Investigating and Analyzing the Potential of Multi-Centered Development in Trans-Regional Scale: A Case Study of Mazandaran Province

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Extended Abstract

1- Introduction

Over the past two decades, the multi-centered concept of cities has played a significant role in the literature of economic planning and geography. Therefore, the definition of multi-centered concepts with different scales and perspectives is a vital topic that should be addressed particularly. This concept thus became a widespread issue in the policy making documents in the mid-90s, and, concurrent with the European Space Development Prospect (ESDP), reports started to evaluate multi-centered development within European countries.

2- Theoretical Framework

Multi-centeredness as an empirical concept emerged in the 1930s, in line with the development of central location theory. The emergence of this concept originally came about in Leipzig, Germany in 1994, but the first concept of multi-centered expression unfolded in the early 1960s in France, which was developed to maintain the balance of metropolises with the goal of economic equilibrium at the national level. Subsequently, ESDP introduced Multi-centeredness as a way to ensure more appropriate spatial planning and a more balanced development in the European space. Thus, the term multi-centered concept, in addition to the strategic concept, refers to an analytical concept that has drawn a significant range of studies into itself.

3- Methodology

According to the nature and purpose of the research, the descriptive-analytic method was applied. Library and documentary methods were used to collect data. Therefore, the study of the subject and its measurement at the macro level was performed based on two dimensions of morphology and functionalism. Hence, for measuring the morphological components, four urban metropolitan indexes, including Taghvaie index, Mahta index, rank-size index, and focal analysis method were considered. Furthermore, in order to measure the functional multi-centered dimension of the province in three stages, using hypothesized domain index for the

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analysis of centrality and vertices dominance, the network density index was utilized to analyze the component of network correlation, and entropy index was used for network distribution analysis. The data of 16 main cities with over 20,000 people in three periods of 1996, 2006, and 2011 were considered for the purpose of this research. In this way, every urban point was analyzed in relation to its neighboring points in a way that the distribution of cities grouping could be central and clustered, or multi-centered. The central distribution of cities is when the demographic distance is high between the province's superior cities and its surrounding towns, and the dominant city of the province acts as a central and powerful nucleus. But the clustering dispersion is the accumulation of cities with similar population close to each other as a cluster.

3- Discussion and Results
Review of the related literature showed that the concept of multi-center requires special attention from managers and planners, which aim to improve and balance different parts of urban areas. To this end, first, the different parts of the morphological and functional components had to be identified. In this study, multi-centeredness measurements in urban areas were investigated using descriptive-analytic method. Therefore, the results of the analysis of the two approaches (morphological and functional) showed that the first approach, which is basically referred to as morphological dimension, refers to the size of urban centers in the area of the land, and it sees its balanced distribution equal to a greater multi-centeredness. The second approach, which is called as the functional spatial equilibrium, takes into account the relationship between the centers. From this point of view, balanced and interconnected relationships between urban centers form a balanced urban area. Therefore, both views, distinct from the normative position, emphasize a shared principle that is the balance of the importance of urban centers in one region.

4- Conclusions and Suggestions
Findings showed that Mazandaran province has a relatively high spatial equilibrium, both functionally and morphologically. Morphologically, in terms of the metropolitan indexes of Mehta, for cities over 20,000, there is evidence of a lack of concentration and superiority of a particular city in the province. As a result, Mazandaran should be regarded as a multi-centered province. However, the study of trends indicates a first-city increase in favor of first cities such as Sari, Babol, and Amol. On the basis of Taghvaie index in 1996, 2006, and 2011, for Mazandaran, it was 0.643, 0.679, and 0.713 respectively, and according to the Zipf index, for all cities of the province, the standard deviation was less than 0.3 showing the gentle and uniform slope of the size and rank of cities in the entire urban system of Mazandaran province.
In the functional dimension, the Vasanen (2012) indices, the equilibrium area, and slope coefficient of the rank-size equation showed that the analysis of the province identified six potential convergence regions whose main centers ranged from west to east of the province. They are Behshahr, Golgah, Sari, Ghaemshahr, Babol, Amol, Noshahr, Chalous, Tonekabon, Ramsar, and their values are 12.5, 28.1,
15.6, 18.75, 12.5 and 12.5 respectively. Although these values, derived from the multi-center analysis of the Vasanen, show the dominance of Sari-Ghaemshahr district, they are still in good balance because of the location of the two important cities of the province in this potential convergent region. Therefore, provincial managers can integrate and adopt a relatively different view on this issue, and many economic and social processes take place at the level of "economic cores" of the same cities; hence for the province to enter balance in the region, the whole regions should be given priority in a wider perspective.

**Key words:** Multi-centered, Trans-regional, Morphological dimension, Functional dimension, Mazandaran province

**References (in Persian)**

**References (in English)**


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