

Assessment of Regional Development Using Taxonomy Model (A Case of Razavi Khorasan, Iran)

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ABSTRACT : Today, for balanced growth in all regions of the country, economists believe that the idea of dynamic growth pole was unsuccessful because not only did it fail in decreasing regional inequalities in the country, but it also caused existing inequality-ties to intensify. In order to, the aim of current research is assessment of regional development using taxonomy model in the Razavi Khorasan province of Iran. Applied methodology is based on descriptive- analytical methods. we have used of numerical taxonomy as an most common approaches to categorize of development level in the Khorasan Razavi cities. Results show that Torbat-E- Jam (0.5) city has the highest level of development in case study region, while Fariman (0.15) has the lowest level. Finally, in the end of this presented some solve ways.

KEY WORDS: Urban Development, Regional Development, Razavi Khorasan, Taxonomy

I. INTRODUCTION

Regional development is a broad term but can be seen as a general effort to reduce regional disparities by supporting (employment and wealth-generating) economic activities in regions. In the past, regional development policy tended to try to achieve these objectives by means of large-scale infrastructure development and by attracting inward investment. Awareness of the need for a new approach is driven by observation that past policies have failed to reduce regional disparities significantly and have not been able to help individual lagging regions to catch up, despite the allocation of significant public funding. The result is under-used economic potential and weakened social cohesion. Substantial disparity in regional incomes is a reality in every geographically large country, and the causes of the disparity are numerous and complex. The enduring character of many cases of regional backwardness is also a reality, for example, the Appalachians in the United States, Northern Shaanxi in China, Chiapas in Mexico, and Madura in Indonesia. The persistence of regional poverty has led many prominent social scientists to see the primary causes of entrenched regional poverty to be interrelated in a self-reinforcing manner (Démurger & et al, 2001). Based on the expert's views in development, there are various definitions for the term of "development". Among them can be mentioned the following cases: the increase in economic production and productivity, improving both the qualitative and quantitative indicators of living standards, improving the level of hygienic and security services, the reduction of unemployment and inflation and meeting social and economic needs (Tudaro, 2008; Fanni & et al, 2014).

II. BACKGROUND

Iran with its unique climactic conditions has experienced different climactic landscapes over its long history. Therefore, in different regions of Iran, the development has not done equally well and there are some inequalities in obtaining the benefits of development. Development that nowadays is the first and foremost purpose of all governments has different forms. One of the important forms of development is economic development but this is not the way development be conceived, so development is not limited to a purely economic phenomenon. Therefore, the main purpose of development must be an optimal growth paradigm for public income that covers any stratum of society. Development besides the amount of production and income includes changes in the political, institutional, social, and bureaucratic structures and revising them and the public opinion of people as well as production and income (Azkia, 1999).

One of the topics that recently have been proposed in the culture of regional and parochial planning is inequality in regional development, but its status is not clearly defined. These inequalities, which are used by various reasons that can be historical, social, economic, geographical, demographic, and/or political, have different and imbalanced growth rates across areas and regions (Mansoori, 1996). In the recent years, Iran's development policy followed the growth pole theory. In this strategy, the development of cities becomes a priority, with the goal of their economic and social development spreading to rural villages. As well, this theory posits that the economic growth of cities stimulate the agricultural production of their neighboring regions. The evidence shows that with the implementation of "the growth pole" policy, cities could not provide the necessary services that the theory had suggested they would, and this caused rural-urban migration (Hamsi, 1981). For understanding the spatial structure of regions and predicting the changes and evolutions of development, Freedman proposes the central- periphery paradigm. Freedman says "every system of geography includes two spatial subsystems: one of them is the center that is the pioneering heart and dynamism of the system and another one is the peripheral that can be considered as the rest of the system and is in the state of dependency or accepting sovereignty toward the center" (Hilhorst, 1967).

