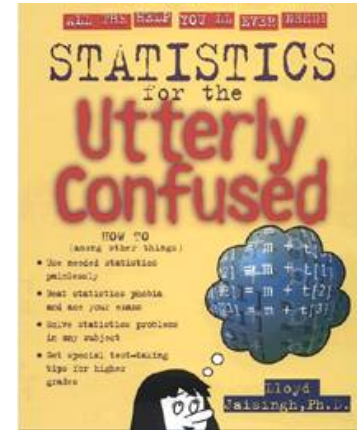


Book Review

Statistics for the Utterly Confused

by Lloyd Jaisingh (2000) ISBN: 0-07-135005-5
New York: McGraw-Hill



This book is aimed at beginners with no quantitative background, and at those who feel they need a brief survey on statistical basics. The book's material is thorough on statistical fundamentals and the essentials are well delineated.

The book is divided into three parts; Part 1 discusses descriptive statistics, Part 2 explains probability and Part 3 discusses statistical inference. *T*-test and chi-square tables are included in the appendices. Each of the fourteen chapters begins with a brief summary and ends with a summary and some questions covering the material covered in the preceding chapter. Each chapter also has a "Technology Corner" which discusses how the Minitab program (Windows version) and TI-83 calculator can be used to produce various charts and utilize different analytical methods.

Scattered throughout each chapter are items called "Quick Tips" which are valuable guides or reminders. Notice in the example below how well differences between α and *P* values are clarified:

Note that there is a clear distinction between the α value (level of significance) and the *P* value. The α value is chosen before the statistical test is carried out, and the *P* value is computed after an experiment is run and a sample statistic is computed. (p 249).

Questions for the reader are also interspersed within the text.

Part One

The first six chapters focus on descriptive statistics. The first chapter defines types of data and variables, and explains graphical displays such as frequency distributions, bar charts, stem and leaf plots. The merits and limitations of various frequency tables, graphs and plot formats are also given. Descriptions of numerical value-measures and methods to compute the given results are covered in the following chapter, while explanations of variation of numeric data and the interpretation of these types of computation are mentioned in Chapter 4. The fourth chapter discusses how to measure and interpret *z* scores, quartiles, outliers, and box plots. Rationalization of linear regression, and the different aspects which comprise this method are considered in the fifth chapter, while Chapter 6 discusses categorical data display through contingency tables, marginal and conditional distributions.

Part Two

The next four chapters focus on probability. Chapter 7 deals with randomness, uncertainty and probability informatively without undue pedantry. The law of large numbers and basic laws of probability are clarified simply and concisely. Chapter 8 considers discrete probability and discusses variance, Bernoulli trials and binomial distributions. Definitions for discrete and continuous random variables are explained here. Chapter 9 discusses normal and standard normal distributions. *Z* scores are defined and probabilities associated with normal distributions are also covered. Chapter 10 covers the sampling distributions between two independent sample proportions and means. This chapter is

quite important for those needing a concise understanding of sampling theory. Methods to investigate sampling through simulation, histograms, and descriptive statistics are also included here.

Part Three

This section focuses on statistical inferences. Chapter 11 deals with large sample confidence intervals for proportions and means, and ways of determining the differences between two proportions or means. Chapter 12 discusses the importance of hypothesis testing through population proportions and means and how to make inferences about parameters. The differences between the two types of statistical hypotheses - null hypothesis and alternative hypothesis - are defined. The types of error in hypothesis testing are explained and key differences between one-tailed and two tailed tests are well illustrated (p. 237). Chapter 13 continues the examination of confidence intervals for population means and hypothesis testing for small samples. Included within this chapter are formulae for small sample mean tests and ways to calculate the differences between two population means.

Chapter 14 focuses on the properties of chi-square measures (X^2), the chi-square test for goodness-of-fit and the chi-square test for independence. Jaisingh plainly illustrates that once the properties X^2 are apparent (pp. 289 - 290), the function of the chi-square test for goodness-of-fit regarding hypothesis testing can be comprehended.

Conclusion

The style of the book is succinct and uncomplicated. However, there are passages where some symbols or abbreviations are not always explained (see p. 35). This might overwhelm some insecure novices. Nevertheless, I recommend this book to anyone who is just starting out in statistics or has to do a quick review. It may also be useful for those who comprehend general concepts, but just want to explore details further. The book does not have to be read from beginning to end, and knowledgeable readers will probably prefer to jump back and forth among the chapters.

- reviewed by P. L. Stribling