

Nonparametric Statistics For The Behavioral Sciences

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This Second Edition presents a practical and understandable approach that enhances and expands the statistical toolset for readers. This book includes: New coverage of the sign test and the Kolmogorov-Smirnov two-sample test in an effort to offer a logical and natural progression to statistical power SPSS® (Version 21) software and updated screen captures to demonstrate how to perform and recognize the steps in the various procedures Data sets and odd-numbered solutions provided in an appendix, and tables of critical values Supplementary material to aid in reader comprehension, which includes: narrated videos and screen animations with step-by-step instructions on how to follow the tests using SPSS; online decision trees to help users determine the needed type of statistical test; and additional solutions not found within the book.

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Called the "bible of applied statistics," the first edition of the bestselling Handbook of Parametric and Nonparametric Statistical Procedures was unsurpassed in its scope. The Second Edition goes even further - more tests, more examples, more than 250 pages of new material. Thorough - Up-To-Date With details of more than 100 statistical procedures, the Handbook offers unparalleled coverage of modern statistical methods. You get in-depth discussion of both practical and theoretical issues, many of which are not addressed in conventional statistics books. Practical - User-Friendly Accessible to novices but valuable to seasoned researchers, the Handbook emphasizes application over theory and presents the procedures in a standardized format that makes it easy to access the information you need. If you have to \emptyset Decide what

method of analysis to use \emptyset Use a particular test for the first time \emptyset Distinguish acceptable from unacceptable research \emptyset Interpret the results of published studies the Handbook of Parametric and Nonparametric Statistical Procedures has the background, the answers, and the guidelines to get the job done.

Based on over 30 years of successful teaching experience in this course, Robert Pagano's introductory text takes an intuitive, concepts-based approach to descriptive and inferential statistics. He uses the sign test to introduce inferential statistics, empirically derived sampling distributions, many visual aids, and lots of interesting examples to promote student understanding. One of the hallmarks of this text is the positive feedback from students -- even students who are not mathematically inclined praise the text for its clarity, detailed presentation, and use of humor to help make concepts accessible and memorable. Thorough explanations precede the introduction of every formula, and the exercises that immediately follow include a step-by-step model that lets students compare their work against fully solved examples. This combination makes the text perfect for students taking their first statistics course in psychology or other social and behavioral sciences. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Balancing the "cookbook" approach of some texts with the more mathematical approach of others, Nonparametric Statistical Methods for Complete and Censored Data introduces commonly used non-parametric methods for complete data and extends those methods to right censored data analysis. Whenever possible, the authors derive their methodology from the general theory of statistical inference and introduce the concepts intuitively for students with minimal backgrounds. Derivations and mathematical details are relegated to appendices at the end of each chapter, which allows students to easily proceed through each chapter without becoming bogged down in a lot of mathematics. In addition to the nonparametric methods for analyzing complete and censored data, the book covers optimal linear rank statistics, clinical equivalence, analysis of block designs, and precedence tests. To make the material more accessible and practical, the authors use SAS programs to illustrate the various methods included. Exercises in each chapter, SAS code, and a clear, accessible presentation make this an outstanding text for a one-semester senior or graduate-level course in nonparametric statistics for students in a variety of disciplines, from statistics and biostatistics to business, psychology, and the social scientists. Prerequisites: Students will need a solid background in calculus and a two-semester course in mathematical statistics.

This text presents the major statistical concepts, methods and designs, and their analyses in simple, easily accessible language.

