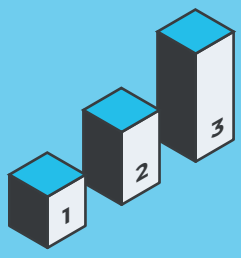
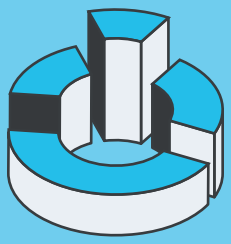
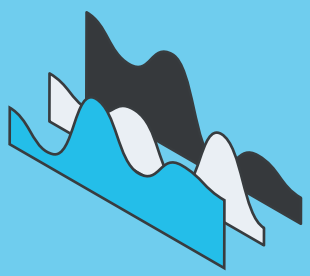
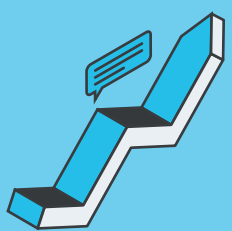








MICHAEL GREENACRE

II International workshop on Sensometrics:

Correspondence Analysis and Related Methods

Universidad Politécnica de Madrid

30 y 31 de Mayo de 2024

Description

Correspondence analysis (CA) has a special place in data science as it analyses data measured on categorical scales and results in visualizations that facilitate interpretation and understanding of multivariate categorical data. CA is primarily a method of unsupervised learning, that is it is designed to identify structures that are latent in the data, for example dimensions that identify the greatest differences in the observations as well as their similarities and groupings. Inherent in CA is a measure of distance that quantifies the proximities between observations, based on categorical data, that can also lead to formal identification of clusters. The method has found extensive applications in sociology, linguistics, archaeology and genetics. This one-day workshop will focus on its applicability and usefulness in sensometrics.

In the first part of the course, before lunch, I will explain the basic ideas of correspondence analysis, including measures of distance and the interpretation of the biplot, both at the heart of the data visualization. Some simple applications in sensometrics will be presented as well as the implementation of the method using R software.

After lunch, the way CA extends to more complex data will be explained, the most important extension being multiple correspondence analysis (MCA), which treats several categorical variables simultaneously. The case of multi-way data in the CA/MCA context is also considered; for example, multi-block or multi-occasion data. Some more challenging sensometric data sets will be analysed, where the full versatility of the approach is demonstrated. Finally, the role of CA/MCA in supervised learning is discussed, when there is a specific response variable being modelled in terms of categorical predictors.

The Lecturer: MICHAEL GREENACRE

Michael Greenacre is "Senior Talent Professor" at the Universitat Pompeu Fabra in Barcelona and affiliated professor of the Barcelona School of Management. His academic work centres around methods for analyzing multivariate data, having specialized in correspondence analysis since his doctoral studies with Jean-Paul Benzécri and then in compositional data analysis after collaborations with both John Aitchison and Paul Lewi. He has over 100 scientific publications in international refereed journals and has written or co-edited 12 books, including Theory and Applications of Correspondence Analysis (1984), three separate editions of Correspondence Analysis in Practice (1993, 2007 and 2016) and most recently, Compositional Data Analysis in Practice (2018). He has given short courses in 15 countries around the world, mostly to marine biologists but also to market researchers and statisticians. He has also been the co-organizer, with Prof. Jörg Blasius in Bonn, Germany, of the successful series of quadrennial conferences called CARME (Correspondence Analysis and Related Methods), which have taken place since 1991, in Cologne (3 times), Barcelona, Rotterdam, Rennes, Naples, Stellenbosch (South Africa) and the latest one in Bonn, 2023. Michael has a wide range of interests in the world of data analysis and has worked with sociologists, Arctic ecologists, biologists, biochemists, geochemists and geneticists. He is also a musician and has two CD albums published of his own music, and is well-known for his satirical statistical songs on the YouTube channel youtube.com/StatisticalSongs.

References

If available, the following book gives a complete treatment of correspondence analysis:

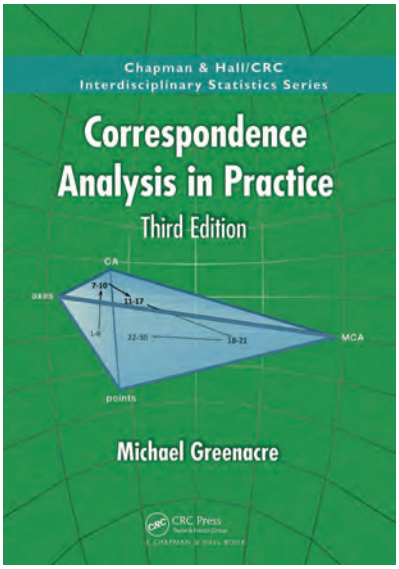
Greenacre, M. (2016) Correspondence Analysis in Practice. 3rd edition. Chapman & Hall / CRC Press, Florida, USA.

