

## Analyzing and studying the role of Zabol city in regional development

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**ABSTRACT:** In regional planning the aim is to make optimal use of resources for developing the regions. One of the most crucial issues in regional development is recognizing the spatial and economic structure of the region. In studying the economic structure of the regions, middle cities have an essential role after first class cities. Nowadays, in most developing countries the planners' tendency toward spatial decentralization, reducing regional inequalities, etc. has led to adopting different urbanizing strategies. In this regard, the present research aims at analyzing and studying the role of Zabol city in regional development. This research adopts a descriptive-analytical approach based on library resources and field study and in order to analyze the data the AHP model is used. The results show that indicator C (reducing regional inequalities) with a weighted mean of 0.391 stands the first and indicator D (accommodating the population in the region) is placed the fourth with a weighted mean of 0.191.

**KEY WORDS:** regional development, balance, Sistan, Zabol city

### I. INTRODUCTION

The aim of regional studies is to regulate the relationship between human, space and activity or the suitable and moderate arrangement of human and his activities over the land (Ziari and Fallah Madvari, 2006). One essential problem of the third world countries including ours is the intense concentration of population and facilities in big cities and creation of urban primacy system and elimination of the dominant system of urban hierarchy. This phenomenon occurs due to lack of balance in distributing various facilities over the land and not paying any attention to the capabilities of small and medium cities. The urban system is the spatial realization of a country's political economy and land management. Studying the urban system reveals the way of diffusion and the balance of urban population. The urban system in Iran has turned from the traditional galactic pattern before 1922 to chain pattern due to the concentration of services and facilities in big cities. While this pattern has broken off the logical relations between small, medium and big cities, it also caused disturbance in Iran's urban system (Taghvaei, 2010. 55). Urban centers in each country can be categorized following the geographical conditions and affected by economic, social and political issues in terms of quality and quantity or in other words in terms of population and role and function (Rakhshanasab, 2008, 26). Studying urban hierarchy as a factor to recognize the spatial order of the cities and equal distribution of facilities and services among urban centers, especially small and medium cities, has always been crucially important. Urban hierarchy is the best form of organizing the space (ibid). The urban network in developed industrial countries is galactic due to functions and activities in different cities' hierarchy and relative homogeneity of socio-economic and spatial facilities, whereas in developing countries the medium and small cities have lost their importance due to infrastructures and facilities being concentrated in big cities and this has led to forming a chained urban network. During recent years, the population and urban centers of Iran have experienced a considerable spatial change (Rakhshanasab, 2008, 28). Disturbing regional balance is regarded as a main obstacle against national development. This trend as well as expansion of urbanism and an increase in the number of cities due to not

complying with the exogenous development have most affected the settlement pattern and formation of urban system in Iran which led to an inefficient and inconsistent urban system.

In southeastern Iran, except for Zahedan that grew very rapidly, other cities have not experienced much development; on the other hand, most investments poured into this city. Meanwhile, Zabol city in Sistan region have been able to play a crucial role in eliminating inequalities by attracting people and striking balance in the region. Thus, the present research aims at analyzing and studying role of Zabol city in regional development.

### **Theoretical background**

Urban system: refers to a number of interdependent cities that create the structure of a system of urban settlements in an area, region, country and the world. The urban system is not merely limited to a spatial collection of urban habitats and contains the currents and communications between these habitats. These currents include: population, capital, production factors, information and innovation (Azimi, 2002, 53).

What is known as urban system is totally different in developed and developing countries. With the advent of the industrial revolution in European countries, the population of these countries were greatly redistributed which could be regarded as a cause for a deviation of European urban system since many of today's big cities developed from small towns to higher ranks of the hierarchy. The industrial revolution also has had another great impact through increasing inequality in sizes of cities all through Europe. However, it should be noted that urban hierarchy in Europe has not been much disturbed as a result of industrial revolution in general. But, later consistent growth of the infrastructure and public welfare with the sizes of these cities led to balance in the urban system (Farhudy et.al, 2009, 57).

It should be noted that "most urban system theories in the past emphasized the elements of distance and space geometry, whereas information technology developments on the one hand, and the new social organization in the future post modern world on the other, led the "spatial organization of the society" to be replaced with "the social organization of the space" in the new urban geography in which political, economic and cultural elements gained more importance than elements such as "geometry and distance". Therefore, in the process of globalization or compression of time and place, at the same time that urban hierarchical system deteriorated in favor of big cities and contraction of urban network and closeness of small and big cities to each other in terms of time and place, we should expect the urban system as an open system to adapt itself to external qualitative and quantitative changes more rapidly (the necessity of understanding and planning); otherwise, functional and physical disruption would be the price that the elements of urban system have to pay" (Azimi, 2002, 130-131).

