Universiti Teknologi MARA

Determining Scholarship Recipients Among Students of UiTM Perlis by Using Fuzzy Multi-Attribute Decision Making (FMADM) with TOPSIS Method

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STUDENT'S DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

….....*hafizzah*.....

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ABSTRACT

Scholarships are given to fund a student's education and are provided by the government, non-governmental organisations (NGOs), the private sector, government-linked companies (GLCs), and trade associations. Many students apply for scholarships to continue their studies. So, it will be a long process to select the rightful candidates, which involves a significant length of time because the interview will be consisting of hundreds of applicants. This study aims to rank and determine the best alternative among scholarship recipients. In this study, the Fuzzy Multi-Attribute Decision Making (FMADM) with the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) is used to solve this problem. The model was run using Microsoft Excel. The selection of scholarship recipients is based on a set of criteria that had been set; which are family income (C1), Grade Point Average (C2), the number of dependents in the family (C3), and the number of involvements in associations or activities in university (C4). The findings show that from 30 samples of students of Universiti Teknologi MARA (UiTM) Perlis, the 29^{th} student (S29) is in the highest-ranking with a 0.6948 closeness coefficient while the 16^{th} student (S16) is in the lowest ranking with a 0.1960 closeness coefficient. It is also shown that ten students meet the qualification that had been set by using closeness coefficients which are 0.5 and above to receive the scholarship. Therefore, using this method, the mistakes in the selection process will be reduced compared to manual selection. Besides, multi-attribute decision making can be solved using other methods instead of the TOPSIS method.

Keywords: Scholarship, Fuzzy Multi-Attribute Decision Making, FMADM, Technique for Order of Preference by Similarity to Ideal Solution, TOPSIS, rank, alternative.

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