1.6
Grandparents Responsible for Grandchildren	1.4
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.2
Place of Birth, Year of Entry, and Citizenship Status	1.5
Residence 1 Year Ago	2.1
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.2
Travel Time to Work	1.4
Means of Transportation to Work	1.2
Place of Work	2.4
Time Leaving Home to go to Work	1.3
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.2

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.9
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.2
Person Earnings/Income	1.6
Type of Household Income	2.0
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.2
Ratio of Income to Poverty Level	1.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.3
HOUSING	
Households/Occupied Housing Units	2.5
Family Type, Household Type, and Household Size	1.3
Households by Presence of Nonrelatives	1.5
Unmarried Partner Households	1.4
Tenure	1.3
Vacant	1.3
Rooms and Bedrooms	1.3
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.2
House Heating Fuel	1.1
Telephone Service Available	1.3
Vehicles Available	1.2
Plumbing Facilities and Kitchen Facilities	1.3
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.4
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.1
Selected Physical and Financial Conditions	1.3

Table 3.36. Design Factors for Calculating PUMS Standard Errors – Ohio

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.0
Age	1.1
Sex	1.6
Population of Two or More Races	1.8
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.0
Hispanic or Latino	1.9
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.3
Language Spoken at Home and Ability to Speak English	1.4
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	2.0
Residence 1 Year Ago	3.1
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.4
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.5
Travel Time to Work	1.6
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.6
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.6
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.7
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.7
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.6
Telephone Service Available	1.7
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.7
Meals Included in Rent	1.6
Inclusion of Utilities in Rent	1.7
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.6

Table 3.37. Design Factors for Calculating PUMS Standard Errors – Oklahoma

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.6
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.5
Age	1.1
Sex	1.6
Population of Two or More Races	1.9
White Alone	3.3
Black or African American Alone	1.3
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.8
Hispanic or Latino	1.5
Marital Status	1.3
Relationship	1.4
Ancestry	2.0
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.2
Language Spoken at Home and Ability to Speak English	1.7
Linguistic Isolation	1.4
Place of Birth, Year of Entry, and Citizenship Status	1.8
Residence 1 Year Ago	2.6
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.5
Travel Time to Work	1.6
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.6
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.3
Number of Workers in Family	1.4

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.5
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.5
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.5
Tenure	1.6
Vacant	1.9
Rooms and Bedrooms	1.5
Occupants per Room	1.8
Units in Structure	1.6
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.5
Telephone Service Available	1.6
Vehicles Available	1.5
Plumbing Facilities and Kitchen Facilities	2.0
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.7
Meals Included in Rent	1.5
Inclusion of Utilities in Rent	1.6
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.5

Table 3.38. Design Factors for Calculating PUMS Standard Errors – Oregon

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.6
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.0
Age	1.1
Sex	1.6
Population of Two or More Races	2.0
White Alone	3.4
Black or African American Alone	1.1
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.4
Language Spoken at Home and Ability to Speak English	1.8
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.1
Residence 1 Year Ago	2.9
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	1.7
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.7
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.1
Unmarried Partner Households	1.7
Tenure	1.6
Vacant	1.9
Rooms and Bedrooms	1.5
Occupants per Room	1.8
Units in Structure	1.6
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.5
Telephone Service Available	1.7
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.3
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.6
Inclusion of Utilities in Rent	1.6
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.6

Table 3.39. Design Factors for Calculating PUMS Standard Errors – Pennsylvania

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.3
Age	1.3
Sex	1.6
Population of Two or More Races	1.9
White Alone	3.9
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.0
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.4
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.0
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.5
Travel Time to Work	1.6
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.4

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	2.0
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.6
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.5
Tenure	1.7
Vacant	1.9
Rooms and Bedrooms	1.5
Occupants per Room	1.8
Units in Structure	1.6
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.4
Telephone Service Available	1.7
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.6
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.6
Value	1.3
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.6