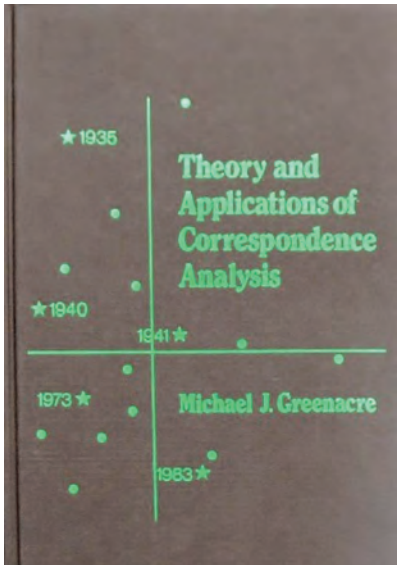
The following three books are available for free online, thanks to the support of the BBVA Foundation. Download from www.multivariatestatistics.org

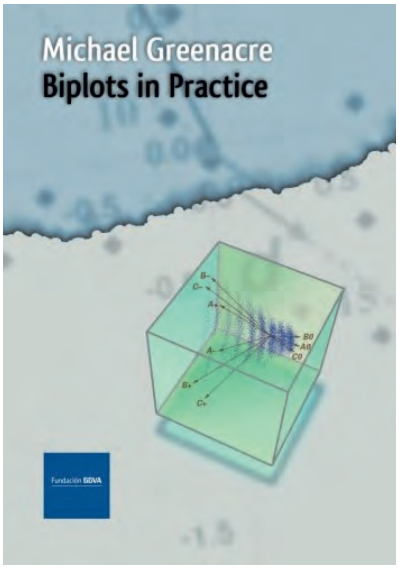
Greenacre, M. (2008) La Práctica del Análisis de Correspondencias (translation into Spanish of Correspondence Analysis in Practice. 2nd edition)

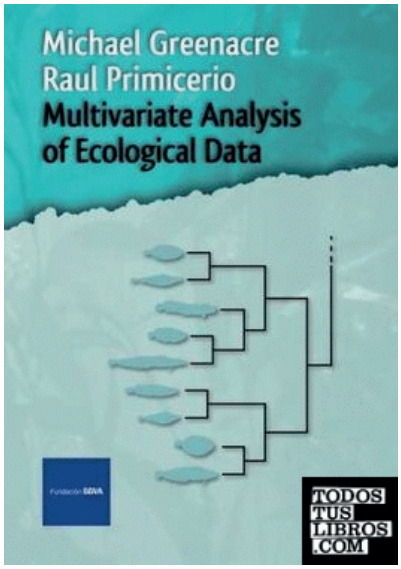
Greenacre, M. (2010) Biplots in Practice. BBVA Foundation, Bilbao.

Greenacre, M. and Primicerio, R. (2013) Multivariate Analysis of Ecological Data. BBVA Foundation, Bilbao.









Schedule

THU MAY 30
FRI MAY 31

	SENSOMETRICS WITH R *(optional)*	CORRESPONDENCE ANALYSIS AND RELATED METHODS
8:30 - 10:00		*Introduction to Correspondence Analysis (CA)* Michael Greenacre (UPF)
10:00 - 10:30	C O F F E E B R E A K	
10:30 - 12:30		*Simple Applications and Practicals with R* Michael Greenacre (UPF)
12:30 - 13:30	L U N C H	
13:30 -14:30		*More Complex Applications: Multiple Correspondence Analysis (MCA), multi-way data analysis in the CA/MCA context and others.* Michael Greenacre (UPF)
14:30 -15:30	*Introduction to R Studio* José Carlos Martínez (UPM)	
15:30 - 16:30		*Test (Optional) and Closure* Carolina Chaya (UPM)
16:30 - 18:30	*Sensometric examples with R Studio* Carolina Chaya and José Carlos Martínez (UPM)	

Fees, modalities and registration

	Sensometrics with R MAY 30	Correspondence Analysis and related methods in Sensometrics MAY 31
UPM and AEPAS students	80€	250€
AEPAS regular members, E3S and other sensory societies students	100€	350€
E3S and other sensory societies regular members	160€	600€
Others	300€	1200€

Catering service of coffee break and lunch of 31st May is included in fees.

Registrations will be open from 12th February to 1st April.

Places are limited and will be assigned **by order of registration.**

To register please click on the following link:

https://forms.gle/ZQZUfyFNFNuEnVrw9

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