

Workshop on Belief Functions Clustering – Computer Project

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The data file `global2000_2014.txt` contains three globalization indices (economic, social and political) in 2000 and in 2014 for 159 countries (source: <http://globalization.kof.ethz.ch>). We want to find meaningful groups of countries using different evidential clustering algorithms implemented in the package `evclust`.

1. Create a new data frame with six variables: the three indices for 2014, and the differences between 2000 and 2014.
2. Use the `kevclus` algorithm to classify the data. (Use default settings.) Select the number of groups using the average nonspecificity criterion.
3. Improve the credal partition by including pairs of neighboring clusters.
4. Interpret the obtained credal partition:
 - (a) List the countries in the lower and upper approximation of each cluster
 - (b) Use box plots to visualize the distribution of each variables in different groups
 - (c) Make a matrix plot to visualize the location of groups in two-dimensional subspaces of the input space
 - (d) using function `cmdscale`, display the clusters using multidimensional scaling (`()`).
5. Use the `EkNNclus` algorithm with $K = 15$ neighbors. How many clusters do you find? Compare the partition obtained with that generated by `kevclus`.