

Measurement of Integrated Index of Spatial Justice in the Distribution of Urban Public Services Based on Population Distribution, Accessibility and Efficiency in Yasuj City

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Extended abstract

1- Introduction

In recent decades, one of the most important outputs of rapid urbanization and physical development of cities has been the disintegration in distribution system of urban services centers and the basis for inequality of citizens for achieving to city service system. Unfortunately, majority of these studies have been done regarding land use and per capita of land plans and accessibility of residents to site services, efficiency of city services, kind of city services, and the relationship of city service distribution with social and economic characteristics of city neighborhoods has been ignored. The existence of multi-culture, rapid urbanization and sensitive contrast between neighborhoods in majority of Iran cities is a major reason for the

importance of this subject (e.g. city services distribution) in urban planning in Iran. Newly, one of the key challenges of urban management and planning in world is the proper and equal distribution of city services in less developed areas of city. Hence, assessment of spatial justice in the distribution of city services is important and essential.

1-1- Objectives and hypothesis of the Study

The main aim of this research is clarification of the concept and dimensions of spatial justice. Also, this research tries to clarify an integration index for measuring spatial justice in the distribution of city services based on the distribution of population, accessibility and efficiency indices. The research assumes that public services in Yasuj City are not distributed based on three factors called accessibility, efficiency and population distribution, also it assumes that the distribution of injustice in the

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neighborhoods of Yasuj City has a specific spatial pattern.

1-2- Theoretical Bases

Methodology used in this study is analytical – descriptive method. The required data has been collected from different census sources; then the amount of resident's, accessibility to public services has been analyzed through access network analysis model, hierarchical analysis and local spatial autocorrelation models. In the present study Gini-Correlation has been used for the analysis of inequality accessibility to public services, as well as Moran-Correlation for the analysis of spatial distribution pattern in Yasuj City.

1-3- Case study

This research has taken place in Yasuj City located in the South West of Iran and in Kohkuleih and Boyerahmad province. According to 1385 Census, this city had 93,448 populations with the impure density of 51 persons per hectare. The total area of Yasuj City is 1822 hectares, from which about 38% is allocated to residential units, 16 % to Road networks, 18 % is vacant land and the remaining 16% is devoted to other services.

2- Theoretical fundamentals of the study

Robert Putnam defines social equity as equality of civic engagement across a community, or how widespread civic involvement is across class lines. An alternative meaning, one more which is applicable to the physical design aspects of urban planning, defines social equity based on the spatial distribution of people and resources. This means, distributive equality-the issue of balancing who gets what. As it relates to principles of city

design, social equity can thus be defined as the equalization of access to resources. One approach to this is to administer territorial equity that is, equalizing access to public goods and services. The concept of social justice from D. Harvey viewpoint is equitable distribution equitably. Social justice in the city should be responsive to all the needs of the urban population. The general connotation of spatial equity is that all residents should receive equal services, wherever they live. This idea is, theoretically, an extended form of social equity. The crucial question to be asked about planned or established facility location patterns is, therefore, how much inequality is produced, and which groups are most disadvantaged?

3- Discussion

In this research three techniques distribution coefficient, Gini coefficient and Moran coefficient is used for assessment and measurement of integrated spatial justice. In the distribution coefficient, at first the amount of accessibility of each city blocks to services should be calculated, then it should be compared with rate of population of blocks. The results of this coefficient show the level of spatial justice in the Blocks and Neighborhoods of the city. To determine the amount of injustice in Yasuj city from the Gini coefficient is used. This coefficient is one of the methods of assessing the balance of the distribution of various parameters in city parts. However, Gini coefficient does not reveal sub-space with the high-density parts that whether it is focused or distributed randomly. The Moran coefficient with measurement of spatial correlation estimates the amount of aggregation. To measure spatial justice in city blocks (A_i) the following five

indicators and the following formula have been used.

(1) The amount of residents accessibility of Blocks to services (W_i), (2) the amount of distance of blocks from intended services (D_{ij}), (3) the amount of service efficiency (G_j), (4) the severity of effectiveness of blocks from annoying land use (R_i) and (5) the amount of population of blocks (P_i).

$$A_i = \sum_j f(W_i, D_{ij}, G_j, R_i, P_i)$$

4- Conclusion

Findings of Gini-Correlation show that the rate of resident's accessibility to public services is unequal in Yasuj City; also Moran-Correlation shows that this inequality distribution follows from special spatial pattern. That is: the rate of spatial justice in southeast and downtown of the city enjoy more facilities than the West, Northeast and North-West Neighborhoods, which has been let to the formation of spatial polarization in the city. Totally, findings of the present study reveal that the distribution of public services in Yasuj City is not based on accessibility, efficiency and distribution of population and public services are concentrated in special areas, and also widespread parts of the city (e.g. 66 %) enjoy from less services than their population ratio.

5- Suggestions

Suggestions of this study are:

- In order measure the level of justice in the city spatial distribution of services and their functional distribution of services must be considered together. This requires creating harmony among various management and integrated management of city services distribution.

- The distribution of city services should be done based on population changes, radius of service and facilities efficiency. These factors should be considered as key factors, especially efficiency factor of facilities for measuring of spatial justice in city. This research showed that there is a reverse relationship between the level of deprivation and accessibility of (public) services of city.

Key words: urban public services, accessibility, efficiency, integration of spatial justice, Yasuj

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