A practical and understandable approach to nonparametric statistics for researchers across diverse areas of study As the

importance of nonparametric methods in modern statistics continues to grow, these techniques are being increasingly applied to experimental designs across various fields of study. However, researchers are not always properly equipped with the knowledge to correctly apply these methods. *Nonparametric Statistics for Non-Statisticians: A Step-by-Step Approach* fills a void in the current literature by addressing nonparametric statistics in a manner that is easily accessible for readers with a background in the social, behavioral, biological, and physical sciences. Each chapter follows the same comprehensive format, beginning with a general introduction to the particular topic and a list of main learning objectives. A nonparametric procedure is then presented and accompanied by context-based examples that are outlined in a step-by-step fashion. Next, SPSS® screen captures are used to demonstrate how to perform and recognize the steps in the various procedures. Finally, the authors identify and briefly describe actual examples of corresponding nonparametric tests from diverse fields. Using this organized structure, the book outlines essential skills for the application of nonparametric statistical methods, including how to:

- Test data for normality and randomness
- Use the Wilcoxon signed rank test to compare two related samples
- Apply the Mann-Whitney U test to compare two unrelated samples
- Compare more than two related samples using the Friedman test
- Employ the Kruskal-Wallis H test to compare more than two unrelated samples
- Compare variables of ordinal or dichotomous scales
- Test for nominal scale data

A detailed appendix provides guidance on inputting and analyzing the presented data using SPSS®, and supplemental tables of critical values are provided. In addition, the book's FTP site houses supplemental data sets and solutions for further practice. Extensively classroom tested, *Nonparametric Statistics for Non-Statisticians* is an ideal book for courses on nonparametric statistics at the upper-undergraduate and graduate levels. It is also an excellent reference for professionals and researchers in the social, behavioral, and health sciences who seek a review of nonparametric methods and relevant applications.

Nonparametric Statistics for the Behavioral Sciences McGraw-Hill Humanities, Social Sciences & World Languages

What do you do when you realize that the data set from the study that you have just completed violates the sample size or other requirements needed to apply parametric statistics? *Nonparametric Statistics for Health Care Research* was developed for such scenarios—research undertaken with limited funds, often using a small sample size, with the primary objective of improving client care and obtaining better client outcomes. Covering the most commonly used nonparametric statistical techniques available in statistical packages and on open-resource statistical websites, this well-organized and accessible Second Edition helps readers, including those beyond the health sciences field, to understand when to use a particular nonparametric statistic, how to generate and interpret the resulting computer printouts, and how to present the results in table and text format.

This field-leading introduction to statistics text for students in the behavioral and social sciences continues to offer straightforward instruction, accuracy, built-in learning aids, and real-world examples. The goals of *STATISTICS FOR THE BEHAVIORAL SCIENCES*, 10th Edition are to

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teach the methods of statistics and convey the basic principles of objectivity and logic that are essential for science -- and valuable in everyday life. Authors Frederick Gravetter and Larry Wallnau help students understand statistical procedures through a conceptual context that explains why the procedures were developed and when they should be used. Students have numerous opportunities to practice statistical techniques through learning checks, examples, step-by-step demonstrations, and problems. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Revision of the classic text in the field, adding two new chapters and thoroughly updating all others. The original structure is retained, and the book continues to serve as a combined text/reference.

This book presents statistical concepts and techniques in simple, everyday language to help readers gain a better understanding of how they work and how to interpret them correctly. Each self-contained chapter features a description of the statistic including how it is used and the information it provides, how to calculate the formula, the strengths and weaknesses of each technique, the conditions needed for its use, and an example that uses and interprets the statistic. A glossary of terms and symbols is also included along with an Interactive CD with PowerPoint presentations and problems and solutions for each chapter. This brief paperback is an ideal supplement for statistics, research methods, or any course that uses statistics, or as a handy reference tool to refresh one's memory about key concepts. The actual research examples are from a variety of fields, including psychology and education.