The relationship of the center-periphery maybe considered as akin to a colonial relationship. Generally, the polarization of structure is toward the center from the periphery by replacing internal factors. According to the proposed theoretical framework, the common aspect or factor of all is to paying attention to regional inequalities and also to the growth and development of less developed areas. Based on the proposed theories, namely the growth pole and center periphery theories, the main cause of the existing inequalities among the regions is the internal factors. This is to say, while the basic economic theory emphasizes on seeking the root cause of the lack of development factors over the foreign factors, and the foreign factors play the primary and determining role in making inequalities among the regions. The inexorable process of globalization has accelerated in recent decades. Driven, inter alia, by the processes of technological change, migration, innovation and connectivity, the world has been more tightly woven together (Lee & et al, 2003). While the positive impacts of globalization have been reaped in the form of rapid economic growth, globalization has also given rise to a range of issues including rapid transmission of financial shocks, international crime and drug trafficking, increasingly volatile and turbulent international financial and product markets, issues of food and energy security and widening income and social inequalities (Kalantari, 2001).

These issues cannot be effectively dealt with except through coordinated global and regional action, and require effective regional and global governance mechanisms. Partly as a response to these challenges, there has been a broadening of regional integration processes and many forms of intra-regional cooperation. Many of the key policy actions and policy dialogues to address the impact of the multiple crises were initiated at the regional and sub-regional levels. Much of this has been done by regional organizations and groupings which have evolved as important players in determining the development agenda at all levels. The regional dimension of development is now being recognized as being critical for an effective and coordinated response for addressing an ever-growing number of Tran's boundary issues. With the regional development architecture evolving rapidly, this is an opportune time for the UN system, in particular the Regional Commissions, to reposition itself to engage more effectively with regional processes. Therefore, the Regional Commissions have come together to undertake a study, which would identify ways in which the UN system, and the Regional Commissions in particular, could engage more deeply and more effectively with the policy frameworks and initiatives developed by regional and sub-regional organizations. The study will document the rise of the most salient and effective regional integration and cooperation mechanisms in different regions, and draw upon selected examples, particularly in the areas of trade and investment; macroeconomic, financial and monetary policy coordination; and regional connectivity including transport. It will provide recommendations for the UN system, in particular the Regional Commissions, for enhanced and coherent support of regional and sub-regional initiatives and priorities (Xang, 2005; Tik, 1987).

III. METHODOLOGY

Various methods and model are used to assess the level and rate of development in regions. Some of these methods are consisting of Oskologram, taxonomy, factor analysis, cluster analysis and Morris noted that each have advantages and disadvantages. In this research, we have used of numerical taxonomy as an most common approaches to categorize of development level in the Khorasan Razavi cities. Finally, it is presented some suggestions to solve the problem.

