

Logistic Regression Models For Ordinal Response Variables Quantitative Applications In The Social Sciences

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Applied Logistic Regression - David W. Hosmer, Jr. 2004-10-28

From the reviews of the First Edition. "An interesting, useful, and well-written book on logistic regression models . . . Hosmer and Lemeshow have used very little mathematics, have presented difficult concepts heuristically and through illustrative examples, and have included references." —Choice "Well written, clearly organized, and comprehensive . . . the authors carefully walk the reader through the estimation of interpretation of coefficients from a wide variety of logistic regression models . . . their careful explication of the quantitative re-expression of coefficients from these various models is excellent." —Contemporary Sociology "An extremely well-written book that will certainly prove an invaluable acquisition to the practicing statistician who finds other literature on analysis of discrete data hard to follow or heavily theoretical." —The Statistician In this revised and updated edition of their popular book, David Hosmer and Stanley Lemeshow continue to provide an amazingly accessible introduction to the logistic regression model while incorporating advances of the last decade, including a variety of software packages for the analysis of data sets. Hosmer and Lemeshow extend the discussion from biostatistics and epidemiology to cutting-edge applications in data mining and machine learning, guiding readers step-by-step through the use of modeling techniques for dichotomous data in diverse fields. Ample new topics and expanded discussions of existing material are accompanied by a wealth of real-world examples-with extensive data sets available over the Internet.

Applied Survival Analysis - David W. Hosmer, Jr. 2011-09-23

THE MOST PRACTICAL, UP-TO-DATE GUIDE TO MODELLING AND ANALYZING TIME-TO-EVENT DATA—NOW IN A VALUABLE NEW EDITION Since publication of the first edition nearly a decade ago, analyses using time-to-event methods have increase considerably in all areas of scientific inquiry mainly as a result of model-building methods available in modern statistical software packages. However, there has been minimal coverage in the available literature to9 guide researchers, practitioners, and students who wish to apply these methods to health-related areas of study. Applied Survival Analysis, Second Edition provides a comprehensive and up-to-date introduction to regression modeling for time-to-event data in medical, epidemiological, biostatistical, and other health-related research. This book places a unique emphasis on the practical and contemporary applications of regression modeling rather than the mathematical theory. It offers a clear and accessible presentation of modern modeling techniques supplemented with real-world examples and case studies. Key topics covered include: variable selection, identification of the scale of continuous covariates, the role of interactions in the model, assessment of fit and model assumptions, regression diagnostics, recurrent event models, frailty models, additive models, competing risk models, and missing data. Features of the Second Edition include: Expanded coverage of interactions and the covariate-adjusted survival functions The use of the Worcester Heart Attack Study as the main modeling data set for illustrating discussed concepts and techniques New discussion of variable selection with multivariable fractional polynomials Further exploration of time-varying covariates, complex with examples Additional treatment of the exponential, Weibull, and log-logistic parametric regression models Increased emphasis on interpreting and using results as well as utilizing multiple imputation

methods to analyze data with missing values New examples and exercises at the end of each chapter Analyses throughout the text are performed using Stata® Version 9, and an accompanying FTP site contains the data sets used in the book. Applied Survival Analysis, Second Edition is an ideal book for graduate-level courses in biostatistics, statistics, and epidemiologic methods. It also serves as a valuable reference for practitioners and researchers in any health-related field or for professionals in insurance and government.

Statistical Analysis of Contingency Tables - Morten Fagerland 2017-07-28

Statistical Analysis of Contingency Tables is an invaluable tool for statistical inference in contingency tables. It covers effect size estimation, confidence intervals, and hypothesis tests for the binomial and the multinomial distributions, unpaired and paired 2x2 tables, rxc tables, ordered rx2 and 2xc tables, paired cxc tables, and stratified tables. For each type of table, key concepts are introduced, and a wide range of intervals and tests, including recent and unpublished methods and developments, are presented and evaluated. Topics such as diagnostic accuracy, inter-rater reliability, and missing data are also covered. The presentation is concise and easily accessible for readers with diverse professional backgrounds, with the mathematical details kept to a minimum. For more information, including a sample chapter and software, please visit the authors' website.

