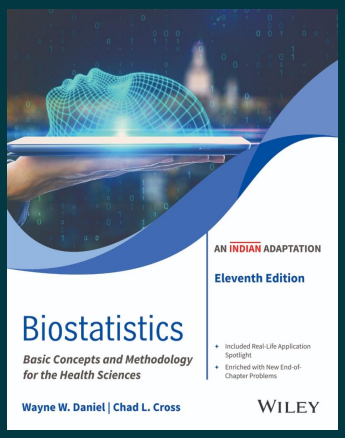
WILEY



Biostatistics : A Foundation for Analysis in the Health Sciences, 11ed, An Indian Adaptation

By Wayne W. Daniel, Chad L. Cross

Paperback 9789363865259 ₹- Price

Pages: 720

Description

Biostatistics: Basic Concepts and Methodology for the Health Sciences, 11th Edition maintains its predecessors' comprehensive approach to biostatistics as it is used in the biological sciences. Perfect for health science and biostatistics students and professors at the upper-undergraduate and graduate levels, it is a must-read reference for practitioners and professionals in the fields of pharmacy, biochemistry, nursing, health care informatics, and the applied health sciences. This new edition has been revised to more closely align with the modern practice of biostatics, teaching methods, and technologies.

This Indian Adaptation has clearly defined pedagogical tools to help students stay up-todate with current real-life applications. It gives emphasis on statistical software, allows faster, more accurate calculation while putting the focus on the underlying concepts rather than the math. Students develop highly relevant skills in inferential and differential statistical techniques, equipping them with the ability to organize,summarize, and interpret large bodies of data.

About the Author

Wayne W. Daniel, Chad L. Cross

Wayne W. Daniel, Ph.D.

Professor Emeritus

Georgia State University

Chad L. Cross, Ph.D., PStat®

Biostatistician

Las Vegas, Nevada

Table of Contents

Preface

1 INTRODUCTION TO BIOSTATISTICS

1.1 Introduction,

1.2 Basic Concepts and Definitions,

1.3 Measurement and Measurement Scales,

1.4 Sampling and Statistical Inference,

Exercises,

1.5 The Scientific Method,

Exercises,
1.6 Computers and Technology,
1.7 Summary,
Review Questions and Exercises,
References,
2 DESCRIPTIVE STATISTICS
2.1 Introduction,
2.2 The Ordered Array,
2.3 Frequency Tables,
Exercises,
2.4 Measures of Central Tendency,
2.5 Measures of Dispersion,
Exercises,
2.6 Visualizing Data,
Exercises,
2.7 Summary,
Summary of Formulas for Chapter 2,
Review Questions and Exercises,
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,
Exercises,
3.5 Bayes' Theorem, Screening Tests, Sensitivity, Specificity, and Predictive Value Positive and Negative,
Exercises,
3.6 Summary,
Summary of Formulas for Chapter 3,
Review Questions and Exercises,
References,
4 PROBABILITY DISTRIBUTIONS
4.1 Introduction,
4.2 Probability Distributions of Discrete Variables,
Exercises,
4.3 The Binomial Distribution,
Exercises,
4.4 The Poisson Distribution,
Exercises,

4.5 Continuous Probability Distributions,
4.6 The Normal Distribution,
Exercises,
4.7 Normal Distribution Applications,
Exercises,
4.8 Summary,
Summary of Formulas for Chapter 4,
5 SOME IMPORTANT SAMPLING DISTRIBUTIONS
5.1 Introduction,
5.2 Sampling Distributions,
5.3 Distribution of the Sample Mean,
Exercises,
5.4 Distribution of the Difference Between Two Sample Means,
Exercises,
5.5 Distribution of the Sample Proportion,
Exercises,
5.6 Distribution of the Difference Between Two Sample Proportions,
Exercises,
5.7 Summary,
Summary of Formulas for Chapter 5,
Review Questions and Exercises,
6 ESTIMATION
6.1 Introduction,
6.2 Confidence Interval for a Population Mean,
Exercises,
6.3 The t Distribution,
Exercises,
6.4 Confidence Interval for the Difference Between Two Population Means,
Exercises,
6.5 Confidence Interval for a Population Proportion,
Exercises,
6.6 Confidence Interval for the Difference Between Two Population Proportions,
Exercises,
6.7 Determination of Sample Size for Estimating Means,
Exercises,
6.8 Determination of Sample Size for Estimating Proportions,
Exercises,
6.9 The Chi-Square Distribution and the Confidence Interval for the Variance of a Normally Distributed Population,