Table 3.40. Design Factors for Calculating PUMS Standard Errors – Rhode Island

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.9
Age	1.1
Sex	1.1
Population of Two or More Races	2.2
White Alone	3.4
Black or African American Alone	1.9
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.4
Language Spoken at Home and Ability to Speak English	1.6
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.1
Residence 1 Year Ago	3.1
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.8
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.6
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.0
Unmarried Partner Households	1.7
Tenure	1.6
Vacant	1.6
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.6
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.5
Telephone Service Available	1.6
Vehicles Available	1.5
Plumbing Facilities and Kitchen Facilities	2.0
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.7
Meals Included in Rent	1.5
Inclusion of Utilities in Rent	1.6
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.6

Table 3.41. Design Factors for Calculating PUMS Standard Errors – South Carolina

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	1.6
Population by Tenure	3.1
Age	1.1
Sex	1.1
Population of Two or More Races	2.2
White Alone	2.1
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.0
Hispanic or Latino	2.0
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.8
Number of Women Who Had a Birth in the Past 12 Months	1.2
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.4
Place of Birth, Year of Entry, and Citizenship Status	2.1
Residence 1 Year Ago	2.9
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.2
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.7
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	1.9
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.7
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.7
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	1.9
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.7
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.42. Design Factors for Calculating PUMS Standard Errors – South Dakota

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.1
Age	1.3
Sex	1.6
Population of Two or More Races	1.9
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	1.3
Marital Status	1.3
Relationship	1.4
Ancestry	1.7
Grandparents Responsible for Grandchildren	1.5
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	2.3
School Enrollment, Level of School, and Type of School	1.4
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.5
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.4
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.3

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.6
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.3
Person Earnings/Income	1.3
Type of Household Income	2.0
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.4
Ratio of Income to Poverty Level	2.2
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.4
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.3
Households by Presence of Nonrelatives	1.7
Unmarried Partner Households	1.4
Tenure	1.2
Vacant	1.5
Rooms and Bedrooms	1.3
Occupants per Room	1.8
Units in Structure	1.4
Year Structure Built and Year Householder Moved Into Unit	1.2
House Heating Fuel	1.1
Telephone Service Available	1.3
Vehicles Available	1.3
Plumbing Facilities and Kitchen Facilities	1.5
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.3
Inclusion of Utilities in Rent	1.2
Value	1.2
Mortgage Status and Selected Monthly Owner Costs	1.3
Selected Physical and Financial Conditions	1.3

Table 3.43. Design Factors for Calculating PUMS Standard Errors – Tennessee

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.3
Age	1.1
Sex	1.1
Population of Two or More Races	2.0
White Alone	3.3
Black or African American Alone	1.1
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.2
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.4
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	1.7
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.7
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.5
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.44. Design Factors for Calculating PUMS Standard Errors – Texas

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.1
Sex	1.6
Population of Two or More Races	2.2
White Alone	3.3
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	2.0
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.2
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.8
Means of Transportation to Work	1.7
Place of Work	1.9
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	2.0
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.9
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.5
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.8
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.8
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.8
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.45. Design Factors for Calculating PUMS Standard Errors – Utah

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.2
Age	1.2
Sex	1.6
Population of Two or More Races	1.9
White Alone	3.4
Black or African American Alone	1.6
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.4
Language Spoken at Home and Ability to Speak English	1.8
Linguistic Isolation	1.4
Place of Birth, Year of Entry, and Citizenship Status	2.1
Residence 1 Year Ago	3.0
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.1
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.6
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.6
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.8
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.7
Vacant	1.7
Rooms and Bedrooms	1.6
Occupants per Room	1.6
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.6
Telephone Service Available	1.7
Vehicles Available	1.5
Plumbing Facilities and Kitchen Facilities	2.0
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.7
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.6
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.5