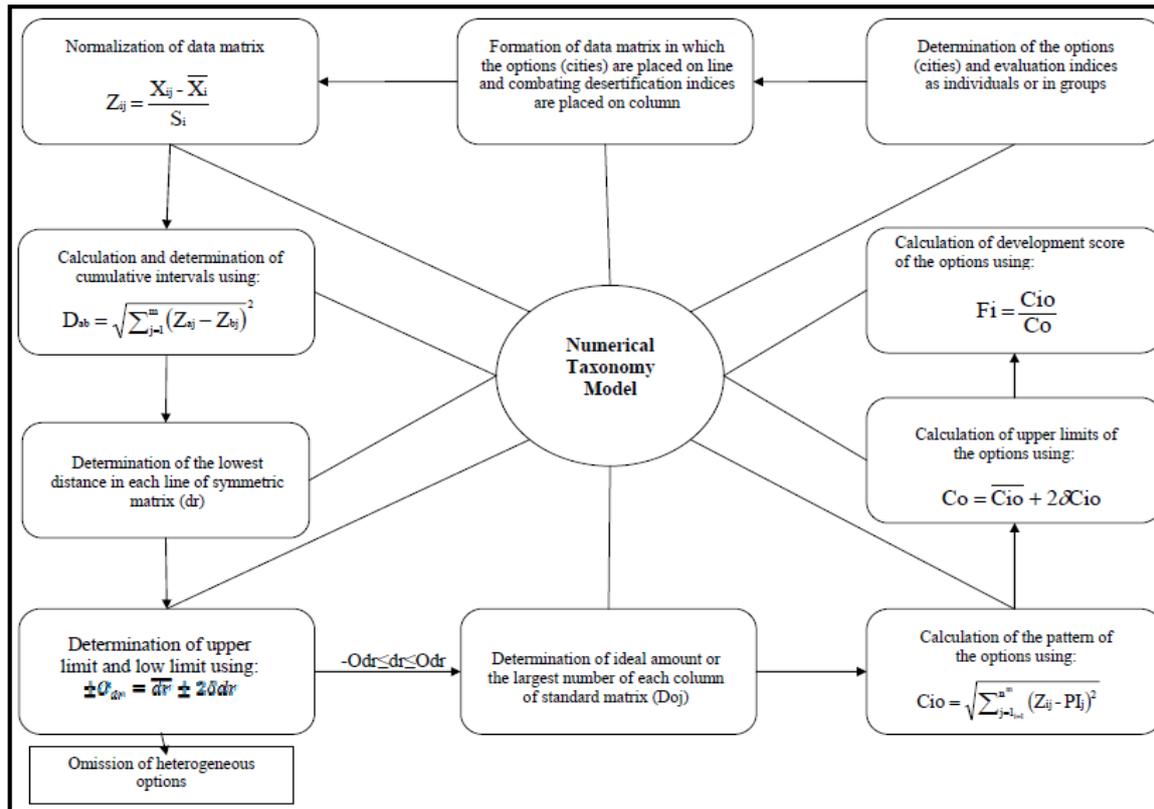


Fig. 1. Steps of numerical taxonomy analysis.
 Source: Sadeghi Ravesh & et al. 2013.

IV. CASE STUDY REGION

Razavi Khorasan is a province that is located in the northeastern of Iran and Mashhad city is the center and the capital city of this province. Other cities and townships are Quchan, Dargaz, Chenaran, Sarakhs, Fariman, Torbat-e Heydarieh, Torbat-e Jam, Taybad, Khaf, Roshtkhar, Kashmar, Bardaskan, Nishapur, Sabzevar, Gonabad, Kalat, Khalilabad and Mahvelat. Razavi Khorasan is one of the three provinces that were created after the division of Khorasan Province in 2004. In 2014 it was placed in Region 5 with Mashhad as the location of the region's secretariat (Wikipedia, 2014). In Persian, "Khor" means "sun" and "san" means "the place", "the dwelling". Khorasan being situated in the East of Iran is the "place where the sun rises". Historical Khorasan, also known as "Great Khorasan" included present day Khorasan as well as Transoxiana and Afghanistan. It was in the 19th century, during the reign of the Qajars, that the frontiers as we know them today were established. The older Persian province of Khorasan included parts which are today in Iran, Afghanistan, Tajikistan, Turkmenistan and Uzbekistan. Some of the main historical cities of Persia are located in the older Khorasan: Nishapur and Tus (now in Iran), Merv and Sanjan (now in Turkmenistan), Samarkand and Bukhara (both now in Uzbekistan), Herat and Balkh (now in Afghanistan), Khujand and Panjakent (now in Tajikistan). In its long history, Khorasan knew many conquerors and empires: Greeks, Mauryans, Arabs, Seljuk Turks, Safavids, Pashtuns (ethnic Afghans) and others. The major ethnic groups in this region are Persians with Kurdish, Turks and Turkmen minorities. Most of the people in the region speak closely related modern day dialects of Persian. The largest cluster of settlements and cultivation stretches around the city of Meshed northwestward, containing the important towns of Quchan, Shirvan, and Bojnurd. The language spoken in Khorasan is Persian.

