

1. Record Nr.	UNINA9910795803803321
Autore	Bruce Peter C. <1953->
Titolo	Introductory statistics and analytics : a resampling perspective // Peter C. Bruce
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley, , 2015 2015
ISBN	1-118-88166-4 1-118-88133-8
Descrizione fisica	1 online resource (285 pages)
Classificazione	417 519.5
Disciplina	519.5
Soggetti	Statistics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Title Page; Copyright; Preface; Book Website; Acknowledgments; Stan Blank; Michelle Everson; Robert Hayden; Introduction; If You Can't Measure it, You Can't Manage It; Phantom Protection from Vitamin E; Statistician, Heal Thyself; Identifying Terrorists in Airports; Looking Ahead in the Book; Resampling; Big Data and Statisticians; Chapter 1: Designing and Carrying Out a Statistical Study; 1.1 A Small Example; 1.2 Is Chance Responsible? The Foundation of Hypothesis Testing; 1.3 A Major Example; 1.4 Designing an Experiment; 1.5 What to Measure-Central Location; 1.6 What to Measure-Variability. 1.7 What to Measure-Distance (Nearness)1.8 Test Statistic; 1.9 The Data; 1.10 Variables and Their Flavors; 1.11 Examining and Displaying the Data; 1.12 Are we Sure we Made a Difference?; Appendix: Historical Note; 1.13 EXERCISES; Chapter 2: Statistical Inference; 2.1 Repeating the Experiment; 2.2 How Many Reshuffles?; 2.3 How Odd is Odd?; 2.4 Statistical and Practical Significance; 2.5 When to Use Hypothesis Tests; 2.6 Exercises; Chapter 3: Displaying and Exploring Data; 3.1 Bar Charts; 3.2 Pie Charts; 3.3 Misuse of Graphs; 3.4 Indexing; 3.5 Exercises; Chapter 4: Probability. 4.1 Mendel's Peas4.2 Simple Probability; 4.3 Random Variables and their Probability Distributions; 4.4 The Normal Distribution; 4.5 Exercises; Chapter 5: Relationship Between Two Categorical Variables; 5.1 Two-Way Tables; 5.2 Comparing Proportions;

5.3 More Probability; 5.4 From Conditional Probabilities to Bayesian Estimates; 5.5 Independence; 5.6 Exploratory Data Analysis (EDA); 5.7 Exercises; Chapter 6: Surveys and Sampling; 6.1 Simple Random Samples; 6.2 Margin of Error: Sampling Distribution for a Proportion; 6.3 Sampling Distribution for a Mean; 6.4 A Shortcut-The Bootstrap. 6.5 Beyond Simple Random Sampling 6.6 Absolute Versus Relative Sample Size; 6.7 Exercises; Chapter 7: Confidence Intervals; 7.1 Point Estimates; 7.2 Interval Estimates (Confidence Intervals); 7.3 Confidence Interval for a Mean; 7.4 Formula-Based Counterparts to the Bootstrap; 7.5 Standard Error; 7.6 Confidence Intervals for a Single Proportion; 7.7 Confidence Interval for a Difference in Means; 7.8 Confidence Interval for a Difference in Proportions; 7.9 Recapping; Appendix A: More on the Bootstrap; Resampling Procedure-Parametric Bootstrap; Formulas and the Parametric Bootstrap. Appendix B: Alternative Populations Appendix C: Binomial Formula Procedure; 7.10 Exercises; Chapter 8: Hypothesis Tests; 8.1 Review of Terminology; 8.2 A-B Tests: The Two Sample Comparison; 8.3 Comparing Two Means; 8.4 Comparing Two Proportions; 8.5 Formula-Based Alternative-t-Test for Means; 8.6 The Null and Alternative Hypotheses; 8.7 Paired Comparisons; Appendix A: Confidence Intervals Versus Hypothesis Tests; Confidence Interval; Relationship Between the Hypothesis Test and the Confidence Interval; Comment; Appendix B: Formula-Based Variations of Two-Sample Tests.

Sommario/riassunto

Developed by the founder of Statistics.com, one of the first online e-learning companies in the discipline, and class-tested there for over ten years, this intuitive book provides a brief but essential introduction to statistics for those with little or no prior exposure to basic probability and statistics. Its simulation/resampling approach (drawing numbers or data from a hat) demystifies traditional formulas and demonstrates the fundamental basis for statistical inference. Topics covered include probability, the Normal distribution, hypothesis testing, independence, conditional probability, Bayes Rule, 2-way tables, random sampling, and confidence intervals. Special connections to statistical distance, recommender systems, predictive modeling, and general analytics are systematically woven throughout the text. The aim is to apply statistically valid designs to basic studies, and test hypotheses regarding proportions and means. The goal is real understanding, not cookbook learning. Even the most anxious novice (as well as the expert) will benefit. The book meets all of the Guidelines for Assessment and Instruction in Statistics Education (GAISE) for the introductory statistics course, as developed in 2005 by a group of noted educators and with funding from the American Statistical Association. Excel and StatCrunch are the software systems of choice. R subroutines are available on an author-maintained web site. The book is available in print and online"--
