

A new consensus measure based on Pearson correlation coefficient

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Obtaining *consensual* solutions is an important issue in decision making processes. It depends on several factors such as experts' opinions, principles, knowledge, experience, etc. In the literature we can find a considerable amount of consensus measurement from different research areas (from a Social Choice perspective: Alcalde-Unzu and Vorsatz [1], Alcantud, de Andrés Calle and Cascón [2] and Bosch [3], among others and from Decision Making Theory: González-Arteaga, Alcantud and de Andrés Calle [4] and González-Pachón [5], Herrera, Herrera-Viedma and Chiclana [7], Herrera-Viedma et al. [6] and Wu et al. [8], among others). Most of them have a common point, they are based on distances or similarity functions.

In the present contribution we propose a new approach based on the use of the Pearson correlation coefficient to measure consensus. Moreover, we suppose a general framework considering experts' opinions modelled by fuzzy preference relation. The new *correlation consensus measurement* takes into account concordance between preferences intensities for pairs of alternatives and it verifies important properties. In addition, we prove that our proposal is a different approach to traditional consensus measures based on distances or similarities.

References

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