

Selecting a Foreign Country to Build a Naval Base Using a Fuzzy Hybrid Decision Support System

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Abstract : Decision support systems are getting more important in many fields of science and technology and used effectively especially when the problems to be solved are complicated with many criteria. In this kind of problems one of the main challenges for the decision makers are that sometimes they cannot produce a countable data for evaluating the criteria but the knowledge and sense of experts. In recent years, fuzzy set theory and fuzzy logic based decision models gaining more place in literature. In this study, a decision support model to determine a country to build naval base is proposed and the application of the model is performed, considering Turkish Navy by the evaluations of Turkish Navy officers and academicians of international relations departments of various Universities located in Istanbul. The results achieved from the evaluations made by the experts in our model are calculated by a decision support tool named DESTEC 1.0, which is developed by the authors using C Sharp programming language. The tool gives advices to the decision maker using Analytic Hierarchy Process, Analytic Network Process, Fuzzy Analytic Hierarchy Process and Fuzzy Analytic Network Process all at once. The calculated results for five foreign countries are shown in the conclusion.

Keywords : decision support system, analytic hierarchy process, fuzzy analytic hierarchy process, analytic network process, fuzzy analytic network process, naval base, country selection, international relations

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