Site Selection of CNG Station by Using FUZZY-AHP Model (Case Study: Gas Zone 4, Tehran City Iran)

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Abstract : The most complex issue in urban land use planning is site selection that needs to assess the verity of elements and factors. Multi Criteria Decision Making (MCDM) methods are the best approach to deal with complex problems. In this paper, combination of the analytical hierarchy process (AHP) model and FUZZY logic was used as MCDM methods to select the best site for gas station in the 4th gas zone of Tehran. The first and the most important step in FUZZY-AHP model is selection of criteria and sub-criteria. Population, accessibility, proximity and natural disasters were considered as the main criteria in this study. After choosing the criteria, they were weighted based on AHP by EXPERT CHOICE software, and FUZZY logic was used to enhance accuracy and to approach the reality. After these steps, criteria layers were produced and weighted based on FUZZY-AHP model in GIS. Finally, through ARC GIS software, the layers were integrated and the 4th gas zone in TEHRAN was selected as the best site to locate gas station.

Keywords : multiple criteria decision making (MCDM), analytic hierarchy process (AHP), FUZZY logic, geographic information system (GIS)

Conference Title : ICSED 2015 : International Conference on Social and Economic Development

Conference Location : Paris, France

Conference Dates : August 27-28, 2015