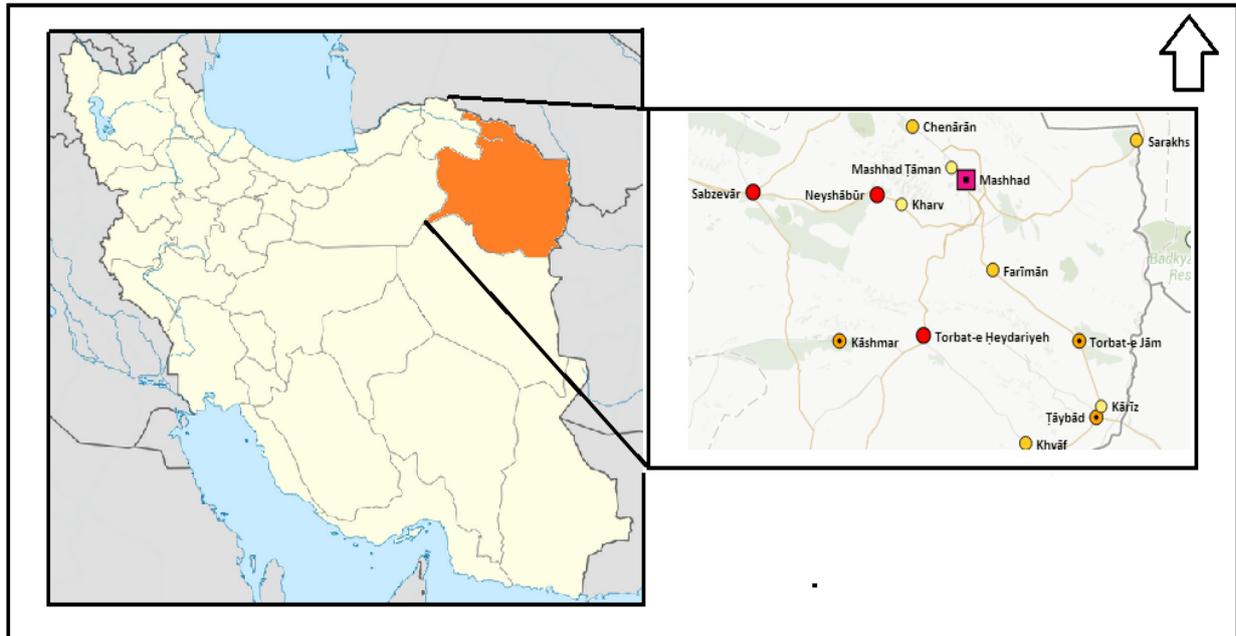


Fig. 2. A view of case study region.

Results

In this study, the options are the urban areas of Khorasan province (units studied), and evaluation indexes are main regional development factors in urban areas which imply amount of investments, activities and operations about regional development in urban and province level.

Step 1: Formation of data's matrix:

$$X = \begin{pmatrix} 75/45 & 9/09 & 37/5 & 12/18 & 12/92 \\ 0 & 1/82 & 0/20 & 0 & 1/34 \\ 0/20 & 3/64 & 5/33 & 1/85 & 1/44 \\ 0/04 & 7/27 & 1/43 & 3/25 & 2/52 \\ 0/20 & 9/09 & 5/12 & 7/37 & 2/40 \\ 0 & 9/09 & 1/64 & 2/71 & 2/40 \\ 0 & 7/27 & 5/94 & 4/50 & 4/18 \end{pmatrix}$$

In continuous, we have Infrastructure index table as below:

Table (1)
Infrastructure indexes in Razavi Khorasan cities

	Network length	Urban Gas delivery	Rural gas delivery	Rural power	Rural telephone
Mashhad	75.45	9.09	37.5	12.18	12.92
Bakharz	0	1.82	0.20	0	1.34
Binalod	0.20	3.64	5.33	1.85	1.44
Taibad	0.04	7.27	1.43	3.25	2.52
Torbat Jam	0.20	9.09	5.12	7.37	2.40
Khavaf	0	1.64	2.71	1.64	2.40
Fariman	0	7.27	5.94	4.50	4.18
Avg	10.84	6.75	8.17	4.55	3.89
X	26.38	2.70	12.15	10.83	3.79

