

A Novel Hybrid MCDM Model Combined with DEMATEL and ANP with Applications

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Abstract—In multiple criteria decision making (MCDM) methods, the analytic network process (ANP) is used to overcome the problems of interdependence and feedback between criteria or alternatives. The ANP method currently deals with normalization in the supermatrix by assuming each cluster has equal weight. Although the method to normalize the supermatrix is easy, it ignores the different effects among clusters. Therefore, we propose a novel hybrid MCDM model combined with DEMATEL and ANP to solve the dependence and feedback problems to suit the real world. In addition, we also give an example to illustrate the proposed method with applications thereof. The results show the proposed method is more suitable in real world applications than the traditional ones.

Keywords—Analytic network process (ANP), DEMATEL, Multiple criteria decision making (MCDM)

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