2006-2008 PUMS Accuracy of the Data
(Revised December 30, 2009)

1. INTRODUCTION

This 3-year public use microdata sample (PUMS) for 2006-2008 is a subset of the 2006-2008 American Community Survey (ACS) and Puerto Rico Community Survey (PRCS) samples. It contains the same sample as the three 1-year PUMS for 2006, 2007 and 2008. Unless otherwise specified, the term "ACS" in this document will refer to both the ACS and PRCS. This 2006-2008 PUMS is the second multiyear file published by the ACS. It contains three years of data for housing units and the population from households and the group quarters (GQ) population. The GQ population, housing units and population from households are all weighted to agree with the ACS counts which are an average over the three year period (2006-2008). The ACS sample was selected from all counties across the nation, and all municipios in Puerto Rico. The 2006-2008 PUMS data contain 3,875,950 housing unit records and 8,819,885 person records from households and 245,787 person records from GQs.

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.

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 2006-2008 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 recent populations too low to release as separate PUMAs. For this 2006-2008 ACS PUMS file, 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. The pseudo PUMA is identified with a PUMA code of 77777.

Other disclosure avoidance measures used include top-coding, age perturbation, and collapsing of detail for categorical variables. The answers to open-ended questions, where an extreme value might identify an individual are top-coded (or bottom-coded). Top-coding (and bottom-coding) substitutes the value of extreme cases with the mean of the highest (or lowest) cases. Top-coded questions include age, income and housing unit value. Age perturbation disguises original data by randomly adjusting the reported ages for a subset of individuals.

Users of the 2006 PUMS should be aware that the age perturbation was modified and new values included in the 2006-2008 PUMS. The changes were applied to persons of age 65 or more in order to reduce noise cause by a version of age perturbation, which had been applied to the 2003 through 2006 ACS PUMS files. When analyzed by single year of age, the ratio of males to females, social security participation, labor force participation, person income and home ownership are now closer to the ACS full sample estimates for ages 65 or more. The modified 2006 file was re-released in late 2009 at the same time as the 2006-2008 file.

3. SAMPLE DESIGN

The 2006-2008 PUMS sample is the same sample found in each of the 1-year PUMS files for the years 2006, 2007 and 2008. It contains three percent of the housing units and three percent of the GQ persons in the United States, District of Columbia, and Puerto Rico weighted to represent the average population during three years. The full ACS sample design is not described here. Information about the sample design and accuracy of the full ACS sample is found in any of the ACS 1-Year Accuracy documents or in the 3-Year Accuracy document found at: http://www.census.gov/acs/www/UseData/Accuracy/Accuracy1.htm

Tables 1 and 2 show PUMS sample sizes next to the corresponding ACS estimates by state, the District of Columbia, and Puerto Rico. Table 1 shows housing units and Table 2 shows GQ persons.

Table 1. 2006-2008 Estimates of the Housing Universe and PUMS Sample Sizes

State	ACS Housing Unit Estimate	PUMS Sample Size	State	ACS Housing Unit Estimate	PUMS Sample Size
Alabama	2,135,236	64,059	Montana	434,975	13,060
Alaska	281,616	8,423	Nebraska	780,052	23,422
Arizona	2,667,820	79,957	Nevada	1,098,307	32,947
Arkansas	1,286,382	38,594	New Hampshire	593,630	17,812
California	13,295,476	398,767	New Jersey	3,496,719	104,895
Colorado	2,124,611	63,742	New Mexico	862,843	25,839
Connecticut	1,438,041	43,140	New York	7,943,321	238,247
Delaware	388,119	11,646	North Carolina	4,120,257	123,558
District of Columbia	284,164	8,526	North Dakota	310,036	9,319
Florida	8,684,100	260,522	Ohio	5,063,551	151,896
Georgia	3,953,206	118,608	Oklahoma	1,622,384	48,677
Hawaii	506,550	15,198	Oregon	1,609,297	48,250
Idaho	629,255	18,883	Pennsylvania	5,476,136	164,276
Illinois	5,240,942	157,227	Rhode Island	450,779	13,523
Indiana	2,776,916	83,299	South Carolina	2,018,762	60,539
Iowa	1,320,498	39,798	South Dakota	356,827	10,717
Kansas	1,216,900	36,544	Tennessee	2,721,889	81,642
Kentucky	1,905,235	57,149	Texas	9,417,981	282,557
Louisiana	1,852,222	55,725	Utah	923,373	27,710
Maine	696,079	20,884	Vermont	311,231	9,338
Maryland	2,317,334	69,522	Virginia	3,269,872	98,117
Massachusetts	2,724,787	81,667	Washington	2,749,580	82,351
Michigan	4,525,160	135,769	West Virginia	882,169	26,470
Minnesota	2,313,867	69,197	Wisconsin	2,548,132	76,637
Mississippi	1,248,334	37,638	Wyoming	242,641	7,280
Missouri	2,645,331	79,344	Puerto Rico	1,434,649	43,043

Table 2. 2006-2008 Estimates of the GQ Person Universe and PUMS Sample Sizes

State	ACS GQ Person Estimate	PUMS GQ Person Sample Size	State	ACS GQ Person Estimate	PUMS GQ Person Sample Size
Alabama	119,880	3,547	Montana	26,568	784
Alaska	21,736	670	Nebraska	52,721	1,580
Arizona	117,720	3,382	Nevada	33,373	1,003
Arkansas	80,395	2,391	New Hampshire	38,653	1,159
California	861,924	25,920	New Jersey	196,347	5,905
Colorado	109,281	3,212	New Mexico	42,104	1,258
Connecticut	114,295	3,431	New York	607,138	18,183
Delaware	24,147	741	North Carolina	279,575	8,273
District of Columbia	35,240	1,060	North Dakota	27,286	829
Florida	422,339	12,538	Ohio	313,012	9,284
Georgia	268,715	8,055	Oklahoma	114,916	3,428
Hawaii	35,099	1,077	Oregon	81,621	2,434
Idaho	34,425	1,024	Pennsylvania	468,724	13,919
Illinois	343,835	9,918	Rhode Island	38,881	1,215
Indiana	188,177	5,539	South Carolina	145,106	4,334
Iowa	105,474	3,150	South Dakota	31,239	919
Kansas	82,134	2,466	Tennessee	152,491	4,574
Kentucky	115,025	3,450	Texas	596,355	17,865
Louisiana	123,104	3,689	Utah	44,180	1,317
Maine	38,024	1,134	Vermont	21,436	632
Maryland	142,150	4,273	Virginia	249,514	7,291
Massachusetts	242,520	6,754	Washington	143,280	4,234
Michigan	258,481	7,728	West Virginia	45,553	1,368
Minnesota	143,302	4,283	Wisconsin	162,160	4,830
Mississippi	99,198	2,896	Wyoming	14,571	430
Missouri	168,957	5,036	Puerto Rico	46,225	1,375

The sampling for HUs (and persons from HUs) was performed independently on the ACS samples of HUs for each of the years 2006, 2007 and 2008, 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 originally performed on the ACS sample of GQ persons for each of the years 2006, 2007 and 2008 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 ACS weight (from the 3-year 2006-2008 ACS file), the PUMS subsampling factor, and a ratio-estimate factor. The ACS 3-year weights were controlled to an average of the Population Estimates Program estimates for the period, 2006-2008. The PUMS subsampling factors for HUs and GQs are the sampling intervals originally used to subsample the ACS HU or GQ person records within a state for 2006, 2007 and 2008. 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 3-year estimates at the PUMA level for occupied/vacant HUs, male and female persons from HUs and at the state level for institutionalized/ noninstitutionalized by male and

female persons from GQs. For details on the ACS weights see the ACS 3-year Accuracy document: http://www.census.gov/acs/www/UseData/Accuracy/Accuracy1.htm.

