Multi- Criteria Expert Assessment System Of Innovative Ideas On The Basis Of Topsis Method In Geo Ideametrik

Julieta Gagloshvili

Julieta.gagloshvili@tsu.ge

Department of Computer Sciences Iv.Javakhishvili Tbilisi State University
University st. 13, 0186, Tbilisi, Georgia

For the purpose of formation of efficient portfolio, other mechanism of assessment, ranging and selection of innovation ideas is proposed in the paper, in particular, multi-criteria method of analysis according to the proximity with optimal – TOPSIS (Technique for Order of Preference by Similarity to Ideal Solution), which is also based on the theory of fuzzy sets and hierarchic representation of assessment indicators. The procedures of formation and use of fuzzy scale are developed, and the peculiarities of determination of trapezoid, fuzzy numbers, corresponding to linguistic variables are determined. Relative coefficients of importance of the relevant characteristics, corresponding to the indicators and weights, denoting experts' competence are used for obtaining of integral assessment of each idea. Specific procedures of their calculation are given.

The algorithm of multi-criteria expert assessment of innovative ideas is created using TOPSIS method, transfer of coefficients of experts' competence, indicators and features from hierarchic two-tier system to one-tier system, using procedures of calculation of coefficients of the values of indicators and features

F e a t u r e s	TOPSIS
Only qualitative feature	Yes
Only quantitative feature	No
Mixed – qualitative and quantitative	No
Consideration of experts' competences	Yes
Agreement of experts	Yes
Consideration of weights of the indicators	Yes
Consideration of weights of the features	Yes
Consideration of coefficients of indicators and features	Yes

Computer system of innovative idea management, based on web technology, was developed. The above-mentioned software product is also a novelty in Georgian reality. In out opinion, it is a comfortable tool

for decision-maker to assess the existing ideas with certain preciseness as early as on initial stage and select the best ideas out of them.

Use of the outcomes is possible for "express assessment" and selection of project proposals, projects and, in general, any number of multiplicity of alternatives. So, the above mentioned web product may be interesting for the organizations, oriented towards project assessment/selection, local self-governances, tender organizations, organizations, planning start-ups and similar contests, various foundations, banks, etc. The methods and the system as the whole can be introduced in educational process.

The results of theoretical researches are integrated into idea management system, testing, development, patenting and introduction of which will be one of the key outcomes of this Project.

Kay words: Geo Ideametrik, TOPSIS, Intellectual System