

GROUP ASSESSMENT METHODS BASED ON TWO ALGORITHMS OF THE LINEAR FUZZY LINGUISTIC

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ABSTRACT. *Traditional group assessment is difficult in reflecting group's complete and certain thought. Therefore, if we can use fuzzy sense to express the degree of interviewee's feelings based on his own concept, the result will be closer to interviewee's real thought. The purpose of this paper is to create two comprehensive algorithms for group assessment with the linear order fuzzy linguistic to do aggregated assessment analysis. Comparing with the two proposed fuzzy assessment methods on group assessment analysis, we have the same computing results. The computed results via the proposed two algorithms are more objective and unbiased than just one evaluator's assessment since they are generated by a group of evaluators. Moreover, if there is only one evaluator existing, the proposed model is also appropriate to assess.*

Keywords: Sampling survey, Fuzzy linguistic

1. Introduction. The validity of data from group assessment is doubtful for making evaluation according to the thinking of binary logic. The result may lead to an unreasonable bias since the human thinking is full with ambiguity and uncertainty. In most group assessment method, the linguistic information provided by experts is firstly expressed in the form of fuzzy linguistic. In order to make the collective opinion close to each expert's opinion, a model should be constructed to integrate the fuzzy assessment information and to directly compute the collective ranking values of alternatives with fuzzy set theory. Fuzzy set theory was introduced by Zadeh [12] to deal with problem in which vagueness is present, linguistic value can be used for approximate reasoning within the framework of fuzzy set theory [13] to effectively handle the ambiguity involved in the data evaluation and the vague property of linguistic expression, and normal triangular fuzzy numbers are used to characterize the fuzzy values of quantitative data and linguistic terms used in approximate reasoning.

With regard to fuzzy decision-making problem, Kao and Wu [1] presented new dynamic approaches in information technology investment evaluation for Taiwan and China, they applied fuzzy rule for decision-making to examine the benefit of IT investment. Lee [2] applied fuzzy set theory to evaluate the aggregative risk in software development under fuzzy circumstances. Lin and Lee [6-8] presented facility site selection model using fuzzy set theory. Lin and Lee [9] presented a new fuzzy algorithm to evaluate the user satisfaction of software quality. Lin and Lee [10] presented the fuzzy assessment on sampling survey analysis. Wang and Chen [11] presented two new methods for evaluating students'