Doing Bayesian Data Analysis - John Kruschke 2010-11-25

There is an explosion of interest in Bayesian statistics, primarily because recently created computational methods have finally made Bayesian analysis tractable and accessible to a wide audience. Doing Bayesian Data Analysis, A Tutorial Introduction with R and BUGS, is for first year graduate students or advanced undergraduates and provides an accessible approach, as all mathematics is explained intuitively and with concrete examples. It assumes only algebra and 'rusty' calculus. Unlike other textbooks, this book begins with the basics, including essential concepts of probability and random sampling. The book gradually climbs all the way to advanced hierarchical modeling methods for realistic data. The text provides complete examples with the R programming language and BUGS software (both freeware), and begins with basic programming examples, working up gradually to complete programs for complex analyses and presentation graphics. These templates can be easily adapted for a large variety of students and their own research needs. The textbook bridges the students from their undergraduate training into modern Bayesian methods. Accessible, including the basics of essential concepts of probability and random sampling Examples with R programming language and BUGS software Comprehensive coverage of all scenarios addressed by non-bayesian textbooks- t-tests, analysis of variance (ANOVA) and comparisons in ANOVA, multiple regression, and chi-square (contingency table analysis). Coverage of experiment planning R and BUGS computer programming code on website Exercises have explicit purposes and guidelines for accomplishment

Handbook of Regression Modeling in People Analytics - Keith McNulty 2021-07-29

Despite the recent rapid growth in machine learning and predictive analytics, many of the statistical questions that are faced by researchers and practitioners still involve explaining why something is happening. Regression analysis is the best 'swiss army knife' we have for answering these kinds of

questions. This book is a learning resource on inferential statistics and regression analysis. It teaches how to do a wide range of statistical analyses in both R and in Python, ranging from simple hypothesis testing to advanced multivariate modelling. Although it is primarily focused on examples related to the analysis of people and talent, the methods easily transfer to any discipline. The book hits a 'sweet spot' where there is just enough mathematical theory to support a strong understanding of the methods, but with a step-by-step guide and easily reproducible examples and code, so that the methods can be put into practice immediately. This makes the book accessible to a wide readership, from public and private sector analysts and practitioners to students and researchers. Key Features: • 16 accompanying datasets across a wide range of contexts (e.g. academic, corporate, sports, marketing) • Clear step-by-step instructions on executing the analyses. • Clear guidance on how to interpret results. • Primary instruction in R but added sections for Python coders. • Discussion exercises and data exercises for each of the main chapters. • Final chapter of practice material and datasets ideal for class homework or project work.

Best Practices in Quantitative Methods - Jason W. Osborne 2008

The contributors to Best Practices in Quantitative Methods envision quantitative methods in the 21st century, identify the best practices, and, where possible, demonstrate the superiority of their recommendations empirically. Editor Jason W. Osborne designed this book with the goal of providing readers with the most effective, evidence-based, modern quantitative methods and quantitative data analysis across the social and behavioral sciences. The text is divided into five main sections covering select best practices in Measurement, Research Design, Basics of Data Analysis, Quantitative Methods, and Advanced Quantitative Methods. Each chapter contains a current and expansive review of the literature, a case for best practices in terms of method, outcomes, inferences, etc., and broad-ranging examples along with any empirical evidence to show why certain techniques are better. Key Features: Describes important implicit knowledge to readers: The chapters in this volume explain the important details of seemingly mundane aspects of quantitative research, making them accessible to readers and demonstrating why it is important to pay attention to these details. Compares and contrasts analytic techniques: The book examines instances where there are multiple options for doing things, and make recommendations as to what is the "best" choice—or choices, as what is best often depends on the circumstances. Offers new procedures to update and explicate traditional techniques: The featured scholars present and explain new options for data analysis, discussing the advantages and disadvantages of the new procedures in depth, describing how to perform them, and demonstrating their use. Intended Audience: Representing the vanguard of research methods for the 21st century, this book is an invaluable resource for graduate students and researchers who want a comprehensive, authoritative resource for practical and sound advice from leading experts in quantitative methods.

