

An AHP-Topsis Integrated Model for Selecting the Most Appropriate Tomography Equipment

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Abstract

Selecting a suitable Multi Criteria Decision-Making (MCDM) method is a crucial step in selecting appropriate medical equipment. The aim of the research is to define the most appropriate tomography equipment through the integration of the Analytic Hierarchy Process (AHP) and Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) method. A hybrid model is presented. The AHP is used to define the weights of each criterion and sub-criterion through qualitative comparisons. Then, TOPSIS is used to evaluate the purchase options. This research provides decision makers with a scientific and rigorous decision support system useful in strategic and complex decision. A numerical example is also presented.

Keywords:

Analytic hierarchy process (AHP), technique for order of preference by similarity to ideal solution (TOPSIS), multi-criteria decision making (MCDM), tomography medical applications.