Exercises,
6.10 The F-Distribution and the Confidence Interval for the Ratio of the Variances of Two Normally Distributed Populations,
Exercises,
6.11 Summary,
Summary of Formulas for Chapter 6,
Review Questions and Exercises,
References,
7 HYPOTHESIS TESTING
7.1 Introduction,
7.2 Hypothesis Testing: A Single Population Mean,
Exercises,
7.3 Hypothesis Testing: The Difference Between Two Population Means,
Exercises,
7.4 Paired Comparisons,
Exercises,
7.5 Hypothesis Testing: A Single Population Proportion,
Exercises,
7.6 Hypothesis Testing: The Difference Between Two Population Proportions,
Exercises,
7.7 Hypothesis Testing: A Single Population Variance,
Exercises,
7.8 Hypothesis Testing: The Ratio of Two Population Variances,
Exercises,
7.9 The Type II Error and the Power of a Test,
Exercises,
7.10 Determining Sample Size to Control Type II Errors,
Exercises,
7.11 Summary,
Summary of Formulas for Chapter 7,
Review Questions and Exercises,
8 ANALYSIS OF VARIANCE
8.1 Introduction,
8.2 The Completely Randomized Design,
Exercises,
8.3 The Randomized Complete Block Design,
Exercises,
8.4 The Repeated Measures Design,

Exercises,
8.5 The Factorial Experiment,
Exercises,
8.6 Summary,
Summary of Formulas for Chapter 8,
Review Questions and Exercises,
9 SIMPLE LINEAR REGRESSION AND CORRELATION
9.1 Introduction,
9.2 The Regression Model,
9.3 The Sample Regression Equation,
Exercises,
9.4 Evaluating the Regression Equation,
Exercises,
9.5 Using the Regression Equation,
Exercises,
9.6 The Correlation Model,
9.7 The Correlation Coefficient,
Exercises,
9.8 Some Precautions,
9.9 Summary,
Summary of Formulas for Chapter 9,
Review Questions and Exercises,
10 MULTIPLE REGRESSION AND CORRELATION
10.1 Introduction,
10.2 The Multiple Linear Regression Model,
10.3 Obtaining the Multiple Regression Equation,
Exercises,
10.4 Evaluating the Multiple Regression Equation,
Exercises,
10.5 Using the Multiple Regression Equation,
Exercises,
10.6 The Multiple Correlation Model,
Exercises,
10.7 Summary,
Summary of Formulas for Chapter 10,
11 REGRESSION ANALYSIS: SOME ADDITIONAL TECHNIQUES
11.1 Introduction,
11.2 Qualitative Independent Variables,

Exercises,
11.3 Variable Selection Procedures,
Exercises,
11.4 Logistic Regression,
Exercises,
11.5 Poisson Regression,
Exercises,
11.6 Summary,
Summary of Formulas for Chapter 11,
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,
Exercises,
12.4 Tests of Independence,
Exercises,
12.5 Tests of Homogeneity,
Exercises,
12.6 The Fisher’s Exact Test,
Exercises,
12.7 Relative Risk, Odds Ratio, and the Mantel–Haenszel Statistic,
Exercises,
12.8 Summary,
Summary of Formulas for Chapter 12,
Review Questions and Exercises,
References,
13 NONPARAMETRIC AND DISTRIBUTION-FREE STATISTICS
13.1 Introduction,
13.2 Measurement Scales,
13.3 The Sign Test,
Exercises,
13.4 The Wilcoxon Signed-Rank Test for Location,
Exercises,
13.5 The Median Test,
Exercises,
13.6 The Mann–Whitney Test,

Exercises,
13.7 The Kolmogorov–Smirnov Goodness-of-Fit Test,
Exercises,
13.8 The Kruskal–Wallis One-Way Analysis of Variance by Ranks,
Exercises,
13.9 The Friedman Two-Way Analysis of Variance by Ranks,
Exercises,
13.10 The Spearman Rank Correlation Coefficient,
Exercises,
13.11 Nonparametric Regression Analysis,
Exercises,
13.12 Summary,
Summary of Formulas for Chapter 13,
14 SURVIVAL ANALYSIS
14.1 Introduction,
14.2 Time-to-Event Data and Censoring,
14.3 The Kaplan–Meier Procedure,
Exercises,
14.4 Comparing Survival Curves,
Exercises,
14.5 Cox Regression: The Proportional Hazards Model,
Exercises,
14.6 Summary,
Summary of Formulas for Chapter 14,
Review Questions and Exercises,
15 VITAL STATISTICS
15.1 Introduction,
15.2 Death Rates and Ratios,
Exercises,
15.3 Measures of Fertility,
Exercises,
15.4 Measures of Morbidity,
Exercises,
15.5 Summary,
Summary of Formulas for Chapter 15,
Review Questions and Exercises,
INDEX
The following supplements are available through your instructor

APPENDIX: STATISTICAL TABLES

ANSWERS TO SELECTED PROBLEMS

REFERENCE

To purchase this product, please visit:
https://www.wileyindia.com/biostatistics-a-foundation-for-analysis-in-the-health-sciences-11ed-an-indian-adaptation.html

Scan to buy