

Abstract

Today, in most cities of Iran, the use of roof space has not been considered scientifically and comprehensively by scientific centers and executive centers and citizens. In the middle cities such as Zabol, the space of the roofs has not been used favorably. However, the use of wind energy has been more visible in Zabol's buildings over the past few decades. But in recent years, the value of roof space has been taken into account in the allocation of various types of users (Allocation of wind energy, solar energy, zero energy, restaurant, green roof, sports ground, cinema, artificial river, and even communication,..).in the cities of the world. This situation in the city of Zabol requires the provision of strategies, global experiences and the feasibility of some users in order to increase the amount of use of the allocation of roof space to be doubled. The methodology of this research is descriptive-analytical and based on library studies and survey surveys. The results of the analysis of the data in the TOPSIS method of hierarchical analysis process (AHP), Shows that potentially deployable applications on the roofs of the city of Zabol have been investigated and analyzed in terms of the mentioned components. Among the studied factors, economic components have the most impact on the use of urban roof space. The final results of the research show that considering the natural and human geographic situation in Zabol, the best types of deployable applications on the roofs of the city of Zabol were respectively wind turbines with a final weight of 0.840, solar panels with final weights 0.833 and solar water heaters with a final weight of 0.716. GIS ARC software and spatial modeling were used to model and locate the first and second priorities of user allocation of roofs using the Boolean logic operator AND multiplication operator in this software. Also, weighted OWA technique was used to combine the results with two factors of type of use and population size. Based on field observations, the model was evaluated and the Tau-Kendall b coefficient was used to determine the correspondence between the results obtained in the model and the results of the observations. The results show a coefficient equal to 0.778, indicating a strong correlation between the two variables and the relatively high accuracy of the modeling.

Keyword: solar panel, wind turbine, roof, zabol



University of Zabol

Graduate school

Faculty of Literature and human sciences
Department of Geography and urban planning

User allocation strategies roof space in the city of Zabol

Supervisors:

Dr.A.kiani

Advisors:

Dr.Gh.Khammar

By:

M. Gholamian

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