Encyclopedia of Quality of Life and Well-Being Research - Alex C. Michalos 2014-02-12

The aim of this encyclopedia is to provide a comprehensive reference work on scientific and other scholarly research on the quality of life, including health-related quality of life research or also called patient-reported outcomes research. Since the 1960s two overlapping but fairly distinct research communities and traditions have developed concerning ideas about the quality of life, individually and collectively, one with a fairly narrow focus on health-related issues and one with a quite broad focus. In many ways, the central issues of these fields have roots extending to the observations and speculations of ancient philosophers, creating a continuous exploration by diverse explorers in diverse historic and cultural circumstances over several centuries of the qualities of human existence. What we have not had so far is a single, multidimensional reference work connecting the most salient and important contributions to the relevant fields. Entries are organized alphabetically and cover basic concepts, relatively well established facts, lawlike and causal relations, theories, methods, standardized tests, biographic entries on significant figures, organizational profiles, indicators and indexes of qualities of individuals and of communities of diverse sizes, including rural areas, towns, cities, counties, provinces, states, regions, countries and groups of countries.

Regression for Categorical Data - Gerhard Tutz 2011-11-21

This book introduces basic and advanced concepts of categorical regression with a focus on the structuring constituents of regression, including regularization techniques to structure predictors. In addition to

standard methods such as the logit and probit model and extensions to multivariate settings, the author presents more recent developments in flexible and high-dimensional regression, which allow weakening of assumptions on the structuring of the predictor and yield fits that are closer to the data. A generalized linear model is used as a unifying framework whenever possible in particular parametric models that are treated within this framework. Many topics not normally included in books on categorical data analysis are treated here, such as nonparametric regression; selection of predictors by regularized estimation procedures; ternative models like the hurdle model and zero-inflated regression models for count data; and non-standard tree-based ensemble methods, which provide excellent tools for prediction and the handling of both nominal and ordered categorical predictors. The book is accompanied an R package that contains data sets and code for all the examples.

Categorical Data Analysis and Multilevel Modeling Using R - Xing Liu 2022-03-08

Categorical Data Analysis and Multilevel Modeling Using R provides a practical guide to regression techniques for analyzing binary, ordinal, nominal, and count response variables using the R software. Author Xing Liu offers a unified framework for both single-level and multilevel modeling of categorical and count response variables with both frequentist and Bayesian approaches. Each chapter demonstrates how to conduct the analysis using R, how to interpret the models, and how to present the results for publication. A companion website for this book contains datasets and R commands used in the book for students, and solutions for the end-of-chapter exercises on the instructor site.

Regression Modeling Strategies - Frank E. Harrell 2001-06-15

The book will serve as a reference for data analysts and statistical methodologists.

Logistic Regression - Scott Menard 2010

Logistic Regression is designed for readers who have a background in statistics at least up to multiple linear regression, who want to analyze dichotomous, nominal, and ordinal dependent variables cross-sectionally and longitudinally.

Logit and Probit - Vani K. Borooah 2002

Many problems in the social sciences are amenable to analysis using the analytical tools of logit and probit models. This book explains what ordered and multinomial models are and also shows how to apply them to analysing issues in the social sciences.

Statistical Models for Ordinal Variables - Clifford C. Clogg 1994-02-28

"This book provides an outstanding introduction to. . . using association models developed primarily by Leo Goodman. . . . This well-written book provides a careful and generally clear introduction to association models. . . . the authors have achieved their aims well. They make a strong case for the usefulness of association models in a variety of applications. Clogg. . . and Shihadeh have provided sociologists with an introduction filled with wise advice about analyzing associations between ordinal variables." --Alan Agresti in Contemporary Sociology "This is a very useful book about. . . statistical models for ordinal variables. Reading this book. . . your reviewer was pleased to find a clear and succinct account explaining a variety of association models. . . . These models are the 'RC' models. . . it is to statistical methods for the social sciences that this book. . . is aimed. . . . This is not a total beginner's book, however. . . and I thought the pace a little faster than leisurely. . . . a fine resource of clear description and explanation of the use of statistical models for ordinal data. . . ." --M. C. Jones in Journal of the Royal Statistical Society "This book is worthwhile reading for statisticians who have scattered training in ordinal data analysis and want to pull this training into a coherent overview. It is a fine supplement to other more mathematical books in the area. . . . After reading the book, the reader will have a clear understanding of the role of odds ratios in ordinal data analysis." --Technometrics "Includes a concise but clear review of criteria for assessing goodness-of-fit. . . . I found this volume an accessible unification of work in the area. I recommend it." --International Statistical Institute How should data involving response variables of many ordered categories be analyzed? What technique is the most useful in analyzing partially ordered variables regarded as dependent variables? Addressing these and other related concerns in social and survey research, this book carefully explores the statistical analysis of data involving dependent variables that can be coded into discrete, ordered categories. Through an analysis of ordinal variables, the authors cover the general procedures for assessing goodness-of-fit, review the independence model and the saturated model, define measures of

