

Agresti Categorical Data Analysis

Foundations of Statistics for Data Scientists: With R and Python is designed as a textbook for a one- or two-term introduction to mathematical statistics for students training to become data scientists. It is an in-depth presentation of the topics in statistical science with which any data scientist should be familiar, including probability distributions, descriptive and inferential statistical methods, and linear modeling. The book assumes knowledge of basic calculus, so the presentation can focus on "why it works" as well as "how to do it." Compared to traditional "mathematical statistics" textbooks, however, the book has less emphasis on probability theory and more emphasis on using software to implement statistical methods and to conduct simulations to illustrate key concepts. All statistical analyses in the book use R software, with an appendix showing the same analyses with Python. The book also introduces modern topics that do not normally appear in mathematical statistics texts but are highly relevant for data scientists, such as Bayesian inference, generalized linear models for non-normal responses (e.g., logistic regression and Poisson logit), and regularized model fitting. The nearly 500 exercises are grouped into "Data Analysis and Applications" and "Methods and Concepts." Appendices introduce R and Python and contain solutions for odd-numbered exercises. The book's website has expanded R, Python, and Matlab appendices and all data sets from the examples and exercises.

The use of Bayesian methods for the analysis of data has grown substantially in areas as diverse as applied statistics, psychology, economics and medical science. *Bayesian Methods for Categorical Data* sets out to demystify modern Bayesian methods, making them accessible to students and researchers alike. Emphasizing the use of statistical computing and applied data analysis, this book provides a comprehensive introduction to Bayesian methods of categorical outcomes. * Reviews recent Bayesian methodology for categorical outcomes (binary, count and multinomial data). * Considers missing data models techniques and non-standard models (ZIP and negative binomial). * Evaluates time series and spatio-temporal models for discrete data. * Features discussion of univariate and multivariate techniques. * Provides a set of downloadable worked examples with documented WinBUGS code, available from an ftp site. The author's previous 2 bestselling titles provided a comprehensive introduction to the theory and application of Bayesian models. *Bayesian Models for Categorical Data* continues to build upon this foundation by developing their application to categorical, or discrete data - one of the most common types of data available. The author's clear and logical approach makes the book accessible to a wide range of students and practitioners, including those dealing with categorical data in medicine, sociology, psychology and epidemiology. Taking a data-driven approach, *A Course on Statistics for Finance* presents statistical methods for financial investment analysis. The author introduces regression analysis, time series analysis, and multivariate analysis step by step using models and methods from finance. The book begins with a review of basic statistics, including descriptive statistics, kinds of variables, and types of data sets. It then discusses regression analysis in general terms and in terms of financial investment models, such as the capital asset pricing model and the Fama/French model. It also describes mean-variance portfolio analysis and concludes with a focus on time series analysis. Providing the connection between elementary statistics courses and quantitative finance courses, this text helps both existing and future quants improve their data analysis skills and better understand the modeling process.

In order to gain an understanding of the dynamics of human individual and average growth patterns it is essential that the right methods are selected. There are a variety of methods available to analyse individual growth patterns, to estimate variation in different growth measures in populations and to relate genetic and environmental factors to individual and average growth. This volume provides an overview of modern techniques for the assessment and collection of growth data and methods of analysis for individual and population growth data. The book contains the basic mathematical and statistical tools required to understand the concepts of the methods under discussion and worked examples of analyses, but it is neither a mathematical treatise, nor a recipe book for growth data analysis. Aimed at junior and senior researchers involved in the analysis of human growth data, this book will be an essential reference for anthropologists, auxologists and paediatricians.

Statistical Methods for Rates and Proportions

With R and Python

A Modern Approach to Regression with R

Ordinal Data Modeling is a comprehensive treatment of ordinal data models from both likelihood and Bayesian perspectives. A unique feature of this text is its emphasis on applications. All models developed in the book are motivated by real datasets, and considerable attention is devoted to the description of diagnostic plots and residual analyses. Software and datasets used for all analyses described in the text are available on websites listed in the preface.

Contingency tables arise in diverse fields, including life sciences, education, social and political sciences, notably market research and opinion surveys. Their analysis plays an essential role in gaining insight into structures of the quantities under consideration and in supporting decision making. Combining both theory and applications, this book presents models and methods for the analysis of two- and multidimensional-contingency tables. An excellent reference for advanced undergraduates, graduate students, and practitioners in statistics as well as biosciences, social sciences, education, and economics, the work may also be used as a textbook for a course on categorical data analysis. Prerequisites include basic background on statistical inference and knowledge of statistical software packages.