Table 3.46. Design Factors for Calculating PUMS Standard Errors – Vermont

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.2
Age	1.3
Sex	1.6
Population of Two or More Races	1.1
White Alone	3.4
Black or African American Alone	1.1
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	0.9
Hispanic or Latino	1.2
Marital Status	1.5
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	1.4
Residence 1 Year Ago	2.2
School Enrollment, Level of School, and Type of School	1.4
Educational Attainment	1.6
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.2
Travel Time to Work	1.4
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.3
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.3

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.7
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.7
Type of Household Income	2.0
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.3
Ratio of Income to Poverty Level	2.1
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.4
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.3
Households by Presence of Nonrelatives	1.5
Unmarried Partner Households	1.3
Tenure	1.2
Vacant	1.0
Rooms and Bedrooms	1.3
Occupants per Room	1.8
Units in Structure	1.3
Year Structure Built and Year Householder Moved Into Unit	1.2
House Heating Fuel	1.2
Telephone Service Available	1.2
Vehicles Available	1.2
Plumbing Facilities and Kitchen Facilities	1.0
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.4
Meals Included in Rent	1.7
Inclusion of Utilities in Rent	1.8
Value	1.2
Mortgage Status and Selected Monthly Owner Costs	1.2
Selected Physical and Financial Conditions	1.3

Table 3.47. Design Factors for Calculating PUMS Standard Errors – Virginia

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.1
Age	1.1
Sex	1.1
Population of Two or More Races	2.2
White Alone	2.1
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.2
Language Spoken at Home and Ability to Speak English	1.4
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.1
Residence 1 Year Ago	2.7
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.7
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.8
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.6
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.6
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.7
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.2
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.7
Meals Included in Rent	1.6
Inclusion of Utilities in Rent	1.7
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.6

Table 3.48. Design Factors for Calculating PUMS Standard Errors – Washington

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.9
Age	1.2
Sex	1.9
Population of Two or More Races	2.0
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	1.8
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.1
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	1.7
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.8
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.6
HOUSING	
Households/Occupied Housing Units	3.5
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.7
Tenure	1.7
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.7
Year Structure Built and Year Householder Moved Into Unit	1.6
House Heating Fuel	1.6
Telephone Service Available	1.7
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	2.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.7
Inclusion of Utilities in Rent	1.7
Value	1.6
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 3.49. Design Factors for Calculating PUMS Standard Errors – West Virginia

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.6
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.7
Age	1.0
Sex	1.6
Population of Two or More Races	1.8
White Alone	3.4
Black or African American Alone	1.2
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.6
Hispanic or Latino	1.4
Marital Status	1.2
Relationship	1.3
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	1.9
Residence 1 Year Ago	2.6
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.6
Private Vehicle Occupancy	1.5
Work Experience, Hours Worked per Week, and Weeks Worked	1.3
Number of Workers in Family	1.5

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.4
Age of Own Children by Living Arrangements and Employment Status of Parents	1.6
Age of Householder	1.3
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.5
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.7
HOUSING	
Households/Occupied Housing Units	1.7
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	2.0
Unmarried Partner Households	1.5
Tenure	1.5
Vacant	1.6
Rooms and Bedrooms	1.5
Occupants per Room	1.4
Units in Structure	1.6
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.5
Telephone Service Available	1.5
Vehicles Available	1.6
Plumbing Facilities and Kitchen Facilities	1.7
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.6
Meals Included in Rent	1.5
Inclusion of Utilities in Rent	1.6
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.6

Table 3.50. Design Factors for Calculating PUMS Standard Errors – Wisconsin

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.7
Age	1.3
Sex	1.6
Population of Two or More Races	1.8
White Alone	3.4
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.0
Hispanic or Latino	2.1
Marital Status	1.4
Relationship	1.4
Ancestry	1.7
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.7
Linguistic Isolation	1.3
Place of Birth, Year of Entry, and Citizenship Status	1.8
Residence 1 Year Ago	2.5
School Enrollment, Level of School, and Type of School	1.4
Educational Attainment	1.6
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.3
Travel Time to Work	1.4
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.4
Private Vehicle Occupancy	1.4
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.2