The additional sampling causes PUMS 3-year estimates to be different from published ACS 3-year 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 2006-2008 PUMS will agree closely with the 2006-2008 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 by institutionalized/ noninstitutionalized status for male and female persons in GQs at the United States, 50 states, District of Columbia, and Puerto Rico levels.

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.

Note that the housing unit file contains some records with blank weights. These are the GQ placeholder records[1]. The housing unit weights were set to blank for these records since they are not housing units, but persons. For confidentiality reasons, the GQ data are not provided at the level of an address but only at the person-level. All of the GQ person data are included in the PUMS person file except the food stamp variables which are the only data included on the GQ placeholder records in the housing unit file. For food stamp estimates of persons in GQs, you will need to match the placeholder records to the person file to get the person weights.

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

[1] To identify HU and GQ placeholder records on the PUMS housing file, see the TYPE variable in the PUMS data dictionary: http://www.census.gov/acs/www/Products/PUMS/pumsdict.html.

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 ACS Accuracy of the Data (2006-2008) at http://www.census.gov/acs/www/UseData/Accuracy/Accuracy1.htm.

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 design factors. Replicate weights have been provided with the ACS PUMS files since the 2005 PUMS. Design factors (a type of generalized variance function) is a method used by the Census 2000 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, a known

proportion of which will contain the average value of the estimated characteristic that results over all possible samples.

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=Lower bound = EST - 1.645*SE(EST)
UB=Upper bound = EST + 1.645*SE(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 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 4.2.

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 6.2, 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:

LB=Lower bound = X - 1.645*SE(X)
UB=Upper bound = X + 1.645*SE(X)

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

As mentioned we consider the replicate weight SEs to be more accurate than the design factor SEs. For exceptions, please note the following:

After using replicate weight SEs, some users may notice that occasionally the SE is zero for an estimate. The user may want to know if this is accurate. Except for controlled estimates, all PUMS estimates are based on a sample of the population and should not have a SE of zero. However, if your estimate is a median, the replicate weight method can be used, but don't accept the SE of zero. Often this occurs when the characteristic contains few records, such as a median based on less than five records in a PUMA. The true SE for a median should *never* be zero because medians are not controlled. So if the replicate weight method gives a SE of zero for a median or other estimate that is not controlled, switch to using the design factor method for that estimate. However, if the estimate is a controlled count (or total) such as total male or total female persons living in households in a state, there is no sampling variability in the estimate. It is expected that the replicate weight SE and MOE will be zero for a controlled estimate.

Examples of PUMS estimates with replicate weight standard errors are found at:
http://www.census.gov/acs/www/Products/PUMS/pumscontrols.html.
Users can check national and state level estimates with associated replicate weight standard errors by comparing to values shown in these files.

When programming the estimates and standard errors, note that the full PUMS weight is never zero or negative. However, the eighty replicate weights can be zero or negative. Some statistical software may treat negative weights as zeros. If your software does this, please be aware that this could cause your standard errors to not match precisely with the values shown in these files.

6.2 Generalized Standard Errors

Standard Errors for Totals and Percentages

The design factors provided in Tables 5 through 5.52 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 for most estimates, use the following formulas:

Total Formula: $$SE(\hat{Y}) \doteq DF * \sqrt{\left(\frac{97}{3}\right) * \hat{Y}\left(1 - \frac{\hat{Y}}{N}\right)}$$

Where:

DF = Design Factor
N = Size of Population in the Geographic Area
$\hat{Y}$ = Estimate of Characteristic Total

Percent Formula: $SE(\hat{p}) \doteq DF * \sqrt{\frac{97}{3B} * \hat{p}(100 - \hat{p})}$

Where:

DF = Design Factor

B = Denominator 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 5 through 5.52. Use the table for the United States (Table 5) when estimating characteristics for the United States or geographic areas that cover more than one state. Use the table for a specific state (Tables 5.1-5.52) 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 142 multiplied by the design factor for the type of estimate.

2. **For estimated percentages that are less than 2 or greater than 98.** Use a value of 2 for the estimated percentage in the percent formula.

3. **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:

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

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:

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

If the ratio is a proportion, that is, the numerator is a subset of the denominator, then follow the procedure outlined in the section Standard Errors 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 Standard Errors for Totals and Percentages.

$$SE(50\,percent) = DF * \sqrt{\frac{97}{3B} * 50^2}$$

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

p_lower = 50 – SE(50 percent)
p_upper = 50 + SE(50 percent)

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.

$$SE(\overline{Y}) = DF * \sqrt{\frac{97}{3B} * s^2}$$

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:

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

Where:

w_i is the weight of the ith sample record
y_i is the value of the characteristic for the ith 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 2006-2008 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 1,857,636 from the PUMS data for the state of Virginia. To calculate the standard error, we use the total formula given in the section Standard Errors for Totals and Percentages. In this formula, Y is our estimate of 1,857,636 and N is the total PUMS population for the state of Virginia, which is 7,698,738. The design factor (from Table 5.47) for “Marital Status” is 1.3.

$$SE = 1.3 * \sqrt{\frac{97}{3} * 1{,}857{,}636 * \left(1 - \frac{1{,}857{,}636}{7{,}698{,}738}\right)} = 8{,}775.80$$

To calculate the lower and upper bounds of the 90 percent confidence interval around 1,857,636 using the standard error, simply multiply 8,775.80 by 1.645, then add and subtract the product from 1,857,636. Thus the 90 percent confidence interval for this estimate is [1,857,636 - 1.645(8,775.80] to [1,857,636 + 1.645(8,775.80)] or 1,843,200 to 1,872,072.

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 20.3336 (= 559,872 ÷2,753,428) from the PUMS data. To calculate the standard error, we use the percent formula given in the section Standard Errors for Totals and Percentages. Use the denominator of the percentage, 2,753,428, in the formula. The design factor (from Table 5.19) for "Educational Attainment" is 1.5.

$$SE = 1.5 * \sqrt{\frac{97}{3 * 2{,}753{,}428} * 20.3336 * (100 - 20.3336)} = 0.2069$$

To calculate the lower and upper bounds of the 90 percent confidence interval around 20.3336 percent using the standard error, simply multiply 0.2069 by 1.645, then add and subtract the product from 20.3336. Thus the 90 percent confidence interval for this estimated percentage is [20.3336 - 1.645(0.2069)] to [20.3336 + 1.645(0.2069)] or 19.99 to 20.67.

