

# Review of: "Improved Cosine Similarity Measures for q-Rung Orthopair Fuzzy Sets"

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This short paper introduces novel similarity measures for q-rung orthopair fuzzy sets, aiming to address certain gaps in the existing literature. While the proposed measures seem promising, there are notable areas for improvement.

The definition of q-rung orthopair fuzzy sets lacks clarity regarding whether  $q$  is a real number; the paper only stipulates that  $q$  is greater than or equal to one.

In Theorem 1, the paper establishes some properties of the improved weighted cosine similarity, yet it overlooks significant properties such as transitivity. Further exploration of essential properties like overlapping or minimum similarity (<https://doi.org/10.1016/j.ins.2019.09.027>) would enhance the comprehensiveness of the study.

The subsequent presentation of the improved Choquet cosine similarity lacks depth, as it solely introduces the theorem outlining its properties. A comparative analysis with others and the first measure proposed and deeper exploration of these properties would contribute to a more robust discussion. Moreover, the absence of practical applications diminishes the paper's potential impact.

In essence, the paper exhibits promise and potential, but it requires further refinement to stand out. A more in-depth exploration of properties, a comparative analysis, and the inclusion of practical applications would significantly enhance its value. I recommend considering the paper for publication after a major revision. Addressing the mentioned concerns and incorporating additional analyses and applications will elevate the paper's contribution to the field.