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Evaluating and Ranking Degree of Development in the counties of Kurdistan Province by Using Morris Quantitative Indicator

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ABSTRACT: Due to the necessity of integrated regional development, dependency analysis of human settlements in the level of areas is considered to be the main part of the planning. The optimum distribution of the population and distribution of economic and social development process is the ultimate goal of regional systems analysis. Thereby, reducing the exclusion and inequality due to having economic and political consequences is of great importance which needs special attention. In fact, achieving comprehensive development and progress in the future requires getting knowledge of the position of regions and various areas. In these regards, applying criteria and quantitative methods in order to classify settlements in the spatial system of regions leads to the identification of degree of inequality in settlement points and also providing criteria for effort in reducing and elimination of existing inequality among them. The main objective of this study was to determining (ranking) the level of development of Kurdistan province, based on various economic, educational, cultural, health and infrastructure indicators. To achieve the desired objectives of this study, the method of Morris quantitative index, which is one of the common methods for the determination of the degree of development in areas, was utilized. In this study, the required statistics and information collected through documents were obtained by referring to the relevant organizations (Plan and Budget Organization.), Statistical Yearbooks and libraries. The results of this research indicate that Bijar and Sanandaj Counties are in the first and second ranks and other counties are in the following ranks.

Keywords: Development, Kurdistan, Morris Index.

INTRODUCTION

The regional imbalance and unbalanced distribution of services and facilities in inappropriate ways are the obvious and major characteristics of third world countries and Iran. Today, several factors led to a network of central places, or hierarchical clustering of settlements that have affected the surrounding places (Nazarian, 1995), moreover the regional inequality in all its forms and levels can have disastrous consequences (Pacion, 2003). Basically the purpose of this kind of research is development and the elimination of regional disparities. Investigating and recognizing of the status of the areas, their abilities and limitations are of particular importance in regional planning. Today, having knowledge of the strengths and weaknesses of the areas are so necessary for preparing plans, programs and policies that the use of economic, social, cultural, physical, health indicators, and so on can provide a suitable criteria for determining the status of areas. Also, it can be considered as an important factor in resolving the existing problems and shortcomings in the way to achieve sustainable development (Ghanbari, 2006). In our country, Iran, development of its infrastructure in different areas in the geography show strong differences in the process of development of the due to the effect of undesirable national and focused planning of the past. However, as the degree of the development in different provinces of a country is far different countries, within a province also degree of the development in various areas and counties is not the same. In this article, the level of degree of the development in Kurdistan province was analyzed according to the educational, health, economic, cultural and other indicators which together they came up to 20 variables. The aim of this study was to determine the degree of development of counties in the province through which we could achieve a clear idea of facilities and services available in the counties of the province.

Theoretical foundations

Theories of regional development, generally after World War II, were developed as attitudes for the establishment of economic and social justice, the optimum distribution of resources and facilities and welfare and wealth, the allocation of more resources, balanced growth of areas and reducing inequalities in the region, and from day to day it came to the fore and received more attentions from planners and policy makers. The pioneer of the theory of the regional development, Walter Izzard, Gunnar Myrdal, Francois Peru, Hirshman, John Friedman and others can be named.

Growth Pole Theory: Growth pole theory emphasizes on macro-investment in industry, in the

largest cities. In this theory, the Government can provide the impetus for economic growth. This economic growth spreads outside the urban centers and causing regional socio-economic development. In this case, in growth pole theory, the priority of development is given to cities so that the socio-economic development of the city leads to socio-economic development of villages. This theory is based on the performance of free-market forces which its side influences are considered as impetus for socio-economic development across an area. In the growth pole theory, investment in the industry is taken into consideration as a driving force for development of agricultural and commercial activities and within which capital and labor move (Hosseinzadeh Dalir, 2008).

Neo-Classical Theory and Regional Development: From the perspective of theorists of this theory, the difference in growth and development between the areas is a short term phenomenon and all areas can compete with each other in a free and uncontrolled market with limited intervention of government. According to this theory, regional growth and development which takes place under the influence of two factors of balance and displacement mechanism lead to the free flow of resources between regions in a country in the long run and create some sort of balance between the areas (Asgari, 2001).

Basic Economic Theory: According to this theory, the growth and development of a region depend on its exports. Exports, as the only variable that determines the growth and development of the area, are recognized as impetus for the regional growth of the economy. Basic economic theory relies on the export activities of the region in order to increase its production in the region with the rise of income and promoting economic growth. This growth leads to more investment and consequently the repetition of this cycle leads to development (Sarrafi, 1998).

Center- Periphery Theory: Explaining the center-periphery theory took place based on Friedmann's research in South America. This model divides the country's space system into two sub-systems i.e. center and periphery. He considered the relationship between these two systems as colonial which lead to polarization in the center and marginalization in the periphery (Ejlali, 1994). The important point in this theory is the critical role which is assigned to the city. The city plays a unifying role (Saberifar, 2003).