association, demonstrate the logit version of the model and the jackknife method for contingency tables, and explain associated models for two-way tables as well as logit-type regression models.

Regression Basics - Leo H. Kahane 2007-11-28

Using a friendly, nontechnical approach, the Second Edition of Regression Basics introduces readers to the fundamentals of regression. Accessible to anyone with an introductory statistics background, this book builds from a simple two-variable model to a model of greater complexity. Author Leo H. Kahane weaves four engaging examples throughout the text to illustrate not only the techniques of regression but also how this empirical tool can be applied in creative ways to consider a broad array of topics. New to the Second Edition • Offers greater coverage of simple panel-data estimation: Because the availability of panel data has increased over the past decade, this new edition includes coverage of estimation with multiple cross-sections of data across time. • Provides an introductory discussion of omitted variables bias: As a problem that frequently arises, this issue is important for those new to regression analysis to understand. • Includes up-to-date advances: Chapter 7 is expanded to include recent developments in regression. • Uses a diverse selection of examples: Engaging examples illustrate the wide application of regression analysis from baseball salaries to presidential voting to British crime rates to U.S. abortion rates and more. • Includes more end-of-chapter problems: This edition offers new questions at the end of chapters that are based on the new examples woven through the book. • Illustrates examples using software programs: Appendix B now includes screenshots to further aid readers working with Microsoft Excel® and SPSS. Intended Audience This is an ideal core or supplemental text for advanced undergraduate and graduate courses such as Regression and Correlation, Sociological Research Methods, Quantitative Research Methods, and Statistical Methods in the fields of economics, public policy, political science, sociology, public affairs, urban planning, education, and geography.

The SAGE Handbook of Regression Analysis and Causal Inference - Henning Best 2014-09-27

'The editors of the new SAGE Handbook of Regression Analysis and Causal Inference have assembled a wide-ranging, high-quality, and timely collection of articles on topics of central importance to quantitative social research, many written by leaders in the field. Everyone engaged in statistical analysis of social-science data will find something of interest in this book.' - John Fox, Professor, Department of Sociology, McMaster University 'The authors do a great job in explaining the various statistical methods in a clear and simple way - focussing on fundamental understanding, interpretation of results, and practical application - yet being precise in their exposition.' - Ben Jann, Executive Director, Institute of Sociology, University of Bern 'Best and Wolf have put together a powerful collection, especially valuable in its separate discussions of uses for both cross-sectional and panel data analysis.' - Tom Smith, Senior Fellow, NORC, University of Chicago Edited and written by a team of leading international social scientists, this Handbook provides a comprehensive introduction to multivariate methods. The Handbook focuses on regression analysis of cross-sectional and longitudinal data with an emphasis on causal analysis, thereby covering a large number of different techniques including selection models, complex samples, and regression discontinuities. Each Part starts with a non-mathematical introduction to the method covered in that section, giving readers a basic knowledge of the method's logic, scope and unique features. Next, the mathematical and statistical basis of each method is presented along with advanced aspects. Using real-world data from the European Social Survey (ESS) and the Socio-Economic Panel (GSOEP), the book provides a comprehensive discussion of each method's application, making this an ideal text for PhD students and researchers embarking on their own data analysis.

