

Developing an Alternative Method to Categorize Small and Medium Enterprises in Sri Lanka

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Abstract

Small and medium enterprises (SMEs) play major roles in achieving economic development in countries all over the world. Currently, Sri Lanka doesn't have a generally accepted criterion to categorize SMEs. Different agencies use various criteria and there is no consistency between them. The most common criterion is the number of employees in the company. Though this is simple, it neglects an important characteristic such as annual turnover. Hence, a company with fewer employees and large turnover categories to small scale enterprises. So, Identifying SMEs on a commonly acceptable criterion is a long felt need of the country. Department of Census and Statistics, Sri Lanka currently categorize SMEs based on number of employees. This classification doesn't consider the important variables such as industry turnover, capital and energy consumption. The main focus of this study is to propose an alternative method to categorize Small and Medium Enterprises in Sri Lanka. Data were collected from Annual Survey of Industries (ASI) which is conducted by Industries, Trade, Construction and Services Division of Department of Census and Statistics. Number of Persons Engaged In, Annual Turnover of the Industry, Annual Energy Consumption of the Industry and Fixed Capital Assets were identified as the key variables to categorize Industries. In our approach Industries are clustered based on the above four variables using Model Based Clustering (EM) Algorithm. Then a Decision Tree algorithm is used to define the cluster boundaries for small, medium and large industries. Finally, a rule set containing nine rules was prepared and proposed to classify industries. The proposed method has the ability to capture the multi-dimensional behavior and hence, produce more accurate categorization.

Keywords: BIC Criterion, Decision Trees, Model Based Clustering