The regional sciences scholars have tried to elaborate on this issue by proposing theories, schools of thought and various models quantitatively or descriptively to discuss and institutionalize urban system, the optimal size of the city and concentration of the population and human functions as spatial hierarchy. In this regard, theories such as central place, growth pole, center-periphery, euferd theory and scholars such as Christaller, Lösch, Friedman, Isard, Perrot & Misra, Hillhorst's spatial development model can be mentioned (Ziari & Fallah Madvaari, 2006).

Balance and equilibrium in urban system and balanced development of population and activities in the region have always been a main concern of urban and regional planners and managers. After World Wars the first and the second and due to relative political stability throughout the world, the activities and plans for development began in countries. The early development theories focused on the concept of economic growth and some theories proposed in this regard. The theory of growth pole emphasizing the role of pioneer section in development economy and aiming at leaking the effects of development from the centers of growth was placed at top of countries' development plans. However, implementing this policy quickly led to negative effects on greater concentration of growth centers and instead of leaking the results of development, it caused metropolises to appear as indispensable economic and social powers whose negative effects on the urban and regional system of provinces and countries are still evident today.

### **Development and sustainable development**

Ever since humans came into existence, development has been their concern and has evolved in line with his spiritual and material progress. There are extensive discussions and comprehensive literature about the human's thoughts on development and growth and their environmental effects the most recent of which are the sustainable development issues. In geography, like any other science that deals with human and his natural environment, these concepts have philosophical and theoretical foundations.

Development is an idea and practice that was created in the beginning of the nineteenth century. This concept is different from the idea of progress. Following the dissatisfaction with progress in the age of Western thoughts of mercantilists, positivists, idealists, the accompaniment of the development theory with early capitalism based on guardianship concept has strongly empowered the theory of development and guardianship is an intention that leads to expansion of other's potentials (Cowen & Shenton, 1996, 1).

Sustainable development means the human being's movement along the human-environment axis and it considers development of economic facilities according to environmental considerations and social justice. Sustainable development was proposed after troubles posed by mere economic development after World War II where irregular development caused class differences and several environmental problems and development did not take social and environmental dimension into account. This concept is rooted in an ecological principle. Based on this principle, in an environment if exploitation is done to the extent of natural potential of ecological processing, the main capital (ecologic resources) remains constant and our use of that environment is always sustainable to the extent of that generative power. The extent of human exploitation in that given environment which suits the environment's potentials has the maximum efficiency because it is the same as the whole generation (Makhdam, 1999, 54).

In sustainable development the focus is on human beings and, consistent with the nature, they deserve a healthy and constructive life. In this trend, the principle of creating balance between economic, social and ecologic demands of each generation with regard to future generations' share of the earth's limited resources is the focus of urban policymaking and arrangement of settlements (Emakchi, 2004, 1). Thus, the concept of sustainable development gives an extensive meaning which contains all aspects of humans' lives in which policies in economic, commercial, technology, natural resources, education, health and industry, etc. are designed and planned in a way that sustains economic-social and environmental development (Movahhed, 2000, 4).

Urban development may include balanced and consistent expansion of the area allocated to residential buildings in a city with areas required for other applications as well as the required facilities in a standard manner; in other words, in urban development equality and balance between the quantity and quality of what is established on the one hand, and number and size of urban population should be emphasized. Attention to urban environment and taking the civilians' welfare and comfort into account as well as preserving the beauty of the city are among the aims of urban planning. Based on what was said, a sustainable city is a city that has such an economy which not only does not have the least negative impact on the environment (Bahraini, 1997, 23), but also focuses on physical aspects of the city, i.e., its future optimal development and act consistently in terms of function and plans for citizens' participation.

Focusing on physical development of the cities is considered as a key factor in planned growth of them. In our country, as long as the pattern of development for the cities has been organic and endogenous and local factors determined urban growth, the urban lands sufficed traditional urban applications and organized the city according to its economic, social and security conditions. But, today due to exogenous groups' interference and people flooding into these cities, physical development is regarded as a key factor in urban planning. Moreover, although urban areas comprise 4 percent of the lands on earth, their irregular development could cause vast changes in the environmental conditions of other applications. The irregular urban development affects cities and their surroundings negatively; these effects include nonconformity of natural perspectives and losing farm lands. Despite that scientific findings have proven that this pattern is not effective for urban development, it is still the dominant pattern in urban development (Batisani & Yarnal, 2008, 2).

Based on the proposed definition, it can be seen that sustainable development is based on three principles:

1. Ecological stability: this principle emphasizes development besides preserving essential environmental activities, biological species variety and the nature.
2. Socio-cultural stability: this principle focuses on people's rule over their destiny in the course of development.
3. Economic stability: this principle emphasizes optimal deployment of resources and their suitable management such that future generations would not face problems (Hashemi & Sabouri, 2010).

