

Part One EMPIRICAL INQUIRY

An overview of the research process and the role of statistics in that process

- 1 The Logic of Inquiry 3**
The formulation and evaluation of research questions and the development and testing of theories
- 2 Methods of Inquiry 21**
Defining and measuring concepts; various techniques of observing and gathering information; converting information to data; the analysis of data

Part Two UNIVARIATE ANALYSIS

The presentation, interpretation, and analysis of data for a single variable

- 3 Enumeration 43**
Organizing and presenting data in arrays, frequency distributions, and grouped frequency distributions; converting frequencies to ratios, proportions, percentages, rates, and percentage change
- 4 Central Tendency 59**
Presentation of the mode, median, and various means; a discussion of criteria for selecting the central tendency measure most appropriate to a given set of circumstances
- 5 Variation 83**
Variation as differences from the mode, as different pairs of observations, as a range of observations, and as deviations from the mean; the use of variation as a substantive concept; the utility of variation in assessing the adequacy of central tendency measures
- 6 Interpreting Statistical Descriptions—Estimation 107**
Using statistical descriptions from samples to estimate corresponding population parameters, including the comprehension and use of sampling distributions and the utilization and interpretation of confidence intervals

Part Three BIVARIATE ANALYSIS

Using the joint distribution of two variables at a time to facilitate descriptive comparisons, explanations, and predictions

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| 7 | The Bivariate Distribution | 131 |
| | Creating, percentaging, and interpreting bivariate tables | |
| 8 | Association and Prediction | 151 |
| | Understanding the concept of association; using central tendency measures as predictions; utilizing the association between two variables to facilitate predictions; linear regression | |
| 9 | Association and Explanation | 177 |
| | Association as an aid in explanations; conceptualizing association as reduction in variation, as reduction in error, and as amount of change; properties of measures of association; distinguishing the regression coefficient, the correlation coefficient, and the standard error of the estimate | |
| 10 | Measures of Association | 203 |
| | Calculation, application, and interpretation of various measures of association, such as: Pearson's r , phi, percentage difference, Yule's Q , contingency coefficient, Cramer's V , Goodman and Kruskal's tau, lambda, correlation coefficient, Spearman's rho, Kandall's taus, gamma, and Somers' d | |
| 11 | Interpreting Statistical Descriptions—
Statistical Tests of Hypotheses | 233 |
| | The rationale and use of the null hypothesis as an alternative to the research hypothesis; classification of different types of statistical tests; the use and abuse of statistical tests | |
| 12 | Statistical Tests | 255 |
| | Specific statistical tests, including: single group mean, single group proportion, goodness-of-fit, difference-of-means, difference-of-proportions, Mann-Whitney U , Wald-Wolfowitz runs, analysis-of-variance, median, chi square, and others | |
| 13 | Presenting Statistical Descriptions—Charts and Graphs | 293 |
| | The application, creation, and interpretation of data charts and graphs for the univariate and bivariate distributions, including various types of bar charts, line graphs, histograms, pictograms, Lorenz curves, and ratio charts | |

Part Four MULTIVARIATE ANALYSIS

The use of multivariate distributions to provide more accurate, complex, and viable descriptions, explanations, and predictions

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| 14 | The Multivariate Distribution | 313 |
| | Creating, percentaging, and interpreting multivariate tables; assessing the control, conjoint, and relative effects of multivariate distributions | |

15 Control Effects	327
Presenting different effects on bivariate relationships that stem from introducing a third variable, including: replicating, reducing, revealing, refining, and reversing effects; alternative interpretations of the reducing effect	
16 Multivariate Statistical Techniques	343
Application and interpretation of factor analysis and multiple regression, with special emphasis on standardized and unstandardized partial regression coefficients, partial and multiple correlation coefficients	
17 A Policy Research Application—Municipal Inequality	355
A public policy research article published by the American Political Science Review that applies many of the components of statistical inquiry presented in this book	
APPENDIXES	
A Normal Curve Distribution (Two Tails)	389
B Normal Curve Distribution (One Tail)	391
C <i>t</i> Distributions	393
D Chi Square Distributions	395
E <i>F</i> Distributions	397
Index	407