Michael Greenacre
Biplots in Practice

Michael Greenacre's new book!

Biplots in Practice is a comprehensive introduction to one of the most useful and versatile methods of multivariate data visualization: the biplot. The biplot extends the idea of a simple scatterplot of two variables to the case of many variables, with the objective of visualizing a maximum amount of information in the data as possible. Research data typically arise in the form of a rectangular table and the biplot takes its name from the fact that it visualizes the rows and the columns of this table in a common space.

This book explains the specific interpretation of the biplot in many different areas of multivariate analysis, notably regression, generalized linear modelling, principal component analysis, log-ratio analysis, various forms of correspondence analysis and discriminant analysis.

The book includes applications in many different fields of the social and natural sciences, and there are three detailed case studies documenting how the biplot reveals structure in large complex data sets in genomics (where thousands of variables are commonly encountered), in social survey research (where many categorical variables are studied simultaneously) and ecological research (where relationships between two sets of variables are investigated).

- **Didactic format**, with over 90 tables and figures, and a summary of the contents of each chapter.
- **Computational appendix**, detailing all the computations in the book in the R language, as well as additional computational topics such as permutation testing.
- **Bibliography and web resources**, for further study.
- **Glossary of terms**, giving definitions of terms and concepts used in the book.
- **Supporting web site**, providing all the data sets used in the book, R scripts for the computations, and additional material such as video presentations of some of the analyses.

MICHAEL GREENACRE, professor of Statistics at the Pompeu Fabra University in Barcelona and research collaborator with the BBVA Foundation, was educated initially in his country of birth, South Africa, and then obtained his doctorate in Paris at the Pierre et Marie Curie University (Paris VI), under professor Jean-Paul Benzécri, the creator of correspondence analysis as it is known today.

He specialized in the visualization of large data sets, especially in the social and environmental sciences, and spent sabbatical periods at Rothamsted Experimental Station (UK); Bell Laboratories, Rochester University and Stanford University (USA); the École des Mines (France); and the Norwegian Polar Environmental Centre in Tromsø (Norway).

He has recently been appointed as statistical advisor and collaborator in an international research project on the ecology of the Barents Sea. Apart from co-editing three books on data visualization, he has written three books on correspondence analysis, the latest of which (*Correspondence Analysis in Practice,* 2nd edition) was published in Spanish (*La práctica del análisis de correspondencias,* 2008) by the BBVA Foundation.

Contents

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