

# 8

## Basic Types of Quantitative Comparisons

### SUGGESTED COURSE EXTENSIONS

#### ■ A. REVIEWING

1. Find a report about recent patterns in mortality, fertility (National Center for Health Statistics Web site), or unemployment (Bureau of Labor Statistics Web site).
  - a. Identify an example of each of the following: rank, absolute difference, relative difference, and percentage difference or change.
  - b. For each example, identify the reference value. Does it come from within their data or some other source (e.g., a historic value or a reference population)?
  - c. Read the explanations of those examples. Is each one clear? If not, use the criteria outlined in chapter 8 of *Writing about Multivariate Analysis* to improve the explanation.
  - d. Identify at least one instance where a different (or additional) comparison would be useful. Perform the calculations and write a sentence to present the results.
2. Find a journal article about an application of a multivariate model.
  - a. Identify which kinds of basic quantitative comparisons are used to contrast and interpret numeric findings.
  - b. Repeat questions A.1b through A.1d for the quantitative comparisons in that article.

#### ■ B. APPLYING STATISTICS

1. For a continuous independent variable from your data set
  - a. Identify a pair of values to contrast.
  - b. Choose two ways to compare the numbers. Explain your choice of types of quantitative comparisons, with reference to common usage in your field.
  - c. Calculate the pertinent comparisons.
  - d. Write a paragraph to explain the results of your calculations from part c.
  - e. Use the checklist at the end of chapter 8 in *Writing about Multivariate Analysis* to evaluate completeness and clarity of your explanation.

2. List all of the categorical variables used in your multivariate model, either as a dependent or independent variable. For each,
  - a. Identify the modal value.
  - b. Read the literature to see which value of that variable is most commonly used as the reference category.
  - c. Consider the role of that variable in your research question and whether that affects your choice of a reference category.
  - d. Cross-tabulate the independent variables to identify the modal categories of the variables in bivariate combination with one another.
  - e. Using the information in parts a through d and the criteria on pages 186–87 of *Writing about Multivariate Analysis*, specify which category you will use as the reference category and explain the basis for your choice.
3. Calculate attributable risk for a risk factor and outcome in your data.
  - a. Use logistic regression to estimate the relative odds (odds ratio) of a categorical dependent variable for a dichotomous risk factor (independent variable).
  - b. In conjunction with information on the prevalence of that risk factor, calculate the attributable risk.
  - c. Write a sentence interpreting the results of the attributable risk calculation with reference to the specific variables involved.

### ■ C. WRITING AND REVISING

1. Identify a numeric background fact to compare with information for other time periods or cases as part of the introductory section of a research paper.
  - a. Select two pertinent types of quantitative comparisons for that fact. Explain your choice, with reference to the topic of your paper.
  - b. Look up the relevant data, and calculate the comparisons.
  - c. Write a paragraph that integrates those quantitative comparisons, including citations.
  - d. Use the checklist at the end of chapter 8 of *Writing about Multivariate Analysis* to evaluate the completeness and clarity of your description.
2. Repeat question B.1 for the results section of your paper.