

# **2005-2007 PUMS Accuracy of the Data**

## **1. INTRODUCTION**

This 3-year public use microdata sample (PUMS) for 2005-2007 is a subset of the 2005-2007 American Community Survey (ACS) and Puerto Rico Community Survey (PRCS) samples. It contains the same sample as the three 1-year PUMS for 2005, 2006 and 2007. Unless otherwise specified, the term “ACS” in this document will refer to both the ACS and PRCS. This 2005-2007 PUMS is the first multiyear file published by the ACS. It contains three years of data for housing units and the population from households. However, because group quarters (GQs) were not included in the 2005 American Community Survey, this file includes two years of data for 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 (2005-2007). The ACS sample was selected from all counties across the nation, and all municipios in Puerto Rico. The 2005-2007 PUMS data contain 3,830,606 housing unit records and 8,783,474 person records from households and 162,830 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 2005-2007 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 2005-2007 ACS PUMS files, they were combined to form a single pseudo PUMA<sup>1</sup>. 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.

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<sup>1</sup> Note that the 2005 1-year PUMS file still has the original PUMA codes for New Orleans, but the PUMA codes on this 2005-2007 file are consistent with the PUMA codes in the 1-year PUMS files of 2006 and 2007.

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

### 3. SAMPLE DESIGN

The 2005-2007 PUMS sample is the same sample found in each of the 1-year PUMS files for the years 2005, 2006 and 2007. It contains three percent of the housing units and about two 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, D.C., and Puerto Rico. Table 1 shows housing units and Table 2 shows GQ persons.

**Table 1. 2005-2007 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	2,109,206	63,295	Montana	431,739	12,961
Alaska	279,298	8,332	Nebraska	773,506	23,228
Arizona	2,596,440	78,178	Nevada	1,062,518	31,871
Arkansas	1,269,829	38,104	New Hampshire	589,065	17,674
California	13,159,730	394,721	New Jersey	3,471,845	104,162
Colorado	2,091,457	62,753	New Mexico	850,448	25,509
Connecticut	1,431,378	42,942	New York	7,906,126	237,005
Delaware	382,178	11,465	North Carolina	4,034,454	120,950
District of Columbia	282,386	8,450	North Dakota	306,891	9,230
Florida	8,504,579	255,088	Ohio	5,038,676	151,168
Georgia	3,864,811	116,062	Oklahoma	1,606,684	48,193
Hawaii	499,290	14,980	Oregon	1,584,947	47,546
Idaho	614,036	18,424	Pennsylvania	5,451,260	163,536
Illinois	5,196,876	155,904	Rhode Island	449,393	13,484
Indiana	2,753,291	82,593	South Carolina	1,976,633	59,256
Iowa	1,318,400	39,574	South Dakota	352,131	10,582
Kansas	1,207,748	36,238	Tennessee	2,681,673	80,435
Kentucky	1,887,321	56,599	Texas	9,224,245	276,832
Louisiana	1,871,176	56,297	Utah	899,987	26,997
Maine	690,571	20,717	Vermont	309,495	9,285
Maryland	2,297,036	68,929	Virginia	3,227,016	96,801
Massachusetts	2,708,150	81,193	Washington	2,699,060	80,952
Michigan	4,503,456	135,201	West Virginia	877,452	26,328
Minnesota	2,279,133	68,401	Wisconsin	2,533,641	75,927
Mississippi	1,242,281	37,320	Wyoming	239,022	7,174
Missouri	2,622,570	78,633	Puerto Rico	1,437,406	43,127