Example 3 – Calculating the Standard Error of a Median

Table 3 below shows a weighted frequency distribution for adjusted household income in Massachusetts.

Table 3: PUMS Distribution of Adjusted Household Income in Massachusetts

Adjusted Household Income	Frequency	Cumulative Frequency	Cumulative Percent
Less than $10,000	163,580	163,580	6.66%
$10,000 to $14,999	121,571	285,151	11.60%
$15,000 to $19,999	104,089	389,240	15.84%
$20,000 to $24,999	105,170	494,410	20.12%
$25,000 to $29,999	94,146	588,556	23.95%
$30,000 to $34,999	102,968	691,524	28.14%
$35,000 to $39,999	89,783	781,307	31.80%
$40,000 to $44,999	102,009	883,316	35.95%
$45,000 to $49,999	84,962	968,278	39.41%
$50,000 to $59,999	180,351	1,148,629	46.75%
$60,000 to $74,999	246,562	1,395,191	56.78%
$75,000 to $99,999	332,717	1,727,908	70.32%
$100,000 to $124,999	245,596	1,973,504	80.32%
$125,000 to $149,999	153,827	2,127,331	86.58%
$150,000 to $199,999	160,955	2,288,286	93.13%
$200,000 or more	168,878	2,457,164	100%

- Determine the standard error of a 50 percent proportion, using as the denominator the cumulative sum of the weighted frequencies, 2,457,164. For this example, the design factor for household income is 1.5 from Table 5.22.

$$SE(50\,percent) = 1.5 * \sqrt{\frac{97}{3 * 2{,}457{,}164} * 50^2} = 0.27$$

- Calculate p_lower and p_upper.

  p_lower = 50 – SE(50 percent) = 49.73
  p_upper = 50 + SE(50 percent) = 50.27

- Determine the categories that contain p_lower and p_upper. The first category with a cumulative percentage that is greater than 49.73 is $60,000 to $74,999. The first category with a cumulative percentage that is greater than 50.27 is $60,000 to $74,999. Since p_lower and p_upper fall in the same category, follow the instructions given in step 5 of the section Standard Errors for Medians.

- Define A1, A2, C1, and C2: A1 = 60,000, A2 = 75,000, C1 = 46.75 and C2 = 56.78. Calculate the lower bound and upper bound using these values.

$$LowerBound = \left[\frac{49.73 - 46.75}{56.78 - 46.75}\right] * (75{,}000 - 60{,}000) + 60{,}000 = 64{,}456.6$$

$$UpperBound = \left[\frac{50.27 - 46.75}{56.78 - 46.75}\right] * (75{,}000 - 60{,}000) + 60{,}000 = 65{,}264.2$$

- Finally, calculate the standard error of the median:

$$SE\,(median\,) = \frac{1}{2} * (65{,}264.2 - 64{,}456.6) = 403.8$$

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. Table 4 below summarizes the computation of the terms in the formula for s^2. The PUMS data for Alabama has 8,023 records for females age 25 to 34 that have a non-missing value for person income.

Table 4: Computations for Mean Adjusted Person Income of Females Age 25 to 34 in Alabama

Sample Record	y_i	w_i	$w_i\, y_i$	$w_i\, y_i^2$
1	3,905	39	152,281	594,602,084
2	49,893	16	798,282	39,828,363,715
3	32,539	54	1,757,088	57,173,277,308
4	19,523	33	644,265	12,578,121,008
.				
.				
8,023	35,338	25	883,452	31,219,529,787
Total		**299,348**	**6,117,692,813**	**250,369,141,743,549**

Note: Data from 2006-2008 PUMS

The mean adjusted income is $\bar{Y} = \dfrac{6{,}117{,}692{,}813}{299{,}348} = 20{,}436.73$

See the section Standard Errors for Means for the formula for s^2, computed as follows:

$$s^2 = \frac{250{,}369{,}141{,}743{,}549 - (6{,}117{,}692{,}813)^2 / 299{,}348}{299{,}348 - 1} = 418{,}723{,}204$$

The design factor for person income in Alabama, from Table 5.1, is 1.6. The standard error of the mean can now be calculated:

$$SE(\bar{Y}) = 1.6 * \sqrt{\frac{97}{3 * 299{,}348} * 418{,}723{,}204} = 340$$

7. WORKING WITH DOLLAR AMOUNTS

Dollar variables must be adjusted into a common year before using them to form estimates. Generally, the older years are adjusted to the most recent year covered by the analysis. Data in the 2006-2008 PUMS were collected over three years, so the adjustment will inflate 2006 and 2007 dollars into 2008 values. The PUMS data dictionary for 2006-2008 describes two adjustment factors on the 3-year file that put dollar values into 2008 dollars:

ADJINC – inflation adjustment factor for income variables, such as household income, self-employment income, retirement income and wages.

ADJHSG – inflation adjustment factor for most housing dollar variables, such as utility costs, rent, food stamps, and condominium fees.

See http://www.census.gov/acs/www/Products/PUMS/pumsdict.html for details.

For example, multiply the household income variable by ADJINC to adjust household income into 2008 dollars. All records need this adjustment since income variables contain estimates of income from the twelve months prior to the interview date.

For example, multiply ADJHSG times the monthly rent to adjust rent into 2008 dollars. All records get this adjustment, although the records interviewed in 2008 have a factor of 1.

Note that the values of ADJINC and ADJHSG are the same for all sample cases from the same year. This is for disclosure avoidance reasons, that is, so that the month of interview cannot be identified by the adjustment factor.

When comparing dollar estimates from the 2006-2008 PUMS file to estimates from other years, an additional adjustment is necessary to convert the amounts into dollars from a common year (after applying the adjustment factor described in the previous paragraphs). 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_2008.pdf. [For example, to express year 2000 dollars in terms of 2008 dollars, multiply the 2000 dollars by 316.2/252.9 = 1.2503].

