

4. *Five More Technical Principles*

SUGGESTED COURSE EXTENSIONS

A. Reviewing

1. In a journal article in your field, find a discussion of an association between two or three variables. For each of those variables, identify
 - a. the type of variable (nominal, ordinal, interval, or ratio);
 - b. whether it is single or multiple response.
 - c. For continuous variables, identify
 - i. the system of measurement;
 - ii. the unit of analysis;
 - iii. the scale of measurement;
 - iv. the appropriate number of digits and decimal places for reporting the mean value in the text and a table.
 - d. For categorical variables, list the categories for each variable.
 - e. If the items requested in c and d aren't described in the article, list plausible versions of that information. For example, if you are studying family income in the United States, you would expect the system of measurement to be US dollars, the unit of analysis to be the family, and the scale of measurement to be either dollars or thousands of dollars.
2. Read the article's description of the variables you listed in question A.1. Does it provide the information about the distribution of that type of variable that is recommended in chapter 4 of *Writing about Multivariate Analysis, 2nd Edition*? If not, what additional information is needed?
3. Read the literature in your field to determine whether standard cutoffs or standard patterns are used to assess one of the variables in the association you listed in question A.1. Find a reference source that explains its application and interpretation.

B. Applying Statistics

1. Repeat question A.1 using variables available in your database.
2. Using the same data,
 - a. calculate the frequency distribution for each variable;
 - b. create a simple chart of the distribution;
 - c. select and calculate the appropriate measure of central tendency for that type of variable;
 - d. determine whether the measure of central tendency calculated in part c typifies the overall distribution. Why or why not? If not, what is a more typical value?
 - e. for continuous variables, identify the minimum and maximum values and the cutoffs for the quartiles of the distribution.
3. For one of the variables in your database, repeat question A.3. Use the standard or cutoff to classify or evaluate your data (e.g., what percentage of cases falls below the cutoff? Does the distribution of that variable in your data follow the expected pattern based on the published literature on that topic for a similar pattern?)
4. Compare the eligibility thresholds for your state's State Children's Health Insurance (SCHIP, or CHIPRA) for the most recent year available against the Federal Poverty Thresholds (see websites for your state's SCHIP program and the "Poverty" page on the US Census website). What is the highest income that would qualify for free SCHIP benefits for a family of one adult and one child? A family of one adult and two children? A family of two adults and two children?