Comparative Study of Urban Network’s Role in Regional Development, Case Study: Zagros Regions and Northern Coast of Iran

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In this paper, we discussed the role of urban networks in regional development. To achieve good results and to better assess the issue, two areas were selected with geographical divergence. One of them is the North Shore area which includes three provinces of Gilan, Mazandaran and Golestan and the Zagros area which comprises five provinces of Hamedan, Kermanshah, Kurdistan, Ilam and Lorestan. This paper has used by Urban Primacy, rank-size, point of separation and spatial coefficient methods. Among the most important of which was the result reached in this paper is that urban networks leads to the development through positive impact on the service sector and a negative impact on agriculture in the Zagros whereas in the North Shore area, it does not such and in regional development, urban network is not influential in the development of the North Shore area the extent to which its influence in the Zagros Mountains.

INTRODUCTION

In today’s world, economic and social inequalities can be seen as a pervasive and growing phenomenon. Mainly in the largest cities of developing countries, excessive concentration of population and activity has the potential to absorb a major part of the development of these cities. As a result, the cities are bigger than other cities partial [1]. Certainly, the formation of spatial patterns of population in an area impacted by a variety of economic, social, climatic and geographical and the role of national and regional policy in the adjuster or a deepening of the spatial distribution of the elements is important.

In the last 50 years, due to economic changes and political interference, cities have expanded too fast and it has led to the emergence of large industrial centers, spatial networks of cities and Mgaia police with a specific spatial arrangement in the entrance area, regional and national. The same development has not taken place in relation to cities around the world; this problem has been more acute in developing countries. In Iran, as in 1300, Space Systems in the population and activity has enjoyed a relatively balanced distribution but in recent decades, economic developments and political interference in the country has led to an increase in urban population growth and uneven in many cities around the country and it has changed the balance of the urban grid so that predominated for centuries urban network built on urban primacy [2]. The Urban Network has variable effects on regional development in the different countries according to their level of development. In developed countries, the urban primacy due to the high power flow (flow of such money, goods, information and etc) it is not only led to the regional imbalances but first, it led to the development flows from high levels of urban network down by saturating the development flows and then it spread down flows. Space system was as a homogeneous that this publication offers a frequent and continuous basis.

But in the developing countries, cities primacy has only titled urban primacy so that the feature size of the population did not have huge economic and cultural dimensions. For this reason, the early spatial development of cities not only failed to provide sufficient flow to their flood they are kept low flows in layers of political and institutional and for this reason, it was not published in whole city. For this reason, cities primacy on the one hand, they could not become saturated during the development and on the other hand, it has the charm that they would have to migrate to other cities. Hereby, the cities primacy was getting leads to greater regional imbalances in developing countries.
Regional development:

Historically regional development is come into existence because of some worries like growth, income and occupation. For example "Storper" arguments that regional success and welfare are depend on permanent increase of occupation, income and interest along with economical development. Because of dissatisfactions about main manner of development and neoclassic traditional economic criticisms in 1960s and 1970s, a substituting manner is created in which regional development is based on economical centralization in companies on the field of national and international outlines. Adopting a certain normal or more local condition, even in the level of society, and manners with social tendency as a part of substituting economic strategy, appears in UK and USA and usually challenging frames among new structures were created in regional level [3].

Urban network:

Urban networks show the mutual connection model and have the control of urban residences, and prepare some structures for social, political and economical activities. So, this concept is comprehensive and wide which is introduced by different aspects and academic fields such as sociology, geography and anthropology. The relations that form urban network usually contain interchange of some sources but there are so many varieties in the form of these connections and their application. The relations of urban network maybe contain the interchange of data, human and materials such migration, productions, etc. Such interchanges service political, social, cultural and economical applications [4].

Research in the field of Urban Network in three micro level (in the city), middle (city as network), Macro (between cities):

Regional development:

Regional development has occurred historically due to economic concerns such as growth, income and employment. For example, "Storper" believes that regional success and prosperity depends on sustainable increases in employment, income and productivity right along with economic development. Due to dissatisfaction with traditional approaches to the development and critique of neoclassical economics in the 1960s and 1970s, alternative approaches have emerged where the regional development by economic focus of most of the companies in the national and international economic issues. Adopt a particular normative position that emerged in Great Britain and the United States, even at the community level and community-oriented approaches as part of the Alternative Economic Strategy and often the most challenging part was creating the new institutions at regional level [3]. Regional development theories are rooted in scientific three branches, regional science, regional economics and geography. The academic field emerged first in North America and Great Britain in the late fifties. Regional development theory can be classified into two general categories. The first category is distinct views are divided on the basis of economic activity - social, functional departments and rely on a plan for regional development and a second set of theories that rely on the primacy of human spatial domain, activities and integrate them in context of spatial planning for regional development. For the first category of theories have been expressed as "economic sectors" and "partial theory", "economic base" and "theory of development based on exports" and the second category theory "growth pole", "cultivation system - Urban (Agropilten)", "hierarchical system of settlements", "bio Regional and Sustainable Development", we consider the following to illustrate each of them [5].

