

## PERLUASAN PROSES HIERARKI ANALISIS KABUR UNTUK KEPUTUSAN MULTI-KRITERIUM

(Fuzzy Analytic Hierarchy Process-Extension for Multi-Criteria Decision)

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### ABSTRAK

Dalam makalah ini dibincangkan kaedah perluasan proses hierarki analisis yang diterapkan dalam teori set kabur bagi tujuan menyelesaikan masalah pembuat keputusan multi-kriterium. Kaedah ini digunakan untuk mengatasi masalah kekaburan data masukan awal menggunakan pendekatan darjah keahlian. Kelebihan ini digunakan melalui penggunaan contoh andaian dalam pemilihan sistem pelupusan sisa perbandaran. Hasil pengiraan menunjukkan penggunaannya mudah dan mampu meminimumkan data masukan yang bersifat kualitatif, sekali gus dapat menangani masalah pembuat keputusan multi-kriterium dengan lebih berkesan. Di samping itu, pendekatan ini juga dilihat dapat memberi kaedah alternatif untuk menyelesaikan masalah pembuat keputusan multi-kriterium.

*Kata kunci:* Pembuat keputusan multi-kriterium; perluasan proses hierarki analisis (PHA); set kabur

### ABSTRACT

This paper discusses an extension of analytic hierarchy process which adopted in fuzzy set theory for multi-criteria decision-making purposes. This method is utilised to overcome the initial of input data-sets problem using the concept of membership degree. The advantage of proposed approach is applied through the hypothetical example of municipal solid waste decision-making problems. Based on the calculations, it shows that the approach is user friendly, enables to minimise the initial of input data-sets and very efficient in terms of problem solving approach. Besides that, it's beneficial as an alternative approach for solving multi-criteria decision-making problem.

*Keywords:* Multi-criteria decision-making; analytic hierarchy process-extension; fuzzy sets

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