

Chapter 15

Choosing Tests and Writing Interpretations

Orientation _____

Descriptions of 20 studies follow. The question that each is designed to answer is usually implied rather than stated directly. Most of the studies have been done by students in one of the author's Research Methods course or were inspired by student research ideas. For each description, identify a statistical test that is appropriate for the data.

Here's a suggestion for getting the most from this exercise. Read each problem, and write down the test to use. Before looking at the answers, turn to Chapter 15 in your textbook. Re-read those sections that deal with choosing the proper statistical test (especially Table 15.1 and Figures 15.1 and 15.2). Using your refreshed knowledge, rework each of the 20 problems. Finally, compare your answers to ours. (Answers to all 20 problems are in the study guide.)

Problems _____

1. Tammy was interested in examining the pattern of visits to the school nurse among 3rd, 4th and 5th grade students in an elementary school. She thought that 3rd graders might be more likely to visit the nurse. She measured the visits for three weeks.
2. Kayla was interested in the examining the development of maturity level from senior year in high school to senior year in college. She used a maturity scale that had been designed and tested at another university. The scale yielded a score from 0 to 100 and reflected the attitudes expressed by the individual. She used a group of seniors from an all male institution and compared that to college men at an all male institution.
3. Shigeru had students on two college campuses fill out surveys on style of dress. From this survey, students could be classified as highly fashion conscious, fashion conscious or not fashion conscious. In addition, he asked students to report their SAT scores.

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4. Lindsay believed that the parenting style displayed by one's primary caregiver was related to success in high school, as measured by class rank.
5. Shari wanted to know if students were more likely to eat breakfast, lunch, or dinner in the college dining hall. For three weeks, she counted the number of students at each meal.
6. Abby and Lilly measured the reaction time of participants who read words as fast as they could from a computer screen. They tested equal numbers of men and women to determine who had faster reaction times. Reaction times are known to be positively skewed.
7. To determine if packages of artificial sweetener all contain the same amount of product (.035 oz), Fran and Ed weighed 30 packages of sweetener.
8. A group of faculty was interested in determining the average incoming SAT scores of student. They had data from the previous 25 years.
9. Chris and Chris had participants read a series of short stories. The stories were inconsistent with previously read material, consistent with previously read material, or unrelated to previously read material. Each participant read 5 stories of each type and reading time was measured.
10. Antonia was studying the behavior of college students on Friday nights. She classified them into one of three groups: studiers, partiers, and sleepers. She then obtained the students' GPAs.
11. Factory workers were asked to report their income. The student interested in this issue wanted to know if this was related to the factory workers' years of service.
12. John and Tracy compared income levels of auto mechanics and car sales people. Income data are known to be positively skewed.

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13. Aubrey examined the influence of course (psychology versus math) and professor's teaching style (lecturer versus discussion based classroom) on test performance.
14. Jane gave students a questionnaire measuring knowledge of statistics. She also asked them to classify whether they took statistics in the math department of the psychology department.
15. Let's assume that women score better on IQ tests than men. How much greater is the IQ score of women than men? Sue has access to IQ scores of more than 2000 men and women.
16. Participants drank both decaffeinated and caffeinated coffee over the course of the morning. After each cup of coffee, participants' reaction time (which is known to be positively skewed) was measured.
17. Participants were given a test of knowledge of US history prior to taking a survey course in history. After finishing the course, they took the test again.
18. Tia wants to know if her major might predict her income when she is 40 years old. She collects data from 100 women who are 40 who had different majors to help her make this prediction.
19. The hearing ability of left-handed and right-handed students was tested by determining the least number of decibels the student could hear.
20. Dave determines his participants' aggression score and then classifies them according to gender and age (either over 40 or under 40).