Twostep cluster analysis: Segmentation of largest companies in Macedonia

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One of the important procedures for segmentation and classification of the largest Macedonian companies is twostep cluster analysis. This clustering method is very efficient in classification of large data sets, has the ability to create groups using categorical and continuous variables and it is provided with automatic selection of number of clusters. These are all advantages of twostep analysis compared to the traditional clustering methods.

The goal of this paper is to present valuable application of the twostep cluster analysis in segmentation of the Macedonian companies. Every year, the Ministry of Economy presents a publication that reveals the 200 largest and most successful companies in Macedonia. In order to reveal the structure of the Macedonian companies, twostep cluster analysis is performed using the following continuous variables: total revenue in 2007, total revenue in 2006, earnings before taxes in 2007, revenue growth rate 2007/2006 and number of employees. Also, one categorical variable is included, type of industry.

The analysis successfully manages to create solution of four clusters or four different types of companies on the Macedonian market. The first type represents the most successful companies with significantly high revenues, earnings and stabile growth. These companies come from industries such as communications, electricity and manufacturing, and provide significant employment of the work force. The second type are companies with relatively smaller revenues and earnings compared to the first type, but yet higher than the country's average. These are all manufacturing companies with steady growth. The third group has slightly smaller revenues and earnings than the second group, but the difference is that this group represents companies with high revenue growth rate, representing developing companies with significant potential. These are companies that mostly provide services, companies that provide telecommunication and transport, and also few companies from other industries. The last group represents the smallest companies from the analyzed 200 largest companies, having the smallest revenues, earnings and number of employees. These companies will develop further, but with much smaller rate than the companies in the third group. These are all companies that deal with retail and wholesale trade.

These findings are useful because mainly they provide the general structure of the largest Macedonian companies. For the potential foreign investors this analysis is an insight to the most lucrative industries in the country. For the government, the presented results give information about which industries dominate in the most successful companies, in order to invest in their development through infrastructure, university education, tax relief and deduction of other expenditures.