**Chapter 1**

**Introduction to Statistics**

**LEARNING OBJECTIVES**

The primary objective of chapter 1 is to introduce you to the world of statistics, enabling you to:

1. Define the term, “statistics” and list example applications of statistics in business.
2. Define important statistical terms, including population, sample, and parameter, as they relate to descriptive and inferential statistics.
3. Understand the difference between quantitative and categorical data.

**CHAPTER TEACHING STRATEGY**

Chapter 1 starts by motivating business students to study statistics by presenting them with many applications of statistics in business. The definition of statistics as a science dealing with the collection, analysis, interpretation, and presentation of numerical data is a great place to start. Statistics is about dealing with data; Data are found in all areas of business. This is a time to have the students brainstorm on the wide variety of places in business where data are measured and gathered. It is important to define statistics for students because they bring so many preconceptions of the meaning of the term. For this reason, a discussion of the various meanings of the word statistics is given in the chapter. We try to emphasize the difference between sample and population, and give several examples.

Chapter 1 sets up the subject of inferential statistics. The student will understand that while there are many useful applications of descriptive statistics in business, the strength of the application of statistics in most fields is through inferential statistics. From this notion, we will later introduce probability, sampling, confidence intervals, and hypothesis testing. The process involves taking a sample from the population, computing a statistic on the sample data, and making an inference (decision or conclusion) back to the population from which the sample has been drawn.

In chapter 1, types of data measurement are emphasized. In order to simplify for the audience, we focus mainly on the difference between quantitative and categorical data, with only a brief mention of the levels of data. In chapter 4, we will discuss how data is gathered. It is important for students to understand that we are often given data to analyze without input as to how it was gathered or the type of measurement. It is our job to ascertain the type of data represented so that appropriate techniques can be used in analysis. Not all techniques presented in this text can be appropriately used to analyze all data.

# CHAPTER OUTLINE

# 1.1 What is Statistics

# Using the Computer

# 1.2 The Language of Statistics

# Populations and Samples

# Population Parameters and Sample Statistics

# Descriptive and Inferential Statistics

# Variables, Measurements and Data

# 1.3 Types of Data

**KEY TERMS**

Categorical Data Parameter

Census Population

Data Quantitative Data

Descriptive Statistics Sample

Inferential Statistics Statistic

Measurement Variable

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