

Chapter 1. Sampling and Descriptive Statistics

Note. In this chapter, we define and illustrate population, sample, and simple random sample (in Section 1.1), sample mean, sample variance, and quartiles (in Section 1.2). In Section 1.3 we present some ways to visualize data, including stem-and-leaf plots, histograms, and boxplots.

Note. “Statistics is the field of study concerned with the collection, analysis, and interpretation of uncertain data.” (See page 1.) Statistics uses the tools of mathematics to analyze data. The tools of math are logic and proof. Statistics is a tool in many scientific studies (in particular in social and medical sciences). But data collected in scientific experiments is expected to display random variation. “The methods of statistics allow scientists and engineers to design valid experiments and to draw reliable conclusions from the data they produce. . . . The basic idea behind all statistical methods of data analysis is to make inferences about a population by studying a relatively small sample chosen from it.” The quotes appear on page 1 of Navidi’s book.

Revised: 2/18/2022