Although many books currently available describe statistical models and methods for analyzing longitudinal data, they do not highlight connections between various research threads in the statistical literature. Responding to this void, *Longitudinal Data Analysis* provides a clear, comprehensive, and unified overview of state-of-the-art theory and applications. It also focuses on the assorted challenges that arise in analyzing longitudinal data. After discussing historical aspects, leading researchers explore four broad themes: parametric modeling, nonparametric and semiparametric models, joint models, and incomplete data. Each of these sections begins with an introductory chapter that provides useful background material and a broad outline to set the stage for subsequent chapters. Rather than focusing on a narrowly defined topic, chapters integrate important research discussions from the statistical literature. They seamlessly blend theory with applications and include examples and case studies from various disciplines. Destined to become a landmark publication in the field, this carefully edited collection emphasizes statistical models and methods likely to endure in the future. Whether involved in the development of statistical methodology or the analysis of longitudinal data, readers will gain new perspectives on the field.

Now in its third edition, this classic book is widely considered the leading text on Bayesian methods, lauded for its accessible, practical approach to analyzing data and solving research problems. *Bayesian Data Analysis, Third Edition* continues to take an applied approach to analysis using up-to-date Bayesian methods. The authors—all leaders in the statistics community—introduce basic concepts from a data-analytic perspective before presenting advanced methods. Throughout the text, numerous worked examples drawn from real applications and research emphasize the use of Bayesian inference in practice. New to the Third Edition Four new chapters on nonparametric modeling Coverage of weakly informative priors and boundary-avoiding priors Updated discussion of cross-validation and predictive information criteria Improved convergence monitoring and effective sample size calculations for iterative simulation Presentations of Hamiltonian Monte Carlo, variational Bayes, and expectation propagation New and revised software code The book can be used in three different ways. For undergraduate students, it introduces Bayesian inference starting from first principles. For graduate students, the text presents effective current approaches to Bayesian modeling and computation in statistics and related fields. For researchers, it provides an assortment of Bayesian methods in applied statistics. Additional materials, including data sets used in the examples, solutions to selected exercises, and software instructions, are available on the book 's web page.

A Course on Statistics for Finance

Encyclopedia of Quality of Life and Well-Being Research

Categorical Data Analysis for the Behavioral and Social Sciences

Bayesian Data Analysis, Third Edition

This book provides a comprehensive introduction to methods and models for categorical data analysis and their applications in social science research. Companion website also available, at https://webspace.utexas.edu/dpowers/www/ *Anstat News asked three review editors to rate their top five favorite books in the September 2003 issue. Categorical Data Analysis was among those chosen. A valuable new edition of a standard reference "A must-have" book for anyone expecting to do research and/or applications in categorical data analysis. -Statistics in Medicine on new releases in the field of statistics in the social sciences. Responding to new developments in the field as well as to the needs of a new generation of professionals and students, this new edition of the classic Categorical Data Analysis offers a comprehensive introduction to the most important methods for categorical data analysis. Designed for statisticians and biostatisticians as well as scientists and graduate students practicing statistics, Categorical Data Analysis, Second Edition summarizes the latest methods for univariate and correlated multivariate categorical responses. Readers will find a unified generalized linear models approach that connects logistic regression and Poisson and negative binomial regression for discrete data with normal regression for continuous data. Adding to the value in the new edition is coverage of: Three new chapters on methods for repeated measurement and other forms of clustered categorical data, including marginal models and associated generalized estimating equations (GEE) methods, and mixed models with random effects Stronger emphasis on logistic regression modeling of binary and multicategory data An appendix showing the use of SAS for conducting nearly all analyses in the book Prescriptions for how ordinal variables should be treated differently than nominal variables Discussion of exact small-sample procedures More than 100 analyses of real data sets to illustrate application of the methods, and more than 600 exercises An Instructor's Manual presenting detailed solutions to all the problems in the book*

