

Multiple Factor Analysis applied to sensory data

Presenters

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Abstract

The aim of this tutorial is to present an overview of Multiple Factor Analysis (MFA, see Escofier and Pagès, 1994), a multivariate exploratory data method that analyzes observations described by several “blocks” or sets of variables.

Overview...

1. General presentation of Multiple Factor Analysis (MFA): weighting variables in MFA, geometric interpretation of MFA.
2. Comparison of MFA with Canonical Correlation Analysis (CCA), Generalised Procrustes Analysis (GPA): why should you use MFA?
3. Comparing sensory data, physical/chemical data and hedonic judgments with MFA.
4. Comparing different points of view from the same sensory profile with MFA: when sensory descriptors are grouped into themes (olfaction at rest, vision, gustation, etc.).
5. Comparing sensory profiles from different panels with MFA: cross-cultural studies.

Exercises using R and the FactoMineR package (and Rcmdr, a user friendly environment).

... and recent developments

1. Analysing napping® data with MFA.
2. Analysing categorization data with MFA.
3. Analysing “sorted napping®” data with Hierarchical Multiple Factor Analysis.

Exercises using R and the SensoMineR package (and Rcmdr, a user friendly environment).

References

Escofier b. & pagès j. (1994). Multiple Factor Analysis (AFMULT package). Computational statistics & data analysis 18 121-140

Francois Husson, Julie Josse, Sebastien Le and Jeremy Mazet (2009). FactoMineR: Factor Analysis and Data Mining with R. R package version 1.12. <http://CRAN.R-project.org/package=FactoMineR>

Francois Husson and Sebastien Le (2009). SensoMineR: Sensory data analysis with R. R package version 1.10. <http://CRAN.R-project.org/package=SensoMineR>