



TITLE CORRESPONDENCE ANALYSIS
AS A MODELING TOOL

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This book presents a particular perspective on Correspondence Analysis methodology based on the practical experience of the authors in applied research in the topic and in related areas in Data Analysis. The target audience for the book includes undergraduate and graduate students in Engineering, Biology, Geology, Sociology and other branches of Science, both 'hard' and 'soft'. Discipline experts who make use of Big Data for modeling purposes in any field will also benefit from this text, which includes a software package suitable for most applications.

Correspondence Analysis is a data treatment methodology developed in the 1960s by the French mathematician Jean-Paul Benzécri. In this text, Correspondence Analysis is considered as a modeling tool that can be used to convert raw numeric data into graphical displays, the interpretation of which may reveal new relationships or associations among the basic elements of the input tables. The resulting structure may be considered as the backbone of a particular type of model having a number of descriptive or explanatory purposes.

The methodology of Correspondence Analysis is based on a bottom-up geometric approach rather than on any sort of multivariate statistical technique. The consequence of this approach is that no internal validation is possible within the scope of the method. Any such validation must come from external information provided by the context of the problem to which the analysis is applied. Hence, an effective pragmatic linkage should be established between data, method and objective, using a minimum of *a priori* assumptions.

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This book can be approached in several ways depending on the reader's interests and background. The reader interested primarily in an intuitive treatment of Correspondence Analysis should focus on PART A, which does not require any of the concepts and other material provided in PARTS B, C, D, E, F. Material in these latter sections can, however, be accessed through the specified **links** whenever the reader may wish to supplement the intuitive presentation with enhanced or expanded treatments of the theoretical, algorithmic, practical or Finally, the reader interested primarily in the concepts and underlying philosophies of Correspondence Analysis is directed to PARTS A+E+F.

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