General type-2 fuzzy degree of nodes in multi-central social networks set NAFIPS co-authorship network

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Abstract

In this study, a new index is defined to measure a degree of node of the multi central complex network. The proposed index measures the belonging degree to the networks based on general type-2 fuzzy membership values. The proposed general type-2 fuzzy degree (GT2FD) consists of the primary degree, which indicates the similarity between nodes and central nodes; and the secondary degree, which indicated the position of the central node compared to other central nodes in the networks. We applied this index on co-authorships network of NAFIPS conferences to determine the authors' degree of belonging. All concepts and operations of general type-2 fuzzy sets could be applied for social network analysis by using GT2FD.

Keywords: General type-2 fuzzy, Degree, Multi central network, Co-authorship network, Social network analysis.