JMA-786

Multiple Attribute Group Decision-Making Based on Novel Similarity Measure Under Linguistic Picture Fuzzy Framework

Barkha Rohtagi[1*] and Rajkumar Verma[2,3]

[1]Department of Applied Sciences, KIET Group of Institutions, Ghaziabad, Uttar Pradesh, India
[2]Instituto de Investigación Interdisciplinaria, Universidad de Talca, Talca, Chile
[3]School of Economics and Business, Universidad de Talca, Talca, Chile

[*]Corresponding author's e-mail: barkha.rohtagi@gmail.com

ABSTRACT

The similarity measure is a very efficient tool to determine the degree of closeness between two sets of objects. It has found successful applications in various practical areas, including pattern recognition, decision-making, clustering analysis, and image processing. Linguistic picture fuzzy sets (LPFSs) provide a more prominent modeling capability to describe qualitative uncertain information effectively. This paper aims to define novel similarity measures between linguistic picture fuzzy sets and explore their applicability in decision-making situations. To do so, we define two new similarity measures between LPFSs and prove their basic mathematical properties to be valid similarity measures in linguistic picture fuzzy information context. Next, a multiple attribute group decision-making method is developed based on the proposed similarity measures and illustrated with the help of a numerical example. A comparative study with existing methods is also carried out to validate the results.

Keywords: Picture fuzzy sets, linguistic picture fuzzy sets, multiple-attribute group decision-making

How to Cite

B. Rohtagi and R. Verma, "Multiple Attribute Group Decision-Making Based on Novel Similarity Measure Under Linguistic Picture Fuzzy Framework", *AIJR Abstracts*, pp. 60–60, Feb. 2024.

DOI: 10.21467/abstracts.165 ISBN: 978-81-965621-7-5 (eBook), 978-81-965621-4-4 (Paperback)