Regional Growth Convergence Theory: An important question for the regional planner is whether the regional growth will increase convergence of areas or increase the gap between them. Some regional growth theories suggest that regional imbalances may be eliminated on their own, so there is no need to direct intervention. The partial theory proposes that the reallocation of resources in poor areas is far more than developed areas. As a result, this issue will cause the convergence of regions. One of the theories that properly rejects the convergence of regions growth and believes in the increase of gap between regions is the center-periphery theory by Hershman, Fredman, and Myrdal (Ziari, 2006).

Introducing the area under study

Kurdistan province with a population of 1440156 is 28203 km2 in area and is located in the west of Iran and bound by the Iraqi territory between 34 ° and 45 minutes to 36 degrees and 28 minutes north latitude and 45 degrees and 34 minutes to 48 degrees and 14 minutes east of Greenwich Meridian, and it is next to the province of west Azerbaijan to its north, Zanjan to the northeast, Hamedan to the east and Kermanshah to the south and Iraq to the west. According to administrative divisions in 2006, Kurdistan province includes 9 Counties, 26 cities, 23 districts and 83 rural agglomerations (Anonymus, 2006).
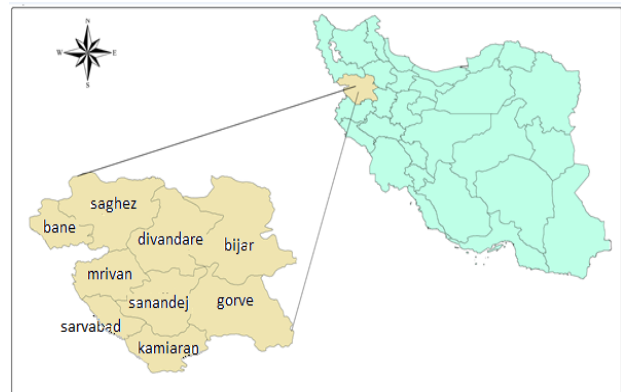

Figure 1. The political position of the Kurdistan province

Background of the study

There is some research in the field determining the development level in areas and degree of development and analyzing the inequality between them. The studies of Noorbakhsh (2003) under the title of human development and regional differences in India can be pointed out that he studied the inequalities between the States of India. Badri and Akbarian Ronizi (2006) analyzed the levels of degree of development in villages of Kamyaran County. The results of this study showed that the coefficient of degree of development between the counties of Kamyaran was different and there were a lot of differences and disparities between them. Out of seven rural agglomerations of this county, one of them is developed, five of them are developing and one of them is underdeveloped. In his study of the degree of development in the counties of Azerbaijan in the period of 55-65, Dehghan concludes that improvement in degree of development in the urban parts are more than rural areas and the development gap between cities of this province is so huge that inequalities between the counties of the province are more than the inequality among the country's provinces (Dehghan, 1994). In other studies by using the same method, Mansori Sales (1996) studies the counties of Tehran province and Habibi studied the counties of Qazvin province in terms of development level, ranking and the inequality between them (Habibi et al., 1999). Through a research plan, Fattahpour analyzed the regional imbalance in the province of Chahar Mahal and Bakhtiari and provided some guidelines to analyze it.

The results of this research showed that the urban development in the province is largely affected by the topography and access networks factors (Fattahpour, 2006). The present research also analyzes the development pattern of the Kurdistan province counties in different parts in terms of the existing inequalities and development.

MATHERIALS AND METHODS

With regard to the analyzed components, the dominant approach in this research was descriptive-analytical. In these regards, first, the required statistics and information were collected through books, Statistical Yearbook, and going to the relevant organizations and institutions, and then by using Morris index, the variables were analyzed.

Research hypothesis

The hypothesis is an informed conjecture about potential results of the research. The hypothesis is a theory or a second solution which should be endorsed and provide a reasonable answer to the question. According to the aforementioned definition, hypotheses for the present research include the following:

➢It appears that the majority of counties of the province are deprived.

➢It seems there is a developmental gap between the counties of the province.

➢It seems, in terms of development, the counties of Bijar and Sanandaj have better conditions

Research objectives

➢Determining the level of access (or enjoyment or facility?) in counties of Kurdistan province in terms of development indicators.

➢Ranking the counties of the province in terms of development level.

Introducing Morris Index

The United Nations development program has utilized a model known as Morris Model for rating the areas in terms of development (spatial-human), which is the latest official model at the global level, and it also has the ability to expand and replace them in different planning with varied scales (Hosseinzadeh Dalir,2008). The overall structure of this model is as follows (Fanni, 2003).

$$YIJ \times 100 = \frac{xij - xi\ min}{xi\ max - xi\ min} \quad (1)$$

$$D.I = \frac{1}{n} \sum_{l=1}^{n} YIJ \quad (2)$$

In respect of (1) YIJ (unequal Morris index) for J area with respect to the I index can be calculated. In respect of (2) the development indicators are used. In this regard the development index specifies the degrees or levels of development in specific areas. The amount of development index is usually between a minimum (zero) and a maximum (one). When the index is between 0 and 0.5, the development of the region has a low development level (a deprived region) and if development index is between 0.5 and 0.8, development of the area is average, and if its value is between 0.8 and 1, the district and area are in high development level (a developed region).

