

SURVEY DATA ANALYSIS

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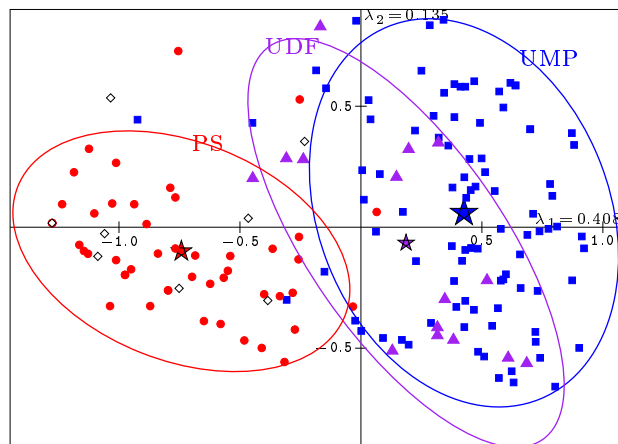
Abstract: This talk consists of two parts.

- Firstly, I will present two variants of Multiple Correspondence Analysis (MCA) that are especially useful for analyzing survey data.

The first variant, called *specific MCA*, ignores some response modalities while preserving the constitutive properties of MCA. For instance we discard an infrequent modality of active variables or more generally a modality made of heterogeneous entities that is properly not representable by a point.

The second variant, called *Class Specific Analysis (CSA)*, consists in studying a class (or subset) of the whole set of active individuals and in determining its specificities. In particular, the concentration ellipse permits to give a geometric summary of a subcloud projected on a plane.

- Secondly, I will briefly introduce the methods of statistical inference that are not based on a random sampling model but on permutation methods recasted in a combinatorial framework. I will state typicality and homogeneity problems using the “Globalization questionnaire” sent out, in 2006, to members of the French Parliament¹.



Globalisation questionnaire. Cloud of the 163 respondents in plane 1-2, marked according to their political group, 92 UMP (square), 48 PS (circle), 15 UDF (triangle) with concentration ellipses and mean points (stars); 8 others (lozenge).

Keywords: Geometric Data Analysis. Multiple Correspondence Analysis. Combinatorial inference. Permutation tests.

¹See: www.telos-eu.com/fr/article/que_pense_votre_depute_de_la_mondialisation