Anstat News asked three review editors to rate their top five favorite books in the September 2003 issue. Categorical Data Analysis was among those chosen. A valuable new edition of a standard reference "A must-have" book for anyone expecting to do research and/orapplications in categorical data analysis. -Statistics in Medicine on new releases in the field of statistics in the social sciences. Responding to new developments inthe field as well as to the needs of a new generation ofprofessionals and students, this new edition of the classicCategorical Data Analysis offers a comprehensiveintroduction to the most important methods for categorical dataanalysis. Designed for statisticians and biostatisticians as well ascientists and graduate students practicing statistics,Categorical Data Analysis, Second Edition summarizes thelatest methods for univariate and correlated multivariatecategorical responses. Readers will find a unified generalizedlinear models approach that connects logistic regression andPoisson and negative binomial regression for discrete data withnormal regression for continuous data. Adding to the value in thenew edition is coverage of: Three new chapters on methods for repeated measurement andother forms of clustered categorical data, including marginalmodels and associated generalized estimating equations (GEE)methods, and mixed models with random effects Stronger emphasis on logistic regression modeling of binaryand multicategory data An appendix showing the use of SAS for conducting nearly all analyses in the book Prescriptions for how ordinal variables should be treateddifferently than nominal variables Discussion of exact small-sample procedures More than 100 analyses of real data sets to illustrateapplication of the methods, and more than 600 exercises An Instructor's Manual presenting detailed solutions to allthe problems in the book is available from the Wiley editorial department.

Statisticians and researchers will find this book, newly updated for SAS/STAT 12.1, to be a useful discussion of categorical data analysis techniques as well as an invaluable aid in applying these methods with SAS.

Categorical Data Analysis Using SAS, Third Edition

International Encyclopedia of Statistical Science

Statistics: The Art and Science of Learning from Data

Ordinal Data Modeling

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.

This book focuses on tools and techniques for building regression models using real-world data and assessing their validity. A key theme throughout the book is that it makes sense to base inferences or conclusions only on valid models. Plots are shown to be an important tool for both building regression models and assessing their validity. We shall see that deciding what to plot and how each plot should be interpreted will be a major challenge. In order to overcome this challenge we shall need to understand the mathematical properties of the fitted regression models and associated diagnostic procedures. As such this will be an area of focus throughout the book. In particular, we shall carefully study the properties of resi- als in order to understand when patterns in residual plots provide direct information about model misspecification and when they do not.

The regression output and plots that appear throughout the book have been gen- ated using R. The output from R that appears in this book has been edited in minor ways. On the book web site you will find the R code used in each example in the text.

Developed from the award-winning course on the subject, these videos include live-in-class recordings, which instructors may find useful in a blended or flipped classroom setting. The videos are also suitable as a substitute for a short course. This package includes a complete copy of Statistics: The Art and Science of Learning from Data by Alan Agresti and Christine Franklin, as well as access to the eText and MyMathLab. Statistics: The Art and Science of Learning from Data, Third Edition, helps you become statistically literate by encouraging you to ask and answer interesting statistical questions. This book takes the ideas that have turned statistics into a central science in modern life and makes them accessible. The Third Edition has been edited for conciseness and clarity to keep you focused on the main concepts. The data-rich examples that feature intriguing human-interest topics now include topic labels to indicate which statistical topic is being applied. Featuring a practical approach with numerous examples, the second edition of Categorical Data Analysis for the Behavioral and Social Sciences focuses on helping the reader develop a conceptual understanding of categorical methods, making it a much more accessible text than others on the market. The authors cover common categorical analysis methods and emphasize specific research questions that can be addressed by each analytic procedure, including how to obtain results using SPSS, SAS, and R, so that readers are able to address the research questions they wish to answer. Each chapter begins with a "Look Ahead" section to highlight key content. This is followed by an in-depth focus and explanation of the relationship between the initial research question, the use of software to perform the analyses, and how to interpret the output substantively. Included at the end of each chapter are a range of software examples and questions to test knowledge. New to the second edition: The addition of R syntax for all analyses and an update of SPSS and SAS syntax. The addition of a new chapter on GLMMs. Clarification of concepts and ideas that graduate students found confusing, including revised problems at the end of the chapters. Written for those without an extensive mathematical background, this book is ideal for a graduate course in categorical data analysis taught in departments of psychology, educational psychology, human development and family studies, sociology, public health, and business. Researchers in these disciplines interested in applying these procedures will also appreciate this book 's accessible approach.