Theories of urban network and regional development:

Setting the place:

Theories of urban network are strongly related to the change of meaning frame of growth process. This relation starts at 1930s with a tendency to regional differences and preparation new tools to determine the dispersion, and is supported by Kinzi economies. After that, at 1950 and 1960 decades the development economies were formed of main concepts of analysis, programming and regional policies [6].

Through recent decades, the concept of development goes out of the monopolistic view of economical growth and western idea, and an increase in per capita consumption is not the aim of development. The view points of social justice, self reliance and ecology balances are easily grafted to new concept of development. Now southern countries have found out that the manner of development in northern countries is not repeatable for them and moreover the yield of development is not their desire and hope anymore [7].

The theories of regional development chiefly have the root in three scientific branches: regional science, regional economy and geography. These academic branches appear in UK and northern America at the end of 50th decade for first time. Theories about regional development are classified in two main branches: The first branches are theories which base on dividing social-economical activities in functional units and depend on district programming for regional development. The second branches are base on priority of special realm of human activities and their integrity in environment, are depend on special programming for regional
development. For first branch theories of growth such as "economical units", "district theory", "economical basis" and "development theory base on exports" are introduced and for second branch theories such as "growth pole", "urban cultivate system", "hierarchy system of residences" and "life-zone and permanent development" are introduced [5].

Paradigm of urban network and regional development:

Recently the efforts for programming and special policy excite engaging to urban network in researches. We can observe the exact advent of urban network concept in scientific works concordant with some studies about changes in urban system. This literature arguments that population changing (such as growth of two supporter in a single family and families with one member) and appearance of network economy (like interests of transport and connecting technology and the progress in service unit) affect strongly on special structure of cities and regions. According this model on the scale of inter-city and local, cities with one center don’t appear and develop in metro Politian areas providing that sometimes social economical process contain some cities in bigger geographical scale on the other side of city and historically distinct metro Politian areas form on inter-city scale and related with creation of cities with more than one center. So, often urban hierarchy characterizes the concept of traditional central condition in urban system, however this method is old and we can do this better with the viewpoint of urban system because this viewpoint study and consider the concept of central condition base on the lack of urban hierarchy and a degree of importance of special integration. In this model, mutual relations between town and cities in an urban network develop gradually in a system in which towns and cities differ economically. Below table lists some different importance between a hierarchy model and a spatial organization model [8].

In contemporary special policy and programming, we observe a tendency to network model as a solution for regional economical development problems. For this reason, we study an urban network and multi-center policy, and introduce multi-center policy to support earth solidarity and high level of urban and regional rivalry [9]. However considering the urban network idea, multi-center and special integrity causes to ignore the former assessment of network model. So Davoudi believes that a reticulated and multi-center special organization appears in order to select anywhere of regional special structure as an ideal sort of it. And the lack of usual definition and experiential evidences about desirable condition, effectiveness and success potential is substituted by interference policy. In addition the divergent approach to measure the special integrity is not still clear: 1- urban system often presents multi-center and special integrity. 2-mutual relation between cities in special integration and multi-central systems develop gradually instead of compete.3- special integration and multi-central systems economically are more efficient than one-center system or non-integrated systems.

MATERIALS AND METHODS

Selecting the method of research depends on the aim and the nature of research’s subject and it’s enforceable facilities. On the other hand, the aim of selecting the method of research is that researcher distinguishes that what method can he select to help him to answer the questions of research easier and sooner. The method of this research is descriptive- analytical.

Given that the benefits associated with centralized production, it helps to further reduce the cost of living in a high population density. For this reason, the rate of urbanization has less effect on the economic growth than the urban primacy. Consequently, this paper examines the role and impact of the network on accumulation of development flows. After determining the type of urban network based on rank - size, effects of aggregation and focus through the city in the first model of urban and entropy as a substitute for the aggregation and the degree of self-sufficiency and economic independence in the Zagros region and the northern coast than the economy is determined by the spatial coefficient, these areas are classified according to the degree of economic independence and self-sufficiency. Next, the relationship between degrees of urbanization with employment measured in various sectors of the economy (industry, agriculture and services) through the model of urbanization and employment.

