Exploratory interactive tools for spatial data analysis

Thibault Laurent[1,*] , Anne Ruiz-Gazen[1], Christine Thomas-Agnan[1]

1. Toulouse School of Economics (GREMAQ)

* Contact author : thibault.laurent@univ-tlse1.fr

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At User!2006, we introduced GeoXp, an R package implementing interactive graphics for exploratory spatial data analysis. Besides elementary plots like boxplots, histograms or simple scatterplots, GeoXp also couples maps with Moran scatterplots, variogram clouds, Lorenz curves, etc. In order to make the most of the multidimensionality of the data, GeoXp includes dimension reduction techniques such as principal components analysis and cluster analysis whose results are also linked to the map. We intend to present now the innovations of GeoXp. We describe the interactive analysis of a neighborhood structure given by a spatial weight matrix (created with package spdep) and the detection of outliers analyzing the relationship between pairwise Euclidean and pairwise Mahalanobis distances (calculated with package mvoutliers). We use a data basis concerning public schools of the French Midi-Pyrénées region to illustrate the use of these exploratory techniques based on the coupling between a statistical graph and a map.

References

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