**Table 2. 2005-2007 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	118,684	2,344	Montana	26,477	518
Alaska	22,559	455	Nebraska	52,427	1,050
Arizona	109,414	2,190	Nevada	33,406	669
Arkansas	79,454	1,585	New Hampshire	39,371	772
California	855,159	17,258	New Jersey	195,952	3,941
Colorado	108,305	2,118	New Mexico	41,969	834
Connecticut	115,603	2,300	New York	604,963	12,095
Delaware	24,901	499	North Carolina	273,117	5,451
District of Columbia	35,280	707	North Dakota	27,183	556
Florida	414,215	8,280	Ohio	305,127	6,136
Georgia	263,563	5,352	Oklahoma	114,455	2,275
Hawaii	36,906	735	Oregon	81,753	1,617
Idaho	33,861	678	Pennsylvania	462,658	9,219
Illinois	322,979	6,464	Rhode Island	39,449	831
Indiana	185,491	3,651	South Carolina	143,019	2,874
Iowa	104,832	2,093	South Dakota	30,622	606
Kansas	82,135	1,644	Tennessee	152,394	3,049
Kentucky	114,993	2,299	Texas	595,492	11,892
Louisiana	126,339	2,458	Utah	44,205	873
Maine	37,927	755	Vermont	20,760	416
Maryland	141,460	2,844	Virginia	243,535	4,794
Massachusetts	215,877	4,318	Washington	140,155	2,797
Michigan	258,066	5,144	West Virginia	45,545	912
Minnesota	142,595	2,847	Wisconsin	160,032	3,198
Mississippi	95,605	1,897	Wyoming	14,095	283
Missouri	167,721	3,347	Puerto Rico	45,304	910

The sampling for HUs (and persons from HUs) was performed independently on the ACS samples of HUs for each of the years 2005, 2006 and 2007, 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 and 2007 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 2005-2007 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, 2005-2007. 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 2005, 2006 and 2007. 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 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 2005-2007 PUMS will agree closely with the 2005-2007 ACS estimates for occupied/vacant HUs, and total persons from households at the United States, 50 states, District of Columbia, Puerto Rico, and PUMA levels. However, there are a few minor inconsistencies between the 3-year full sample estimates and PUMS for total population and housing units. Five states were affected: Iowa, Minnesota, Montana, North Dakota and South Dakota.

**Table 3: Differences Between 2005-2007 PUMS And ACS For Some Controlled Estimates**

State (FIPS)	Total Housing Units		Total Persons from Households	
	PUMS	ACS	PUMS	ACS
Iowa (19)	1,318,403	1,318,419	2,867,190	2,867,234
Minnesota (27)	2,279,089	2,279,073	5,012,793	5,012,749
Montana (30)	431,745	431,748	920,335	920,338
North Dakota (38)	306,805	306,798	610,553	610,526
South Dakota (46)	351,913	351,917	757,595	757,619

For example, the ACS full sample 3-year estimate of total housing units for Iowa differs from the 3-year PUMS estimate by 16 housing units. This is due to the PUMS file using the same geography codes as the 1-year PUMS files, while the 3-year ACS file uses updated geography codes affecting six records in five states. They will agree 100% for institutionalized/ noninstitutionalized 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 zero weights. These are the GQ placeholder records<sup>2</sup>. The housing unit weights were set to zero 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 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.

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<sup>2</sup> 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>

More information about the control of nonsampling error can be found in ACS Accuracy of the Data (2005-2007) at <http://www.census.gov/acs/www/Downloads/ACS/accuracy2005-2007.pdf>

## 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).



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

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

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

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

## 6.1 Calculating Standard Errors with Replicate Weights

Replicate weights 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:

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

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

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.

When programming the replicate weight standard errors, note that the full PUMS weight is never zero or negative. However, the eighty replicate weights can be zero or negative.

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 some basic state level estimates and replicate weight standard errors by comparing to values shown in these files.

## 6.2 Generalized Standard Errors

### Standard Errors for Totals and Percentages

The design factors provided in Tables 6 through 6.52 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 (excluding GQ only estimates), use the following formulas:

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

Where:

DF = Design Factor

N = Size of Geographic Area

$\hat{Y}$  = Estimate of Characteristic Total

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

Where:

DF = Design Factor

B = Base of Estimated Percentage

$\hat{p}$  = Estimated Percentage

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

1. For the value of N, obtain the number of persons, number of households or number of HUs, respectively for the geography(ies) you are interested in. If the estimate is of HUs then use the number of HUs; if the estimates is of families or households then use the number of households; otherwise use the number of persons.
2. Select the appropriate table from Tables 6 through 6.52. Use the table for the United States (Table 6) when estimating characteristics for the United States or geographic areas that cover more than one state. Use the table for a specific state (Tables 6.1-6.52) 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. For estimated percentages that are less than 2 or greater than 98, use a value of 2 for the estimated percentage in the formula.
2. **The denominator of a percentage is zero.** There are no sample observations available to compute an estimate of a proportion or an estimate of its standard error.