Statistical science as organized in formal academic departments is relatively new. With a few exceptions, most Statistics and Biostatistics departments have been created within the past 60 years. This book consists of a set of memoirs, one for each department in the U.S. created by the mid-1960s. The memoirs describe key aspects of the department 's history -- its founding, its growth, key people in its development, success stories (such as major research accomplishments) and the occasional failure story. PhD graduates who have had a significant impact, its impact on statistical education, and a summary of where the department stands today and its vision for the future. Read here all about how departments such as at Berkeley, Chicago, Harvard, and Stanford started and how they got to where they are today. The book should also be of interests to scholars in the field of disciplinary history.

Statistical Methods for Categorical Data Analysis

Discrete Data Analysis with R

Strength in Numbers: The Rising of Academic Statistics Departments in the U. S.

Foundations of Linear and Generalized Linear Models

The fourth edition has an even stronger emphasis on concepts and applications, with greater attention to "real data" both in the examples and exercises. The mathematics is still downplayed, in particular probability, which is all too often a stumbling block for students. On the other hand, the text is not a cookbook. Reliance on an overly simplistic recipe-based approach to statistics is not the route to good statistical practice. Changes in the Fourth Edition: Since the first edition, the increase in computer power coupled with the continued improvement and accessibility of statistical software has had a major impact on the way social scientists analyze data. Because of this, this book does not cover the traditional shortcut hand-computational formulas and approximations. The presentation of computationally complex methods, such as regression, emphasizes interpretation of software output rather than the formulas for performing the analysis. Teh text contains numerous sample printouts, mainly in the style of SPSS and occasionally SAS, both in chapter text and homework problems. This edition also has an appendix explaining how to apply SPSS and SAS to conduct the methods of each chapter and a website giving links to information about other software.

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.

The goal of this book is multidimensional: a) to help reviving Statistics education in many parts in the world where it is in crisis. For the first time authors from many developing countries have an opportunity to write together with the most prominent world authorities. The editor has spent several years searching for the most reputable statisticians all over the world. International contributors are either presidents of the local statistical societies, or head of the Statistics department at the main university, or the most distinguished statisticians in their countries. b) to enable any non-statistician to obtain quick and yet comprehensive and highly understandable view on certain statistical term, method or application c) to enable all the researchers, managers and practitioners to refresh their knowledge in Statistics, especially in certain controversial fields. d) to introduce in statistics among students, since they will see its usefulness and relevance in almost all branches of Science.

This text provides a comprehensive and practical review of the main statistical methods in pathology and laboratory medicine. It reviews statistical concepts used in pathology and laboratory medicine. The information provided is relevant to pathologists both for their day to day clinical practice as well as in their research and scholarly activities. The text will begin by explaining the fundamentals concepts in statistics. In the later sections, these fundamental concepts are expanded and unique applications of statistical methods in pathology and laboratory medicine practice are introduced. Other sections of the text explain research methodology in pathology covering a broad range of topics from study design to analysis of data.

Finally, data-heavy novel concepts that are emerging in pathology and pathology research are presented such as molecular pathology and pathology informatics. Introduction to Statistical Methods in Pathology will be of great value for pathologists, pathology residents, basic and translational researchers, laboratory managers and medical students.

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Categorical Data Analysis

Methods in Human Growth Research

Analyzing Categorical Data

A valuable overview of the most important ideas and results in statistical modeling Written by a highly-experienced author, Foundations of Linear and Generalized Linear Models is a clear and comprehensive guide to the key concepts and results of linearstatistical models. The book presents a broad, in-depth overview of the most commonly usedstatistical models by discussing the theory underlying the models, R software applications, andexamples with crafted models to elucidate key ideas and promote practical modelbuilding. The book begins by illustrating the fundamentals of linear models, such as how the model-fitting projects the data onto a model vector subspace and how orthogonal decompositions of the data yield information about the effects of explanatory variables. Subsequently, the book covers the most popular generalized linear models, which include binomial and multinomial logistic regression for categorical data, and Poisson and negative binomial loglinear models for count data. Focusing on the theoretical underpinnings of these models, Foundations ofLinear and Generalized Linear Models also features: An introduction to quasi-likelihood methods that require weaker distributional assumptions, such as generalized estimating equation methods An overview of linear mixed models and generalized linear mixed models with random effects for clustered correlated data, Bayesian modeling, and extensions to handle problematic cases such as high dimensional problems Numerous examples that use R software for all text data analyses More than 400 exercises for readers to practice and extend the theory, methods, and data analysis A supplementary website with datasets for the examples and exercises An invaluable textbook for upper-undergraduate and graduate-level students in statistics and biostatistics courses, Foundations of Linear and Generalized Linear Models is also an excellent reference for practicing statisticians and biostatisticians, as well as researchers who are interested in statistical models for analyzing data.

