



Research Article

Available online at www.journal-advances-developmental-research.com

Journal of Advances in Developmental Research

ISSN: 0976-4704 (Print), e-ISSN: 0976-4844 (Online)

J.Adv.Dev.Res. Volume 2, No.1, June 2011

Spatial Analyze of Regional Disparities Between Central and Border Regions of Iran

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Abstract

Regional disparity between peripheral and central regions of developing countries is an outcome of centralized planning system in a historical process. This study aims to investigate regional disparities between central and frontier areas of Iran. The methodology of the research is based on descriptive and analytical methods. The study revealed that a regional disparity is very high between central and the peripheral regions of the country which stands about 1.6. The mean of development is 0.057 compared to the figure 0.169 of central regions, so it is obvious that central regions of Iran are more developed three times than other areas. Also the findings of research showed that the level of inter-regional disparity is 1.06 and 1.43 for the peripheral and central regions respectively. A closer look could show that these figures introduce the prevalence of heterogeneity and divergence among the different provinces of Iran which by excluding Tehran, the inter-regional disparity of central areas decreases about 2.5 times and reaches to 0.63. Using T test also confirmed the existence of regional disparities between central and peripheral regions which obtained 1.793 with significance of 0.84 and confidence level of 90%. Therefore disparity could be seen not only between different provinces of Iran but it is quite evident inside the regions themselves. Such circumstances indicate the pattern of regional development of center-periphery in the spatial structure of the country.

Key words: Regional disparity, frontier areas, central regions, center-periphery, Iran

Introduction

Evidences show that by the collapse of Soviet Union and empowering economy and energy, geostrategic theories inclined towards economic geography notions worldwide. Following that major changes took place in the global system, however, prior to such changes and formation of new world order, most of the countries concentrated their economic investments in the central areas due to

security concerns. But by the deadlock of geostrategic and military powers and change in the macro visions, different countries found the way of development in intra-regional cooperation and enhancement of commercial activities with the bordering countries. This paradigm presented a new pattern to the politicians and investors to revise their general policies in the frontier regions to eliminate or reduce regional and inter-regional disparities. A review of theoretical literature on the

development of frontier regions shows that the first notion has its origin in the visionaries of central theories specially Christaller. He tried to analysis the main reason of regional unbalances between central and frontier regions¹. Many researchers have studied border regions in different countries²⁻⁵. In Iran, several researches have been conducted in the frontier regions especially in post war era⁶⁻¹². The frontier comprehensive development of Iran dates back to the years after the imposed war influencing from the post revolution development plans. The Iranian Government wide measures to eradicate depravation in poor regions and also stabilize the political security of border regions, predominantly was based on the UFRD approach. However these measures could not succeed many of their targets due to political challenges which were imposed by external powers. Iran is one of the countries in the world which have the longest border zone with 15 countries. Also, Iran has a unique strategic position with rich mineral resources like oil and gas. Iran enjoys many economic advantages which could be utilized for trade and investment opportunities with its divers neighboring countries. The present research aims to first identify the demographical change in the border and central regions of Iran and second, investigate the level of development in both areas and finally to introduce the dominant pattern of regional development of the country.

Literature review

A review on the theoretical literature of border zone development is concentrated on three essential approaches including “traditional place theory”, “inter border cooperation approach” and “public approach”. In first approach the theories of Christaller, Losh, Giersch, Pirox and Friedman are highly referenced which the border regions are especial cases in Christaller notion as they are isolated economically and fragmented in the edge of countries¹³. These regions are fragile due to their distance from the central parts; however, development and prosper of commercial activities could have positive impact on the regions¹⁴. Losh by concentrating on the spatial economy of border region believed that national borders lead to distance in economic network and market and so

