

**SELECTING STUDENTS FROM LOW INCOME FAMILY USING
ANALYTICAL HIERARCHY PROCESS
BASED ON LINGUISTIC HEDGES**

(Memilih Pelajar daripada Keluarga Berpendapatan Rendah Menggunakan
Proses Hierarki Analisis Berasaskan Pagaran Linguistik)

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ABSTRACT

In this paper, we propose a new method for selecting students from low income family, namely *Mengubah Destini Anak Bangsa* (MDAB) programme by analytical hierarchy process based on linguistic hedges. It focuses on utilising the linguistic hedges for decision-makers (DMs) to make their judgement for weighting purposes. Two linguistic hedges, the *concentration* and *dilation* are used to measure the importance of relative weight for each criterion. Meanwhile, the group of DMs viewpoints is used to build the membership functions towards deriving the entire criterion performance scores. Then, the maxmin operator and sorting the results by descending order are applied to determine the best alternative and ranking process, respectively. A numerical example related to Universiti Teknologi MARA (UiTM) MDAB students' selection is presented to demonstrate the applicability of the proposed method. It is found that the method is successful in dealing with situations which are relevant to the university concern, thus can facilitate the DMs to make a decision in a simple and systematic manner.

Keywords: analytical hierarchy process (AHP); concentration; dilation; linguistic hedges; *Mengubah Destini Anak Bangsa* (MDAB); students selection

ABSTRAK

Dalam makalah ini, diusulkan suatu kaedah untuk pemilihan pelajar dalam kalangan keluarga berpendapatan rendah atau dikenali sebagai program *Mengubah Destini Anak Bangsa* (MDAB) secara proses hierarki analisis berasaskan pagaran linguistik. Perbincangan terfokus kepada memanfaatkan pagaran linguistik untuk pembuat keputusan menentukan pemberat sesuatu atribut dalam proses penilaian. Dua jenis pagaran linguistik yang dinamai *konsentrasi* dan *dilasi* diguna untuk mengukur kepentingan pemberat relatif setiap kriterium kajian. Pendapat pembuat keputusan berkumpulan pula diguna untuk membina fungsi-fungsi keahlian bagi tujuan mendapatkan keseluruhan skor prestasi. Seterusnya, pengoperasi minmaks dan proses menyusun secara menurun dilakukan masing-masing untuk menentukan pilihan terbaik dan proses pemangkatan. Suatu contoh empirikal berkaitan dengan proses pemilihan pelajar MDAB di Universiti Teknologi MARA (UiTM) diguna pakai untuk menunjukkan kebolegunaan kaedah usulan. Hasilnya menunjukkan kaedah ini berjaya menangani situasi ketakpastian yang wujud dalam proses pemilihan pelajar seperti yang diperlukan oleh UiTM. Di samping itu ia memberi manfaat kepada pembuat keputusan untuk membuat keputusan secara bersistematik dan lebih mudah.

Kata kunci: proses hierarki analisis (PHA); *konsentrasi*; *dilasi*; pagaran linguistik; *Mengubah Destini Anak Bangsa* (MDAB); pemilihan pelajar

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