An introduction to applied probability; Assessing significance in a fourfold table; Determining sample sizes needed to detect a difference between two proportions; How to randomize; Sampling method; The analysis of data from matched samples; The comparison of proportions from several independent samples; Combining evidence from fourfold tables; The effects of misclassification errors; The control of misclassification error; The measurement of interrater agreement; The standardization of rates.

This set contains 9780471224242 Categorical Data Analysis Using the SAS System, Second Edition by Maura E. Stokes, Charles S. Davis, Gary G. Koch and Categorical Data Analysis, Second Edition by Alan Agresti.

An Applied Treatment of Modern Graphical Methods for Analyzing Categorical DataDiscrete Data Analysis with R: Visualization and Modeling Techniques for Categorical and Count Data presents an applied treatment of modern methods for the analysis of categorical data, both discrete response data and frequency data. It explains how to use graphical meth

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Foundations of Statistics for Data Scientists

Statistical Consulting

Introduction to Statistical Methods in Pathology

Introduces the key concepts in the analysis of categoricaldata with illustrative examples and accompanying R code This book is aimed at all those who wish to discover how to analyze categorical data without getting immersed in complicated mathematics and without needing to wade through a large amount of prose. It is aimed at researchers with their own data ready to be analyzed and at students who would like an approachable alternative view of the subject. Each new topic in categorical data analysis is illustrated with an example that readers can apply to their own sets of data. In many cases, R code is given and excerpts from the resulting output are presented. In the context of log-linear models for cross-tabulations, two specialties of the house have been included: the use of cobweb diagrams to get visual information concerning significant interactions, and a procedure for detecting outlier category combinations. The R code used for these is available and may be freely adapted. In addition, this book: • Uses an example to illustrate each new topic in categorical data • Provides a clear explanation of an important subject • Is understandable to most readers with minimal statistical and mathematical backgrounds • Contains examples that are accompanied by R code and resulting output • Includes starred sections that provide more background details for interested readers Categorical Data Analysis by Example is a reference for students in statistics and researchers in other disciplines, especially the social sciences, who use categorical data. This book is also a reference for practitioners in market research, medicine, and other fields.

GRAHAM J. G. UPTON is formerly Professor of Applied Statistics, Department of Mathematical Sciences, University of Essex. Dr. Upton is author of The Analysis of Cross-tabulated Data (1978) and joint author of Spatial Data Analysis by Example (2 volumes, 1995), both published by Wiley. He is the lead author of The Oxford Dictionary of Statistics (OUP, 2014). His books have been translated into Japanese, Russian, and Welsh.

Categorical data arise often in many fields, including biometrics, economics, management, manufacturing, marketing, psychology, and sociology. This book provides an introduction to the analysis of such data. The coverage is broad, using the loglinear Poisson regression model and logistic binomial regression models as the primary engines for methodology. Topics covered include count regression models, such as Poisson, negative binomial, zero-inflated, and zero-truncated models; loglinear models for two-dimensional and multidimensional contingency tables, including for square tables and tables with ordered categories; and regression models for two-category (binary) and multiple-category target variables, such as logistic and proportional odds models. All methods are illustrated with analyses of real data examples, many from recent subject area journal articles. These analyses are highlighted in the text, and are more detailed than is typical, providing discussion of the context and background of the problem, model checking, and scientific implications. More than 200 exercises are provided, many also based on recent subject area literature. Data sets and computer code are available at a web site devoted to the text. Adopters of this book may request a solutions manual from: textbook@springer-ny.com.

