

## Project 2: Estimation

*For use after [Chapter 7](#)*

In this exercise, you will use the 2018 GSS sample to estimate characteristics of the U.S. population. You will use SPSS to generate the sample statistics and then use either [Formula 7.2](#) or [Formula 7.3](#) to find the confidence interval and state each interval in words.

### A. Estimating Means

1. There are relatively few interval-ratio variables in the 2018 GSS, and for this part of the project you may use ordinal variables that have at least three categories or scores. Choose a total of three variables that fit this description *other than* the variables you used in [Chapter 7](#). (NOTE: Your instructor may specify a different number of variables.)
2. Use the **Descriptives** command to get means, standard deviations, and sample size ( $N$ ), and use this information to construct 95% confidence intervals for the mean of each of your variables. Make a note of the mean, standard deviation, and sample size, or print a hard copy. Use [Formula 7.2](#) to compute the confidence intervals.
3. For each variable, write a summary sentence reporting the variable, the interval itself, the confidence level, and the sample size. Write in plain English, as if you were reporting results in a newspaper. Most importantly, you should make it clear that you are estimating characteristics of the population of the entire United States. For example, a summary sentence might look like this: "Based on a random sample of 1231 respondents, I estimate at the 95% level that U.S. drivers average between 64.46 and 68.22 miles per hour when driving on interstate highways."

### B. Estimating Proportions

1. Choose three nominal- or ordinal-level variables *other than* the variables you used in [Chapter 7](#). (NOTE: Your instructor may specify a different number of variables.)
2. Use the **Frequencies** command to get the percentage of the sample in the various categories of each variable. Change the percentages (remember to use the **valid percents** column) to proportions and construct confidence intervals for one category of each variable (e.g., the percent female for sex) using [Formula 7.3](#).

3. For each variable, write a summary sentence reporting the variable, the interval, the confidence level, and the sample size. Write in plain English, as if you were reporting results in a newspaper. Remember to make it clear that you are estimating a characteristic of the U.S. population.
4. For any one of the intervals you constructed in either Project A or Project B, identify each of the following concepts and terms, and briefly explain their role in estimation: sample, population, statistic, parameter, EPSEM, representative, confidence level.