Lecture Notes

# Chapter 1: Statistics or Sadistics? It’s Up to You

## Overview

The purpose of this chapter is to provide students with a basic introduction to the field of statistics—why it is important and what they will need to know in order to be successful in the course. The text provides a brief history of statistics and points out that the introduction of software programs such as Excel has helped to make sophisticated statistical techniques available to individuals interested in exploring such topics on their personal computers. The author takes the time to point out the difference between descriptive and inferential statistics and also provides students with some study tips and how best to use the text.

## What You’ll Learn About in This Chapter

* What statistics is all about
* Why you should take statistics
* How to succeed in the course

## Outline Chapter 1

I. Why Statistics?

II. And Why SPSS?

II. A Five-Minute History of Statistics

A. Dating back to the 17th century, scientists and mathematicians needed to develop tools to describe data sets. This is when the use of descriptive statistics began. Most of the basic statistical procedures were developed and used in the fields of agriculture, astronomy, and politics. Application to human behavior came much later.

B. Personal computers have made these procedures available to the general public at little cost.

C. Although data are collected in many different ways across a variety of fields, all statisticians use the same basic techniques to answer different questions.

III. Statistics: What It Is (and Isn’t)

A. A set of tools and techniques used for describing, organizing, and interpreting information or data.

B. Two major branches of statistics: descriptive and inferential

C. What Are Descriptive Statistics?

1. Used to organize and describe the characteristics of a collection of data.

2. The collection of data is sometimes called a data set or just data.

3. Makes describing more than a few people or things much easier.

D. What Are Inferential Statistics?

1. Inferential statistics are often the next step after collecting and summarizing data.

2. Used to make inferences from a smaller group of data (e.g., a group of 30 undergraduate statistics students) to a larger one (such as all of the undergraduate students at a university).

3. The smaller group is called a sample.

4. The larger group is called a population.

5. Works best when the sample is representative of the population.

a. Scientist spend a lot of effort getting a representative sample.

E. In Other Words . . .

1. Statistics help us organize information, letting us make statements about how characteristics of those data are applicable to new settings.

2. Knowledge of statistics is important in many fields, helping us make decisions based on empirical evidence.

3. Which statistics you use depends on the question answered and how you happened to measure your variables.

IV. What Am I Doing in a Statistics Class?

Students enroll in an introductory statistics course for a variety reasons, including program requirements, preparation for advanced courses, transcript building, intellectual challenge, to improve as a student, preparation for graduate school, and bragging rights.

V. Ten Ways to Use This Book (and Learn Statistics at the Same Time!)

A. You’re not dumb.

B. How do you know statistics is hard?

C. Don’t skip lessons—work through the chapters in sequence.

D. Form a study group.

E. Ask your teacher questions, and then, ask a friend.

F. Do the exercises at the end of each chapter.

G. Practice, practice, practice.

H. Look for applications to make it more real.

I. Browse.

J. Have fun.

VI. People (Who Loved) Statistics. All of the statistical tricks and procedures we will discover in this book were invented by real people.

VII. Steps Icon in the Margin: Indicates that a set of steps is coming up that will direct you through a particular process. Sometimes you will use SPSS to do these steps.

VIII. Key to Difficulty Index: Used to indicate the difficulty of the chapter’s contents.

A. Help you along a bit, we placed a difficulty index at the beginning of each chapter.

B. Because the index uses smiley faces, the more smiles the merrier!

IX. Glossary

A. The back of the book has a glossary that contains bolded terms and their definitions.

1. Remember, if they are bolded, then they are **important**.

X. Real-World Stats

A. Real-World Stats will appear at the end of every chapter as appropriate and, hopefully, will provide you with a demonstration of how a particular method, test, idea, or some aspect of statistics is used every day in various workplaces.

XI. Summary

A. That wasn’t too bad, was it?!!!

B. Make sure to continue to read.

C. Just take it one chapter at a time.

D. Use your resources!

XII. Time to Practice

A. Chapters 1–17 and 19 have review exercises for you.

B. The answers to the exercises can be found near the end of the book in Appendix D.

XIII. Student Study Site

A. Get the tools you need to sharpen your study skills! Visit **edge.sagepub.com/salkindfrey7e**

1. Practice quizzes

2. Use eFlashcards

3. Original and curated videos

4. Data sets

5. Journal articles

6. And more!