create a underdeveloped and the recession of border cities. In Giersch model national borders are an obstacle to international trade, in his view, the more domestic production increases the larger economic region will be, so there is less tendency by entrepreneurs and investors towards border regions, which omitting the factor of border for economic integration lead to tend to these areas¹⁵. Johndarm by analyzing the pole theory about border regions believed that political border lead to the control of growth poles expansion in the peripheral areas. He assumed that the only way to develop the border regions is the formation of integrated poles with inter-border co-operations between developed and less developed areas. The center-periphery theory also, acknowledges the international boundaries as hindrance to the border region improvement¹⁶. Many scholars believe that this theory would change the economic integration and inter-border cooperation, and furthermore increases the prosperity and strategic importance of such regions. The second approach which entered to the literature of economic geography in 1990s refers to the global systems of city, globalization, reliability, cooperation and unity analysis the border regions¹⁷. This approach recognizes the border zones of two countries quite same in their geography, history, ethnic and economic characteristics and potential which are separated by political reasons¹⁸. Inter Border consolidation and cooperation in an organized way is quite necessary and the disintegration of regions is not acceptable anymore and so the boundaries could be dissolved by mutual agreements¹⁹.

The third approach is that borders cold integrated for stability, the most important factor in this paradigm is creation of though, and symbolizing it to form border via human factors by the help of politicians, companies, consumers and citizens. In fact such approach based on the human factors which could help the inter border cooperation¹⁷. In other words, borders are not the central factor of political isolation but human processes with different nationality separate the regions²⁰. This approach has been studied in the context of psychological and sociological theories which borders like human beings and social

structure are under influence of human perception and attitude toward space, it improved the influential, subjective and mental aspects of borders which they have no direct relation to each others. It means that break among the regions is a relative gap, and the perceptual break is important to space²¹. In sociological theories border regions are looked as social and spatial structures which people and groups formed them in a historical process and have meaning, they consider the formation of nations with their specific characteristics and also their impacts on the concept of borders²².

Experimental

At present from 30 provinces of Iran 16 of them are located in the border areas which consisted 50% and 49 % of the country's area and population respectively. So it seems 50% of nation's development has to be concentrated in these areas to balance the spatial pattern in regional context. The present research attempts to analysis the socio-economic and demographical structure of both regions in the first step and then to determine the status of development and also to recognize the main challenges of development in the border regions. With respect to the nature of the subject the methodology is based on the descriptive-analytical methods. The different socio-economic indicators (30) were obtained from the statistical center of Iran (SCI) which belonging to the national census of 2006. Firstly the indicators were weighted by using the Shannon Entropy then the provinces are ranked by applying TOPSIS model. TOPSIS is a multiple criteria method to identify solutions from a finite set of alternatives based upon simultaneous minimization of distance from an ideal point and maximization of distance from a nadir point. TOPSIS can incorporate relative weights of criterion importance²³. This model gained considerable attention by many researchers. There are several examples of applying TOPSIS in geography and urban planning. For example the model has been used in spatial planning²⁴, tourism²⁵, housing²⁶, public transportation²⁷ site selection for waste disposal^{28,29}, urban services³⁰ even in marine sciences and environmental studies³¹.

Finally the two regions are compared and analyzed by T-test. The main questions of the research are: (a) is there disparity between central and border regions of Iran? and (b) what kind of pattern dominates the spatial development in these regions?

Results

Population changes in the Border and Central areas

Iran had a population of 70495782 in 2006 of which 48.98% lived in border provinces by 34526511 people³². The statistics show that 67.5 % of the population of Iran has been urban. This figure was 74.4% for the Central Regions while it decreased to 60.2% for border provinces (Table1). Such figures indicate that the proportion of urbanization has been higher compared to the mean of the country as whole about 7.9%. A comparison between two regions shows that the central region has 15.8% urban population more than the border zones. Among the border provinces the highest level of urbanization was belonged to Khorasan Razavi and East Azerbaijan 66.7 and 68.15 % respectively which is lower than the country's average. Qum had the highest level of urban population with 93.91%, eight provinces showed a higher level of urbanization compared to the mean of the country. Also the per cent of urbanization has been lower in the six provinces of the central region compared to the country as whole which are adjacent to the border provinces. The population growth rate shows that the figure has been higher in the central area than the border region, as the average annual growth rate of central region was 1.79% (Table 1). Among the border provinces, five of them had a higher level of the average level of the country (Sistan and Baluchistan 3.4, Hourmozgan 2.83, Bushehr 1.77, Southern Khorasan 1.74 and Khorasan Razavi 1.71).