After determining the accumulated effects of development flows and determining the level of economic dependence Zagros region and the northern coast than the country economic, sphere of influence or radius market performance is determined through the separation point in the city areas. In this study we will use the different models of Urban Network and regional development and software, AutoCad, Excel, Spss for Analysis of Data as shown in the following lines:

Statistic society and the number of samples:

The population in this research include urban areas in the Zagros Mountains of Iran and the northern coast, the required information can be classified in three groups as follows: Population of all cities in the aforementioned areas, workers in different economic sectors (industry, services and agriculture), cities in the Zagros region and the northern coast of Iran, distance from city centers, towns, provinces and federal agencies,
distance between cities of provincial centers to centers of Zagros and the northern coast of Iran and distance to other cities in other parts of kilometers.

RESULTS AND DISCUSSION

According to Figure 1, in addition to being the urban primacy rate is less than the rate of urbanization in these areas, developments or changes in these two variables is also fundamentally different from each other. Given that the urban primacy rate has been trend to reduce in the region from 1375 to 1390, and urbanization have also been increased in the area in the past 15 years, but the rate of urbanization and urban primacy is lower in the period from the Zagros region in the North Shore area.

**Fig. 1:** Compares the comparative degree of urbanization and urban primacy in the Zagros region and the North Coast

Network Zagros region and North Beach were the cities where or formed, they are quite different from each other. It is clear that the capital is far above the role in spatial grid formed by the cities of Zagros and the North Shore but it has been effective in these two regions or population distribution in urban networks. The pattern that was created by the cities of the North Shore area in geographical space, it is a continuous linear pattern with three core (Rasht, Gorgan and Sari) and five sub-core (Roudbar, Mashad, Amol, Babol and Ghaemshahr) but in Zagros region except for the part where the border region with Iraq and the road to Kermanshah, Hamedan, in other parts of the province, there is not a linear pattern in the distribution of towns in the area, the geographical distribution of cities in the region in space, it is more indicative of a pattern of multi-core it is composed of five core (Kermanshah, Ilam, Lorestan, Hamedan, Sanandaj) and 11 sub-core (Malayer, Nahavand, Boroojerdi, Ghorveh, Saghez, West Gilan, Islamabad West, Kouhdasht, Aligudarz, Dehloran and Mehran). As a result, the urban network of the North Shore area is dominated by a continuous linear pattern by scattered nuclei and the urban network in the Zagros region is dominated multi-core pattern by sparse linear patterns. North Coast of Zagros and reached full development in agriculture and they gained the ability to export in this sector and the Zagros region is self-sufficient in the service sector, but the North Shore area of nearly reached self-sufficiency in industrial and service sectors.

In total, the North Shore area of more developed than in the Zagros region in various sectors of the economy. Due to these differences, the regressions in agriculture in the two areas show significantly higher levels than in other in relation to the size of the urban network in the urban areas but it is clear that a significant inverse correlation between urbanization and agriculture as is clear in Table 1, and in slope of the estimated model. This is significantly higher in the Zagros Mountains, in the coastal area, per unit change in urbanization will lead to the decline 0.209 of the agricultural sector while the per unit change in urbanization in the Zagros Mountains face the agricultural sector in the region with 0.621 of deterioration. This is despite the fact that both the Zagros region and North Beach was developed in agriculture and they found an export economy. Zagros area which is even more of coefficient space than the North Shore area in agriculture, it has a negative regression between the part and the size of its urbanization over the coastal area.

In economic sector, the industry is moving closer to self-sufficiency due to the spatial coefficients in Table 1, the region in North Coast and it is further development in this part of the Zagros Mountains. Given this level of development, regression in the industrial sector has a more significant relationship with extent of urbanization in metropolitan networks in Zagros of this relationship in the North Shore area, because for every unit change in the Zagros urbanization, it creates 0.262 unit change in the industrial sector in the region, but each unit change
in urbanization in the North Shore area pose a 0.066 unit change in the industrial sector of the region. As a result, although the spatial coefficient is lower in the manufacturing sector of the industry in the Zagros region in the North Shore area but urban network in the Zagros region has more effective in the industrial sector in the region. In table 1, the coefficients of the place, the North Shore area close to self-sufficiency and the Zagros region is a time of self-sufficiency.