### **Standard Errors for Sums and Differences**

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

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

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

### **Standard Errors for Ratios**

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

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

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

## Standard Errors for Medians

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

1. Obtain the weighted frequency distribution for the selected variable. Cumulate these frequencies to yield the base.
2. Determine the standard error of a 50 percent proportion using the formula in the section Standard Errors for Totals and Percentages. (For GQ person estimates use a different formula shown in the section Standard Errors for Estimates of Group Quarters Persons given later in this document.)

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

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

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

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

$$\begin{aligned} \text{LowerBound} &= \left[ \frac{p_{\text{lower}} - C1}{C2 - C1} \right] * (A2 - A1) + A1 \\ \text{UpperBound} &= \left[ \frac{p_{\text{upper}} - C1}{C2 - C1} \right] * (A2 - A1) + A1 \end{aligned}$$

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.

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

### 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. (For GQ person estimates use a different formula shown in the section Standard Errors for Estimates of Group Quarters Persons given later in this document.)

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

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:

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

Where:

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

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

$n$  is the number of sample records

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

### Standard Errors for Estimates of Group Quarters Persons

If estimates are formed from Group Quarters records only, the above formulas should be modified as follows:

$$\text{Total Formula: } SE(\hat{Y}) \doteq DF * \sqrt{\left(\frac{98}{2}\right) * \hat{Y} \left(1 - \frac{\hat{Y}}{N}\right)}$$

$$\text{Percent Formula: } SE(\hat{p}) \doteq DF * \sqrt{\frac{98}{2B} * \hat{p}(100 - \hat{p})}$$

Percent formula for an estimate of 50% in step 2 of the above section Standard Errors for Medians would be:

$$SE(50\text{ percent}) = DF * \sqrt{\frac{98}{2B} * 50^2}$$

The standard error formula in the previous section Standard Errors for Means should be:

$$SE(\bar{Y}) = DF * \sqrt{\frac{98}{2B} * s^2}$$

### Examples of Standard Error Calculations using Generalized Standard Error Formulas

We will present some examples based on the 2005-2007 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 1,819,558 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 1,819,558 and N is the total PUMS population for the state of Virginia, which is 7,636,644. The design factor (from Table 6.47) for “Marital Status” is 1.3.

$$SE = 1.3 * \sqrt{\frac{97}{3} * 1,819,558 * \left(1 - \frac{1,819,558}{7,636,644}\right)} = 8,702.680$$

To calculate the lower and upper bounds of the 90 percent confidence interval around 1,819,558 using the standard error, simply multiply 8,702.680 by 1.645, then add and subtract the product from 1,819,558. Thus the 90 percent confidence interval for this estimate is [1,819,558 - 1.645(8,702.680)] to [1,819,558 + 1.645(8,702.680)] or 1,805,242 to 1,833,874.

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

The estimated percent of people 25 years or over with a bachelor’s degree or higher in Louisiana is 19.9971 from the PUMS data and the base of the estimated percentage is 2,766,373. To calculate the standard error, we use the percent formula given in the section Standard Errors for Totals and Percentages. The design factor (from Table 6.19) for “Educational Attainment” is 1.5.

$$SE = 1.5 * \sqrt{\frac{97}{3 * 2,766,373} * 19.9971 * (100 - 19.9971)} = 0.2051$$

To calculate the lower and upper bounds of the 90 percent confidence interval around 19.9971 percent using the standard error, simply multiply 0.2051 by 1.645, then add and subtract the product from 19.9971. Thus the 90 percent confidence interval for this estimated percentage is [19.9971 - 1.645(0.2051)] to [19.9971 + 1.645(0.2051)] or 19.66 to 20.33.