### Review of literature

Jaajarmi & Gheibi (2011) in a study titled "investigating and analyzing developments in Tehran's urban system during the years 1976-2006" found that Tehran's urban system has two main characteristics: the first is rapid growth in its population and its transformation into a local-national metropolis which contains 64 percent of urban population of Tehran province. This process, in turn, has been followed by the "Macrocephaly" or "Primate City" phenomenon. The second characteristic is increase in urban population in general and their tendency to ascend to higher ranks. Overall, what is most evident in the curves is kurtosis during the years 1976-2006 which is due to population increase and shows the superiority of Tehran in the national and local urban system.

Lotfi et.al, in a study titled “investigating the development of Primate City and the urban system in Zagros region (1976-2006) concluded that there is no Primate City in Zagros region despite increase in the number and size of the cities in all provinces and there is balance in most census rounds in urban network. In a study titled “the balanced urban system and its role in balanced development of the regions of Ardabil province”, Nazmfar & Khodaei (2012) found that because of primate city Ardabil, the urban hierarchy of the province did not follow the rank-size rule. In fact, having vast and various functions, Ardabil city has always enjoyed a distinct regional situation and caused irregularity of urban system in the province by attracting population of the surrounding areas.

**Methodology**

This is an applied-developmental study which uses a descriptive-analytical methodology. The theoretical parts of this study are written using library, internal and external resources and to analyze the data the AHP model is applied.

**Introducing the area under study**

Zabol County with an area of 15,197 square kilometers is located Northwest of Sistan & Baluchestan province and the distance between the center of the County and the center of the province is 213 kilometers. This County contains 6 towns and 5 districts, 17 rural districts, and 932 populated villages. According to the 2011 census the population of Zabol and its surrounding villages amounts to 259356.

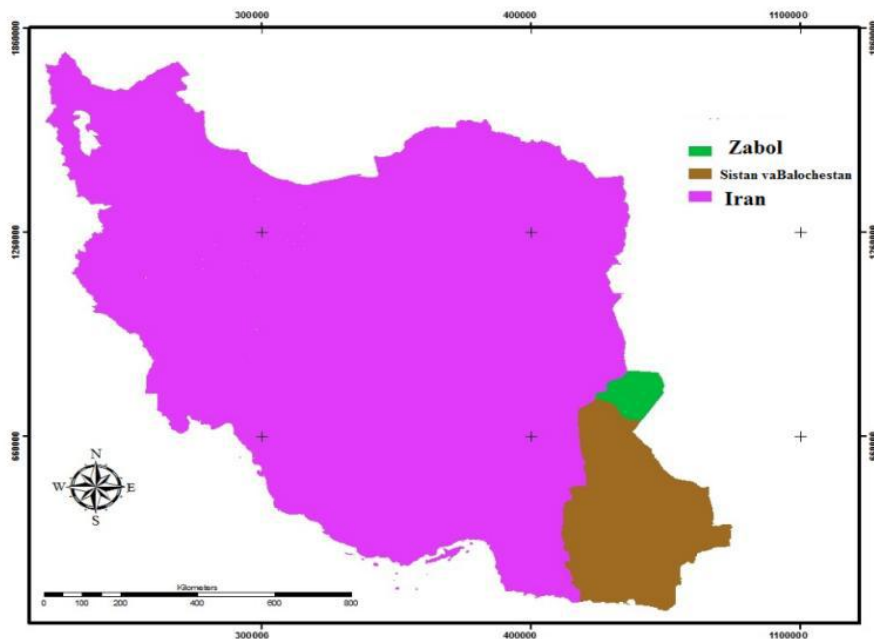


Figure (1). The location of Zabol city in the country, province, and the county, Source: findings of the research

**Discussion and conclusion**

**Analysis and prioritizing indicators of the role of Zabol city in regional development using AHP model**

First the issue under study is transformed into a hierarchical structure including a three-level hierarchy i.e., aim, criteria and the options (table 1)

Table (1). Indicators of the role of Zabol city in regional development

Indicator	criterion
A	Creating services and facilities for the surrounding areas
B	The spatial-economic development of the region
C	Reducing regional inequalities
D	Accommodation of the population in the region

Source: findings of the research

In order to determine the binary comparison matrix of the indicators (A=aij) and their significance, experts' opinion was applied.

Table 2, binary matrix of the indicators

Indicators	A	B	C	D
A	1	1.3	1.3	2
B	3	1	1.7	1.2
C	5	3	1	3
D	2	1.2	1.3	1
Σ	10	6.5	5.3	7.2

Source: findings of the research

Binary matrix of the indicators is obtained as follows:

It should be noted that in order to fill this matrix, a 1 to 9 scale is used to determine the relative significance of each element compared to the others.