SPSS Statistics 17.0 - Marija J. Norušis 2008

Key Message:SPSS® 17.0: Advanced Statistical Procedures Companion contains valuable tips, warnings, and examples that will help you take advantage of SPSS and better analyze data. This book offers clear and concise explanations and examples of advanced statistical procedures in the SPSS Advanced and Regression modules. Key Topics: Model Selection Loglinear Analysis; Logit Loglinear Analysis; Multinomial Logistic Regression; Ordinal Regression; Probit Regression; Kaplan-Meier Survival Analysis; Life Tables; Cox Regression; Variance Components; Linear Mixed Models; Generalized Linear Models; Generalized Estimating Equations; Nonlinear Regression; Two-Stage Least-Squares Regression; Weighted Least-Squares Regression; Multidimensional Scaling Market: for all readers interested in SPSS.

Regression & Linear Modeling - Jason W. Osborne 2016-03-24

In a conversational tone, Regression & Linear Modeling provides conceptual, user-friendly coverage of the generalized linear model (GLM). Readers will become familiar with applications of ordinary least squares (OLS) regression, binary and multinomial logistic regression, ordinal regression, Poisson regression, and loglinear models. The author returns to certain themes throughout the text, such as testing assumptions, examining data quality, and, where appropriate, nonlinear and non-additive effects modeled within different types of linear models. Available with Perusall—an eBook that makes it easier to prepare for class Perusall is an award-winning eBook platform featuring social annotation tools that allow students and instructors to collaboratively mark up and discuss their SAGE textbook. Backed by research and supported by technological innovations developed at Harvard University, this process of learning through collaborative annotation keeps your students engaged and makes teaching easier and more effective. Learn more.

Encyclopedia of Research Design - Neil J. Salkind 2010-06-22

"Comprising more than 500 entries, the Encyclopedia of Research Design explains how to make decisions about research design, undertake research projects in an ethical manner, interpret and draw valid inferences from data, and evaluate experiment design strategies and results. Two additional features carry this encyclopedia far above other works in the field: bibliographic entries devoted to significant articles in the history of research design and reviews of contemporary tools, such as software and statistical procedures, used to analyze results. It covers the spectrum of research design strategies, from material presented in introductory classes to topics necessary in graduate research; it addresses cross- and multidisciplinary research needs, with many examples drawn from the social and behavioral sciences, neurosciences, and biomedical and life sciences; it provides summaries of advantages and disadvantages of often-used strategies; and it uses hundreds of sample tables, figures, and equations based on real-life cases."--Publisher's description.

Applied Categorical Data Analysis - Chap T. Le 1998-09-23

The nonstatistician's quick reference to applied categorical data analysis With a succinct, unified approach to applied categorical data analysis and an emphasis on applications, this book is immensely useful to researchers and students in the biomedical disciplines and to anyone concerned with statistical analysis. This self-contained volume provides up-to-date coverage of all major methodologies in this area of applied statistics and acquaints the reader with statistical thinking as expressed through a variety of modern-day topics and techniques. Applied Categorical Data Analysis introduces a number of new research areas, including the Mantel-Haenszel method, Kappa statistics, ordinal risks, odds ratio estimates, goodness-of-fit, and various regression models for categorical data. Chap T. Le, author of Health and Numbers and Applied Survival Analysis, presents his information in a user-friendly format and an accessible style while purposefully keeping the mathematics to a level appropriate for students in applied fields. Well supplemented with helpful graphs and tables, Applied Categorical Data Analysis: * Covers both basic and advanced topics * Employs many real-life examples from biomedicine, epidemiology, and public health * Presents case studies in meticulous detail * Provides end-of-chapter exercise sets and solutions * Incorporates samples of computer programs (most notably in SAS). Applied Categorical Data Analysis is an important resource for graduate students and professionals who need a compact reference and guide to both the fundamentals and applications of the major methods in the field.

