

Appendix: Statistical Reasoning in Everyday Life

Chapter Overview

A basic understanding of statistical reasoning has become a necessity in everyday life. Statistics are tools that help the psychologist and layperson to interpret the vast quantities of information they are confronted with on a daily basis. The text appendix discusses how statistics are used to describe data and to generalize from instances.

In studying this chapter you must concentrate on learning a number of procedures and understanding some underlying principles in the science of statistics. The graphic and computational procedures in the section called "Describing Data" include how data are distributed in a sample; measures of central tendency such as the mean, median, and mode; variation measures such as the range and standard deviation; and correlation, or the degree to which two variables are related. Most of the conceptual material is then covered in the section entitled "Generalizing from Instances." You should be able to discuss four important principles concerning populations and samples, as well as the concept of significance in testing differences. The ultimate goal is to make yourself a better consumer of statistical research by improving your critical thinking skills.

NOTE: Answer guidelines for all questions in the Appendix begin on page 426.

Guided Study

The text chapter should be studied one section at a time. Before you read, preview each section by skimming it, noting headings and boldface items. Then read the appropriate section objectives from the following outline. Keep these objectives in mind and, as you read the chapter section, search for the information that will enable you to meet each objective. Once you have finished a section, write out answers for its objectives.

Describing Data (pp. 622-630)

1. Explain how frequency distributions, histograms, and percentile ranks are used to describe data.

1) Freq DIST. scores where are they
2) HIST. = Graph.

3) % OF scores below the mean.


2. Define the three measures of central tendency and explain how they describe data differently.

1) Mode = MOST FREQUENT
2) Mean is avg $\frac{\text{sum of scores}}{\# \text{ of scores}}$

3) Median = 50% middle

3. Describe measures of variation and the normal curve.

1) RANGE - highest - lowest

2) Bell curve 
where they fall

4. Describe the correlation coefficient and explain its importance in assessing relationships between variables.

+1.00 TO -1.00
A) How strong relation?

B) + means increase in proportion to another

417 C) -1 goes up - 1 goes down
- closer to either = good