

1. Record Nr.	UNINA9910483801403321
Autore	Devore Jay L.
Titolo	Modern Mathematical Statistics with Applications // by Jay L. Devore, Kenneth N. Berk, Matthew A. Carlton
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2021
ISBN	3-030-55156-3
Edizione	[3rd ed. 2021.]
Descrizione fisica	1 online resource (981 pages)
Collana	Springer Texts in Statistics, , 2197-4136
Disciplina	519.5
Soggetti	Statistics Statistical Theory and Methods Statistics in Business, Management, Economics, Finance, Insurance
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Preface -- 1 Overview and Descriptive Statistics -- 2 Probability -- 3 Discrete Random Variables and Probability Distributions -- 4 Continuous Random Variables and Probability Distributions -- 5 Joint Probability Distributions and Their Applications -- 6 Statistics and Sampling Distributions -- 7 Point Estimation -- 8 Statistical Intervals Based on a Single Sample -- 9 Tests of Hypotheses Based on a Single Sample -- 10 Inferences Based on Two Samples -- 11 The Analysis of Variance -- 12 Regression and Correlation -- 13 Chi-Squared Tests -- 14 Chi-Squared Tests -- 15 Introduction to Bayesian Estimation -- Appendix Tables -- Index.
Sommario/riassunto	This 3rd edition of Modern Mathematical Statistics with Applications tries to strike a balance between mathematical foundations and statistical practice. The book provides a clear and current exposition of statistical concepts and methodology, including many examples and exercises based on real data gleaned from publicly available sources. Here is a small but representative selection of scenarios for our examples and exercises based on information in recent articles: Use of the "Big Mac index" by the publication The Economist as a humorous way to compare product costs across nations Visualizing how the concentration of lead levels in cartridges varies for each of five brands of e-cigarettes Describing the distribution of grip size among surgeons

and how it impacts their ability to use a particular brand of surgical stapler Estimating the true average odometer reading of used Porsche Boxsters listed for sale on www.cars.com Comparing head acceleration after impact when wearing a football helmet with acceleration without a helmet Investigating the relationship between body mass index and foot load while running The main focus of the book is on presenting and illustrating methods of inferential statistics used by investigators in a wide variety of disciplines, from actuarial science all the way to zoology. It begins with a chapter on descriptive statistics that immediately exposes the reader to the analysis of real data. The next six chapters develop the probability material that facilitates the transition from simply describing data to drawing formal conclusions based on inferential methodology. Point estimation, the use of statistical intervals, and hypothesis testing are the topics of the first three inferential chapters. The remainder of the book explores the use of these methods in a variety of more complex settings. This edition includes many new examples and exercises as well as an introduction to the simulation of events and probability distributions. There are more than 1300 exercises in the book, ranging from very straightforward to reasonably challenging. Many sections have been rewritten with the goal of streamlining and providing a more accessible exposition. Output from the most common statistical software packages is included wherever appropriate (a feature absent from virtually all other mathematical statistics textbooks). The authors hope that their enthusiasm for the theory and applicability of statistics to real world problems will encourage students to pursue more training in the discipline.