Multiple Regression with Discrete Dependent Variables - John G. Orme 2009-03-25

Most social work researchers are familiar with linear regression techniques, which are fairly straightforward to conduct, interpret, and present. However, linear regression is not appropriate for discrete dependent variables, and social work research frequently employs these variables, focusing on outcomes such as placement in foster care or not; level of severity of elder abuse or depression symptoms; or number of reoffenses by juvenile delinquents in the year following adjudication. This book presents detailed discussions of regression models that are appropriate for a variety of discrete dependent variables. The major challenges of such analyses lie in the non-linear relationships between independent and dependent variables, and particularly in interpreting and presenting findings. Clear language guides the reader briefly through each step of the analysis, using SPSS and result presentation to enhance understanding of the important link function. The book begins with a brief review of linear regression; next,

the authors cover basic binary logistic regression, which provides a foundation for the other techniques. In particular, comprehension of the link function is vital in order to later interpret these methods' results. Though the book assumes a basic understanding of linear regression, reviews and definitions throughout provide useful reminders of important terms and their meaning, and throughout the book the authors provide detailed examples based on their own data, which readers may work through by accessing the data and output on companion website. Social work and other social sciences faculty, students, and researchers who already have a basic understanding of linear regression but are not as familiar with the regression analysis of discrete dependent variables will find this straightforward pocket guide to be a terrific boon to their bookshelves. For additional resources, visit <http://www.oup.com/us/pocketguides>.

[Applied Ordinal Logistic Regression Using Stata](#) - Xing Liu 2015-09-30

The first book to provide a unified framework for both single-level and multilevel modeling of ordinal categorical data, *Applied Ordinal Logistic Regression Using Stata* by Xing Liu helps readers learn how to conduct analyses, interpret the results from Stata output, and present those results in scholarly writing. Using step-by-step instructions, this non-technical, applied book leads students, applied researchers, and practitioners to a deeper understanding of statistical concepts by closely connecting the underlying theories of models with the application of real-world data using statistical software.

[Handbook of Multilevel Analysis](#) - Jan Deleeuw 2007-12-26

This book presents the state of the art in multilevel analysis, with an emphasis on more advanced topics. These topics are discussed conceptually, analyzed mathematically, and illustrated by empirical examples. Multilevel analysis is the statistical analysis of hierarchically and non-hierarchically nested data. The simplest example is clustered data, such as a sample of students clustered within schools. Multilevel data are especially prevalent in the social and behavioral sciences and in the biomedical sciences. The chapter authors are all leading experts in the field. Given the omnipresence of multilevel data in the social, behavioral, and biomedical sciences, this book is essential for empirical researchers in these fields.

[Probability and Bayesian Modeling](#) - Jim Albert 2019-12-19

Probability and Bayesian Modeling is an introduction to probability and Bayesian thinking for undergraduate students with a calculus background. The first part of the book provides a broad view of probability including foundations, conditional probability, discrete and continuous distributions, and joint distributions. Statistical inference is presented completely from a Bayesian perspective. The text introduces inference and prediction for a single proportion and a single mean from Normal sampling. After fundamentals of Markov Chain Monte Carlo algorithms are introduced, Bayesian inference is described for hierarchical and regression models including logistic regression. The book presents several case studies motivated by some historical Bayesian studies and the authors' research. This text reflects modern Bayesian statistical practice. Simulation is introduced in all the probability chapters and extensively used in the Bayesian material to simulate from the posterior and predictive distributions. One chapter describes the basic tenets of Metropolis and Gibbs sampling algorithms; however several chapters introduce the fundamentals of Bayesian inference for conjugate priors to deepen understanding. Strategies for constructing prior distributions are described in situations when one has substantial prior information and for cases where one has weak prior knowledge. One chapter introduces hierarchical Bayesian modeling as a practical way of combining data from different groups. There is an extensive discussion of Bayesian regression models including the construction of informative priors, inference about functions of the parameters of interest, prediction, and model selection. The text uses JAGS (Just Another Gibbs Sampler) as a general-purpose computational method for simulating from posterior distributions for a variety of Bayesian models. An R package ProbBayes is available containing all of the book datasets and special functions for illustrating concepts from the book.

[Practical Statistics](#) - David Kremelberg 2010-03-18

Making statistics—and statistical software—accessible and rewarding This book provides readers with step-by-step guidance on running a wide variety of statistical analyses in IBM® SPSS® Statistics, Stata, and other programs. Author David Kremelberg begins his user-friendly text by covering charts and graphs through regression, time-series analysis, and factor analysis. He provides a background of the method, then explains how to run these tests in IBM SPSS and Stata. He then progresses to more advanced kinds of

statistics such as HLM and SEM, where he describes the tests and explains how to run these tests in their appropriate software including HLM and AMOS. This is an invaluable guide for upper-level undergraduate and graduate students across the social and behavioral sciences who need assistance in understanding the various statistical packages.