Proven Material for a Course on the Introduction to the Theory and/or on the Applications of Classical Nonparametric Methods Since its first publication in 1971, *Nonparametric Statistical Inference* has been widely regarded as the source for learning about nonparametric statistics. The fifth edition carries on this tradition while thoroughly revising at least 50 percent of the material. New to the Fifth Edition Updated and revised contents based on recent journal articles in the literature A new section in the chapter on goodness-of-fit tests A new chapter that offers practical guidance on how to choose among the various nonparametric procedures covered Additional problems and examples Improved computer figures This classic, best-selling statistics book continues to cover the most commonly used nonparametric procedures. The authors carefully state the assumptions, develop the theory behind the procedures, and illustrate the techniques using realistic research examples from the social, behavioral, and life sciences. For most procedures, they present the tests of hypotheses, confidence interval estimation, sample size determination, power, and comparisons of other relevant procedures. The text also gives examples of computer applications based on Minitab, SAS, and StatXact and compares these examples with corresponding hand calculations. The appendix includes a collection of tables required for solving the data-oriented problems. *Nonparametric Statistical Inference, Fifth Edition* provides in-depth yet accessible coverage of the theory and methods of nonparametric statistical inference procedures. It takes a practical approach that draws on scores of examples and problems and minimizes the theorem-proof format. Jean Dickinson Gibbons was recently interviewed regarding her generous pledge to Virginia Tech.

A unique approach to understanding the foundations of statistical quality control with a focus on the latest developments in nonparametric control charting methodologies Statistical Process Control (SPC) methods have a long and successful history and have revolutionized many facets of industrial production around the world. This book addresses recent developments in statistical process control bringing the modern use of computers and simulations along with theory within the reach of both the researchers and practitioners. The emphasis is on the burgeoning field of nonparametric SPC (NSPC) and the many new methodologies developed by researchers worldwide that are revolutionizing SPC. Over the last several years research in SPC, particularly on control charts, has seen phenomenal growth. Control charts

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are no longer confined to manufacturing and are now applied for process control and monitoring in a wide array of applications, from education, to environmental monitoring, to disease mapping, to crime prevention. This book addresses quality control methodology, especially control charts, from a statistician's viewpoint, striking a careful balance between theory and practice. Although the focus is on the newer nonparametric control charts, the reader is first introduced to the main classes of the parametric control charts and the associated theory, so that the proper foundational background can be laid. Reviews basic SPC theory and terminology, the different types of control charts, control chart design, sample size, sampling frequency, control limits, and more Focuses on the distribution-free (nonparametric) charts for the cases in which the underlying process distribution is unknown Provides guidance on control chart selection, choosing control limits and other quality related matters, along with all relevant formulas and tables Uses computer simulations and graphics to illustrate concepts and explore the latest research in SPC Offering a uniquely balanced presentation of both theory and practice, Nonparametric Methods for Statistical Quality Control is a vital resource for students, interested practitioners, researchers, and anyone with an appropriate background in statistics interested in learning about the foundations of SPC and latest developments in NSPC.

An Introduction to Nonparametric Statistics presents techniques for statistical analysis in the absence of strong assumptions about the distributions generating the data. Rank-based and resampling techniques are heavily represented, but robust techniques are considered as well. These techniques include one-sample testing and estimation, multi-sample testing and estimation, and regression. Attention is paid to the intellectual development of the field, with a thorough review of bibliographical references. Computational tools, in R and SAS, are developed and illustrated via examples. Exercises designed to reinforce examples are included. Features Rank-based techniques including sign, Kruskal-Wallis, Friedman, Mann-Whitney and Wilcoxon tests are presented Tests are inverted to produce estimates and confidence intervals Multivariate tests are explored Techniques reflecting the dependence of a response variable on explanatory variables are presented Density estimation is explored The bootstrap and jackknife are discussed This text is intended for a graduate student in applied statistics. The course is best taken after an introductory course in statistical methodology, elementary probability, and regression. Mathematical prerequisites include calculus through multivariate differentiation and integration, and, ideally, a course in matrix algebra.

Statistics for the Behavioral Sciences is an introduction to statistics text that will engage students in an ongoing spirit of discovery by illustrating how statistics apply to modern-day research problems. By integrating instructions, screenshots, and practical examples for using IBM SPSS® Statistics software, the book makes it easy for students to learn statistical concepts within each chapter. Gregory J. Privitera takes a user-friendly approach while balancing statistical theory, computation, and application with the technical instruction needed for students to succeed in the modern era of data collection, analysis, and statistical interpretation. This Student Study Guide to accompany Renee Ha and James Ha's 'Integrative Statistics for the Social and Behavioral Sciences' includes notes to the student, and multiple choice and short answer questions. Exercises are also included for students to test and apply their knowledge. Answers to all questions are also included. This Student Study Guide is also available in a bundle with the textbook at a discounted price. Bundle ISBN: 9781452205304.