Regional unbalances in Border and Central areas

The research has defined thirty socio-economic, industrial and infrastructural indexes by using entropy³³ and Topsis models³⁴ to analysis the development level, then to show status of inequality

Table 1: Population of Border and Central Regions in 2006 and growth rate between 1996 and 2006

Regions	Total population		Urban population		Rural population		Growth rate
	Number	Percentage	Number	Percentage	Number	Percentage	
Border	34526511	48.98	20767084	60.2	13709356	39.8	1.45
Central	35969271	51.02	27492880	74.4	8421745	23.6	1.79
Total	70495782	100	48259964	67.5	23131101	31.5	1.62

between the central and border zone of Iran. The results indicated that Tehran province had the highest level of development with 0.9739 and Ilam with 0.0078 was one of the most undeveloped provinces of the country (Table 2). In fact the gap between Tehran and Ilam stands 124.859 which show the depth of the regional disparities in the spatial structure of Iran. The second developed province was Isfahan which showed a gap of 3.6 with Tehran. Tehran as capital city of Iran has pulled many socio-economic, administrative infrastructures which became the main absorber of economic revenues of the country. Tehran dominance on the country however did not lag the development of other regions but it led to regional disparities. The SPSS was applied to analysis the data and then cluster analysis of K mean was used to rank the different provinces of two regions; five categories are very high, high, moderate, low and very low developed. As Table 2 shows none of the border provinces ranked very high regarding to their development. Khorasan Razavi ranked in third place among the 30 provinces of Iran by score of 0.2654, in fact this province is the most developed area of the border zone, the city has a historical-religious (cultural tourism) background which attracted many infrastructural investments.

In the lower level of development east Azerbaijan and Khuzestan ranked by scores of 0.1307 and 0.0821. East Azerbaijan is one of the industrial poles of the country by locating Tabriz city where many manufactures are active, and Khuzestan as oil capital of Iran has a better level of development among the border provinces. It was expected however both the provinces place in a higher level of development rather than they are

now. The other 13 provinces of border region are placed in the class of very low development (Figure1).

Among the central provinces Isfahan has the high level of development and three provinces of Fars, Yazd and Qum placed in the middle level. Four provinces of this region had a low level of development which is Kerman, Semnan, Markazi and Hamadan. The key point is that the adjacent provinces to border areas showed very low level of development (Figure 1). The status of inequality has been examined by using dispersion coefficient between central and border regions, the figure indicated that disparity is very high between two areas which is 1.6. The development mean is 0.057 and 0.169 for border and central regions respectively. It means the central regions are developed threefold than the border regions of the country. However it should be mentioned that some of the political issues such as war and security challenges has lowered the development of the border provinces of Iran in the western zone. Also a closer look at the status of inter-regional development among the central and border regions reflect the dimension of disparity inside these regions themselves. The figure stands 1.43 for the central areas and 1.08 for border provinces. It seems the level of inequality among the central provinces is higher than border areas which is due to the presences of Tehran in the central sphere, by eliminating Tehran from the central areas the level of inter-regional disparity decreases to 0.63 which means a 2.5fold reduction in the level of deprivation.

