

Spatial analysis about distribution of population and urban services according to social justice using synthetic model (Case study: Bonab City)

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Extended Abstract

Introduction

Nowadays, urbanization is growing increasingly in the world. This situation has affected life quality because of unbalanced growth in some regions. Population growth has many negative consequences such as discordant physical distribution of cities, extension of informal settlements, poverty, decreasing life standards, lack of service centers, and finally inequity in accessibility for services. These circumstances have been exacerbated in developing countries. One of sustainable development dimensions, as the main slogan of third millennium, is satisfaction of urban dwellers. Indeed, urban managers can sustain cities by attention to population demands and using their participation. Balanced spatial organization in cities, kind of urban sustainability and its execution needs to create harmony between population and service distribution. Therefore, proper distribution of social, economic, cultural and hygienic services among regions is one of most important factors to prevent inequity and proper spatial distribution of population in the regions. This has been examined in Bonab city in East Azerbaijan province. It has tried to describe spatial distribution of population and services in that city, then has characterized relationship of population and service distribution; finally some solutions have been arranged.

Methodology

This research has descriptive- analytical method. Data has been gathered by library style using statistics of East Azerbaijan province (2011), comprehensive project, and updating the information by field survey. Case study is 5 regions of Bonab, according to proposal comprehensive project. Research indicators are didactic land use per capita, cultural and religious land use per capita, sporty land use per capita, administrative land use per capita, installations land use per capita, commercial land use per capita, green space land use per capita, and remedial land use per capita. Analysis of information has been done using Entropy (for getting spatial distribution of population), VIKOR, TOPSIS, SAR and synthetic models for ranking regions of Bonab. Finally, correlation coefficient between population and urban services has been examined using Spearman test in SPSS software.

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Results and Discussion

Results of Entropy examination show that there is balanced distribution of population in Bonab city (with coefficient -1.5671). Mean of density is 64.8 people in hectare on Bonab. Region 4 by 111.3 people and region 1 by 49.2 person are the most and the least density regions of the city. Result of Entropy examination about getting indicators weight shows that didactic, administrative and cultural land use have obtained the highest weights. Results of TOPSIS model calculations show that regions 4, 1 and 5 have been situated in top grades. Also, development situation of the regions examined by VIKOR model show that the regions 4, 1 and 5 are recurred again. Then, this study has been done using SAR model, and results show that regions 4, 1 and 5 are repeated in third stage. Finally, we used synthetic method for least examination and results show that Bonab regions have been ranked by sequence as regions of 4, 1, 5, 2 and 3.

Table 1. Ranking of Bonab Regions using TOPSIS, VIKOR, SAR and Synthetic Models

Regions	SAR	Rank	VIKOR	Rank	TOPSIS	Rank	Mean 3 models	Final rank
Region 1	0.382106	2	0.659283	2	0.390152	2	0.370991	2
Region 2	0.286749	4	1	5	0.217059	5	0.167936	4
Region 3	0.220448	5	0.989806	4	0.225031	4	0.151890	5
Region 4	0.424565	1	0	1	0.718916	1	0.714494	1
Region 5	0.320738	3	0.894884	3	0.318579	3	0.248144	3

Afterwards, the regions of Bonab have been categorized in 3 clusters. Region 1 has been situated in cluster 1 as balanced region, and other regions have been situated in cluster 3 as unbalanced regions. Relationship examination between population and service distribution using spearman test shows that there isn't any scientific correlation between them. Namely, population growth hasn't played any role in distribution of urban services. Afterwards, the regions of Bonab have been categorized in 3 clusters. Region 1 has been situated in cluster 1 as balanced region and other regions have been situated in cluster 3 as unbalanced regions. Relationship examination between population and services dispersion using spearman test shows that there isn't any scientific correlation between them. Namely, population growth hasn't any role in distribution of urban services.

Conclusion

In developing countries, urbanization process has been faced with uncontrolled city growth because of lack of service balance and population dispersion, in way that resulted unsustainability from this unbalanced growth has been appeared as lack of social and spatial unbalances with existing urban poverty, residency and informal employment, weakness of local government and environmental pollution. Therefore, sustainability in cities is fulfills when proper distribution of services and facilities in cities are due to the needs of population.

The purpose of this research has been identification of urban services and facilities distribution in five areas of Bonab city and evaluation of social justice in this city. In all the five areas of this city, amount of enjoyment from the elected services of development have seen different. Given service enjoyment, only four areas have been in full unbalanced state of services and regions of 1, 2, 3 and 5 have been recognized as the most imbalanced areas.

Keywords: Bonab, population distribution, SAR, spatial justice, TOPSIS, VIKOR.

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