

15. By squaring the correlation coefficient, you get the coefficient of determination, which tells you the strength of the relationship between two variables. The coefficient of determination can range from 0 (no relationship) to 1 (perfect relationship). Note that the coefficient of determination of both a  $-1$  and a  $+1$  correlation coefficient is  $+1$ .
16. If your results are based on a random sample, you may want to use inferential statistics to analyze your data.
17. Remember, statistical significance means only that your results can be generalized to the population from which you randomly sampled. Statistical significance does *not* mean that you have found a cause-effect relationship.
18. Beware of doing too many tests of significance. Remember, if you do 100 tests and use a .05 level of significance, 5 of those tests might be significant by chance alone.
19. You may obtain null (nonsignificant) results even though your variables are related. Common culprits are insufficient number of observations, nonlinear relationships, restriction of range, and insensitive measures.

## KEY TERMS

95% confidence interval (p. 248)	illusory correlations (p. 231)	participant observation (p. 241)
archival data (p. 234)	instrumentation bias (p. 238)	positive correlation (p. 253)
coefficient of determination (p. 260)	laboratory observation (p. 241)	restriction of range (p. 267)
content analysis (p. 236)	median split (p. 252)	scatterplot (p. 253)
correlation coefficient (p. 256)	median (p. 246)	standard deviation (p. 245)
ex post facto research (p. 232)	mode (p. 246)	standard error of the mean (p. 249)
frequency distribution (p. 245)	moderator variable (p. 270)	zero correlation (p. 255)
	naturalistic observation (p. 241)	
	negative correlation (p. 255)	
	nonreactive measure (p. 239)	

## EXERCISES

1. Steinberg and Dornbusch (1991) found that there is a positive correlation between cutting class and hours per week that adolescents work. In addition, they find a negative correlation between grade-point average and number of hours worked.
  - a. In your own words, describe what the relationship is between class-cutting and hours per week that adolescents work.
  - b. In your own words, describe what the relationship is between grade-point average and hours per week that adolescents work.
  - c. What conclusions can you draw about the effects of work? Why?
  - d. If you had been analyzing their data, what analysis would you use? Why?
2. Steinberg and Dornbusch (1991) also reported that the correlation between hours of employment and interest in school was statistically significant. Specifically, they reported that  $r(3,989) = -.06, p < .001$ . [Note that the  $r(3,989)$  means that they had 3,989 participants in their study.] Interpret this finding.
3. Brown (1991) found that a measure of aerobic fitness correlated  $+.28$  with a self-report measure of how much people exercised. He also found that the measure of aerobic fitness correlated  $-.41$  with resting heart rate. Is resting heart rate or self-report

of exercise more closely related to the aerobic fitness measure?

4. In the same study, gender was coded as 1 = male, 2 = female. The correlation between gender and aerobic fitness was  $-.58$ , which was statistically significant at the  $p < .01$  level.
  - a. In this study, were men or women more fit?
  - b. What would the correlation have been if gender had been coded as 1 = female and 2 = male?
  - c. From the information here, can you conclude that one gender tends to be more aerobically fit than the other? Why or why not?
5. Suppose you wanted to see whether men differed from women in terms of the self-descriptions they put in personal ads. How would you get your sample of ads? How would you code your ads? That is, what would your content analysis scheme look like?
6. Suppose that a physician looked at 26 instances of crib death in a certain town and found that some of these deaths were due to parents suffocating their children. As a result, the physician concluded that most crib deaths in this country are due not to problems in brain development, but to parental abuse and neglect. What problems do you have with the physician's conclusions?
7. Researchers began by looking at how a sample of 5-year-olds were treated by their

parents. Thirty-six years later, when the participants were 41-year-olds, the study examined the degree to which these individuals were socially accomplished. The investigators then looked at the relationship between childrearing practices when the child was 5 and how socially accomplished the person was at 41 (Franz, McClelland, & Weinberger, 1991). They concluded that having a warm and affectionate father or mother was significantly associated with "adult social accomplishment."

- a. What advantages does this prospective study have over a study that asks 41-year-olds to reflect back on their childhood?
- b. How would you measure adult social accomplishment?
- c. How would you measure parental warmth? Why?
- d. Assume, for the moment, that the study clearly established a relationship between parenting practices and adult social accomplishment. Could we then conclude that parenting practices account for (cause) adult social accomplishment? Why or why not?
- e. Imagine that the researchers had failed to find a significant relationship between the variables of adult social accomplishment and parental warmth. What might have caused their results to fail to reach significance?



## WEB RESOURCES

1. Go to the Chapter 7 section of the book's student website and
  1. Look over the concept map of the key terms.
  2. Test yourself on the key terms.
  3. Take the Chapter 7 Practice Quiz.
2. Get a better sense of what descriptive research is like by using the "Participate in a Descriptive Study" link.
3. Become more comfortable with correlation coefficients by computing correlation coefficients using a statistical calculator, accessible from the "Statistical Calculator" link.
4. Get a better sense of the coefficient of determination by clicking on the "Coefficient of Determination" link.