[Regression and Mediation Analysis Using Mplus](#) - Bengt O. Muthen 2016-07-06

Logit Modeling - Alfred DeMaris 1992-06-06

Logit models : theoretical background. Logit models for multidimensional tables. Logistic regression.

Advanced topics in logistic regression. Appendix : Computer routines.

[Regression Models for Categorical and Limited Dependent Variables](#) - J. Scott Long 1997-01-09

The linear regression model is the most commonly used statistical method in the social sciences. This book considers regression models that are appropriate when the dependent variable is censored, truncated, binary, ordinal, nominal, or count. I refer to these variables as categorical and limited dependent variables (hereafter CLDVs). Until recently, the greatest obstacle in using models for CLDVs was the lack of software that was flexible, stable, and easy to use. This limitation no longer applies since these models can be estimated routinely with standard software. Now, the greatest impediment is the complexity of the models and the difficulty in interpreting the results. The difficulties arise because most models for CLDVs are nonlinear.

[Regression Models for Categorical Dependent Variables Using Stata, Second Edition](#) - J. Scott Long 2006

The goal of the book is to make easier to carry out the computations necessary for the full interpretation of regression nonlinear models for categorical outcomes using Stata.

[Interpretable Machine Learning](#) - Christoph Molnar 2020

This book is about making machine learning models and their decisions interpretable. After exploring the concepts of interpretability, you will learn about simple, interpretable models such as decision trees, decision rules and linear regression. Later chapters focus on general model-agnostic methods for interpreting black box models like feature importance and accumulated local effects and explaining individual predictions with Shapley values and LIME. All interpretation methods are explained in depth and discussed critically. How do they work under the hood? What are their strengths and weaknesses? How can their outputs be interpreted? This book will enable you to select and correctly apply the interpretation method that is most suitable for your machine learning project.

[Interpreting Probability Models](#) - Tim F. (Futing) Liao 1994-06-30

What is the probability that something will occur, and how is that probability altered by a change in an independent variable? To answer these questions, Tim Futing Liao introduces a systematic way of interpreting commonly used probability models. Since much of what social scientists study is measured in noncontinuous ways and, therefore, cannot be analyzed using a classical regression model, it becomes necessary to model the likelihood that an event will occur. This book explores these models first by reviewing each probability model and then by presenting a systematic way for interpreting the results from each.

[The Analysis of Cross-Classified Categorical Data](#) - Stephen E. Fienberg 2007-08-06

A variety of biological and social science data come in the form of cross-classified tables of counts, commonly referred to as contingency tables. Until recent years the statistical and computational techniques available for the analysis of cross-classified data were quite limited. This book presents some of the recent work on the statistical analysis of cross-classified data using loglinear models, especially in the multidimensional situation.

[An Introduction to Categorical Data Analysis](#) - Alan Agresti 2018-10-11

A valuable new edition of a standard reference The use of statistical methods for categorical data has increased dramatically, particularly for applications in the biomedical and social sciences. *An Introduction to Categorical Data Analysis, Third Edition* summarizes these methods and shows readers how to use them using software. Readers will find a unified generalized linear models approach that connects logistic regression and loglinear models for discrete data with normal regression for continuous data. Adding to the value in the new edition is: • Illustrations of the use of R software to perform all the analyses in the book •

A new chapter on alternative methods for categorical data, including smoothing and regularization methods (such as the lasso), classification methods such as linear discriminant analysis and classification trees, and cluster analysis • New sections in many chapters introducing the Bayesian approach for the methods of that chapter • More than 70 analyses of data sets to illustrate application of the methods, and about 200 exercises, many containing other data sets • An appendix showing how to use SAS, Stata, and SPSS, and an appendix with short solutions to most odd-numbered exercises Written in an applied, nontechnical style, this book illustrates the methods using a wide variety of real data, including medical clinical trials, environmental questions, drug use by teenagers, horseshoe crab mating, basketball shooting, correlates of happiness, and much more. An Introduction to Categorical Data Analysis, Third Edition is an invaluable tool for statisticians and biostatisticians as well as methodologists in the social and behavioral sciences, medicine and public health, marketing, education, and the biological and agricultural sciences.