8. REFERENCES

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[3]. PUMS Accuracy of the Data for 1-Year PUMS files:
http://www.census.gov/acs/www/Products/PUMS/pumsaccuracy_archived.html

[4]. PUMS Data Dictionary:
http://www.census.gov/acs/www/Products/PUMS/pumsdict.html

[5]. Updated CPI-U-RS, All Items and All items less food and energy, 1978-2008
http://www.bls.gov/cpi/cpiurs1978_2008.pdf

Table 5. 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	1.9
Population by Tenure	3.3
Age	1.1
Sex	1.1
Population of Two or More Races	2.2
White Alone	1.9
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	2.0
Hispanic or Latino	2.2
Marital Status	1.6
Relationship	1.7
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.4
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	3.0
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	1.4
Employment/Work Status	1.1
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	1.7
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	1.6
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	2.6
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	2.1
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	1.5
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	1.7
Meals Included in Rent	1.7
Inclusion of Utilities in Rent	1.7
Value	1.5
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.7

Table 5.1. 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	2.9
Age	1.1
Sex	1.5
Population of Two or More Races	1.9
White Alone	1.2
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	1.5
Hispanic or Latino	2.1
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	1.5
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	1.4
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	1.5
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	1.3
Race of Householder	1.3
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.2
Poverty Status (Persons)	1.5
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	2.0
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.5
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	1.5
Plumbing Facilities and Kitchen Facilities	1.9
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.2. 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	1.8
Population by Tenure	2.5
Age	1.0
Sex	1.5
Population of Two or More Races	1.9
White Alone	1.2
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	1.4
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	1.2
Language Spoken at Home and Ability to Speak English	1.4
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	1.3
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.4
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	1.5
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	1.4
Age of Own Children by Living Arrangements and Employment Status of Parents	1.6
Age of Householder	1.3
Race of Householder	1.4
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.4
Type of Household Income	1.0
Poverty Status (Persons)	1.2
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	1.7
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	1.5
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 5.3. 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	1.8
Population by Tenure	3.1
Age	1.2
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.9
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	1.9
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	1.5
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	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
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	1.7
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	1.6
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.6
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.6
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.5
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	2.1
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.7
Meals Included in Rent	1.7
Inclusion of Utilities in Rent	1.7
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.4. 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 by Tenure	2.7
Age	1.1
Sex	1.5
Population of Two or More Races	1.9
White Alone	1.1
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	1.8
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	1.5
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	1.2
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.1
Period of Military Service	1.4
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	1.4
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	1.6
Age of Householder	1.4
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.1
Poverty Status (Persons)	1.4
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	2.1
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
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	1.5
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	1.6
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 5.5. 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	1.8
Population by Tenure	3.1
Age	1.1
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.9
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	1.9
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	1.5
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	1.4
Educational Attainment	1.5
Armed Forces Status and Veteran Status	0.7
Period of Military Service	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	1.5
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	1.6
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.6
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.6
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.7
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	2.2
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.6. 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	1.8
Population by Tenure	2.9
Age	1.1
Sex	1.5
Population of Two or More Races	2.0
White Alone	1.9
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	1.9
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	1.6
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	1.4
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	1.5
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	1.6
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.1
Unmarried Partner Households	1.6
Tenure	1.5
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.5
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	2.3
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.7. Design Factors for Calculating PUMS Standard Errors – Connecticut

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.5
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	2.5
Age	1.2
Sex	1.5
Population of Two or More Races	2.1
White Alone	1.9
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	1.9
Hispanic or Latino	2.2
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	1.5
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	1.3
Period of Military Service	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	1.5
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	1.3
Age of Own Children by Living Arrangements and Employment Status of Parents	1.6
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	1.1
Poverty Status (Persons)	1.4
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	2.3
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	1.9
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	1.4
Vehicles Available	1.5
Plumbing Facilities and Kitchen Facilities	2.1
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.7
Meals Included in Rent	1.4
Inclusion of Utilities in Rent	1.5
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.3
Selected Physical and Financial Conditions	1.5

Table 5.8. 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	1.1
Sex	1.5
Population of Two or More Races	1.6
White Alone	1.7
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	1.8
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	1.2
Language Spoken at Home and Ability to Speak English	1.4
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	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	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	1.5
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	1.3
Race of Householder	1.3
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.4
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	1.8
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	1.4
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	1.6
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	1.4

Table 5.9. 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	1.5
Population of Two or More Races	2.2
White Alone	1.3
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	1.9
Hispanic or Latino	2.2
Marital Status	1.3
Relationship	1.4
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	1.5
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	1.4
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	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	1.4
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	2.7
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.5
HOUSING	
Households/Occupied Housing Units	2.3
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	1.5
House Heating Fuel	1.5
Telephone Service Available	1.5
Vehicles Available	1.5
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	1.5
Inclusion of Utilities in Rent	1.5
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.3
Selected Physical and Financial Conditions	1.5

Table 5.10. 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	1.8
Population by Tenure	3.1
Age	1.1
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.9
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	1.9
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	1.5
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	1.3
Period of Military Service	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	1.5
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	1.6
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.6
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
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	1.5
House Heating Fuel	1.5
Telephone Service Available	1.6
Vehicles Available	1.5
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.11. 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	1.8
Population by Tenure	3.1
Age	1.1
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.6
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	1.9
Hispanic or Latino	2.2
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	1.4
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	3.1
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	1.4
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	1.5
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	1.6
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.6
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
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	1.5
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.12. 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	1.8
Population by Tenure	3.0
Age	1.1
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.3
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	1.9
Hispanic or Latino	2.2
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	1.5
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	1.4
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.3
Period of Military Service	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	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	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.5
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	2.0
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	1.5
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	1.5
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.5

Table 5.13. 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	1.8
Population by Tenure	2.6
Age	1.0
Sex	1.5
Population of Two or More Races	1.8
White Alone	1.9
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	1.9
Hispanic or Latino	1.5
Marital Status	1.3
Relationship	1.4
Ancestry	2.0
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	1.2
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	1.2
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.4
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.5
Travel Time to Work	1.6
Means of Transportation to Work	1.5
Place of Work	1.3
Time Leaving Home to go to Work	1.6
Private Vehicle Occupancy	1.5
Work Experience, Hours Worked per Week, and Weeks Worked	1.2
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	1.3
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.0
Poverty Status (Persons)	1.2
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	1.9
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	2.0
Unmarried Partner Households	1.6
Tenure	1.5
Vacant	1.6
Rooms and Bedrooms	1.5
Occupants per Room	1.4
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	1.5
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	1.5

Table 5.14. 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	1.8
Population by Tenure	3.1
Age	1.2
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.9
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	1.9
Hispanic or Latino	2.2
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	2.1
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	1.3
Period of Military Service	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	1.5
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	1.4
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	1.1
Poverty Status (Persons)	1.6
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.6
Vacant	1.9
Rooms and Bedrooms	1.5
Occupants per Room	1.8
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.5
Telephone Service Available	1.6
Vehicles Available	1.5
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.15. 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	1.8
Population by Tenure	2.7
Age	1.1
Sex	1.5
Population of Two or More Races	2.0
White Alone	1.9
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	1.9
Hispanic or Latino	1.8
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	1.3
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	1.2
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	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	1.4
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.5
Work Experience, Hours Worked per Week, and Weeks Worked	1.2
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	1.6
Age of Householder	1.3
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.0
Poverty Status (Persons)	1.3
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	2.1
Family Type, Household Type, and Household Size	1.5
Households by Presence of Nonrelatives	2.1
Unmarried Partner Households	1.6
Tenure	1.5
Vacant	1.9
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	2.0
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.5