Given this level of development, the service sector has a more significant relationship with extent of urbanization in metropolitan networks in Zagros than this relationship in the North Shore area, because for every unit change in urbanization in the Zagros Mountains, it creates 0.444 unit change in the services sector in the region, while each unit change in urbanization in the North Shore area, it will lead to a 0.35 unit change in the service area. As a result, urban network in the Zagros region has more effective on the services sector in this region.

Table 1: Location coefficient in the economic sector and regression of urbanization and these sections in the Zagros region and the North Coast

<table>
<thead>
<tr>
<th>Economic sectors</th>
<th>Spatial Coefficient</th>
<th>Regression in economic sectors and size of urbanization</th>
<th>Estimation of model Slope (β)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regions</td>
<td>Agriculture</td>
<td>Industry</td>
<td>Services</td>
</tr>
<tr>
<td>Zagros</td>
<td>1.4</td>
<td>0.52</td>
<td>1</td>
</tr>
<tr>
<td>North Coast Area</td>
<td>1.3</td>
<td>0.94</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Based on the comparisons made in the context of the geographic space in urban grid patterns in the Zagros region and the North Coast and the economic sectors and sizes of urbanization in metropolitan networks in these two regions, the pattern of the urban network in the North Shore area is a kind of "continuous linear pattern with scattered nuclei" so that it displays an insensible polarization, but the pattern of the urban network in the Zagros Mountains, it was a "pattern of continuous multi-core sparse linear models" so that it exhibited a noticeable polarization of the northern region. But the role that spatial patterns they create in their metropolitan networks on economic development and through the development of regional areas distributed by population patterns it is differs. According to Table 1 and comparisons made in it, multi-core polarization pattern associated with a significantly more positive impact on the development of regional Zagros region and especially in the industrial and service sectors than continuous linear polarization pattern with subtle in the North Shore area. The continuous multi-core model with little polarization is more pronounced in the Zagros Mountains negative impact on the agricultural sector in the region than continuous linear pattern in the North Shore area.

Regional development and Operational polarity:

According to Figure 2, the five-pole operation (Kermanshah, Sanandaj and Hamedan, Ilam and Lorestan), during more than half a century, the influence of market performance in Kermanshah was higher than other cities in the region it is functional as a major hub in the Zagros Mountains, and after it, respectively the cities of Sanandaj, Hamadan, Lorestan and Ilam is considered as the hub of the sub-market performance in the Zagros Mountains. According to Figure 3, in the North Shore area Rasht is considered a functional polarity as the polarity the major functional areas and poles of Gorgan and the city set Sari and Babol Qa'emshahr is a sub-function pole in the North Shore area.

Fig. 2: Functional domains in the functional polarity in the Zagros
Fig. 3: Functional domains in the functional polarity in North Coast Area

Spatial scales in the Zagros region and the North Coast:

Entropy measures in spatial distribution of cities in the Zagros region based on population levels in 1375, 1385 and 1390, respectively 0.9, 0.717 and 0.724 while this is the order of 0.847, 0.8 and 0.812 in the North Shore area. However, in 1375, the distribution of the number of cities in the North Shore area was populated classes more balanced than the Zagros, but in the years 1385 and 1390, the Zagros region in this respect was more balanced than North Shore area. Process of developments in entropy measures in spatial distribution of cities is identical in both classes of the population, thus, this index decreased in both areas from 1375 to 1385 and from 1385 to 1390 a slight increase. Entropy measures in spatial distribution of urban population in the Zagros region based on population levels in 1375, 1385 and 1390, respectively 0.875, 0.891 and 0.863 while the index is in the North Shore area respectively 0.847, 0.929 and 0.872. In all three Statistical, the spatial distribution of urban population in Floors Zagros region’s population is more balanced than in the North Shore area.

In addition to these differences, the Process of developments in these distributions are also different from each other in the Zagros region and the northern coast. This trend is likely to be an imbalance in the North Shore area from 1375 to 1390, but in Zagros region from 1375 to 1385, distribution index in establishment of population tended to unbalance and from 1385 to 1390 indicates that the process tends to equilibrium.

Proportion of regional urban networks in the Zagros region and the North Coast:

In 1375, Zagros area and the North Coast respectively with 72 and 86 cities over 25 thousand people in the area were respectively 29 and 28 city. In this area, all cities over 25 thousand people in the Zagros were based on rank-size pattern were overweight population. In the North Shore area, all cities with populations add than pattern of ratings - size of except sari. Urban Network in the North Shore area in 1375 is closer to a model rank - size. But nearby, the city is ranked tenth in Zagros area down and in the North Shore area of the city will be higher. In 1385, there were 120 and 124 respectively Zagros region and North Shore city so that cities over 25 thousand people in this regions were, respectively, 32 and 33 city. In this area, all cities over 25 thousand people in Zagros area were overweight population based on rank-size model. In the North Shore area, all cities have overcrowding than rank - size pattern except Gorgan. Zagros area has one adding more people than North Coast region than rank-size model. In 1385, the log-normal rank and size in Zagros area the logarithm of the rank-size pattern more closely than North Shore area in cities over 25 thousand people. Process of inverse correlation between the logarithm of the rank and size in the North Shore area at lower levels of the hierarchy of cities over 25 thousand people and process of positive correlation at Zagros area was the same as in 1375. The rank-size model is much closer to each other.