### Example 3 – Calculating the Standard Error of a Median

Table 4 below shows a weighted frequency distribution for adjusted household income in Massachusetts.

**Table 4: PUMS Distribution of Adjusted Household Income in Massachusetts**

Adjusted Household Income	Frequency	Cumulative Frequency	Cumulative Percent
Less than \$10,000	176,465	176,465	7.21%
\$10,000 to \$14,999	125,323	301,788	12.32%
\$15,000 to \$19,999	110,225	412,013	16.83%
\$20,000 to \$24,999	102,658	514,671	21.02%
\$25,000 to \$29,999	100,665	615,336	25.13%
\$30,000 to \$34,999	103,117	718,453	29.34%
\$35,000 to \$39,999	99,144	817,597	33.39%
\$40,000 to \$44,999	105,004	922,601	37.68%
\$45,000 to \$49,999	87,722	1,010,323	41.26%
\$50,000 to \$59,999	191,434	1,201,757	49.08%
\$60,000 to \$74,999	240,933	1,442,690	58.92%
\$75,000 to \$99,999	336,238	1,778,928	72.65%
\$100,000 to \$124,999	234,776	2,013,704	82.24%
\$125,000 to \$149,999	143,988	2,157,692	88.12%
\$150,000 to \$199,999	144,651	2,302,343	94.03%
\$200,000 or more	146,262	2,448,605	100%

- The base is the cumulative sum of the weighted frequencies, which is 2,448,605
- Determine the standard error of a 50 percent proportion. For this example, the design factor for household income is 1.6 from Table 6.22.

$$SE(50\text{ percent}) = 1.6 * \sqrt{\frac{97}{3 * 2,448,605} * 50^2} = .29$$

- Calculate p\_lower and p\_upper.

$$p_{\text{lower}} = 50 - SE(50\text{ percent}) = 49.71$$

$$p_{\text{upper}} = 50 + SE(50\text{ percent}) = 50.29$$

- Determine the categories that contain p\_lower and p\_upper. The first category with a cumulative percentage that is greater than 49.71 is \$60,000 to \$74,999. The first category with a cumulative percentage that is greater than 50.29 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 procedure for medians.

- Define A1, A2, C1, and C2: A1 = 60,000, A2 = 75,000, C1 = 49.08 and C2 = 58.92. Calculate the lower bound and upper bound using these values.

$$LowerBound = \left[ \frac{49.71 - 49.08}{58.92 - 49.08} \right] * (75,000 - 60,000) + 60,000 = 60,960.4$$

$$UpperBound = \left[ \frac{50.29 - 49.08}{58.92 - 49.08} \right] * (75,000 - 60,000) + 60,000 = 61,844.5$$

- Finally, calculate the standard error of the median:

$$SE(median) = \frac{1}{2} * (61,844.5 - 60,960.4) = 442.1$$

#### 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 5 below summarizes the computation of the terms in the formula for  $s^2$ . The PUMS data for Alabama has 8,057 records for females age 25 to 34 that have a non-missing value for person income.

**Table 5: 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	12,990	18	233,813	3,037,136,617
2	20,567	26	534,739	10,997,902,890
3	0	16	0	0
4	27,062	24	649,480	17,576,022,091
.				
.				
8,057	122,014	18	2,196,260	267,975,424,233
Total		<b>296,276</b>	<b>5,684,425,240</b>	<b>222,550,438,532,982</b>

Note: Data from 2005-2007 PUMS

The mean adjusted income is  $\bar{Y} = \frac{5,684,425,240}{296,276} = 19,186.25$

$s^2$  is computed as follows:

$$s^2 = \frac{222,550,438,532,982 - (5,684,425,240)^2 / 296,276}{296,276 - 1} = 383,048,310$$

The design factor for person income in Alabama, from Table 6.1, is 1.6. The standard error of the mean can now be calculated:

$$SE(\bar{Y}) = 1.6 * \sqrt{\frac{97}{3 * 296,276} * 383,048,310} = 327$$

## 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 2005-2007 PUMS were collected over three years, so the adjustment will inflate 2005 and 2006 dollars into 2007 values. The PUMS data dictionary for 2005-2007 describes two adjustment factors on the 3-year file that put dollar values into 2007 dollars:

ADJINC – inflation adjustment factors 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 2007 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 2007 dollars. All records get this adjustment, although the records interviewed in 2007 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 2005-2007 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 paragraph). We use the CPI-U-RS adjustment factors from the Bureau of Labor Statistics. These factors can be found in the first table in the PDF file at: [http://www.bls.gov/cpi/cpiurs1978\\_2007.pdf](http://www.bls.gov/cpi/cpiurs1978_2007.pdf). [For example, to express year 2000 dollars in terms of 2007 dollars, multiply the 2000 dollars by  $304.5/252.9 = 1.204033$ ].

## 8. REFERENCES

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**Table 6. Design Factors for Calculating PUMS Standard Errors – United States**

Characteristics	Design Factor
<b>POPULATION</b>	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	2.0
Population by Tenure	3.4
Age	1.1
Sex	1.1
Population of Two or More Races	2.3
White Alone	2.5
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	2.1
Hispanic or Latino	2.4
Marital Status	1.7
Relationship	1.7
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.5
Language Spoken at Home and Ability to Speak English	1.8
Linguistic Isolation	1.5
Place of Birth, Year of Entry, and Citizenship Status	2.2
Residence 1 Year Ago	3.0
School Enrollment, Level of School, and Type of School	1.4
Educational Attainment	1.6
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.4
Disability Status	1.2
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	2.0
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

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

**Table 6.1. Design Factors for Calculating PUMS Standard Errors – Alabama**

Characteristics	Design Factor
<b>POPULATION</b>	
Families and Nonfamilies	1.7
Population in Households by Race/Hispanic Origin of Householder	1.7
Population by Tenure	3.0
Age	1.1
Sex	1.6
Population of Two or More Races	1.9
White Alone	2.5
Black or African American Alone	2.0
American Indian or Alaska Native Alone, Asian Alone, Native Hawaiian or Other Pacific Islander Alone, or Some Other Race Alone	1.5
Hispanic or Latino	2.1
Marital Status	1.3
Relationship	1.4
Ancestry	2.1
Grandparents Responsible for Grandchildren	1.9
Number of Women Who Had a Birth in the Past 12 Months	1.3
Language Spoken at Home and Ability to Speak English	1.5
Linguistic Isolation	1.7
Place of Birth, Year of Entry, and Citizenship Status	2.0
Residence 1 Year Ago	3.0
School Enrollment, Level of School, and Type of School	1.3
Educational Attainment	1.5
Armed Forces Status and Veteran Status	1.2
Period of Military Service	1.5
Disability Status	1.3
Employment/Work Status	1.2
Industry, Occupation, and Class of Worker	1.6
Travel Time to Work	1.7
Means of Transportation to Work	1.7
Place of Work	2.4
Time Leaving Home to go to Work	1.7
Private Vehicle Occupancy	1.7
Work Experience, Hours Worked per Week, and Weeks Worked	1.4
Number of Workers in Family	1.5

