

Accepted Manuscript

A group multi-criteria decision-making based on best-worst method

Soroush Safarzadeh, Saba Khansefid, Morteza Rasti-Barzoki

PII: S0360-8352(18)30427-3
DOI: <https://doi.org/10.1016/j.cie.2018.09.011>
Reference: CAIE 5396

To appear in: *Computers & Industrial Engineering*

Received Date: 12 December 2017
Revised Date: 21 July 2018
Accepted Date: 5 September 2018

Please cite this article as: Safarzadeh, S., Khansefid, S., Rasti-Barzoki, M., A group multi-criteria decision-making based on best-worst method, *Computers & Industrial Engineering* (2018), doi: <https://doi.org/10.1016/j.cie.2018.09.011>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



A group multi-criteria decision-making based on best-worst method

Soroush Safarzadeh, Saba Khansefid, Morteza Rasti-Barzoki*

Department of Industrial and Systems Engineering, Isfahan University of Technology, Isfahan 84156-83111, Iran

Abstract

In recent years, the daily increase in the application of the group decision-making approaches can be seen in the various areas such as facility location, supplier selection, energy schemes, project management, and performance evaluation. The group decision-making methods aggregate the individual preferences and present the best agreement using the mathematical models. On the other hand, best-worst method (BWM) is a novel multi-attribute decision-making (MADM) method which can solve the decision problems by a new perspective on the pairwise comparisons. So, in this paper, we extend a novel group decision-making method based on BWM (GBWM), which includes new attributes, under the three steps. Also, for the first time, we formulate two various mathematical models ($M1$ and $M2$) to calculate the optimal weights of the criteria. Then, we present some numerical instances to evaluate the proposed method and clarify how we can use it. In addition, we perform a comprehensive sensitivity analysis on the main parameters of the proposed method. Finally, we use GBWM to solve a real case study. The results show the acceptable performance of GBWM, besides the simple usage and the customization ability of the presented model.

Keywords: Multi-criteria decision-making, Group decision-making, Best-worst method, Group-AHP

* Corresponding author. Tel: (+9831) 33911480; Fax: (+9831) 33915526.
E-mail address: rasti@cc.iut.ac.ir

Download English Version:

<https://daneshyari.com/en/article/10154339>

Download Persian Version:

<https://daneshyari.com/article/10154339>

[Daneshyari.com](https://daneshyari.com)