

## عنوان مقاله:

(An Analysis of Urban Sprawl Using Factor Analysis Technique (Case: Qazvin City Districts

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## نویسندگان:

Esfandiyar Zebardast - Professor, Department of Urban Development, Faculty of Urban Development, College of Fine Arts. University of Tehran, Tehran, Iran

Hossein Ghanooni - Ph.D. of Urban and Regional Planning, School of Architecture and Urban Development, Shahid Beheshti University, Tehran, Iran

#### خلاصه مقاله:

Urban sprawl is an issue in many cities throughout the world, which has affected many aspects of urban life negatively. Urban sprawl, which is generally attributed to horizontal and leapfrogged extension of city boundaries caused by citizen's will to leave central urban areas and live in urban countryside. The first step for tackling this problem is the identification of sprawled places and the influential factors on sprawl in urban land. Therefore, this article analyses urban sprawl phenomenon in Qazvin city districts. Relying on relevant theoretical texts, 13 indicators are chosen among others in literature for measuring urban sprawl in Qazvin districts. These indices are localized according to the conditions of Iran and the data associated with each of them are extracted using census statistics and Geographic Information System (GIS). Then, factor analysis technique is implemented by SPSS software and the indicators are attributed to four factors. By assessing the contributing indicators to each factor, they are named density, configuration, land-use and accessibility respectively. The results of factor analysis are very consistent with literature. These factors explain the variance of urban sprawl by 27.8, 21.6, 11.3 and 9.5 percent respectively. It is shown that shape index and fractal dimension as new indicators for measuring urban sprawl are significantly effective on this phenomenon. Results show that districts 4, 5, 7, 11 and 12 are the most sprawled and districts 17, 28, 38 and 39 are the least sprawled districts in Qazvin. These two new indexes in Iranian urban literature can be used in other sprawl studies in the country. In addition, the results of this study can guide Qazvin municipality to make important .decisions about the direction of city development

# کلمات کلیدی:

Urban Sprawl, Factor Analysis, Configuration, Qazvin

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