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.5
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.3
Person Earnings/Income	1.6
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.4
Ratio of Income to Poverty Level	2.2
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.6
HOUSING	
Households/Occupied Housing Units	3.2
Family Type, Household Type, and Household Size	1.4
Households by Presence of Nonrelatives	1.7
Unmarried Partner Households	1.4
Tenure	1.5
Vacant	1.3
Rooms and Bedrooms	1.3
Occupants per Room	1.8
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.3
House Heating Fuel	1.2
Telephone Service Available	1.5
Vehicles Available	1.3
Plumbing Facilities and Kitchen Facilities	1.4
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.8
Meals Included in Rent	1.4
Inclusion of Utilities in Rent	1.5
Value	1.2
Mortgage Status and Selected Monthly Owner Costs	1.2
Selected Physical and Financial Conditions	1.4

Table 3.51. Design Factors for Calculating PUMS Standard Errors – Wyoming

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.6
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.4
Age	1.1
Sex	1.6
Population of Two or More Races	1.7
White Alone	3.4
Black or African American Alone	1.4
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.6
Hispanic or Latino	1.5
Marital Status	1.3
Relationship	1.2
Ancestry	1.8
Grandparents Responsible for Grandchildren	1.6
Number of Women Who Had a Birth in the Past 12 Months	0.9
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	1.7
Residence 1 Year Ago	2.4
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.3
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.4
Travel Time to Work	1.5
Means of Transportation to Work	1.7
Place of Work	1.7
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.4
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.3

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.3
Age of Own Children by Living Arrangements and Employment Status of Parents	1.5
Age of Householder	1.2
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.5
Type of Household Income	1.3
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.4
Ratio of Income to Poverty Level	2.4
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.5
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.5
Households by Presence of Nonrelatives	1.7
Unmarried Partner Households	1.5
Tenure	1.4
Vacant	1.6
Rooms and Bedrooms	1.5
Occupants per Room	1.8
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.4
Telephone Service Available	1.5
Vehicles Available	1.4
Plumbing Facilities and Kitchen Facilities	1.5
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.5
Meals Included in Rent	1.4
Inclusion of Utilities in Rent	1.5
Value	1.3
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.4

Table 3.52. Design Factors for Calculating PUMS Standard Errors – Puerto Rico

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	2.7
Age	1.1
Sex	1.6
Population of Two or More Races	2.2
White Alone	3.3
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.2
Marital Status	1.2
Relationship	1.3
Ancestry	2.0
Grandparents Responsible for Grandchildren	1.7
Number of Women Who Had a Birth in the Past 12 Months	1.0
Language Spoken at Home and Ability to Speak English	1.8
Linguistic Isolation	1.6
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.0
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.5
Travel Time to Work	1.6
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.6
Private Vehicle Occupancy	1.6
Work Experience, Hours Worked per Week, and Weeks Worked	1.3
Number of Workers in Family	1.4

Presence of Own Children, Presence of People Under 18 Years, Presence of People 60 Years and Over, and Presence of People 65 Years and Over	1.5
Age of Own Children by Living Arrangements and Employment Status of Parents	1.7
Age of Householder	1.4
Race of Householder	1.8
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.5
Type of Household Income	1.1
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.5
Ratio of Income to Poverty Level	2.7
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.5
HOUSING	
Households/Occupied Housing Units	2.4
Family Type, Household Type, and Household Size	1.5
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.5
Tenure	1.5
Vacant	1.5
Rooms and Bedrooms	1.4
Occupants per Room	1.5
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.5
Telephone Service Available	1.5
Vehicles Available	1.4
Plumbing Facilities and Kitchen Facilities	1.8
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.5
Meals Included in Rent	1.8
Inclusion of Utilities in Rent	1.4
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.5