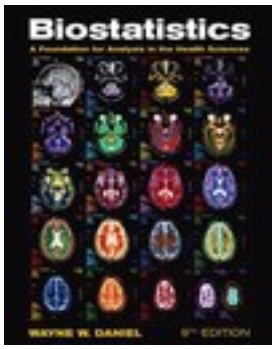
Biostatistics: A Foundation for Analysis in the Health Sciences



Biostatistics: A Foundation for Analysis in the Health Sciences_下载链接1_

著者:Wayne W. Daniel (Georgia State Univ.)

出版者:December 2008, ©2009

出版时间:2008-12

装帧:Hardcover

isbn:9780470105825

This ninth edition of Biostatistics: A Foundation for Analysis in the Health Sciences should appeal to the same audience for which the first eight editions were written: advanced undergraduate students, beginning graduate students, and health professionals in need of a reference book on statistical methodology. Like its predecessors, this edition requires few mathematical prerequisites. Only reasonable proficiency in algebra is required for an understanding of the concepts and methods underlying the calculations. The emphasis continues to be on an intuitive understanding of principles rather than an understanding based on mathematical sophistication. For most of the statistical techniques covered in this edition, we discuss the capabilities of one or more software packages (MINITAB, SAS, SPSS, and NCSS) that may be used to perform the calculations needed for their application. Resulting screen displays are also shown.

作者介绍:

Wayne W. Daniel is on the faculty of Georgia State University, Atlanta, Georgia.

目录: Preface.
1. Introduction To Biostatistics.
1.1 Introduction.
1.2 Some Basic Concepts.
1.3 Measurement and Measurement Scales.
1.4 Sampling and Statistical Inference.
1.5 The Scientific Method and the Design of Experiments.
1.6 Computers and Biostatistical Analysis.
1.7 Summary.
Review Questions and Exercises.
References.
2. Descriptive Statistics.
2.1 Introduction.
2.2 The Ordered Array.
2.3 Grouped Data: The Frequency Distribution.
2.4 Descriptive Statistics: Measures of Central Tendency.
2.5 Descriptive Statistics: Measures of Dispersion.
2.6 Summary.
Review Questions and Exercises.
References.
3. Some Basic Probability Concepts.
3.1 Introduction.
3.2 Two Views of Probability: Objective and Subjective.
3.3 Elementary Properties of Probability.
3.4 Calculating the Probability of an Event.
3.5 Bayes' Theorem, Screening Tests, Sensitivity, Specificity, and Predictive Value Positive and Negative.
Summary.
Review Questions and Exercises.
References.
4. Probability Distributions.
4.1 Introduction.
4.2 Probability Distributions of Discrete Variables.
4.3 The Binomial Distribution.
4.4 The Poisson Distribution.
4.5 Continuous Probability Distributions.
4.6 The Normal Distribution.
4.7 Normal Distribution Applications.
4.8 Summary.
Review Questions and Exercises.
References.
5. Some Important Sampling Distributions.
5.1 Introduction.
5.2 Sampling Distributions.
5.3 Distribution of the Sample Mean.
5.4 Distribution of the Difference Between Two Sample Means.
5.5 Distribution of the Sample Proportion.
5.6 Distribution of the Difference Between Two Sample Proportions.
5.7 Summary.
Review Questions and Exercises.
References.
6. Estimation.

