



Contribution ID: 50

Type: **not specified**

Development of Two Multivariate Methods for the Classification of Tenders and Bids in Public Procurement (Auctions)

This work compares two multivariate methods for the classification of tenders (auctions). Outcomes show that both are appropriate and yield good results when the variables are processed as (i) categorical data with Multiple Correspondence Analysis (MCA) or (ii) continuous variables by means of Principal Component Analysis (PCA). The Cronbach alpha coefficient determines a reasonable reliability of both methods, it allows to compare them in each one of the latent variables and to fix those who are the most relevant for dimensionality reduction. It is a high dimensional classification problem where the initial challenge is to build a method able to classify more than 160 thousand tenders each year, using 2,000 possible categories of items, having as final purpose the possibility of classifying each new tender in real time with high precision.

Keywords

Auction, Multivariate Analysis, Statistical Modelling

Classification

Mainly application

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Track Classification: Machine learning