

A Fuzzy System for the Assessment of Cultural Recognition in Kadurugoda Viharaya-Jaffna

D.S Kalana Mendis
Advanced Technological Institute, Dehiwala, Sri Lanka.
kalanaatil@mail.com

Theri Sangamitta arrived to Dambakolapatuna in Sri Lanka with a sampling of Sri Maha Bodhi. It is said that the road to Anuradhapura from Dambakolapatuna was through this Kadurugoda Vihara area and before going to Anuradhapura she has visited this temple. Unfortunately, there is no validated tool to assess its land usage for cultural recognition in this temple. The aim of the research is to address this deficiency. The findings should a) provide guidance for the development a fuzzy system for land classifications. b) Validate as a reliable assessment tool for cultural recognition in Kadurugoda Vihara. Land selection in architectural construction domain is considered as an area in land selection methods, which involves commonsense knowledge of architects for cultural recognition. Sometime, there are too many redundancies in the process selection of lands. Further, functional and social parameters of classification lands describe significant evidence of cultural recognition. This paper presents a methodology to the development of a fuzzy system in a sub field of architecture domain of land selection to come up with land classifications as physical, functional and social events. At the initial stage primary and secondary sources relating to Cultural Recognition in Kadurugoda Viharaya-Jaffna has been considered. At the second stage commonsense knowledge in land selection has been mapped into a questionnaire for classifying physical, functional and social aspects. The questionnaire has been consisted with 31 number of questions. Removing dependencies among the questions in the questionnaire has been modelled by principal component analysis. A survey has been conducted for computing principal component analysis by considering different archaeological sites. Classification of the knowledge of the questionnaire biased on classification of lands has been processed through fuzzy logic module, which was constructed on the basis of principal components. The fuzzy system scored for Kadurugoda Vihara in term of physical, functional and social as 7.072626%, 44.11221 % and 48.81516% respectively. With these results of the system, this appears to exploit significant contribution of functional and social aspects respectively. Therefore fuzzy system has been used to validate as a reliable assessment tool for cultural recognition in Kadurugoda Vihara.

Keywords: cultural recognition; land selection; Kadurugoda Vihara; fuzzy logic; principal component analysis