Table 2 Regional balance or unbalance in Iran 2006

Border areas				Central areas			
Province	Topsis	Development		Province	Topsis	Development	
1	Kh. Razavi	0.2654	High	1	Tehran	0.9739	Very high
2	E. Azerbaijan	0.1307	Low	2	Isfahan	0.2704	High
3	Khuzestan	0.0821	Low	3	Fars	0.1823	Middle
4	Mazandaran	0.0640	Very low	4	Yazd	0.1542	Middle
5	Kermanshah	0.0610	Very low	5	Qum	0.1448	Middle
6	Golestan	0.0471	Very low	6	Kerman	0.1070	Low
7	Gilan	0.0446	Very low	7	Semnan	0.1046	Low
8	Kurdistan	0.0434	Very low	8	Markazi	0.1025	Low
9	Ardabil	0.0381	Very low	9	Hamadan	0.0779	Low
10	W. Azerbaijan	0.0297	Very low	10	Qazvin	0.0566	Very low
11	Sistam-Bluch.	0.0288	Very low	11	Zanjan	0.0545	Very low
12	N. Khorasan	0.194	Very low	12	Lurestan	0.0505	Very low
13	Bushehr	0.0191	Very low	13	Chrmahal	0.0501	Very low
14	S. Khorasan	0.0147	Very low	14	Kohkiloveh	0.0299	Very low
15	Houmozgan	0.035	Very low				
16	Ilam	0.0078	Very low				
Dispersion coefficient		1.08				1.43	
Dispersion coefficient between border and central areas						1.6	

Disparity between Border and Central Regions

T-test has been used to determine the significance of disparity between the two regions. The amount of t obtained 1.793 with significance of 0.084 and agreement of 90% shows that there is

inequality between the border zone and the central region of Iran. The figure increases to 2.008 if we exclude the province of Khorasan Razavi with a

agreement of 95%. So we could answer the question of the existence of disparity between two regions, the figures also reveal that not only there are severe disparity between the two regions but the gap exists among the provinces inside each area. It seems that the development policies should initially address the socio-economic gaps among the provinces of the border and central regions first then the intra-regional disparity would reduce. The results and Figure 1 showed that the dominated pattern of

