



Analysis of Multivariate Social Science Data,
2nd edn

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On the first day of a seminar on intermediate social statistics for first-year graduate students that I sometimes teach, I would tell the class that I could cover all the relevant statistical topics of interest to them in one session or I could focus on just a single method during the entire 15-week semester though I would prefer to use the time to have them learn a small number of useful statistical methods. Invariably, none of the students would be happy with either extreme approach, and they would go for the 'happy median'.

Analysis of Multivariate Social Science Data represents such a happy median. Written by some of the leaders in the field, the second edition expands the horizon of the first edition by three new chapters. The new edition enabled the authors to deal with two equally important types of methods—those for data summarization and those that are model based. The first type includes cluster analysis, multi-dimensional scaling, correspondence analysis and principal components analysis, whereas regression analysis (new), factor analysis, latent trait analysis for binary data, latent trait analysis for ordinal data, latent class analysis for binary data, confirmatory factor analysis and structural equation modelling (new) and multilevel modelling (new) fall into the second category.

The book should provide a superb introduction to these methods for graduate students who are without substantial statistical or mathematical training beyond a first course in social statistics on sampling, probability, hypothesis testing, inference, univariate and bivariate analysis, and the like. Having the knack of explaining fairly complex statistical concepts in simple language, the authors could keep the mathematics to a minimum. Good examples abound, in the opening of all chapters and elsewhere; so do worked-out applications. The examples and applications together help to give those who are without a strong training in statistics a soft ride in learning these important methods.

I also like the authors' effort to compare related methods across the chapters so that the reader would have a better sense of the appropriateness and usefulness of a particular method. Sometimes the same data are analysed by several methods. For example, the same attitude-to-abortion data are analysed by cluster analysis, latent trait analysis and latent class

analysis. Comments comparing different methods are also found throughout the book.

There are no end-of-chapter exercises. Sometimes worked examples are left half finished. This, however, is intentional because the reader can, and is encouraged to, follow up on the examples by downloading the data from the Web site for the book so that learning is enhanced. The Web site is a treasure trove, where the entire first edition (eight chapters, except the introduction) and two sample chapters from the second edition, plus data sets for the applications, computer program syntax and the software for latent trait related analysis are all there free for the taking.

At the end of most chapters (except for Chapters 2–5), there is a short section on software. This is useful despite the slight inconsistency in the inclusivity of available and appropriate software. The book overall is actually quite consistent in its structure and organization as well as the style of writing throughout. The chapter on structural equation modelling, however, might be a little difficult to follow by novices in the topic because the method has its own extensive notation, set of assumptions and issues of identification in spite of the authors' great effort to integrate the model into the framework of the book.

The book should be useful for two types of readers: it can still be employed as the main text in a graduate social science methods course just as the original first edition was designed for even though most instructors would probably choose a slate of useful chapters for their purposes; it can certainly serve as a guide or a self-teaching book for many social science professionals who find themselves in need of either brushing up or learning a particular statistical method. In either case, the book is essential to read because it would also provide the reader with a new understanding of the methods that they already know through its frequent comparative comments and applications.

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**Computational Biology: a Statistical Mechanics
Perspective**

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This book is at the interface of several disciplines: statistics, physics and theoretical and systems