

## Using GIS and AHP Model to Explore the Parking Problem in Khomeinishahr

**Authors :** Davood Vatankhah, Reza Mokhtari Malekabadi, Mohsen Saghaei

**Abstract :** Function of urban transportation systems depends on the existence of the required infrastructures, appropriate placement of different components, and the cooperation of these components with each other. Establishing various neighboring parking spaces in city neighborhood in order to prevent long-term and inappropriate parking of cars in the allies is one of the most effective operations in reducing the crowding and density of the neighborhoods. Every place with a certain application attracts a number of daily travels which happen throughout the city. A large percentage of the people visiting these places go to these travels by their own cars; therefore, they need a space to park their cars. The amount of this need depends on the usage function and travel demand of the place. The study aims at investigating the spatial distribution of the public parking spaces, determining the effective factors in locating, and their combination in GIS environment in Khomeinishahr of Isfahan city. Ultimately, the study intends to create an appropriate pattern for locating parking spaces, determining the request for parking spaces of the traffic areas, choosing the proper places for providing the required public parking spaces, and also proposing new spots in order to promote quality and quantity aspects of the city in terms of enjoying public parking spaces. Regarding the method, the study is based on applied purpose and regarding nature, it is analytic-descriptive. The population of the study includes people of the center of Khomeinishahr which is located on Northwest of Isfahan having about 5000 hectares of geographic area and the population of 241318 people are in the center of Komeinishahr. In order to determine the sample size, Cochran formula was used and according to the population of 26483 people of the studied area, 231 questionnaires were used. Data analysis was carried out by usage of SPSS software and after estimating the required space for parking spaces, initially, the effective criteria in locating the public parking spaces are weighted by the usage of Analytic Hierarchical Process in the Arc GIS software. Then, appropriate places for establishing parking spaces were determined by fuzzy method of Order Weighted Average (OWA). The results indicated that locating of parking spaces in Khomeinishahr have not been carried out appropriately and per capita of the parking spaces is not desirable in relation to the population and request; therefore, in addition to the present parking lots, 1434 parking lots are needed in the area of the study for each day; therefore, there is not a logical proportion between parking request and the number of parking lots in Khomeinishahr.

**Keywords :** GIS, locating, parking, khomeinishahr

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