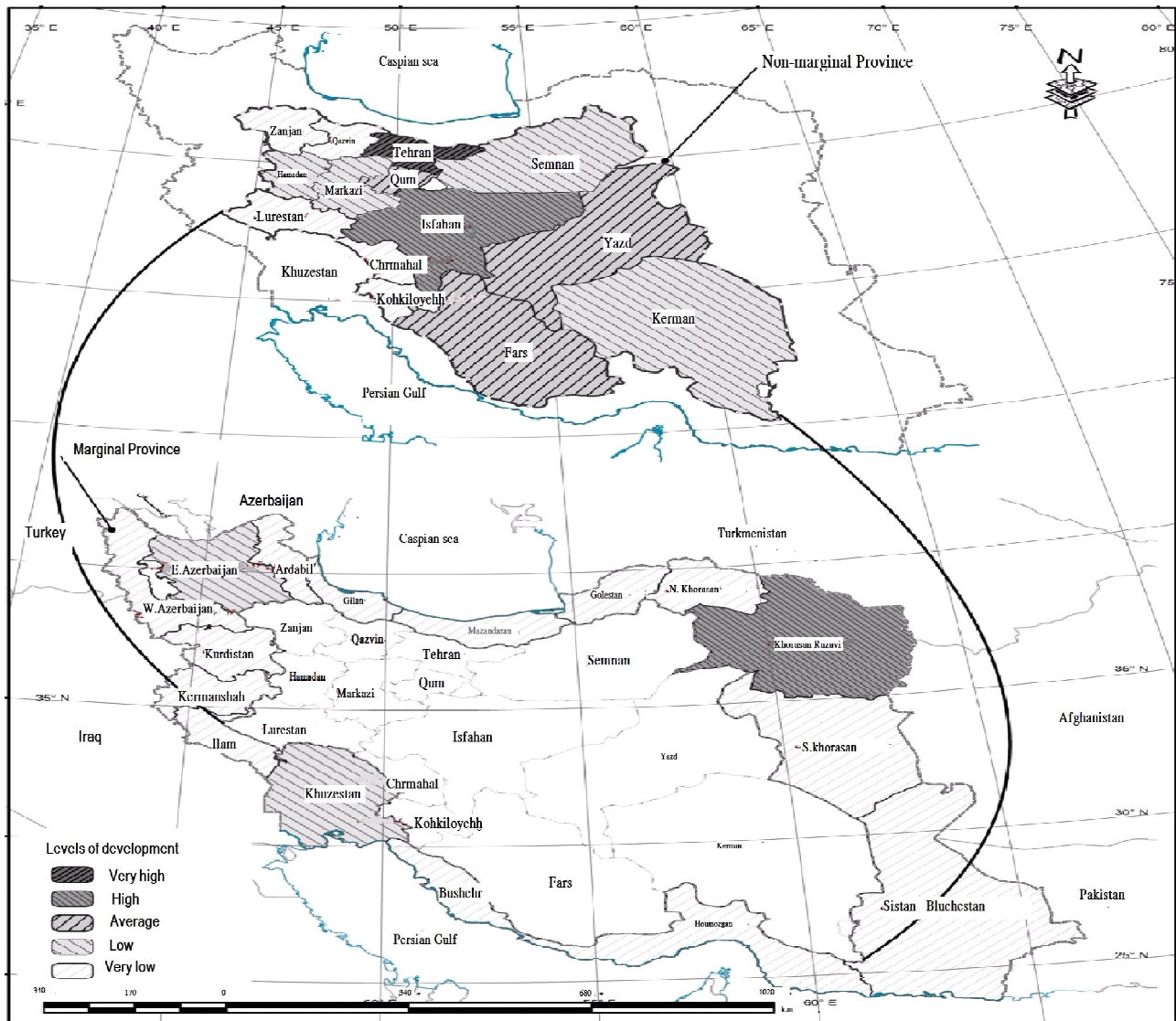


Fig. 1. Spatial distribution of development level in Iran

spatial development indicates the center-periphery model as the central area has better condition of development compared to the border or peripheral regions of the country. This pattern demonstrates a gradient of development which slips towards the border zones. Such pattern relates to the system of planning in the country which followed the pace of neoclassic economy and the growth pole theory from pre to post revolutionary eras. As evidences showed the main premise of the neoclassical economy was economic growth which could eliminate the economic disequilibrium³⁵. The third Development Plan of Iran aimed to increase the large investment of industrial enterprises in the big cities of Iran which intensified the level of disparity between two regions.

Discussion and Conclusion

Today regional equilibrium and inter border cooperation have very important role in the national development and political stability of countries. Iran has located in the middle of a geostrategic and Islamic region where 15 countries have encompassed it. So it is quite necessary to keep stability and accelerate economic development to decrease the risk of political instability in its border areas where many different ethnical groups are living. This paper tried to investigate the level of development in the central and border areas of Iran using entropy weighting model and Topsis to compare and rank the provinces according to thirty socio-economic and physical indexes. The results

indicated that Tehran province was one of the most developed areas of Iran by 0.6739 and Ilam was the most deprived province with 0.0078. Such figures demonstrate the depth of the Iranian development between the peripheral and central areas. Also the result of analyzing K mean Khorasan Razavi with the level of 0.2654 among the 30 provinces had the third place. However this province belongs to border area, the city of Mashhad is one of the most religious cities of the country which attracts more than 5 million pilgrimages from Middle East region. Such function also created an active economy for the city in the province of Khorasan Razavi. As Table 2 illustrates border areas of Iran have been less developed compared to the central regions. It could be concluded that the socio-economic and physical policies of the country have to target the diminishing of the wide spread deprivation in the border areas of the country as the region is susceptible to political disturbances due to their ethnical structure and position in the eastern and western border zones of Iran. The fact is that inequality is not only the problem of the peripheral areas of the country but a closer look at the central part also indicates inter-regional disparity. So it seems that the Iranian government has to take effective measure to reduce the level of inequality among the provinces in both regions. However the current policy of government is to give economic opportunity to the remote provinces of the country as the face to face visit of the Iranian president shows his intention to grant development to the peripheral regions. It worth to mention that the time will reveal the consequences of the current development policy by conducting big surgery of the Iranian economy as it put to practice most recent months.

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