Table 5.16. 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	1.8
Population by Tenure	2.2
Age	1.1
Sex	1.5
Population of Two or More Races	1.8
White Alone	1.3
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	1.5
Hispanic or Latino	1.2
Marital Status	1.1
Relationship	1.2
Ancestry	1.8
Grandparents Responsible for Grandchildren	1.6
Number of Women Who Had a Birth in the Past 12 Months	1.0
Language Spoken at Home and Ability to Speak English	1.5
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	1.0
Educational Attainment	1.2
Armed Forces Status and Veteran Status	1.0
Period of Military Service	1.1
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.3
Travel Time to Work	1.5
Means of Transportation to Work	1.4
Place of Work	1.2
Time Leaving Home to go to Work	1.4
Private Vehicle Occupancy	1.4
Work Experience, Hours Worked per Week, and Weeks Worked	1.0
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	1.3
Age of Own Children by Living Arrangements and Employment Status of Parents	1.3
Age of Householder	1.1
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.3
Person Earnings/Income	1.4
Type of Household Income	1.1
Poverty Status (Persons)	1.0
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	2.2
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	1.7
Rooms and Bedrooms	1.3
Occupants per Room	1.8
Units in Structure	1.4
Year Structure Built and Year Householder Moved Into Unit	1.3
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 5.17. 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	1.8
Population by Tenure	2.7
Age	1.2
Sex	1.5
Population of Two or More Races	1.8
White Alone	1.9
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	1.9
Hispanic or Latino	2.1
Marital Status	1.2
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	1.4
Linguistic Isolation	1.4
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	1.2
Educational Attainment	1.3
Armed Forces Status and Veteran Status	1.2
Period of Military Service	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	1.5
Place of Work	1.4
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.5
Work Experience, Hours Worked per Week, and Weeks Worked	1.2
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	1.5
Age of Householder	1.3
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.5
Type of Household Income	1.0
Poverty Status (Persons)	1.3
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	2.3
Family Type, Household Type, and Household Size	1.5
Households by Presence of Nonrelatives	2.1
Unmarried Partner Households	1.5
Tenure	1.5
Vacant	1.9
Rooms and Bedrooms	1.5
Occupants per Room	1.4
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	2.0
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 5.18. 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	1.8
Population by Tenure	2.9
Age	1.1
Sex	1.5
Population of Two or More Races	1.9
White Alone	1.4
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	1.9
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	1.2
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.4
Place of Birth, Year of Entry, and Citizenship Status	2.0
Residence 1 Year Ago	2.8
School Enrollment, Level of School, and Type of School	1.2
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.4
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	1.5
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	1.3
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.2
Poverty Status (Persons)	1.5
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	2.0
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
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	1.5
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	1.6
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 5.19 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	3.1
Age	1.1
Sex	1.0
Population of Two or More Races	1.9
White Alone	1.0
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	2.0
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	1.4
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	2.9
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	1.4
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	1.5
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	1.4
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.6
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	2.1
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
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	1.5
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.20. Design Factors for Calculating PUMS Standard Errors – Maine

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.6
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	2.5
Age	1.0
Sex	1.5
Population of Two or More Races	1.3
White Alone	1.9
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	1.2
Hispanic or Latino	1.5
Marital Status	1.2
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	1.1
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	1.1
Educational Attainment	1.3
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.3
Employment/Work Status	1.0
Industry, Occupation, and Class of Worker	1.4
Travel Time to Work	1.5
Means of Transportation to Work	1.5
Place of Work	1.5
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.4
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	1.4
Age of Householder	1.2
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.4
Type of Household Income	1.1
Poverty Status (Persons)	1.1
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	1.5
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	1.8
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.3
Telephone Service Available	1.4
Vehicles Available	1.4
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	1.4
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 5.21. 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	1.8
Population by Tenure	3.1
Age	1.1
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.9
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	1.9
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	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	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	1.4
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	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	1.6
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.1
Unmarried Partner Households	1.6
Tenure	1.6
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.5
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	2.2
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	1.6
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.22. 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	1.8
Population by Tenure	2.9
Age	1.1
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.9
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	1.9
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	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	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	1.3
Period of Military Service	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	1.5
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	1.4
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	1.0
Poverty Status (Persons)	1.6
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	2.1
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.5
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	1.5
House Heating Fuel	1.5
Telephone Service Available	1.6
Vehicles Available	1.5
Plumbing Facilities and Kitchen Facilities	2.1
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.5

Table 5.23. Design Factors for Calculating PUMS Standard Errors – Michigan

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.5
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	2.7
Age	1.2
Sex	1.5
Population of Two or More Races	1.9
White Alone	1.9
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	1.9
Hispanic or Latino	1.8
Marital Status	1.2
Relationship	1.4
Ancestry	1.8
Grandparents Responsible for Grandchildren	1.7
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	1.4
Place of Birth, Year of Entry, and Citizenship Status	1.9
Residence 1 Year Ago	2.7
School Enrollment, Level of School, and Type of School	1.2
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.2
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	1.4
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	1.3

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	1.6
Age of Householder	1.2
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.5
Type of Household Income	1.0
Poverty Status (Persons)	1.5
Poverty Status (Families/Households)	1.4
Ratio of Income to Poverty Level	2.5
Receipt of Food Stamps and Participation in Free or Reduced Price Meals	1.6
HOUSING	
Households/Occupied Housing Units	1.8
Family Type, Household Type, and Household Size	1.5
Households by Presence of Nonrelatives	2.1
Unmarried Partner Households	1.5
Tenure	1.4
Vacant	1.7
Rooms and Bedrooms	1.5
Occupants per Room	1.8
Units in Structure	1.4
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.4
Telephone Service Available	1.4
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	1.5
Inclusion of Utilities in Rent	1.5
Value	1.3
Mortgage Status and Selected Monthly Owner Costs	1.3
Selected Physical and Financial Conditions	1.4

Table 5.24. Design Factors for Calculating PUMS Standard Errors – Minnesota

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.4
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	2.4
Age	1.1
Sex	1.5
Population of Two or More Races	1.8
White Alone	1.9
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	1.9
Hispanic or Latino	2.2
Marital Status	1.1
Relationship	1.4
Ancestry	1.8
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	1.4
Place of Birth, Year of Entry, and Citizenship Status	1.9
Residence 1 Year Ago	2.5
School Enrollment, Level of School, and Type of School	1.1
Educational Attainment	1.2
Armed Forces Status and Veteran Status	1.1
Period of Military Service	1.1
Employment/Work Status	1.0
Industry, Occupation, and Class of Worker	1.3
Travel Time to Work	1.4
Means of Transportation to Work	1.4
Place of Work	1.3
Time Leaving Home to go to Work	1.4
Private Vehicle Occupancy	1.4
Work Experience, Hours Worked per Week, and Weeks Worked	1.2
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	1.2
Age of Own Children by Living Arrangements and Employment Status of Parents	1.4
Age of Householder	1.1
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.3
Person Earnings/Income	1.3
Type of Household Income	1.1
Poverty Status (Persons)	1.2
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	1.7
Family Type, Household Type, and Household Size	1.4
Households by Presence of Nonrelatives	1.8
Unmarried Partner Households	1.5
Tenure	1.4
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	1.3
House Heating Fuel	1.2
Telephone Service Available	1.3
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	1.4
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 5.25. 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	1.4
Population by Tenure	2.9
Age	1.1
Sex	1.1
Population of Two or More Races	2.2
White Alone	1.0
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	1.8
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	1.2
Linguistic Isolation	1.5
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	1.4
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	1.5
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	1.2
Household, Family, or Nonfamily Income	1.6
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	2.2
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
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	1.5
Plumbing Facilities and Kitchen Facilities	2.1
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	1.6
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.26. Design Factors for Calculating PUMS Standard Errors – Missouri