6.1 Introduction.
6.2 Confidence Interval for a Population Mean.
6.3 The t Distribution.
6.4 Confidence Interval for the Difference Between Two Population Means.
6.5 Confidence Interval for a Population Proportion.
6.6 Confidence Interval for the Difference Between Two Population Proportions.
6.7 Determination of Sample Size for Estimating Means.
6.8 Determination of Sample Size for Estimating Proportions.
6.9 Confidence Interval for the Variance of a Normally Distributed Population.
6.10 Confidence Interval for the Ratio of the Variances of Two Normally Distributed Populations.
6.11 Summary.
Review Questions and Exercises.
References.
7. Hypothesis Testing.
7.1 Introduction.
7.2 Hypothesis Testing: A Single Population Mean.
7.3 Hypothesis Testing: The Difference Between Two Population Means.
7.4 Paired Comparisons.
7.5 Hypothesis Testing: A Single Population Proportion.
7.6 Hypothesis Testing: The Difference Between Two Population Proportions.
7.7 Hypothesis Testing: A Single Population Variance.
7.8 Hypothesis Testing: The Ratio of Two Population Variances.
7.9 The Type II Error and the Power of a Test.
7.10 Determining Sample Size to Control Type II Errors.
7.11 Summary.
Review Questions and Exercises.
References.
8. Analysis Of Variance.
8.1 Introduction.
8.2 The Completely Randomized Design.
8.3 The Randomized Complete Block Design.
8.4 The Repeated Measures Design.
8.5 The Factorial Experiment.
8.6 Summary.
Review Questions and Exercises.
References.
9. Simple Linear Regression And Correlation.
9.1 Introduction.
9.2 The Regression Model.
9.3 The Sample Regression Equation.
9.4 Evaluating the Regression Equation.
9.5 Using the Regression Equation.
9.6 The Correlation Model.
9.7 The Correlation Coefficient.
9.8 Some Precautions.
9.9 Summary.
Review Questions and Exercises.
References.
10. Multiple Regression And Correlation.
10.1 Introduction.
10.2 The Multiple Linear Regression Model.
10.3 Obtaining the Multiple Regression Equation.
10.4 Evaluating the Multiple Regression Equation.

10.5 Using the Multiple Regression Equation.
10.6 The Multiple Correlation Model.
10.7 Summary.
Review Questions and Exercises.
References.
11. Regression Analysis: Some Additional Techniques.
11.1 Introduction.
11.2 Qualitative Independent Variables.
11.3 Variable Selection Procedures.
11.4 Logistic Regression.
11.5 Summary.
Review Questions and Exercises.
References.
12. The Chi-Square Distribution And The Analysis Of Frequencies.
12.1 Introduction.
12.2 The Mathematical Properties of the Chi-Square Distribution.
12.3 Tests of Goodness-of-Fit.
12.4 Tests of Independence.
12.5 Tests of Homogeneity.
12.6 The Fisher Exact Test.
12.7 Relative Risk, Odds Ratio, and the Mantel–Haenszel Statistic.
12.8 Survival Analysis.
12.9 Summary.
Review Questions and Exercises.
References.
13. Nonparametric And Distribution-Free Statistics.
13.1 Introduction.
13.2 Measurement Scales.
13.3 The Sign Test.
13.4 The Wilcoxon Signed-Rank Test for Location.
13.5 The Median Test.
13.6 The Mann–Whitney Test.
13.7 The Kolmogorov–Smirnov Goodness-of-Fit Test.
13.8 The Kruskal–Wallis One-Way Analysis of Variance by Ranks.
13.9 The Friedman Two-Way Analysis of Variance by Ranks.
13.10 The Spearman Rank Correlation
Coefficient.
13.11 Nonparametric Regression Analysis.
13.12 Summary.
Review Questions and Exercises.
References.
14. Vital Statistics.
14.1 Introduction.
14.2 Death Rates and Ratios.
14.3 Measures of Fertility.
14.4 Measures of Morbidity.
14.5 Summary.
Review Questions and Exercises.
References.
Appendix. Statistical Tables.
Answers To Odd-Numbered Exercises.
Index.
・・・・・・(收起)

Biostatistics: A Foundation for Analysis in the Health Sciences_下载链接1_

标签

评论

Biostatistics: A Foundation for Analysis in the Health Sciences_下载链接1_

书评

Biostatistics: A Foundation for Analysis in the Health Sciences_下载链接1_