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ANALYSING GLOBAL ENVIRONMENT QUALITY STATE AND EVOLUTION BASED ON A MULTI-CRITERIA APPROACH

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Abstract

The paper is focused on the integrated modelling of environmental quality. It shows how we can use multi-criteria decision analysis to study some aspects about the environmental quality status in a region and its evolution during a certain period of time. The global analysis is created by taking into account the concurrent contributions of different factors such as air quality, drinking-water quality and noise pollution, on the quality of the environment people live in. We propose an indicator, named environmental quality index, which can reflect the global quality of the environment. It can be considered a tool which can be used by decision-makers involved in environmental management issues for deciding if the current actions and strategies are going in right directions. The study is carried out through a multi-criteria decision model in case of certainty, namely the Simple Additive Weighting (SAW) method, because it is based on real and basic defined indicators which have certain values. We have applied this tool for a case study. We chose as our case study a city from south west Romania and a period of 7 years, namely 2012-2018. Based on this environmental quality index we have ranked the 7 years showing in which of them the level of the quality of the environment was the best.

Key words: air pollution, drinking-water quality, environmental management, multi-criteria decisions, noise pollution

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