

ABSTRACT

The process of major selection of high school students is determined by considering the academic ability and the students' interest. The process of major selection in SMA Al-Islam 1 Surakarta has been done therefore there is a subjective assessments and it needs more time to give the result of major selection. The objective of the research is to develop a decision support system for determining the major of high school student by implementing scientific method. So this research can help give recommendation to the decision makers effectively, efficiently and objectively.

This research proposed the combination methods of AHP method and AHP Fuzzy TOPSIS to determine the majors of high school students. AHP method was to determine the weight of criteria value consistently and Fuzzy TOPSIS method was to determine the final value of alternative ranks. Beside that research combined the TOPSIS method has been developed (TOPSIS 2). TOPSIS 2 method had the computation process which is simpler to determine the similarity solution with vertical projection distance.

This research is success in giving recommendation for major selection by using the combination of the scientific methods they are AHP Fuzzy TOPSIS. The analysis of the results of the AHP method obtains accuracy rate 61% according to the manual result. Whereas the result analysis of accuracy test of combination AHP Fuzzy TOPSIS method obtains accuracy rate of 75% according to the selection result manually. The evaluation of system to the users obtains average value 4.75 from 1-5.

Keywords - DSS, AHP, Fuzzy, TOPSIS, Improved TOPSIS, Major Selection, High School Students

INTISARI

Proses seleksi jurusan siswa SMA ditentukan dengan mempertimbangkan kemampuan akademik dan minat jurusan siswa. Proses seleksi jurusan di SMA Al-Islam 1 Surakarta masih dilakukan secara manual sehingga memungkinkan adanya penilaian secara subyektif dan memerlukan waktu yang lebih lama untuk memberikan hasil seleksi jurusan. Tujuan penelitian yaitu membangun sebuah sistem pendukung keputusan untuk menentukan jurusan siswa SMA dengan mengimplementasikan metode ilmiah di dalamnya. Sehingga penelitian ini dapat membantu memberikan hasil rekomendasi jurusan kepada pihak pengambil keputusan secara obyektif efektif dan efisien.

Penelitian ini mengusulkan kombinasi metode AHP dan AHP Fuzzy TOPSIS untuk menentukan jurusan siswa SMA. Metode AHP untuk menentukan bobot penilaian kriteria yang konsisten dan metode Fuzzy TOPSIS untuk menentukan nilai akhir perankingan alternatif. Selain itu, penelitian ini mengkombinasikan metode TOPSIS yang telah dikembangkan (TOPSIS 2). Metode TOPSIS 2 memiliki proses komputasi yang lebih sederhana untuk menentukan kesamaan solusi dengan jarak proyeksi vertikal (*vertical projection distance*).

Penelitian ini berhasil memberikan hasil rekomendasi seleksi jurusan menggunakan kombinasi metode ilmiah, yaitu AHP Fuzzy TOPSIS. Analisis hasil metode AHP memperoleh tingkat akurasi 61% kesesuaian terhadap hasil manual. Sedangkan analisis hasil uji akurasi kombinasi metode AHP Fuzzy TOPSIS memperoleh tingkat akurasi sebesar 75% sesuai terhadap hasil seleksi secara manual. Evaluasi sistem terhadap pengguna memperoleh nilai rata-rata 4,75 dari skala 1-5.

Kata kunci – SPK, AHP, Fuzzy, TOPSIS, Peningkatan TOPSIS, Seleksi Jurusan, Siswa SMA