

Position of Neighborhood in Urban Sustainable Development (Case Study: Neighborhoods of Region 10 of Tehran)

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Received: April 30, 2013 Accepted: March 01, 2014

Extended Abstract

Introduction

One of the objectives of urban planners is to promote urban and neighborhood sustainable development. It is in such a way that stability can be reached in the higher levels of hierarchy in city framing divisions. Purpose of this research is to study rate of stability in the neighborhoods of region N10 of Tehran municipality using the Fuzzy combinational method and Geographical Information System (GIS). Region No. 10 of Tehran, with an area of 817 hectares, is regarded as the smallest region of Tehran municipality after region No. 17. It possesses three neighborhoods. With regard to the performed studies, about 57% of the region is consisted of residential usage. Therefore, we observe the dominance of residential usage over the other urban functions in this region. Severe shortage of the usages of the green space and educational, sporting, hygienic and therapeutic space and high population density are the features of this region (Tehran region No. 10 municipality, 2011: 18). Thus, the goal of this study is to survey the position of neighborhood in the urban sustainable development in which the sustainability levels of the neighborhoods have been assessed using the fuzzy method. In addition to identifying the capacities, possibilities and available difficulties and failures in the desired neighborhoods, the following objectives have been taken into consideration:

Specification of the stability level of the neighborhoods

Determination of the most sustainable neighborhoods

Determination of optimum strategies for promotion of position of neighborhoods of region No. 10 in the development of city

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Methodology

In this research, fuzzy analysis has been in such a form that, for each index, a membership function in the fuzzy environment has been determined in the GIS software. This has suggested the rate of benefiting of each neighborhood from that index. Quantities of these functions of fuzzy membership are between zero and one and the neighborhood whose quantity being closer to one is considered to be the superior neighborhood for that index. Then, combination of these layers was dealt with in each dimension using gamma operator. By this, the neighborhoods are compared together and sequence of their sustainability is specified. Since the aim of this research was to determine total sustainability of these neighborhoods compared with each other, it is necessary in this step of the research to combine the stability layers of the raised seven dimensions with gamma operator. The total sustainability of the neighborhoods compared with each other has been specified.

Results and discussion

With regard to the combination of sustainability results in the mentioned seven dimensions, this can be concluded that situation of stability of the neighborhoods of Tehran is region 10. The conditions of the region are ranged from weak to average (from rank of 0.3 to 0.5). Northern Salsabil neighborhood, with score of 0.53, is determined to be the most sustainable neighborhood among the neighborhoods of the region. This is due to superiority of this neighborhood in the servicing, social-cultural, economical and hygienic-therapeutic dimensions. In the discussion of urban governorship, this neighborhood has, also, a rank higher than 0.9 which suggests a high level. After the northern Salsabil, the neighborhoods of northern Karoon with rank of 0.47, Beryanak with rank of 0.46, Southern Zanzan with rank of 0.42, Southern Salsabil with rank of 0.388, Haftchenar with rank of 0.387, Solaimani-Taimouri with rank of 0.38, Shobairi-J with rank of 0.35, southern Karoon with rank of 0.32 and Hashemi with rank of 0.3 are ranged from 0.3 to 0.47.

Conclusion

Neighborhoods of region 10 of Tehran were evaluated by the index in seven framing and sustainability rate of each neighborhood. It was studied by use of the fuzzy method so that a comparison is to be carried out between neighborhoods in order to evaluate the rate of sustainability. The obtained results suggest that situation of sustainability of mentioned neighborhoods in the conditions is ranged from weak to average (from rank of 0.3 to 0.5). For example, the problems, , which lead to lowering of stability rate of these neighborhoods, include dominance of residence relative to other usages, shortage of servicing usages and green space severe attrition of the compacted residential content.

Keywords: fuzzy logic, neighborhood, stability, sustainable development, sustainability.