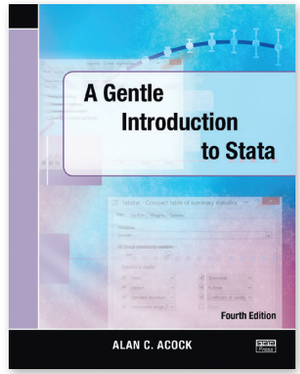
Brief contents

About this book

A Gentle Introduction to Stata, Fourth Edition is for people who need to learn Stata but who may not have a strong background in statistics or prior experience with statistical software packages. After working through this book, you will be able to enter, build, and manage a dataset, and perform fundamental statistical analyses. This book is organized like the unfolding of a research project. You begin by learning how to enter and manage data and how to do basic descriptive statistics and graphical analysis. Then you learn how to perform standard statistical procedures from *t* tests, nonparametric tests, and measures of association through ANOVA, multiple regression, and logistic regression. Readers who have experience with another statistical package may benefit more by reading chapters selectively and referring to this book as needed.

A Gentle Introduction to Stata, Fourth Edition



By Alan C. Acock

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About the author

Alan Acock is a sociologist and a University Distinguished Professor in the School of Social and Behavioral Health Sciences at Oregon State University. He held the Knudson Chair in Family Research and was also recognized as the Alumni Distinguished Professor based on his work with students. He is the author of *Discovering Structural Equation Modeling Using Stata, Revised Edition*. He has published more than 150 articles in leading journals across the social and behavioral sciences, including *Structural Equation Modeling*, *Psychological Bulletin*, *Multivariate Behavioral Research*, *Journal of Gerontology*, *Journal of Adolescence*, *American Journal of Public Health*, *American Sociological Review*, *Journal of Marriage and Family*, *Social Forces*, *Drug and Alcohol Dependence*, *Educational and Psychological Measurement*, *Journal of Politics*, *Prevention Science*, *American Journal of Preventive Medicine*, and many others. With this broad experience, Acock brings examples from a variety of disciplines.

What's new in this edition

- Computation of effect sizes with **esize** and **estat esize**
- Power and sample-size computations using the **power** suite of commands for
  - » Two-sample tests of means
  - » One-way ANOVA
  - » Two-way ANOVA
  - » Repeated-measures ANOVA
- New chapter covering structural equation modeling
  - » Introduction of the **sem** and **gsem** commands
  - » Description of path diagrams and fitting models using the SEM Builder
  - » Extensions of basic linear and logistic regression to path analysis
- Screenshots of menus, dialogs, and interface updated for Stata 13

Comment from the Stata technical group

Alan C. Acock's *A Gentle Introduction to Stata, Fourth Edition* is aimed at new Stata users who want to become proficient in Stata. After reading this introductory text, new users will not only be able to use Stata well but will also learn new aspects of Stata.

Acock assumes that the user is not familiar with any statistical software. This assumption of a blank slate is central to the structure and contents of the book. Acock starts with the basics; for example, the portion of the book that deals with data management begins with a careful and detailed example of turning survey data on paper into a Stata-ready dataset on the computer. When explaining how to go about basic exploratory statistical procedures, Acock includes notes that will help the reader develop good work habits. This mixture of explaining good Stata habits and good statistical habits continues throughout the book.

Acock is quite careful to teach the reader all aspects of using Stata. He covers data management, good work habits (including the use of basic do-files), basic exploratory statistics (including graphical displays), and analyses using the standard array of basic statistical tools (correlation, linear and logistic regression, and parametric and nonparametric tests of location and dispersion). He also successfully introduces some more advanced topics such as multiple imputation and structural equation modeling in a very approachable manner. Acock teaches Stata commands by using the menus and dialog boxes while still stressing the value of do-files. In this way, he ensures that all types of users can build good work habits. Each chapter has exercises that the motivated reader can use to reinforce the material.

The tone of the book is friendly and conversational without ever being glib or condescending. Important asides and notes about terminology are set off in boxes, which makes the text easy to read without any convoluted twists or forward-referencing. Rather than splitting topics by their Stata implementation, Acock arranges the topics as they would appear in a basic statistics textbook; graphics and postestimation are woven into the material in a natural fashion. Real datasets, such as the *General Social Surveys* from 2002 and 2006, are used throughout the book.

The focus of the book is especially helpful for those in psychology and the social sciences because the presentation of basic statistical modeling is supplemented with discussions of effect sizes and standardized coefficients. Various selection criteria, such as semipartial correlations, are discussed for model selection. Acock also covers a variety of commands available for evaluating reliability and validity of measurements.

The fourth edition of the book has been updated to include new features in Stata 13. Effect-size computation is performed using the **esize** and **estat esize** commands. Power and sample-size analysis for two-sample tests of means as well as one-way, two-way, and repeated-measures ANOVA models are demonstrated using the suite of **power** commands. The multiple regression chapter includes a new section on modeling quadratic relationships. The chapter on logistic regression contains new material on examining effects of predictors using **margins** and **marginsplot**. A newly added chapter is devoted to Stata's **sem** and **gsem** commands for structural equation modeling. This chapter focuses on fitting linear and logistic regression models, thinking of these models in terms of path diagrams, and expanding the capabilities of **regress** and **logistic** using **sem** and **gsem**. After covering models with one response variable, these concepts are extended to performing path analysis.