Step 2: Converting data matrix to Standard data matrix:

$$Z = \begin{pmatrix} 2/45 & 0/87 & 2/41 & 0/70 & 2/38 \\ -0/41 & -1/83 & -0/66 & -0/42 & -0/67 \\ -0/40 & -1/15 & -0/23 & -0/24 & -0/64 \\ -0/41 & 0/19 & -0/55 & -0/12 & -0/36 \\ -0/40 & 0/87 & -0/25 & -0/26 & -0/39 \\ -0/41 & 0/87 & -0/53 & -0/16 & 0/39 \\ -0/41 & 0/19 & -0/18 & -0/004 & 0/076 \end{pmatrix}$$

Step 3: Calculating composite intervals between areas:

$$D = \begin{pmatrix} 0/000 & 5/9541 & 5/40152 & 5/07578 & 4/87776 & 4/63927 & 4/59936 \\ 5/9541 & 0/000 & 0/82504 & 2/168432 & 2/74994 & 2/91515 & 2/24518 \\ 5/40152 & 0/82504 & 0/000 & 1/41099 & 2/0356 & 2/28862 & 1/53836 \\ 5/07578 & 2/168432 & 1/41099 & 0/000 & 0/75696 & 1/01336 & 0/58348 \\ 4/87776 & 2/74994 & 2/0356 & 0/75696 & 0/000 & 0/8348 & 0/85612 \\ 4/63927 & 2/91515 & 2/28862 & 1/01336 & 0/8348 & 0/000 & 0/84132 \\ 4/59936 & 2/24518 & 1/53836 & 0/58348 & 0/85612 & 0/84132 & 0/000 \end{pmatrix}$$

Table (2)

Matrix Composites distances between regions of Razavi Khorasan

Region	Mashhad	Bakharz	Binalod	Taibad	Torbat- E- Jam	Khaf	Fariman	Shortest distance
Mashhad	0	5.9541	5.40152	5.07578	4.877	4.6	4.5	4.59
Bakharz	5.95	0	0.82	2.168	2.74	2.915	2.24	0.82
Binalod	5.40	0.82	0	1.41	2.035	2.2	1.5	0.82
Taibad	5.07	2.16	1.41	2.03	2.2	1.53	0.583	0.583
Torbat- E- Jam	4.8	2.7	2.03	0.75	0	0.83	0.85	0.75
Khaf	4.63	2.91	2.2	1.01	0.834	0	0.84	0.834
Fariman	4.5	2.2	1.5	0.58	0.856	0.84	0	0.583
	$\bar{K}(D) = 1/28688$				$S(D) = 1/63281$			
	$D_{(+)} = 4/5525$				$D_{(+)} = 1/97874$			

Step 4: Calculating the developmental paradigm:

Table (3)

Development patern in Razavi Khorasan province

city	Development patern
Fariman	0.73995
Binalod	1.021518
Taibad	1.14289
Bakharz	1.463
Khaf	2.2126
Mashhad	2.35
Torbat- E- Jam	2.39

According to the fourth development plan, investment and production developments should be done through:

- Priority making and acceleration of performance, and exploiting uncompleted governmental plans;
- Limiting governmental investment in ruling fields and common public and private investment in order to encouraging the activities of private section;
- Establishing support organizations for encouraging the activities of research, progress and development of innovation, technology development, human resource development, exploiting improvement and competency accepting;

- Establishing new organization and supporting current ones and providing proper facilities for developing occupations and entrepreneurs and encouraging entrepreneurs (Organization of management and planning, 2005). Today, for balanced growth in all regions of the country, economists believe that the idea of dynamic growth pole was unsuccessful because not only did it fail in decreasing regional inequalities in the country, but it also caused existing inequality-ties to intensify. In this way, accurate regional programming to achieve balanced development is necessary. Based on the view-point of these economists, the purpose of balanced development should be create the best conditions and to develop the society in all areas. As well, interregional life differences should be minimized and finally eradicated. The first step in regional programming is the identification of the existing situation of that region; and this identification itself requires the analysis of different economic, social and cultural sectors. To devote budgets and sources among regions, the identification of the rank of the region in related sectors.