Table 3. The 9 digit Saati scale for binary comparison of the options

Numerical value	Preferences (oral judgment)
9	Extremely preferred
7	Very strongly preferred
5	Strongly preferred
3	Moderately preferred
1	Equally preferred
2,4,6,8	In between preferences

source: findings of the study

After creating binary comparison matrices for the indicators, we normalize their values. To do this, the value of each matrix is divided to the sum of the corresponding column.

Table 4 normalized matrix of binary comparisons of indicators and relative weights

Indicators	A	B	C	D
A	0.1	0.2	0.245	0.277
B	0.3	0.153	0.320	0.166
C	0.5	0.461	0.188	0.416
D	0.2	0.184	0.245	0.138

source: findings of the research

**The principle of logical compatibility of the judgments**

Now these steps are taken for all options (a, b, c, etc.). In this step the rate of I.R should be calculated in order to decide whether there is agreement between the binary comparisons. Here we only calculate the compatibility rate for binary comparisons of the indicators; a similar operation should be performed for the options in each indicators view. The (I.R) is obtained from the following relation:

The I.R is extracted from the following table (5)

Table 5. The standard table of calculating the I.R

N	1	2	3	4	5	6	7	8	9	10
I.I.R	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.45

Source: findings of the research

Therefore, according to the calculations of the expert choice software, the I.R is 0.069 in the present study. Since IR =0.069 is less than 0.1, therefore there is an acceptable compatibility.

A (L: 0.205) B (L: 0.234) C (L: 0.391) D (L: 0.191)

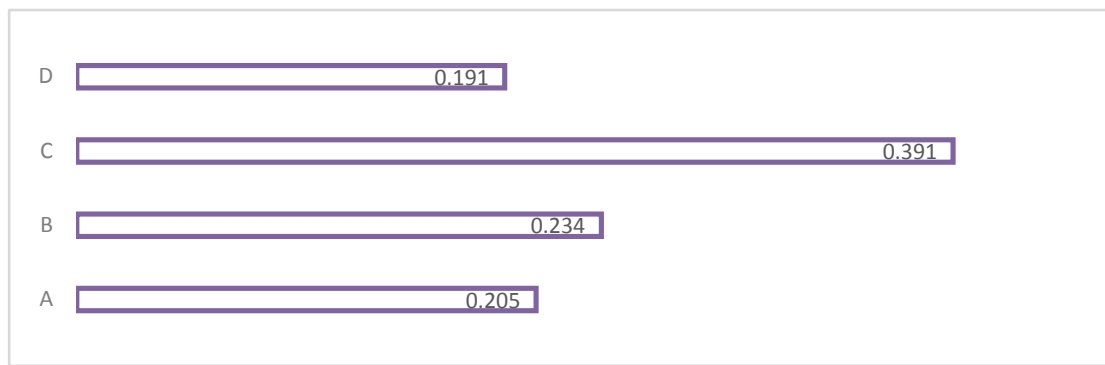


Figure (2). Results obtained from hierarchical analysis using expert choice; source: findings of the study

The results obtained from prioritizing the indicators of the role of Zabol city in regional development is as follows:  $C > B > A > D$ , in which indicator C (reducing regional inequalities) with a weighted mean of 0.391 ranks first, indicator B (spatial-economic development of the region) with a mean of 0.234 stands the second, indicator A (services for the surrounding areas) with a mean of 0.205 takes the third place, and indicator D (habituating the population in the region) with a weighted mean of 0.191 is placed fourth.

Table 6. Final ranking of the indicators of the role of Zabol city in regional development AHP model

indicator	Criteria	Mean	Rank
A	services for the surrounding areas	0.205	3
B	spatial-economic development of the region	0.234	2
C	reducing regional inequalities	0.391	1
D	Accommodating the population in the region	0.191	4

Source: findings of the research

### CONCLUSION:

In views specifying the process of regional development, the issue of balance in development and balanced arrangement of activities in the space is crucially important. One of the basic issues of decentralization is the need to take middle parts of the hierarchy of habitats into account. In this regard, middle cities require more attention. In developing countries like Iran, the irregular growth of metro polises and concentration of all facilities in these spots leads to imbalanced growth of the population. This in turn is the source of many problems and creates several incongruencies such as population growth and increase in the number of big cities against middle and small cities and villages. Therefore, the solution to balanced development is paying attention to middle and small cities which could have an effective role in distributing regional facilities and development. The policy of middle cities has always attracted attention of planners and researchers. Middle cities play the role of transmission and enhancing regional development, a role that enables each city to have their particular function in applying potentials of development and movement of regional-urban network. In this regard, the aim of the present study is to investigate and analyze the role of Zabol city in regional development. It makes use of a descriptive-analytical methodology based on library resources and field studies and the AHP model to analyze the data. The results show that indicator C (reducing regional inequalities) with a weighted mean of 0.391 ranks the first and indicator D (habituating the population in the region) with a weighted mean of 0.191 ranks fourth.

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