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



**Table 6.2. Design Factors for Calculating PUMS Standard Errors – Alaska**

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

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

**Table 6.3. Design Factors for Calculating PUMS Standard Errors – Arizona**

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

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

**Table 6.4. Design Factors for Calculating PUMS Standard Errors – Arkansas**

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

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

**Table 6.5. Design Factors for Calculating PUMS Standard Errors – California**

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

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



**Table 6.6. Design Factors for Calculating PUMS Standard Errors – Colorado**

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

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

**Table 6.7. Design Factors for Calculating PUMS Standard Errors – Connecticut**

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

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

**Table 6.8. Design Factors for Calculating PUMS Standard Errors – Delaware**

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

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

**Table 6.9. Design Factors for Calculating PUMS Standard Errors – District of Columbia**

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

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



**Table 6.10. Design Factors for Calculating PUMS Standard Errors – Florida**

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

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

**Table 6.11. Design Factors for Calculating PUMS Standard Errors – Georgia**

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

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

**Table 6.12. Design Factors for Calculating PUMS Standard Errors – Hawaii**

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

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

**Table 6.13. Design Factors for Calculating PUMS Standard Errors – Idaho**

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

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



**Table 6.14. Design Factors for Calculating PUMS Standard Errors – Illinois**

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

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

**Table 6.15. Design Factors for Calculating PUMS Standard Errors – Indiana**

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

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

**Table 6.16. Design Factors for Calculating PUMS Standard Errors – Iowa**

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

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

**Table 6.17. Design Factors for Calculating PUMS Standard Errors – Kansas**

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

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



**Table 6.18. Design Factors for Calculating PUMS Standard Errors – Kentucky**

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

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

**Table 6.19 Design Factors for Calculating PUMS Standard Errors – Louisiana**

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

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

**Table 6.20. Design Factors for Calculating PUMS Standard Errors – Maine**

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

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

**Table 6.21. Design Factors for Calculating PUMS Standard Errors – Maryland**

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

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



**Table 6.22. Design Factors for Calculating PUMS Standard Errors – Massachusetts**

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

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

**Table 6.23. Design Factors for Calculating PUMS Standard Errors – Michigan**

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

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

**Table 6.24. Design Factors for Calculating PUMS Standard Errors – Minnesota**

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

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

**Table 6.25. Design Factors for Calculating PUMS Standard Errors – Mississippi**

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

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



**Table 6.26. Design Factors for Calculating PUMS Standard Errors – Missouri**

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

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

**Table 6.27. Design Factors for Calculating PUMS Standard Errors – Montana**

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

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

**Table 6.28. Design Factors for Calculating PUMS Standard Errors – Nebraska**

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

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

**Table 6.29. Design Factors for Calculating PUMS Standard Errors – Nevada**

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

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



**Table 6.30. Design Factors for Calculating PUMS Standard Errors – New Hampshire**

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

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

**Table 6.31. Design Factors for Calculating PUMS Standard Errors – New Jersey**

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

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

**Table 6.32. Design Factors for Calculating PUMS Standard Errors – New Mexico**

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

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

**Table 6.33. Design Factors for Calculating PUMS Standard Errors – New York**

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

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



**Table 6.34. Design Factors for Calculating PUMS Standard Errors – North Carolina**

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

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

**Table 6.35. Design Factors for Calculating PUMS Standard Errors – North Dakota**

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

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

**Table 6.36. Design Factors for Calculating PUMS Standard Errors – Ohio**

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

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

**Table 6.37. Design Factors for Calculating PUMS Standard Errors – Oklahoma**

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

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



**Table 6.38. Design Factors for Calculating PUMS Standard Errors – Oregon**

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

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

**Table 6.39. Design Factors for Calculating PUMS Standard Errors – Pennsylvania**

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

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

**Table 6.40. Design Factors for Calculating PUMS Standard Errors – Rhode Island**

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

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

**Table 6.41. Design Factors for Calculating PUMS Standard Errors – South Carolina**

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

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



**Table 6.42. Design Factors for Calculating PUMS Standard Errors – South Dakota**

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

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

**Table 6.43. Design Factors for Calculating PUMS Standard Errors – Tennessee**

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

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

**Table 6.44. Design Factors for Calculating PUMS Standard Errors – Texas**

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

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

**Table 6.45. Design Factors for Calculating PUMS Standard Errors – Utah**

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

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



**Table 6.46. Design Factors for Calculating PUMS Standard Errors – Vermont**

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

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

**Table 6.47. Design Factors for Calculating PUMS Standard Errors – Virginia**

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

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

**Table 6.48. Design Factors for Calculating PUMS Standard Errors – Washington**

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

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

**Table 6.49. Design Factors for Calculating PUMS Standard Errors – West Virginia**

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

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



**Table 6.50. Design Factors for Calculating PUMS Standard Errors – Wisconsin**

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

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

**Table 6.51. Design Factors for Calculating PUMS Standard Errors – Wyoming**

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

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

**Table 6.52. Design Factors for Calculating PUMS Standard Errors – Puerto Rico**

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

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