1. Record Nr. UNINA9910300108303321

Autore	Dunn Peter K
Titolo	Generalized Linear Models With Examples in R / / by Peter K. Dunn, Gordon K. Smyth
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2018
ISBN	1-4419-0118-3
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (XX, 562 p. 115 illus.)
Collana	Springer Texts in Statistics, , 2197-4136
Disciplina	519.5
Soggetti	Statistics Mathematical statistics - Data processing Statistical Theory and Methods Statistics and Computing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Statistical models -- Linear regression models -- Linear regression models: diagnostics and model-building -- Beyond linear regression: the method of maximum likelihood -- Generalized linear models: structure -- Generalized linear models: estimation -- Generalized linear models: inference -- Generalized linear models: diagnostics -- Models for proportions: binomial GLMs -- Models for counts: Poisson and negative binomial GLMs -- Positive continuous data: gamma and inverse Gaussian GLMs -- Tweedie GLMs -- Extra problems -- Appendix A: Using R for data analysis -- Appendix B: The GLMsData package -- Index: Data sets -- Index: R commands -- Index: General Topics. .
Sommario/riassunto	This textbook presents an introduction to multiple linear regression, providing real-world data sets and practice problems. A practical working knowledge of applied statistical practice is developed through the use of these data sets and numerous case studies. The authors include a set of practice problems both at the end of each chapter and at the end of the book. Each example in the text is cross-referenced with the relevant data set, so that readers can load the data and follow the analysis in their own R sessions. The balance between theory and practice is evident in the list of problems, which vary in difficulty and

purpose. This book is designed with teaching and learning in mind, featuring chapter introductions and summaries, exercises, short answers, and simple, clear examples. Focusing on the connections between generalized linear models (GLMs) and linear regression, the book also references advanced topics and tools that have not typically been included in introductions to GLMs to date, such as Tweedie family distributions with power variance functions, saddlepoint approximations, likelihood score tests, modified profile likelihood, and randomized quantile residuals. In addition, the authors introduce the new R code package, GLMsData, created specifically for this book. Generalized Linear Models with Examples in R balances theory with practice, making it ideal for both introductory and graduate-level students who have a basic knowledge of matrix algebra, calculus, and statistics. .