FUNDAMENTAL STATISTICS FOR THE BEHAVIORAL SCIENCES focuses on providing the context of statistics in behavioral

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research, while emphasizing the importance of looking at data before jumping into a test. This practical approach provides students with an understanding of the logic behind the statistics, so they understand why and how certain methods are used -- rather than simply carry out techniques by rote. Students move beyond number crunching to discover the meaning of statistical results and appreciate how the statistical test to be employed relates to the research questions posed by an experiment. Written in an informal style, the text provides an abundance of real data and research studies that provide a real-life perspective and help students learn and understand concepts. In alignment with current trends in statistics in the behavioral sciences, the text emphasizes effect sizes and meta-analysis, and integrates frequent demonstrations of computer analyses through SPSS and R. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

An updated edition of a classic text on applying statistical analyses to the social sciences, with reviews, new chapters, an expanded set of post-hoc analyses, and information on computing in Excel and SPSS Now in its second edition, *Statistical Applications for the Behavioral and Social Sciences* has been revised and updated and continues to offer an essential guide to the conceptual foundations of statistical analyses (particularly inferential statistics), placing an emphasis on connecting statistical tools with appropriate research contexts. Designed to be accessible, the text contains an applications-oriented, step-by-step presentation of the statistical theories and formulas most often used by the social sciences. The revised text also includes an entire chapter on the basic concepts in research, presenting an overall context for all the book's statistical theories and formulas. The authors cover descriptive statistics and z scores, the theoretical underpinnings of inferential statistics, z and t tests, power analysis, one/two-way and repeated-measures ANOVA, linear correlation and regression, as well as chi-square and other nonparametric tests. The second edition also includes a new chapter on basic probability theory. This important resource: Contains information regarding the use of statistical software packages; both Excel and SPSS Offers four strategically positioned and accumulating reviews, each containing a set of research-oriented diagnostic questions designed to help students determine which tests are applicable to which research scenarios Incorporates additional statistical information on follow-up analyses such as post-hoc tests and effect sizes Includes a series of sidebar discussions dispersed throughout the text that address, among other topics, the recent and growing controversy regarding the failed reproducibility of published findings in the social sciences Puts renewed emphasis on presentation of data and findings using the APA format Includes supplementary material consisting of a set of "kick-start" quizzes designed to get students quickly back up to speed at the start of an instructional period, and a complete set of ready-to-use PowerPoint slides for in-class use Written for students in areas such as psychology, sociology, criminology, political science, public health, and others, *Statistical Applications for the Behavioral and Social Sciences, Second Edition* continues to provide the information needed to understand the foundations of statistical analyses as relevant to the behavioral and social sciences.

Do you find statistics overwhelming and confusing? Have you ever wished for someone to explain the basics in a clear and easy-

to-follow style? This accessible textbook gives a step-by-step introduction to all the topics covered in introductory statistics courses for the behavioural sciences, with plenty of examples discussed in depth, based on real psychology experiments utilising the statistical techniques described. Advanced sections are also provided, for those who want to learn a particular topic in more depth. *Statistics for the Behavioural Sciences: An Introduction* begins with an introduction to the basic concepts, before providing a detailed explanation of basic statistical tests and concepts such as descriptive statistics, probability, the binomial distribution, continuous random variables, the normal distribution, the Chi-Square distribution, the analysis of categorical data, t-tests, correlation and regression. This timely and highly readable text will be invaluable to undergraduate students of psychology, and students of research methods courses in related disciplines, as well as anyone with an interest in the basic concepts and tests associated with statistics in the behavioural sciences.