From the reviews: "Jeff Simonoff's book is at the top of the heap of categorical data analysis textbooks... The examples are superb. Student reactions in a class I taught from this text were uniformly positive, particularly because of the examples and exercises. Additional materials related to the book, particularly code for S-Plus, SAS, and R, useful for analysis of examples, can be found at the author's Web site at New York University. I liked this book for this reason, and recommend it to you for pedagogical purposes." (Stanley Wasserman, The American Statistician, August 2006, Vol. 60, No. 3) "The book has various noteworthy features. The examples used are from a variety of topics, including medicine, economics, sports, mining, weather, as well as social aspects like needle-exchange programs. The examples motivate the theory and also illustrate nuances of data analytical procedures. The book also incorporates several newer methods for analyzing categorical data, including zero-inflated Poisson models, multivariate analysis of binomial and poisson models, sandwich estimators, multinomial smoothing, ordinal agreement tables... this is definitely a good reference book for any researcher working with categorical data." Technometrics, May 2004 "This guide provides a practical approach to the appropriate analysis of categorical data and is suitable for teaching a course on the subject. These videos include live-in-class recordings, which instructors may find useful in a blended or flipped classroom setting. The videos are also suitable as a substitute for a short course. This package includes a complete copy of Statistics: The Art and Science of Learning from Data by Alan Agresti and Christine Franklin, as well as access to the eText and MyMathLab. Statistics: The Art and Science of Learning from Data, Third Edition, helps you become statistically literate by encouraging you to ask and answer interesting statistical questions. This book takes the ideas that have turned statistics into a central science in modern life and makes them accessible. The Third Edition has been edited for conciseness and clarity to keep you focused on the main concepts. The data-rich examples that feature intriguing human-interest topics now include topic labels to indicate which statistical topic is being applied. Featuring a practical approach with numerous examples, the second edition of Categorical Data Analysis for the Behavioral and Social Sciences focuses on helping the reader develop a conceptual understanding of categorical methods, making it a much more accessible text than others on the market. The authors cover common categorical analysis methods and emphasize specific research questions that can be addressed by each analytic procedure, including how to obtain results using SPSS, SAS, and R, so that readers are able to address the research questions they wish to answer. Each chapter begins with a "Look Ahead" section to highlight key content. This is followed by an in-depth focus and explanation of the relationship between the initial research question, the use of software to perform the analyses, and how to interpret the output substantively. Included at the end of each chapter are a range of software examples and questions to test knowledge. New to the second edition: The addition of R syntax for all analyses and an update of SPSS and SAS syntax. The addition of a new chapter on GLMMs. Clarification of concepts and ideas that graduate students found confusing, including revised problems at the end of the chapters. Written for those without an extensive mathematical background, this book is ideal for a graduate course in categorical data analysis taught in departments of psychology, educational psychology, human development and family studies, sociology, public health, and business. Researchers in these disciplines interested in applying these procedures will also appreciate this book 's accessible approach.

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Statistical Consulting

Introduction to Statistical Methods in Pathology

Introduces the key concepts in the analysis of categoricaldata with illustrative examples and accompanying R code This book is aimed at all those who wish to discover how to analyze categorical data without getting immersed in complicated mathematics and without needing to wade through a large amount of prose. It is aimed at researchers with their own data ready to be analyzed and at students who would like an approachable alternative view of the subject. Each new topic in categorical data analysis is illustrated with an example that readers can apply to their own sets of data. In many cases, R code is given and excerpts from the resulting output are presented. In the context of log-linear models for cross-tabulations, two specialties of the house have been included: the use of cobweb diagrams to get visual information concerning significant interactions, and a procedure for detecting outlier category combinations. The R code used for these is available and may be freely adapted. In addition, this book: • Uses an example to illustrate each new topic in categorical data • Provides a clear explanation of an important subject • Is understandable to most readers with minimal statistical and mathematical backgrounds • Contains examples that are accompanied by R code and resulting output • Includes starred sections that provide more background details for interested readers Categorical Data Analysis by Example is a reference for students in statistics and researchers in other disciplines, especially the social sciences, who use categorical data. This book is also a reference for practitioners in market research, medicine, and other fields.

GRAHAM J. G. UPTON is formerly Professor of Applied Statistics, Department of Mathematical Sciences, University of Essex. Dr. Upton is author of The Analysis of Cross-tabulated Data (1978) and joint author of Spatial Data Analysis by Example (2 volumes, 1995), both published by Wiley. He is the lead author of The Oxford Dictionary of Statistics (OUP, 2014). His books have been translated into Japanese, Russian, and Welsh.