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.5
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	3.0
Age	1.1
Sex	1.5
Population of Two or More Races	1.9
White Alone	1.9
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	1.9
Hispanic or Latino	1.8
Marital Status	1.4
Relationship	1.4
Ancestry	2.0
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.3
Language Spoken at Home and Ability to Speak English	1.2
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.0
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	1.3
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	1.5
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	1.4
Age of Own Children by Living Arrangements and Employment Status of Parents	1.6
Age of Householder	1.4
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.2
Poverty Status (Persons)	1.5
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	2.0
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	1.9
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	1.6
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	1.6
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 5.27. Design Factors for Calculating PUMS Standard Errors – Montana

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.5
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	2.6
Age	1.0
Sex	1.5
Population of Two or More Races	1.8
White Alone	1.9
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	1.7
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	1.3
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	1.1
Educational Attainment	1.3
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.3
Employment/Work Status	1.0
Industry, Occupation, and Class of Worker	1.4
Travel Time to Work	1.5
Means of Transportation to Work	1.4
Place of Work	1.2
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.4
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	1.3
Age of Own Children by Living Arrangements and Employment Status of Parents	1.4
Age of Householder	1.2
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.5
Type of Household Income	1.0
Poverty Status (Persons)	1.0
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	1.6
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 5.28. Design Factors for Calculating PUMS Standard Errors – Nebraska

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.4
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	2.3
Age	1.0
Sex	1.5
Population of Two or More Races	1.8
White Alone	1.9
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	1.9
Hispanic or Latino	2.2
Marital Status	1.1
Relationship	1.2
Ancestry	1.8
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	1.2
Linguistic Isolation	1.3
Place of Birth, Year of Entry, and Citizenship Status	1.7
Residence 1 Year Ago	2.6
School Enrollment, Level of School, and Type of School	1.2
Educational Attainment	1.3
Armed Forces Status and Veteran Status	1.1
Period of Military Service	1.2
Employment/Work Status	1.0
Industry, Occupation, and Class of Worker	1.3
Travel Time to Work	1.4
Means of Transportation to Work	1.4
Place of Work	1.3
Time Leaving Home to go to Work	1.4
Private Vehicle Occupancy	1.4
Work Experience, Hours Worked per Week, and Weeks Worked	1.1
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	1.3
Age of Own Children by Living Arrangements and Employment Status of Parents	1.4
Age of Householder	1.2
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.3
Person Earnings/Income	1.4
Type of Household Income	1.1
Poverty Status (Persons)	1.3
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	2.0
Family Type, Household Type, and Household Size	1.4
Households by Presence of Nonrelatives	2.0
Unmarried Partner Households	1.4
Tenure	1.3
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	1.4
Value	1.2
Mortgage Status and Selected Monthly Owner Costs	1.2
Selected Physical and Financial Conditions	1.4

Table 5.29. 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	1.8
Population by Tenure	3.1
Age	1.2
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.9
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	1.9
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	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	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	1.4
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	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	1.5
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.6
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.6
Vacant	1.9
Rooms and Bedrooms	1.6
Occupants per Room	1.5
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	2.3
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.30. Design Factors for Calculating PUMS Standard Errors – New Hampshire

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.5
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	2.6
Age	1.1
Sex	1.4
Population of Two or More Races	1.6
White Alone	1.9
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	1.9
Hispanic or Latino	2.2
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	1.2
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	1.2
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.4
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	1.5
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	1.3
Age of Own Children by Living Arrangements and Employment Status of Parents	1.6
Age of Householder	1.3
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.1
Poverty Status (Persons)	1.3
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	1.5
Family Type, Household Type, and Household Size	1.5
Households by Presence of Nonrelatives	1.9
Unmarried Partner Households	1.6
Tenure	1.5
Vacant	1.4
Rooms and Bedrooms	1.5
Occupants per Room	1.4
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	1.7
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	1.4

Table 5.31. 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	1.8
Population by Tenure	2.9
Age	1.2
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.9
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	1.9
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	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	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	0.7
Period of Military Service	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	1.5
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	1.4
Age of Own Children by Living Arrangements and Employment Status of Parents	1.7
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	1.0
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.5
Vacant	1.7
Rooms and Bedrooms	1.5
Occupants per Room	1.8
Units in Structure	1.5
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.5
Telephone Service Available	1.5
Vehicles Available	1.5
Plumbing Facilities and Kitchen Facilities	2.1
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.5

Table 5.32. 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	1.8
Population by Tenure	2.9
Age	1.1
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.9
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	1.9
Hispanic or Latino	2.2
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	1.5
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	1.3
Period of Military Service	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	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	1.5
Household, Family, or Nonfamily Income	1.6
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	1.6
HOUSING	
Households/Occupied Housing Units	1.9
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.4
Vacant	1.8
Rooms and Bedrooms	1.6
Occupants per Room	1.5
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	1.5
Plumbing Facilities and Kitchen Facilities	1.8
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.33. 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	1.8
Population by Tenure	3.1
Age	1.1
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.9
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	1.9
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	1.5
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	0.7
Period of Military Service	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	1.5
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	1.6
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.6
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.6
Vacant	1.6
Rooms and Bedrooms	1.6
Occupants per Room	1.8
Units in Structure	1.5
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	2.2
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.34. 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	1.8
Population by Tenure	3.0
Age	1.1
Sex	1.1
Population of Two or More Races	2.2
White Alone	1.3
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	1.9
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	1.2
Language Spoken at Home and Ability to Speak English	1.3
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	1.3
Period of Military Service	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	1.5
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	1.5
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.5
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	1.6
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	1.7
Vehicles Available	1.5
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.35. Design Factors for Calculating PUMS Standard Errors – North Dakota

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.3
Population in Households by Race/Hispanic Origin of Householder	1.6
Population by Tenure	1.9
Age	1.2
Sex	1.5
Population of Two or More Races	1.6
White Alone	1.9
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	1.0
Hispanic or Latino	2.2
Marital Status	1.1
Relationship	1.2
Ancestry	1.6
Grandparents Responsible for Grandchildren	1.4
Number of Women Who Had a Birth in the Past 12 Months	1.0
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	1.1
Educational Attainment	1.2
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.2
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	1.5
Time Leaving Home to go to Work	1.3
Private Vehicle Occupancy	1.2
Work Experience, Hours Worked per Week, and Weeks Worked	1.0
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	1.2
Age of Own Children by Living Arrangements and Employment Status of Parents	1.2
Age of Householder	1.0
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.2
Person Earnings/Income	1.3
Type of Household Income	1.0
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	1.6
Family Type, Household Type, and Household Size	1.3
Households by Presence of Nonrelatives	1.5
Unmarried Partner Households	1.4
Tenure	1.2
Vacant	1.3
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	1.2
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	1.3
Inclusion of Utilities in Rent	1.4
Value	1.2
Mortgage Status and Selected Monthly Owner Costs	1.1
Selected Physical and Financial Conditions	1.3