??Non-parametric methods are widely used for studying populations that take on a ranked order (such as movie reviews receiving one to four stars). The use of non-parametric methods may be necessary when data have a ranking but no clear numerical interpretation, such as when assessing preferences. In terms of levels of measurement, non-parametric methods result in "ordinal" data. As non-parametric methods make fewer assumptions, their applicability is much wider than the corresponding parametric methods. In particular, they may be applied in situations where less is known about the application in question. Also, due to the reliance on fewer assumptions, non-parametric methods are more robust. Non-parametric methods have many popular applications, and are widely used in research in the fields of the behavioral sciences and biomedicine. This is a textbook on non-parametric statistics for applied research. The authors propose to use a realistic yet mostly fictional situation and series of dialogues to illustrate in detail the statistical processes required to complete data analysis. This book draws on a readers existing elementary knowledge of statistical analyses to broaden his/her research capabilities. The material within the book is covered in such a way that someone with a very limited knowledge of statistics would be able to read and understand the concepts detailed in the text. The "real world" scenario to be presented involves a multidisciplinary team of behavioral, medical, crime analysis, and policy analysis professionals work together to answer specific empirical questions regarding real-world applied problems. The reader is introduced to the team and the data set, and through the course of the text follows the team as they progress through the decision making process of narrowing the data and the research questions to answer the applied problem. In this way, abstract statistical concepts are translated into concrete and specific language. This text uses one data set from which all examples are taken. This is radically different from other statistics books which provide a varied array of examples and data sets. Using only one data set facilitates reader-directed teaching and learning by providing multiple research questions which are integrated rather than using disparate examples and completely unrelated research questions and data.

A New Way of Analyzing Object Data from a Nonparametric Viewpoint Nonparametric Statistics on Manifolds and Their Applications to Object Data Analysis provides one of the first thorough treatments of the theory and methodology for analyzing data on manifolds. It also presents in-depth applications to practical problems arising in a variety of fields,

including statistics, medical imaging, computer vision, pattern recognition, and bioinformatics. The book begins with a survey of illustrative examples of object data before moving to a review of concepts from mathematical statistics, differential geometry, and topology. The authors next describe theory and methods for working on various manifolds, giving a historical perspective of concepts from mathematics and statistics. They then present problems from a wide variety of areas, including diffusion tensor imaging, similarity shape analysis, directional data analysis, and projective shape analysis for machine vision. The book concludes with a discussion of current related research and graduate-level teaching topics as well as considerations related to computational statistics. Researchers in diverse fields must combine statistical methodology with concepts from projective geometry, differential geometry, and topology to analyze data objects arising from non-Euclidean object spaces. An expert-driven guide to this approach, this book covers the general nonparametric theory for analyzing data on manifolds, methods for working with specific spaces, and extensive applications to practical research problems. These problems show how object data analysis opens a formidable door to the realm of big data analysis.

This unique textbook guides students and researchers of social sciences to successfully apply the knowledge of parametric and nonparametric statistics in the collection and analysis of data. This book comprehensively covers all the methods of parametric and nonparametric statistics such as correlation and regression, analysis of variance, test construction, one-sample test to k-sample tests, etc. The two methods of statistics are presented simultaneously, with indication of their use in data analysis. Through adequate knowledge of both techniques, readers can select the appropriate method of testing as well as the graphical method for representing the data. Key Features - Provides a comparative account of the two statistical methodologies: why, when and how to use either of the two methods - Enables the readers to consider and identify the nature of data and apply the most suitable test - Exclusive chapter on SPSS and Excel-based statistical analysis of data - Special coverage of the use of statistics in psychology and psychological test construction - Contains worked-out problems to help students and scholars for better understanding of the concepts and further practice

