Analysis of spatial inequalities based on social, economic and physical indices in medium-sized cities (Case study: Miyandoab City)

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Expanded Abstract

Introduction

In Iran, after land reform and overflowing dollars from the sale of oil to the urban economy, urbanization has started. This urbanization made different urban groups deprived of having access to services and facilities due to lack of facilities and urban infrastructures tailored to their social situation. Miyandoab city was not an exception. In this city, due to vast rural immigration, integration of villages surrounding to the city, inefficient management, and unplanned urban growth, spatial inequalities have been increased. The present research has been conducted in order to investigate spatial inequalities in Miyandoab city. Therefore, the situation of city blocks in Miyandoab is initially studied in order to assess social, economic, and physical facilities using spatial statistics and hot spot analysis. Then, the distribution pattern of spatial inequality is determined using spatial autocorrelation. Accordingly, the questions of research are:

1. Does Miyandoab have spatial inequality according to social, economic, and physical indicators?
2. How is spatial distribution of these inequalities?

Methodology

In terms of objectives, this is an applied study with a qualitative-analytic research method in terms of the nature and method of data gathering. Library method has been used to gather data. The source citation of used indicators and quantities was the data and information of the statistical blocks of the general population and housing census of Miyandoab in 2011. The GIS maps have been derived from Planning Deputy of Governorate of Western Azerbaijan. Statistical population of this research is all statistical blocks (1660) of Miyandoab in 2011. After theoretical research, 34 social, economic, and physical indicators were selected for investigation of inequality situation and recognizing spatial pattern of the inequality. In the next stage, based on these indicators, Spatial Statistics tools, Hot Spot Analysis, and Autocorrelation Moran's I in

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ArcGIS software have been used. Indexing has been done in Excel software and the information has been projected in ArcGIS for analysis and mapping.

First, the analysis of Hot Spots on 8 indicators has been done for each social, economic, and physical factor. For each factor, a map entitled Hot Spots analysis on social, economic, and physical indicators has been extracted. At the last stage, these three maps have been overlaid using ArcGIS to create one map. Then, to analyze the spatial inequality of the urban blocks, a combinational map obtained from triple indicators has been prepared using Morris indicators in five levels. Autocorrelation Moran's I has also been used to determine the type of distribution pattern of the inequality.

Results and Discussion

Findings of the research have been obtained in two stages:

1. Analyzing Hot Spots on the indicators used in the research (social, economic, physical), overlaying layers, and determining the levels of spatial inequality in urban blocks of Miyandoab.
2. Identifying distribution pattern of the inequality in Miyandoab in 2011.

The Hot Spot analysis has been done for each sub-indicator of social factors. Then, the layers have been combined to create the map of Hot Spot analysis of social indicators of Miyandoan in 2011 based on the total of social sub-indicators. The same was done for economic and physical indicators. Then, the obtained three layers have been combined to generate the regarded map of Hot Spot analysis of social, economic, and physical factors. At the end, to analyze the situation and understanding the subject in the city, urban blocks were graded according to having the the indicators using maps and Morris development index.

The map of city blocks has been determined in five levels (very deprived, deprived, average, possessed, highly possessed). From total 1660 urban blocks in Miyandoab, 626 blocks are very deprived and 287 blocks are deprived. While 403 blocks have the indicators in average level, 307 blocks are possessed, and the highest value and the lowest numbers of indicators are 37 highly possessed blocks.

The urban blocks are not in an equal situation in terms of possessing, and regarding the quantitative output, the distribution pattern of inequality is cluster type. The deprived and very deprived clusters in the city could be due to integration of rural cores to the city. Average and possessed blocks are also in the center and margins of the city. Meanwhile, highly possessed blocks are the least ones.

Conclusion

The results show that poor and very poor blocks (913) are the most (55 percent), and they have the least values of the indicators. Considerable placement of them in the edge of city is due to the integration of rural cores to the city. A large number of these blocks are seen in districts of the damaged areas of the city, districts behind hospital, Namaz Boulevard, and Rabari alley. There are 403 blocks with average indicators (24 percent). The possessed blocks are mostly located around left side of Zine Rood River, i.e., shoreline where economic and social bases have separated the population groups (307 blocks, i.e., 19 percent). The highly possessed blocks have the highest value of the indicators, but they are the least in numbers (37 cases) and 2.3 percent could not be a desirable result. The findings have shown that the distribution pattern of spatial inequality is cluster type. The deprived clusters are mostly located in the edges of the city and the possessed clusters are located in the center. This situation indicates class differences and duality in urban spaces and difference in having regarded indicators.

Keywords: Miandoab, spatial equity, spatial inequality, spatial statistics, urban blocks.

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