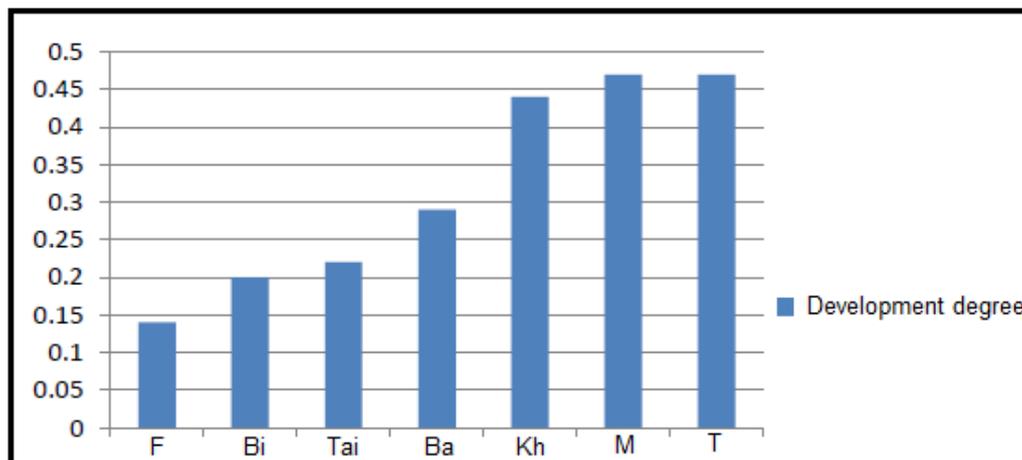


Fig. 2. Development degree of Razavi Khorasan.

Suggestions

- [1] Attention to the urban population of cities in Raazavi Khorasan Province in providing of services with spatial movements of human elements in the framework of complete spatial ideas;
- [2] repeated reviewing in distribution of health programs, basic structure and curing services;
- [3] Improve the sense of social trust between government and citizens.

REFERENCES

- [1] Azkia, M. (1999). An introduction in sociology and developing countries. Tehran: EtelaatPublications.
- [2] Demurger, H. Jhag, K. Erta, N. (2001). New towns and future urbanization in Iran. TWPR, 22(1), 67–86.
- [3] Fanni, Z. Khakpoor, BA. Heydari, A. (2014). Evaluating the regional development of border cities by TOPSIS model (case study: Sistan and Baluchistan Province, Iran). Sustainable Cities and Society 10 (2014) 80–86.
- [4] Hamsi, M. (1981). A discussion based on the factors affecting migration of people inIran. Iran Geographical Institution Publications., first period, No. 3.
- [5] Hansen, E. (1997). Threshold effects in non-dynamic panels: estimation, testing, and inference. Journal of Econometrics, 93(2), 266.
- [6] Hilhorst, J. (1967). Regional Development Theory. Canada: Mouton & Co.
- [7] Kalantari, Kh. (1998). Programming and regional development (methods and hypothe-ses). Tehran: Khoshbin Publications.
- [8] Lee, U. (1987). A criticism on taxonomy method in determining rural regions development, Chahar Mahal va Bakhtiari province, the department of planning and coordination, the organization of planning and budget of Chahar Mahal va Bakhtiari province, p.66.
- [9] Mansoori Sales, M. (1996). Measuring the degree of being development of cities in the province of Tehran. Tehran: Shahid Beheshti university (master thesis).
- [10] Sadeghi Ravesh, A. Ahmadi, H. Zehtabian, Gh.R. Tahmouresd, M. (2013). Application of Numerical Taxonomy Analysis in Sustainable Development Planning of Combating Desertification. DESERT 17 (2013) 147-159.
- [11] Tudaro, P. (2008). Income expectations, urban migration and employment in Africa. International Labor Review, 104(5), 23.
- [12] Wikipedia. (2014).
- [13] Xang, T. (2005). Government and growth, translation, Tehran, the organization of management and planning.