Now your students can become intelligent consumers of scientific research, without being overwhelmed by the statistics! Jaccard and Becker's text teaches students the basic skills for analyzing data and helps them become intelligent consumers of scientific information. Praised for its real-life applications, the text tells students when to use a particular statistic, why they should use it, and how the statistic should be computed and interpreted. Because many students, given a set of data, cannot determine where to begin in answering relevant research questions, the authors explicate the issues involved in selecting a statistical test. Each statistical technique is introduced by giving instances where the test is

most typically applied followed by an interesting research example (each example is taken from psychology literature). Designed for a graduate course in applied statistics, *Nonparametric Methods in Statistics with SAS Applications* teaches students how to apply nonparametric techniques to statistical data. It starts with the tests of hypotheses and moves on to regression modeling, time-to-event analysis, density estimation, and resampling methods. The text begins with classical nonparametric hypotheses testing, including the sign, Wilcoxon sign-rank and rank-sum, Ansari-Bradley, Kolmogorov-Smirnov, Friedman rank, Kruskal-Wallis H, Spearman rank correlation coefficient, and Fisher exact tests. It then discusses smoothing techniques (loess and thin-plate splines) for classical nonparametric regression as well as binary logistic and Poisson models. The author also describes time-to-event nonparametric estimation methods, such as the Kaplan-Meier survival curve and Cox proportional hazards model, and presents histogram and kernel density estimation methods. The book concludes with the basics of jackknife and bootstrap interval estimation. Drawing on data sets from the author's many consulting projects, this classroom-tested book includes various examples from psychology, education, clinical trials, and other areas. It also presents a set of exercises at the end of each chapter. All examples and exercises require the use of SAS 9.3 software. Complete SAS codes for all examples are given in the text. Large data sets for the exercises are available on the author's website.

Praise for the Second Edition "This book should be an essential part of the personal library of every practicing statistician."—*Technometrics*

Thoroughly revised and updated, the new edition of *Nonparametric Statistical Methods* includes additional modern topics and procedures, more practical data sets, and new problems from real-life situations. The book continues to emphasize the importance of nonparametric methods as a significant branch of modern statistics and equips readers with the conceptual and technical skills necessary to select and apply the appropriate procedures for any given situation. Written by leading statisticians, *Nonparametric Statistical Methods, Third Edition* provides readers with crucial nonparametric techniques in a variety of settings, emphasizing the assumptions underlying the methods. The book provides an extensive array of examples that clearly illustrate how to use nonparametric approaches for handling one- or two-sample location and dispersion problems, dichotomous data, and one-way and two-way layout problems. In addition, the Third Edition features: The use of the freely available R software to aid in computation and simulation, including many new R programs written explicitly for this new edition New chapters that address density estimation, wavelets, smoothing, ranked set sampling, and Bayesian nonparametrics Problems that illustrate examples from agricultural science, astronomy, biology, criminology, education, engineering, environmental science, geology, home economics, medicine, oceanography, physics, psychology, sociology, and space science

Nonparametric Statistical Methods, Third Edition is an excellent reference for applied statisticians and practitioners

whoseek a review of nonparametric methods and their relevant applications. The book is also an ideal textbook for upper-undergraduate and first-year graduate courses in applied nonparametric statistics.

Robust and nonparametric statistical methods have their foundation in fields ranging from agricultural science to astronomy, from biomedical sciences to the public health disciplines, and, more recently, in genomics, bioinformatics, and financial statistics. These disciplines are presently nourished by data mining and high-level computer-based algorithms. *Statistical Power Analysis* is a nontechnical guide to power analysis in research planning that provides users of applied statistics with the tools they need for more effective analysis. The Second Edition includes: * a chapter covering power analysis in set correlation and multivariate methods; * a chapter considering effect size, psychometric reliability, and the efficacy of "qualifying" dependent variables and; * expanded power and sample size tables for multiple regression/correlation.

Incorporating a hands-on pedagogical approach, *Nonparametric Statistics for Social and Behavioral Sciences* presents the concepts, principles, and methods used in performing many nonparametric procedures. It also demonstrates practical applications of the most common nonparametric procedures using IBM's SPSS software. This text is the only current nonparametric book written specifically for students in the behavioral and social sciences. Emphasizing sound research designs, appropriate statistical analyses, and accurate interpretations of results, the text: Explains a conceptual framework for each statistical procedure Presents examples of relevant research problems, associated research questions, and hypotheses that precede each procedure Details SPSS paths for conducting various analyses Discusses the interpretations of statistical results and conclusions of the research With minimal coverage of formulas, the book takes a nonmathematical approach to nonparametric data analysis procedures and shows students how they are used in research contexts. Each chapter includes examples, exercises, and SPSS screen shots illustrating steps of the statistical procedures and resulting output.