Categorical data arise often in many fields, including biometrics, economics, management, manufacturing, marketing, psychology, and sociology. This book provides an introduction to the analysis of such data. The coverage is broad, using the loglinear Poisson regression model and logistic binomial regression models as the primary engines for methodology. Topics covered include count regression models, such as Poisson, negative binomial, zero-inflated, and zero-truncated models; loglinear models for two-dimensional and multidimensional contingency tables, including for square tables and tables with ordered categories; and regression models for two-category (binary) and multiple-category target variables, such as logistic and proportional odds models. All methods are illustrated with analyses of real data examples, many from recent subject area journal articles. These analyses are highlighted in the text, and are more detailed than is typical, providing discussion of the context and background of the problem, model checking, and scientific implications. More than 200 exercises are provided, many also based on recent subject area literature. Data sets and computer code are available at a Web site devoted to this text." (T. Postelnicu, Zentralblatt MATH, Vol. 1028, 2003) "This book grew out of notes prepared by the author for classes in categorical data analysis. The presentation is fresh and compelling to read. Regression ideas are used to motivate the modelling presented. The book focuses on applying methods to real problems; many of these will be novel to readers of statistics texts ... All chapters end with a section providing references to books or articles for the inquiring reader." (C.M. O'Brien, Short Book Reviews, Vol. 23 (3), 2003)

Praise for the Second Edition "A must-have book for anyone expecting to do research and/orapplications in categorical data analysis. -Statistics in Medicine "It is a total delight reading this book." -Pharmaceutical Research "If you do any analysis of categorical data, this is anessential desktop reference." —Technometrics The use of statistical methods for analyzing categorical datahas increased dramatically, particularly in the biomedical, socialsciences, and financial industries. Responding to new developments, thisbook offers a comprehensive treatment of the most importantmethods for categorical data analysis. Categorical Data Analysis, Third Edition summarizes thelatest methods for univariate and correlated multivariatecategorical responses. Readers will find a unified generalizedlinear models approach that connects logistic regression andPoisson and negative binomial loglinear models for discrete datawith normal regression for continuous data. This edition alsofeatures: An emphasis on logistic and probit regression methods forbinary, ordinal, and nominal responses for independent observationsand for clustered data with marginal models and random effectsmodels Two new chapters on alternative methods for binary responsesdata, including smoothing and regularization methods.classification methods such as linear discriminant analysis andclassification trees, and cluster analysis New sections introducing the Bayesian approach for methods inthat chapter More than 100 analyses of data sets and over 600 exercises Notes at the end of each chapter that provide references torecent research and topics not covered in the text, linked to a bibliography of more than 1,200 sources A supplementary website showing how to use R and SAS; for allexamples in the text, with information also about SPSS and Stataaand with exercise solutions Categorical Data Analysis, Third Edition is an invaluabletool for statisticians and methodologists, such as biostatisticiansand researchers in the social and behavioral sciences, medicine andpublic health, marketing, education, finance, biological andagricultural sciences, and industrial quality control.

Longitudinal data analysis for biomedical and behavioral sciences This innovative book sets forth and describes methods for the analysis of longitudinaldata, emphasizing applications to problems in the biomedical and behavioral sciences. Reflecting the growing importance and use of longitudinal data across many areas of research, the text is designed to help users of statistics better analyze and understand this type of data. Much of the material from the book grew out of a course taught by Dr. Hedeker on longitudinal data analysis. The material is, therefore, thoroughly classroom tested and includes a number of features designed to help readers better understand and apply the material. Statistical procedures featured within the text include: • Repeated measures analysis of variance • Multivariate analysis of variance for repeated measures • Random-effects regression models (RMM) • Covariance-pattern models • Generalized-estimating equations (GEE) models • Generalizations of RRM and GEE for categorical outcomes Practical in their approach, the authors emphasize the applications of the methods, using real-world examples for illustration. Some syntax examples are provided, although the authors do not generally focus on software in this book. Several datasets and computer syntax examples are posted on this title's companion Web site. The authors intend to keep the syntax examples current as new versions of the software programs emerge. This text is designed for both undergraduate and graduate courses in longitudinal data analysis. Instructors can take advantage of overheads and additional course materials available online for adopters. Applied statisticians in biomedicine and the social sciences can also use the book as a convenient reference.

Studyguide for an Introduction to Categorical Data Analysis by Agresti

Analysis of Categorical Data with R

Learning Statistics with R

Analysis of Ordinal Categorical Data

This book is intended for the statistician or student interested in becoming a statistical consultant, as well as clients who need to understand what is involved in the consulting process. It discusses different consulting environments, provides detailed descriptions of communication skills a consultant must possess, and provides concrete examples and case-studies of varying complexity. Emphasis is placed on the importance of engaging the client's understanding of the purpose and interpretation of statistical procedures.

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