Table 5.36. 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	1.8
Population by Tenure	2.8
Age	1.1
Sex	1.5
Population of Two or More Races	1.8
White Alone	1.9
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	1.9
Hispanic or Latino	1.9
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	1.4
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	1.4
Armed Forces Status and Veteran Status	1.3
Period of Military Service	1.4
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	1.5
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	1.4
Age of Own Children by Living Arrangements and Employment Status of Parents	1.7
Age of Householder	1.3
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.1
Poverty Status (Persons)	1.5
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	2.3
Family Type, Household Type, and Household Size	1.5
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.5
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	1.6
Telephone Service Available	1.5
Vehicles Available	1.5
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	1.6
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.5

Table 5.37. Design Factors for Calculating PUMS Standard Errors – Oklahoma

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.5
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	2.5
Age	1.1
Sex	1.5
Population of Two or More Races	1.9
White Alone	1.3
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	1.6
Hispanic or Latino	1.5
Marital Status	1.3
Relationship	1.4
Ancestry	2.0
Grandparents Responsible for Grandchildren	1.7
Number of Women Who Had a Birth in the Past 12 Months	1.2
Language Spoken at Home and Ability to Speak English	1.3
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	1.2
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.1
Period of Military Service	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	1.4
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	1.6
Age of Householder	1.3
Race of Householder	1.4
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.0
Poverty Status (Persons)	1.4
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	1.9
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	1.6
Rooms and Bedrooms	1.5
Occupants per Room	1.4
Units in Structure	1.6
Year Structure Built and Year Householder Moved Into Unit	1.4
House Heating Fuel	1.4
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	1.7
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 5.38. 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	1.8
Population by Tenure	3.0
Age	1.1
Sex	1.5
Population of Two or More Races	2.0
White Alone	1.9
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	1.9
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	1.5
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	1.4
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	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	1.4
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	1.1
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	1.7
HOUSING	
Households/Occupied Housing Units	2.0
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	1.9
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	1.5
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	1.6
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 5.39. Design Factors for Calculating PUMS Standard Errors – Pennsylvania

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	1.5
Population of Two or More Races	1.9
White Alone	1.9
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	1.9
Hispanic or Latino	2.2
Marital Status	1.3
Relationship	1.4
Ancestry	1.9
Grandparents Responsible for Grandchildren	1.7
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	2.8
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.3
Period of Military Service	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	1.5
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	1.4
Age of Own Children by Living Arrangements and Employment Status of Parents	1.7
Age of Householder	1.3
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.5
Type of Household Income	1.1
Poverty Status (Persons)	1.5
Poverty Status (Families/Households)	1.4
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	2.3
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	1.7
Rooms and Bedrooms	1.5
Occupants per Room	1.8
Units in Structure	1.4
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	2.2
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	1.4

Table 5.40. Design Factors for Calculating PUMS Standard Errors – Rhode Island

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.6
Population in Households by Race/Hispanic Origin of Householder	1.9
Population by Tenure	2.6
Age	1.1
Sex	1.1
Population of Two or More Races	2.1
White Alone	1.9
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	1.9
Hispanic or Latino	2.2
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	1.5
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	1.4
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	1.5
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	1.4
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	1.0
Poverty Status (Persons)	1.2
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	1.9
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.0
Unmarried Partner Households	1.6
Tenure	1.4
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	1.4
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 5.41. 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	2.7
Age	1.1
Sex	1.1
Population of Two or More Races	2.2
White Alone	1.0
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	1.9
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	1.2
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	1.4
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	1.5
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	1.4
Household, Family, or Nonfamily Income	1.6
Person Earnings/Income	1.6
Type of Household Income	1.2
Poverty Status (Persons)	1.5
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	1.5
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	1.5
Vehicles Available	1.5
Plumbing Facilities and Kitchen Facilities	1.9
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.7
Meals Included in Rent	1.6
Inclusion of Utilities in Rent	1.6
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.42. Design Factors for Calculating PUMS Standard Errors – South Dakota

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.5
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	2.1
Age	1.0
Sex	1.5
Population of Two or More Races	1.9
White Alone	1.9
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	1.2
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	1.1
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	2.3
School Enrollment, Level of School, and Type of School	1.1
Educational Attainment	1.3
Armed Forces Status and Veteran Status	1.0
Period of Military Service	1.2
Employment/Work Status	1.0
Industry, Occupation, and Class of Worker	1.4
Travel Time to Work	1.5
Means of Transportation to Work	1.5
Place of Work	1.5
Time Leaving Home to go to Work	1.4
Private Vehicle Occupancy	1.3
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	1.3
Age of Own Children by Living Arrangements and Employment Status of Parents	1.4
Age of Householder	1.2
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.3
Person Earnings/Income	1.3
Type of Household Income	1.0
Poverty Status (Persons)	1.2
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	1.9
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	1.4
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	1.6
Meals Included in Rent	1.3
Inclusion of Utilities in Rent	1.2
Value	1.2
Mortgage Status and Selected Monthly Owner Costs	1.2
Selected Physical and Financial Conditions	1.3

Table 5.43. 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	1.8
Population by Tenure	3.0
Age	1.1
Sex	1.1
Population of Two or More Races	1.9
White Alone	1.9
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	1.9
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	1.4
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	1.2
Period of Military Service	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	1.5
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	1.6
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.5
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
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	1.5
Plumbing Facilities and Kitchen Facilities	2.1
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	1.6
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.44. 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	1.8
Population by Tenure	3.1
Age	1.2
Sex	1.6
Population of Two or More Races	2.1
White Alone	1.9
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	1.9
Hispanic or Latino	2.2
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	1.5
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
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	1.7
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	1.1
Poverty Status (Persons)	1.6
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
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	1.6
House Heating Fuel	1.6
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	1.8
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	1.7

Table 5.45. 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	1.8
Population by Tenure	2.9
Age	1.2
Sex	1.6
Population of Two or More Races	1.9
White Alone	1.9
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	1.9
Hispanic or Latino	2.2
Marital Status	1.3
Relationship	1.4
Ancestry	2.0
Grandparents Responsible for Grandchildren	1.7
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	1.4
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	1.3
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	1.5
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	1.3
Age of Own Children by Living Arrangements and Employment Status of Parents	1.8
Age of Householder	1.3
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.4
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	1.8
Family Type, Household Type, and Household Size	1.6
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
Tenure	1.5
Vacant	1.7
Rooms and Bedrooms	1.5
Occupants per Room	1.6
Units in Structure	1.6
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	1.8
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 5.46. Design Factors for Calculating PUMS Standard Errors – Vermont

