



PEARSON BUSINESS ANALYTICS SERIES

FOURTH EDITION

EVEN YOU CAN LEARN STATISTICS *and* ANALYTICS

An Easy to Understand Guide



DAVID M. LEVINE | DAVID F. STEPHAN

Even You Can Learn Statistics and Analytics

Fourth Edition

An Easy to Understand Guide to Statistics and Analytics

David M. Levine

David F. Stephan

PEARSON

Boston • Columbus • New York • San Francisco • Amsterdam • Cape Town
Dubai • London • Madrid • Milan • Munich • Paris • Montreal • Toronto • Delhi • Mexico City
São Paulo • Sidney • Hong Kong • Seoul • Singapore • Taipei • Tokyo

Even You Can Learn Statistics and Analytics: An Easy to Understand Guide

Table of Contents

Cover

Title Page

Copyright Page

Dedication

Table of Contents

Introduction The Even You Can Learn Statistics and Analytics
Owners Manual

Chapter 1 Fundamentals of Statistics

1.1 The First Three Words of Statistics

1.2 The Fourth and Fifth Words

1.3 The Branches of Statistics

1.4 Sources of Data

1.5 Sampling Concepts

1.6 Sample Selection Methods

Chapter 2 Presenting Data in Tables and Charts

2.1 Presenting Categorical Variables

2.2 Presenting Numerical Variables

2.3 Bad Charts

Chapter 3 Descriptive Statistics.

3.1 Measures of Central Tendency

3.2 Measures of Position

Table of Contents

3.3 Measures of Variation

3.4 Shape of Distributions

Chapter 4 Probability.

4.1 Events

4.2 More Definitions

4.3 Some Rules of Probability

4.4 Assigning Probabilities

Chapter 5 Probability Distributions.

5.1 Probability Distributions for Discrete Variables

5.2 The Binomial and Poisson Probability Distributions

5.3 Continuous Probability Distributions and the Normal Distribution

5.4 The Normal Probability Plot

Chapter 6 Sampling Distributions and Confidence Intervals.

6.1 Foundational Concepts

6.2 Sampling Error and Confidence Intervals

6.3 Confidence Interval Estimate for the Mean Using the t Distribution
(s Unknown)

6.4 Confidence Interval Estimation for Categorical Variables

6.5 Confidence Interval Estimation When Normality Cannot Be
Assumed

Chapter 7 Fundamentals of Hypothesis Testing.

7.1 The Null and Alternative Hypotheses

7.2 Hypothesis Testing Issues

7.3 Decision-Making Risks

7.4 Performing Hypothesis Testing

7.5 Types of Hypothesis Tests

Table of Contents

Chapter 8 Hypothesis Testing: Z and t Tests.

8.1 Test for the Difference Between Two Proportions

8.2 Test for the Difference Between the Means of Two
Independent Groups

8.3 The Paired t Test

Chapter 9 Hypothesis Testing: Chi-Square Tests and the One-Way Analysis of Variance (ANOVA).

9.1 Chi-Square Test for Two-Way Tables

9.2 One-Way Analysis of Variance (ANOVA): Testing for the
Differences Among the Means of More Than Two Groups

Chapter 10 Simple Linear Regression.

10.1 Basics of Regression Analysis

10.2 Developing a Simple Linear Regression Model

10.3 Measures of Variation

10.4 Inferences About the Slope

10.5 Common Mistakes When Using Regression Analysis

Chapter 11 Multiple Regression.

11.1 The Multiple Regression Model

11.2 Coefficient of Multiple Determination

11.3 The Overall F Test

11.4 Residual Analysis for the Multiple Regression Model

11.5 Inferences Concerning the Population Regression
Coefficients

Chapter 12 Introduction to Analytics.

12.1 Basic Concepts

12.2 Descriptive Analytics

Table of Contents

12.3 Typical Descriptive Analytics Visualizations

Chapter 13 Predictive Analytics.

13.1 Predictive Analytics Methods

13.2 More About Predictive Models

13.3 Tree Induction

13.4 Clustering

13.5 Association Analysis

Appendix A: Microsoft Excel Operation and Configuration

A.1 Conventions for Keystroke and Mouse Operations

A.2 Microsoft Excel Technical Configuration

Appendix B: Review of Arithmetic and Algebra.

Assessment Quiz

Symbols

Answers to Quiz

Appendix C: Statistical Tables.

Appendix D: Spreadsheet Tips

Chart Tips

Function Tips

Appendix E Advanced Techniques.

Advanced How-To Tips

Analysis ToolPak Tips

Appendix F Documentation for Downloadable Files

F.1 Downloadable Data Files

F.2 Downloadable Spreadsheet Solution Files

Index