A Practical Guide to Implementing Nonparametric and Rank-Based Procedures *Nonparametric Statistical Methods Using R* covers traditional nonparametric methods and rank-based analyses, including estimation and inference for models ranging from simple location models to general linear and nonlinear models for uncorrelated and correlated responses. The authors emphasize applications and statistical computation. They illustrate the methods with many real and simulated data examples using R, including the packages *Rfit* and *npsm*. The book first gives an overview of the R language and basic statistical concepts before discussing nonparametrics. It presents rank-based methods for one- and two-sample problems, procedures for regression models, computation for general fixed-effects ANOVA and ANCOVA models, and time-to-event analyses. The last two chapters cover more advanced material, including high breakdown fits for general regression models and rank-based inference for cluster correlated data. The book can be used as a primary text or supplement in a course on applied nonparametric or robust procedures and as a reference for researchers who need to implement nonparametric and rank-based methods in practice. Through

numerous examples, it shows readers how to apply these methods using R.

Probability theory; Statistical inference; Some tests based on the binomial distribution; Contingency tables; Some methods based on ranks; Statistics of the Kolmogorov-Smirnov type.

This book was written with the belief that ordinal statistical methods--sometimes discussed under the title of "nonparametric statistics"--deserve much more serious attention as research tools than they have traditionally had. There are three classes of reasons for this: *Many behavioral variables constitute only ordinal scales, not interval measurements that are required for traditional statistics. *Various research issues that are of primary interest in behavioral research are themselves questions about order: Which group scores higher? Is the order on this variable similar to the order on that? *Inferences from ordinal statistics are less subject to distributional peculiarities of the data than are those from traditional statistics. Taking an innovative approach, this book treats ordinal methods in an integrated way rather than as a compendium of unrelated methods, and emphasizes that the ordinal quantities are highly meaningful in their own right, not just as stand-ins for more traditional correlations or analyses of variance. In fact, since the ordinal statistics have desirable descriptive properties of their own, the book treats them parametrically, rather than nonparametrically. The author discusses how ordinal statistics can be applied in a much wider set of research situations than has usually been thought, and that they can often come closer to answering the researcher's primary questions than traditional ones can. And he includes some extensions of ordinal methods in order to accomplish that end.

Nonparametric Statistical Tests: A Computational Approach describes classical nonparametric tests, as well as novel and little-known methods such as the Baumgartner-Weiss-Schindler and the Cucconi tests. The book presents SAS and R programs, allowing readers to carry out the different statistical methods, such as permutation and bootstrap tests. The author considers example data sets in each chapter to illustrate methods. Numerous real-life data from various areas, including the bible, and their analyses provide for greatly diversified reading. The book covers: Nonparametric two-sample tests for the location-shift model, specifically the Fisher-Pitman permutation test, the Wilcoxon rank sum test, and the Baumgartner-Weiss-Schindler test Permutation tests, location-scale tests, tests for the nonparametric Behrens-Fisher problem, and tests for a difference in variability Tests for the general alternative, including the (Kolmogorov-)Smirnov test, ordered categorical, and discrete numerical data Well-known one-sample tests such as the sign test and Wilcoxon's signed rank test, a modification suggested by Pratt (1959), a permutation test with original observations, and a one-sample bootstrap test are presented. Tests for more than two groups, the following tests are described in detail: the Kruskal-Wallis test, the permutation F test, the Jonckheere-Terpstra trend test, tests for umbrella alternatives, and the Friedman and Page tests for multiple dependent groups The concepts of independence and correlation, and stratified tests such as the van Elteren test and combination tests The applicability of computer-intensive methods such as bootstrap and permutation tests for non-standard situations and complex designs Although the major development of nonparametric methods came to a certain end in the 1970s, their importance undoubtedly persists. What is still needed is a computer assisted evaluation of their main properties. This book closes that gap.

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