Integrating Case-Based and Fuzzy Reasonings to Predict the Results of Environmental Impact Assessment Reviews for Road C

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ABSTRACT

This country announces its Environmental Impact Assessment in 1994 due to considerations such as: national long term development interest, environmental protection and economic development, etc. This announcement states that all kinds of development behaviors should take into account the environmental factor during the planning stage; if it has adverse influence on the environment, manual or report for the influence on the environment should be submitted. During the preparation of environmental impact assessment statements or reports, the editor cares most two things. First, the acquisition of similar case: since environmental impact assessment statements or reports are all preserved in the document form, day after day, great difficulty has to be faced in the preservation and management of the document, in the mean time, the massive data will make the searching and comparison job very tedious and time consuming during the search of similar cases. Second, the forecast of review conclusions: what is thought most important for an edited environmental impact assessment manual is its possibility of passing a review. If the possibly acquired conclusion and suggestion can be predicted, early preparation and the submission of corrective proposals can be done in advance on highly risky factors, in turn, the possibility of passing review is relatively enhanced. Therefore, in order to solve these issues, the following suggestions are proposed in this study: (1) Case database is built through the use of Case-Based Reasoning (CBR) and the most similar case is acquired for reference. (2) The applicability of review conclusion from the most similar case is predicted in association with Fuzzy Logic. (3) Important Performance Analysis (IPA) is used to perform the risk analysis of the examination conclusion of environmental factors. Finally, case is going to be used for the test and practical use analysis of the current system.

Keywords : environmental impact assessment ; case-based reasoning ; fuzzy logic

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