In the year 1390, Zagros area and the North Coast was order of 126 and 129 city over 25 thousand people in the area was total of 34 city. All cities in over 25 thousand people in the Zagros region and the North Coast based on rank-size model have population is overweight. Cities over 25 thousand people in the Zagros the ranking model than a lower overcrowding than in the North Shore area. Overcrowding in cities of over 25 million people in the Zagros, Alborz was increasing from 1375 to 1390, and from 1375 to 1390 to reduce overcrowding in the cities in the Zagros towards the cities in the North Shore area to the rank-size pattern so that overcrowding in cities of over 25 million people in the Zagros area in the years 1375, 1385 and 1390 the rank-
size pattern respectively was 90714, 19361, and 17070 more people from the North Shore area. In 1390, the log-normal rank and size of cities over 25 thousand people in the Zagros Mountains to the logarithm of rank-size pattern, it was the lowest state in 15 years. Process of inverse correlation between the logarithm of the rank and size of cities over 25 thousand people at lower levels of the hierarchy in the North Shore area and the positive correlation at Zagros area from 1375 to 1390 in each of the previous period it covers most of the lower levels of the urban hierarchy of cities across the Zone and the North Shore. City ranks eighteenth in the North Shore area in 1385 had the highest compliance with the rank-size pattern of the urban network in the region from 1375 to 1390. In each of the three periods studied, a sub-district town in the North Shore area was ranked twelfth in the region's urban hierarchy. In the years 1375, 1385 and 1390, respectively Ali Abad, Babolsar and Talesh cities were ranks twelfth that among these cities, the city had the highest compliance Babolsar with pattern of rank-size hierarchy of metropolitan cities in these areas. Babolsar and Ali Abad cities in 1390 fell to a lower level in the urban hierarchy in the North Shore area so that they were ranked twelfth in the years 1375 and 1385, but Talesh city since 1375 had jumped 8 ratings so that in the year 1390 came to class twelve.

Conclusion:

Urban Network in the North Coast region and the Zagros in Iran have two different patterns. The network in the North Shore area has been a continuous linear pattern with scattered nuclei and in the Zagros region is an example of continuous multi-core sparse linear models. Zagros and the North Coast regions are a different feature of regional development so that the Zagros region and northern coast have reached the full development of the agricultural sector and they gained the ability to export in the this sector, but also the Zagros area reached self-sufficiency in the service sector while North Shore area close to the border of self-sufficiency in the industrial and service sectors.

In total, the region's northern coast is more developed than in the Zagros area in the various sectors of the economy. Due to these differences, the regressions in agriculture in the these two areas show significantly higher levels than in other in the relation to the size of the urban metropolitan area network in these areas, but it is clear that a significant inverse correlation between urbanization and agriculture. So that it is quite clear the table and estimate the slope of the model. This is significantly higher in the Zagros Mountains, in the coastal area, per unit change in urbanization, 0.209 of the agricultural sector leads to a decline while per unit change in urbanization in the Zagros Mountains; the region's agricultural sector is declining with 0.621 units. Meanwhile Zagros region and the northern coast of both developed and found them in agriculture and export economy. Even the Zagros area in the agricultural sector, it has a spatial index greater than the North Shore area, it has the most negative regression towards the coastal zone between the part and the size of its urbanization.

According to a comparative table of urbanization and economic regression, service sector with extent of urbanization in the metropolitan networks Zagros region, it has a more significant relationship to the relation in the North Shore area, because for every unit change in urbanization in the Zagros Mountains, it creates 0.444 unit change in the services sector in the region while per unit change in urbanization in the North Shore area, it will lead to a 0.35 unit change in the services sector in the region. As a result, according to the regional balance, patterns in the separation point and the regression of the implementation of the economic sector and the measure of urbanization, Urban Network in the Zagros region and northern coast have been influenced more by the positive impact on the industry and Service sector and a negative impact on the agricultural sector in the regional development in these areas.

**REFERENCE**