

Chapter 19

Quality of Life Modeling at the Regional Level

Jiří Křupka

University of Pardubice, Czech Republic

Miloslava Kašparová

University of Pardubice, Czech Republic

Pavel Jirava

University of Pardubice, Czech Republic

Jan Mandys

University of Pardubice, Czech Republic

ABSTRACT

The chapter presents the problem of quality of life modeling in the Czech Republic based on classification methods. It concerns a comparison of methodological approaches; in the first case the approach of the Institute of Sociology of the Academy of Sciences of the Czech Republic was used, the second case is concerning a project of the civic association Team Initiative for Local Sustainable Development. On the basis of real data sets from the institute and team initiative the authors synthesized and analyzed quality of life classification models. They used decision tree classification algorithms for generating transparent decision rules and compare the classification results of decision tree. The classifier models on the basis of C5.0, CHAID, C&RT and C5.0 boosting algorithms were proposed and analyzed. The designed classification model was created in Clementine.

INTRODUCTION

Quality of Life (QL) is measured, evaluated and computed around the world from a local level

(community, region) to a country level (Dunning, Williams, Abonyi, & Crooks, 2008; Epley & Menon, 2008; Shackman, Liu, & Wang, 2005). This topic is currently the subject of numerous research studies at national and regional level.

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We can find many different methods and indexes for QL definition in the corresponding papers and books (Arslantas, Unsal, Metintas, Koc, & Arslantas, 2009; Dunning, Williams, Abonyi, & Crooks, 2008; Epley & Menon, 2008). QL is an interdisciplinary topic of the research which began to be popular in the 1970's. Researchers tried to understand the social and economic problems arising from inequities in access to resources. They started to search for attributes and indexes which are more complex than objective measurements such as income of levels, health or crime statistics (Day & Weitz, 1977; Dunning, Williams, Abonyi, & Crooks, 2008). In the 1980's, the focus of QL studies turned to the city level (as opposed to the state/provincial or regional level) and non-traditional data sources were utilized, such as those from city administrative and health departments. In recent years, researchers' debate is focused on the differentiation between objective and subjective measures and on searching new methodologies comprising mixed and hybrid approaches (Dunning, Williams, Abonyi, & Crooks, 2008).

Human satisfaction is one of the basic conditions designating QL for humans. However, it is a value that is markedly subjective and is changing through time, and the concept of satisfaction in itself is wide and vague. Regional development and growth in quality of life of its citizens belong to the essential goals of regional management. The effect caused by the improvement in QL of citizens, and thereby the increase rate in their satisfaction, not only with regards to the environment in which they live, requires the existence of tools facilitating an assessment of the success of this effect. For regional management, information on citizen satisfaction is an important basis in decision making and self-assessment; that is why it is necessary to assess and measure citizen satisfaction. It is important to identify not only areas in which people fulfill their personal aspirations, but also areas with negative influence on people. Inhabitants of the region judge their own

interests by possibilities and barriers which influence fulfilling their personal needs and interests and unwind their positive or negative relation to the place where they live.

The definition of regional management (Adamčík, 2000; Kašparová, Křupka, & Pírko, 2008) is analogous to the definition of company management. In (Adamčík, 2000) On can find the generalization '...the goal of regional management is prosperity and development of a region, satisfying interests and needs of inhabitants and their groups as well as public interest...', which is in alignment with the definition by law No. 128/2000 Sb. in regards to municipalities (municipal authorities) and No. 129/2000 Sb. in regards to regions (regional authorities).

The problem of QL in the Czech Republic (CR) is one of the main parts of the strategy of national policy of quality in the CR for the period 2008 to 2013. The concept of the strategy (Vorlíček, 2008) is based on a result analysis of the present fulfillment of the national policy of quality support and on the basis of the evaluation of the current situation; it defines sending, vision, framework and the long-term strategic goal for the next period. The effort is to create an environment that would improve society life in all areas (including the improvement of quality of life of individuals) in the CR (Křupka, Jirava, Kašparová, & Mandys, 2009). This strategy is to be a contribution for the entrepreneurial sphere, Public Administration (PA) and for the whole civil society. In the public sector area Strategy has to support the development of PA quality. The most frequently used tools, methods and models used for the evaluation of the management quality of the PA are mentioned for example in (Hersh, 2005; Křupka, Jirava, Kašparová, & Mandys, 2009; Ministry of Interior, 2008).

If regional management is understood (Shafritz, Russell, & Borick, 2008) as a model of management system¹, then the method of collecting information through direct citizen satisfaction measuring supports management with feedback

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