

# 9

## WRITING ABOUT DISTRIBUTIONS AND ASSOCIATIONS

### PROBLEM SET

1. Write a description of the distribution shown in table 9A, following the guidelines for writing about univariate distributions in chapter 9 of *Writing about Numbers*, 2nd Edition.

**Table 9A. Total amount borrowed by 2009 by US students beginning postsecondary education in 2003–04**

Amount borrowed	Percentage of students	Percentage of borrowers
Did not borrow	43%	NA
\$1 to \$10,000	25%	44%
\$10,001 to \$20,000	16%	28%
\$20,001 to 30,000	8%	14%
\$30,001 to \$50,000	5%	9%
More than \$50,000	2%	4%

Source: College Board Advocacy and Policy Center, 2014. Trends in Student Aid 2013. Trends in Higher Education Series. Figure 11C. Available online at <https://trends.collegeboard.org/sites/default/files/student-aid-2013-full-report-140108.pdf>

2. Write a description of the race/household type patterns in table 6.1 (*Writing about Numbers*, 2nd Edition, 124), using the “generalization, example, exception” (GEE) approach explained on pp. 220–24 and 349–58 of *Writing about Numbers*, 2nd Edition. *Hint*: To compare across racial/ethnic groups, report percentage distribution of household type within each race. Why are percentages preferred to counts in this case?
3. Write a description of the age pattern of mortality shown in figure 7.17b (*Writing about Numbers*, 2nd Edition, 183), following the guidelines in chapter 9 for writing about bivariate associations. Use descriptive phrases to convey the shape of the pattern, then document with appropriate numeric evidence. Incorporate selected quantitative comparisons to illustrate size of differences in the chart.
4. What kind of test would you perform to assess the statistical significance of differences in household type by race? (Do not perform the calculation, just name the statistic!)

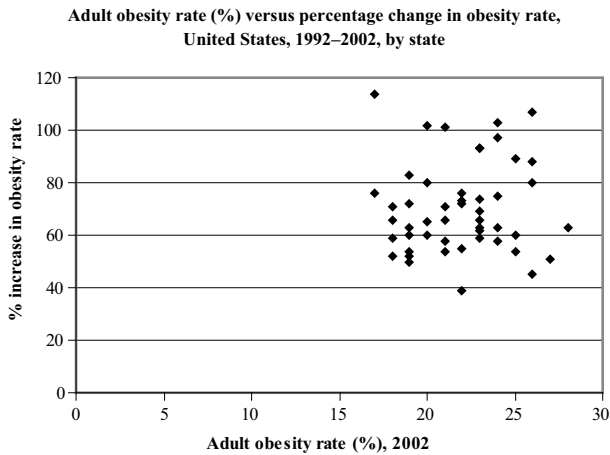


Figure 9A

5. Answer the following questions about figure 9A.
  - a. What types of variables are shown?
  - b. What kind of chart is used to portray the association? Explain why this is an appropriate choice.
  - c. Write a description of the pattern in figure 9A, reporting the level and range of each of the two variables and portraying the shape and extent of association between them.
  - d. What statistic would you use to measure the extent of association between those variables?
  
6. In figure A.2 (*Writing about Numbers*, 2nd Edition, 355), the pattern of emergency room use varies by race and family income. What is such a pattern called in statistical terms? In GEE lingo? Write paragraphs to describe that pattern to
  - a. a group of first-year high school students;
  - b. a group of senior undergraduate statistics majors.

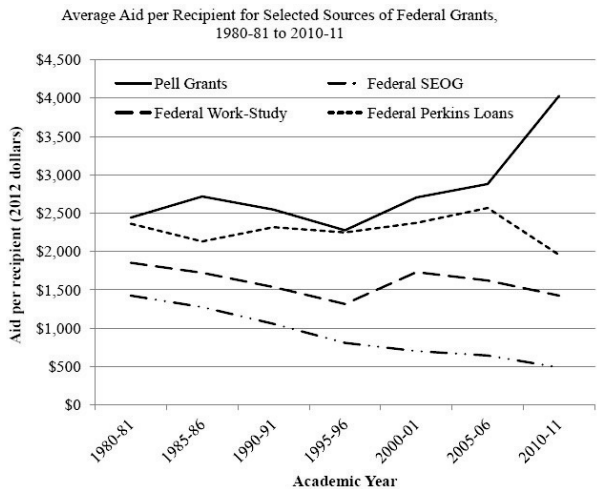


Figure 9B

7. Write a GEE description of the pattern in figure 9B.
  - a. Write topic sentences for
    - i. a paragraph about how levels of aid change across time;
    - ii. a paragraph about how levels of aid differ across sources at one point in time.
  - b. Write evidentiary sentences to illustrate the general pattern in each of those paragraphs.
  - c. Write sentences to describe and document any exceptions to those patterns, then summarize the implications of those differences for the overall shape of the association among the variables shown in the chart.
8. Write a description of the pattern in the chart you created in question 9 of the problem set for chapter 7.