Analysis of Ordinal Categorical Data - Alan Agresti 2012-07-06

Statistical science's first coordinated manual of methods for analyzing ordered categorical data, now fully revised and updated, continues to present applications and case studies in fields as diverse as sociology, public health, ecology, marketing, and pharmacy. Analysis of Ordinal Categorical Data, Second Edition provides an introduction to basic descriptive and inferential methods for categorical data, giving thorough coverage of new developments and recent methods. Special emphasis is placed on interpretation and application of methods including an integrated comparison of the available strategies for analyzing ordinal data. Practitioners of statistics in government, industry (particularly pharmaceutical), and academia will want this new edition.

Applied Ordinal Logistic Regression Using Stata - Xing Liu 2015-09-30

The first book to provide a unified framework for both single-level and multilevel modeling of ordinal categorical data, Applied Ordinal Logistic Regression Using Stata helps readers learn how to conduct analyses, interpret the results from Stata output, and present those results in scholarly writing. Using step-by-step instructions, this non-technical, applied book leads students, applied researchers, and practitioners to a deeper understanding of statistical concepts by closely connecting the underlying theories of models with the application of real-world data using statistical software. Available with Perusall—an eBook that makes it easier to prepare for class Perusall is an award-winning eBook platform featuring social annotation tools that allow students and instructors to collaboratively mark up and discuss their SAGE textbook. Backed by research and supported by technological innovations developed at Harvard University, this process of learning through collaborative annotation keeps your students engaged and makes teaching easier and more effective. Learn more.

Logistic Regression Models for Ordinal Response Variables - Ann A. O'Connell 2006

Ordinal measures provide a simple and convenient way to distinguish among possible outcomes. The book

provides practical guidance on using ordinal outcome models.

Best Practices in Logistic Regression - Jason W. Osborne 2014-02-26

Jason W. Osborne's Best Practices in Logistic Regression provides students with an accessible, applied approach that communicates logistic regression in clear and concise terms. The book effectively leverages readers' basic intuitive understanding of simple and multiple regression to guide them into a sophisticated mastery of logistic regression. Osborne's applied approach offers students and instructors a clear perspective, elucidated through practical and engaging tools that encourage student comprehension.

Regression Modeling Strategies - Frank E. Harrell 2013-03-09

Many texts are excellent sources of knowledge about individual statistical tools, but the art of data analysis is about choosing and using multiple tools. Instead of presenting isolated techniques, this text emphasizes problem solving strategies that address the many issues arising when developing multivariable models using real data and not standard textbook examples. It includes imputation methods for dealing with missing data effectively, methods for dealing with nonlinear relationships and for making the estimation of transformations a formal part of the modeling process, methods for dealing with "too many variables to analyze and not enough observations," and powerful model validation techniques based on the bootstrap. This text realistically deals with model uncertainty and its effects on inference to achieve "safe data mining".

Applied Logistic Regression Analysis - Scott Menard 2002

The focus in this Second Edition is again on logistic regression models for individual level data, but aggregate or grouped data are also considered. The book includes detailed discussions of goodness of fit, indices of predictive efficiency, and standardized logistic regression coefficients, and examples using SAS and SPSS are included. More detailed consideration of grouped as opposed to case-wise data throughout the book Updated discussion of the properties and appropriate use of goodness of fit measures, R-square analogues, and indices of predictive efficiency Discussion of the misuse of odds ratios to represent risk ratios, and of over-dispersion and under-dispersion for grouped data Updated coverage of unordered and ordered polytomous logistic regression models.

Logistic Regression Models for Ordinal Response Variables - Ann A. O'Connell 2005-11-02

This concise guide provides applied researchers in the fields of the social, educational and behavioural sciences with comprehensive and accessible coverage of the different analyses for ordinal outcomes of the logistic regression models.

Multiple Regression with Discrete Dependent Variables - John G. Orme 2009-03-25

This volume presents detailed discussions of regression models that are appropriate for a variety of discrete dependent variables. Clear language guides the reader briefly through each step of the analysis, using SPSS and result presentation to enhance understanding of the important link function.