## عنوان مقاله:

A new interval type ۲ best worst method and its application to healthcare waste treatment selection problem

## محل انتشار:

نهمین کنفرانس بین المللی مهندسی صنایع و سیستم ها (سال: 1402)

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## خلاصه مقاله:

The Best Worst Method (BWM) is considered to be a desirable method for multi-criteria decisionmaking(MCDM) in place of the Analytic Hierarchy Process (AHP) because it reduces the number ofpairwise comparisons required and maintains consistency between judgments. However, decisionmakersoften face uncertainty and must choose between a few similar alternatives, making decisionmakingmore challenging. To address these issues, a new method called interval type ۲ Fuzzy AdditiveBWM (IT۲F-ABWM) has been proposed, which uses a fuzzy interval scale to handle uncertainpreferences. This method retains the characteristics of the original BWM while simplifying fuzzycalculations by eliminating the fuzzy multiplication operation. Furthermore, a fuzzy consistency indexand fuzzy consistency ratio are introduced to check the reliability of the DMs' preferences. A case studyconcerning healthcare waste treatment selection is implemented by the proposed IT۲F-ABWM toillustrate the practicality of the proposed method. Finally, a comparative analysis is conducted todemonstrate the benefits of the proposed IT۲F-ABWM.

## کلمات کلیدی:

Best-Worst method, Interval type ۲ fuzzy set, Interval scale, Multicriteria decisionmaking.