Management Model for the Evaluation of University Performance Using AHP and Fuzzy Inference Systems

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Abstract. The management model for measuring university performance through decision-making methodologies is a fundamental tool for evaluating and improving the performance of universities. In this context, performance management has become a crucial aspect in ensuring the quality of higher education and the achievement of institutional objectives. This model is based on the application of various decision-making methodologies, such as the Analytic Hierarchy Process (AHP) and fuzzy logic, which allow for a comprehensive and accurate evaluation of different aspects of university performance.

A comprehensive literature review was conducted to identify the factors, subfactors, and indicators related to university performance. Academic aspects, such as teaching and learning, research and innovation, as well as community engagement, are taken into account. Subsequently, the AHP method is used to assess criteria related to university performance and estimate their priorities based on their dimensions. This enables the prioritization of factors and subfactors, as well as the assignment of weights to the indicators considered in the model.

To consolidate the information into a single indicator, the use of a fuzzy inference system is proposed. This methodology allows for the handling of uncertainty and subjectivity present in performance evaluation, considering qualitative and subjective factors that cannot be precisely measured. With this approach, a performance measure is constructed that comprehensively reflects the quality and effectiveness of the university in all its aspects. The implementation of this model involves the participation of decision-making experts.

Keywords. Performance measures in universities, Analytic hierarchy process, Fuzzy inference system, decision-making systems

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