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.4
Population in Households by Race/Hispanic Origin of Householder	1.5
Population by Tenure	2.2
Age	1.1
Sex	1.6
Population of Two or More Races	1.1
White Alone	1.9
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	1.1
Hispanic or Latino	1.2
Marital Status	1.0
Relationship	1.2
Ancestry	1.6
Grandparents Responsible for Grandchildren	1.7
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	1.3
Place of Birth, Year of Entry, and Citizenship Status	1.4
Residence 1 Year Ago	1.9
School Enrollment, Level of School, and Type of School	1.0
Educational Attainment	1.2
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.1
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.2
Travel Time to Work	1.4
Means of Transportation to Work	1.4
Place of Work	1.1
Time Leaving Home to go to Work	1.3
Private Vehicle Occupancy	1.3
Work Experience, Hours Worked per Week, and Weeks Worked	1.0
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	1.2
Age of Own Children by Living Arrangements and Employment Status of Parents	1.2
Age of Householder	1.1
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.3
Person Earnings/Income	1.3
Type of Household Income	1.1
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	1.2
Family Type, Household Type, and Household Size	1.3
Households by Presence of Nonrelatives	1.5
Unmarried Partner Households	1.3
Tenure	1.1
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	1.2
Inclusion of Utilities in Rent	1.3
Value	1.2
Mortgage Status and Selected Monthly Owner Costs	1.2
Selected Physical and Financial Conditions	1.3

Table 5.47. 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	1.8
Population by Tenure	2.8
Age	1.1
Sex	1.1
Population of Two or More Races	2.1
White Alone	1.2
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	1.9
Hispanic or Latino	2.2
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	1.3
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
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	1.7
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	1.4
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.6
Type of Household Income	1.1
Poverty Status (Persons)	1.3
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	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
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	1.5
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	1.4
Mortgage Status and Selected Monthly Owner Costs	1.5
Selected Physical and Financial Conditions	1.6

Table 5.48. 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	1.8
Population by Tenure	2.9
Age	1.2
Sex	1.5
Population of Two or More Races	2.0
White Alone	1.9
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	1.9
Hispanic or Latino	2.2
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	1.5
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
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	1.7
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	1.1
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	1.6
HOUSING	
Households/Occupied Housing Units	2.3
Family Type, Household Type, and Household Size	1.7
Households by Presence of Nonrelatives	2.2
Unmarried Partner Households	1.6
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	1.5
House Heating Fuel	1.6
Telephone Service Available	1.7
Vehicles Available	1.5
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	1.5
Inclusion of Utilities in Rent	1.7
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.7

Table 5.49. 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	1.8
Population by Tenure	2.6
Age	1.0
Sex	1.6
Population of Two or More Races	1.6
White Alone	1.6
Black or African American Alone	1.0
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	1.4
Marital Status	1.2
Relationship	1.3
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	1.5
Place of Birth, Year of Entry, and Citizenship Status	1.9
Residence 1 Year Ago	2.3
School Enrollment, Level of School, and Type of School	1.2
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	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	1.5
Place of Work	1.4
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	1.5
Household, Family, or Nonfamily Income	1.5
Person Earnings/Income	1.5
Type of Household Income	1.1
Poverty Status (Persons)	1.2
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	1.5
Year Structure Built and Year Householder Moved Into Unit	1.5
House Heating Fuel	1.5
Telephone Service Available	1.5
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	1.5
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.4
Selected Physical and Financial Conditions	1.6

Table 5.50. Design Factors for Calculating PUMS Standard Errors – Wisconsin

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.5
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	2.3
Age	1.0
Sex	1.6
Population of Two or More Races	1.9
White Alone	1.5
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	2.0
Hispanic or Latino	2.1
Marital Status	1.2
Relationship	1.2
Ancestry	1.7
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	1.2
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	1.1
Educational Attainment	1.2
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.2
Employment/Work Status	1.0
Industry, Occupation, and Class of Worker	1.3
Travel Time to Work	1.4
Means of Transportation to Work	1.4
Place of Work	1.3
Time Leaving Home to go to Work	1.4
Private Vehicle Occupancy	1.4
Work Experience, Hours Worked per Week, and Weeks Worked	1.1
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	1.3
Age of Own Children by Living Arrangements and Employment Status of Parents	1.4
Age of Householder	1.1
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.3
Person Earnings/Income	1.4
Type of Household Income	1.0
Poverty Status (Persons)	1.1
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	1.8
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	1.3
Occupants per Room	1.8
Units in Structure	1.4
Year Structure Built and Year Householder Moved Into Unit	1.3
House Heating Fuel	1.2
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	1.4
Value	1.2
Mortgage Status and Selected Monthly Owner Costs	1.2
Selected Physical and Financial Conditions	1.4

Table 5.51. 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	1.8
Population by Tenure	2.4
Age	1.0
Sex	1.6
Population of Two or More Races	1.7
White Alone	1.2
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	1.6
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	1.4
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	1.1
Educational Attainment	1.3
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.3
Employment/Work Status	1.0
Industry, Occupation, and Class of Worker	1.4
Travel Time to Work	1.5
Means of Transportation to Work	1.5
Place of Work	1.2
Time Leaving Home to go to Work	1.5
Private Vehicle Occupancy	1.4
Work Experience, Hours Worked per Week, and Weeks Worked	1.1
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	1.5
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.5
Type of Household Income	1.0
Poverty Status (Persons)	1.0
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	1.9
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	1.4
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 5.52. Design Factors for Calculating PUMS Standard Errors – Puerto Rico

Characteristics	Design Factor
POPULATION	
Families and Nonfamilies	1.6
Population in Households by Race/Hispanic Origin of Householder	1.8
Population by Tenure	2.7
Age	1.1
Sex	1.5
Population of Two or More Races	2.2
White Alone	1.9
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	1.9
Hispanic or Latino	2.0
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	2.0
Residence 1 Year Ago	2.6
School Enrollment, Level of School, and Type of School	1.1
Educational Attainment	1.4
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.4
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	1.5
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	1.3

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	1.7
Age of Householder	1.2
Race of Householder	1.5
Household, Family, or Nonfamily Income	1.4
Person Earnings/Income	1.5
Type of Household Income	1.0
Poverty Status (Persons)	1.7
Poverty Status (Families/Households)	1.4
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	1.7
Family Type, Household Type, and Household Size	1.4
Households by Presence of Nonrelatives	2.0
Unmarried Partner Households	1.5
Tenure	1.4
Vacant	1.4
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	1.4
Telephone Service Available	1.4
Vehicles Available	1.4
Plumbing Facilities and Kitchen Facilities	1.6
Gross Rent, Gross Rent as a Percentage Of Household Income, and Contract Rent	1.4
Meals Included in Rent	1.4
Inclusion of Utilities in Rent	1.4
Value	1.4
Mortgage Status and Selected Monthly Owner Costs	1.3
Selected Physical and Financial Conditions	1.4