عنوان مقاله:

Fermatean Fuzzy Type Statistical Concepts with Medical Decision-Making Application

محل انتشار:

مجله بهینه سازی و مدل سازی فازی, دوره 4, شماره 1 (سال: 1402)

تعداد صفحات اصل مقاله: 14

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خلاصه مقاله:

When a correlation between datasets is presented, it is clear from this statement that it quantifies how strongly these datasets are connected. Meanwhile, this coefficient is a well-known metric for assessing the link between two sets. The Fermatean fuzzy set is a significant extension of the extant intuitionistic and Pythagorean fuzzy sets, with the benefit of more comprehensively characterizing ambiguous data. In other words, Fermatean fuzzy sets are powerful and useful tools for representing imprecise information. The purpose of this work is to generate novel correlation coefficients using Fermatean fuzzy sets. These coefficients specify the degree and kind of correlation (positive or negative) between two Fermatean fuzzy sets. The new coefficient values will similarly be in the [-۱,۱] range. During formulation, pairs of membership and non-membership degrees were viewed as a vector representation containing the two elements. Furthermore, the novel approach was compared to existing methods. A medical diagnosis application and pattern recognition as a data mining application were used to exemplify the effectiveness of the proposed method.

کلمات کلیدی:

Variance, Covariance, Correlation Coefficient, Pearson correlation coefficient, Fermatean fuzzy set

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