

An Extended Fuzzy Measure on Competitiveness Correlation Based on WCY 2011

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Abstract

The fuzzy measure can highlight important information in analyzing component features, patterns, and trends. However, fuzzy densities and interactions effects are usually unknown or uncertain for implications thus making the fuzzy measure not powerful enough. This research proposes an extended fuzzy measure non-additively (or called super-additively) to aggregate preferences and implication probabilities into utilities, and then implies utilities correlation to highlight competitiveness features, patterns, and trends. The proposed method extends 'if...then...' statements of dominance-based rough set approach (DRSA) to bridge implication probabilities to fuzzy measurements. For illustration, the extended fuzzy measure is applied on World Competitiveness Yearbook 2011 and then implies policy making for Greece, Italy, Portugal, and Spain.

Keyword : competitiveness, dominance-based rough set approach (DRSA), fuzzy measure, utility.