RESULTS

In the research those indicators were selected that they could clearly depict the development level of Counties of province, but it should be mentioned that these indicators only show a small parts of regional inequalities, and some of its dimensions due to the limitation of access to the statistics and weak quantitative methods remain hidden. As the population of the counties of the province varied, the utilized indicators were analyzed for each 10000 persons, so that there was no supremacy among counties in terms of population. Summary of the obtained results are described in the tables below:

Table 1: Cultural Indicators for ten thousand

Counties	Library	Cultural Center	Book Fair	Morris	Ranking
Bane	62.0	14.0	89.0	55	3
Bijar	1	1	03.0	67	2
Devandare	0	36.0	26.0	20	8
Saghez	26.0	57.0	34.0	39	5
Snandej	20.0	36.0	49.0	35	6
Gorve	28.0	29.0	0	19	9
Kamiaran	54.0	21.0	49.0	41	4
Marevan	16.0	0	49.0	21	7
Sarvabad	88.0	86.0	1	91	1

Variable: library, Cultural Center, Book Fair, Morris, ranking of the county.

Table 2. Health care indicators for ten thousand

Counties	Health Care Center	Pharmacies	Doctor	Doctor	People With Insurance	Morris	Ranking
Bane	45.0	36.0	28.0	52.0	02.0	33	6
Bijar	1	60.0	50.0	1	60.0	74	2
Devandare	91.0	20.0	08.0	52.0	14.0	37	4
Saghez	37.0	36.0	30.0	17.0	21.0	28	8
Snandej	0	1	1	89.0	1	78	1
Gorve	16.0	35.0	28.0	0	0	16	9
Kamiaran	60.0	27.0	23.0	48.0	28.0	38	3
Marevan	25.0	43.0	28.0	50.0	26.0	34	5
Sarvabad	96.0	36.0	28.0	52.0	02.0	33	6

Variable: health, care center pharmacies, doctor, laboratories, number of people with insurance coverage, Morris, ranking of the county

Table 3: Economic indicators for ten thousand

Counties	Job Opportunity	Amount of Produced Milk	Number of Farmers	Irrigated Areas	Morris	Ranking
Bane	29.0	1.0	13.0	12.0	16	7
Bijar	25.0	39.0	59.0	01.0	31	4
Devandare	9.0	1	1	1	97.5	1
Saghez	14.0	03.0	12.0	04.0	8.25	8
Snandej	1	0	11.0	27.0	34.5	3
Gorve	16.0	01.0	0	0	4.25	9
Kamiaran	36.0	54.0	71.0	0	40	2
Marevan	43.0	13.0	1.0	31.0	24	6
Sarvabad	0	11.0	86.0	08.0	26	5

Variable: job opportunity, number of farmers, amount of produced milk, irrigated areas, Morris, Ranking of the county

Table 4: Index of Infrastructure and Transport for ten thousand

Counties	Roads	Telephone	Power Subscribers	Transportation	Gas	Morris	Ranking
Bane	30.0	40.0	74.0	73.0	70.0	57	3
Bijar	83.0	19.0	94.0	1	86.0	76	1
Devandare	1	14.0	41.0	15.0	1	54	4
Saghez	26.0	37.0	51.0	18.0	45.0	35	8
Snandej	04.0	1	1	91.0	41.0	67	2
Gorve	30.0	14.0	0	52.0	0	19	9
Kamiaran	13.0	35.0	56.0	03.0	96.0	41	6
Marevan	0	45.0	71.0	64.0	52.0	46	5
Sarvabad	39.0	0	80.0	0	61.0	36	7

Variable: length of roads, number of telephone, power subscribers, transportation company, gas station, Morris, ranking of the county

Table 5: Education indicators for ten thousand

Counties	Secondary School	High School	Pre-University School	Morris	Ranking
Bane	33.0	0	0	11	9
Bijar	27.0	63.0	56.0	49	5
Devandare	73.0	43.0	25.0	47	6
Saghez	27.0	10.0	63.0	33	7
Snandej	27.0	32.0	1	54	3
Gorve	0	34.0	19.0	18	8
Kamiaran	47.0	56.0	56.0	53	4
Marevan	67.0	22.0	75.0	55	2
Sarvabad	1	1	48.0	83	1

Variable: Secondary school, high school, pre-university school, Morris, ranking of the county

Table 6: Ranking of Kurdistan province based on Morris

Counties	Cultural	Health Care	Economic	Transportation	Education	Morris	Ranking
Bijar	67	74	31	76	49	59.4	1
Snandej	35	78	34.5	67	54	53.7	2
Sarvabad	91	32	26	36	83	53.6	3
Devandare	20	37	97.5	54	47	51.1	4
Kamiaran	41	38	40	41	53	42.6	5
Marevan	21	34	34	46	55	36	6
Bane	55	33	16	57	11	34.4	7
Saghez	39	28	8.25	35	33	28.65	8
Gorve	19	16	4.35	19	18	15.25	9

Indicators: Cultural, health care, economic, transportation, education, Morris, ranking of city

CONCLUSION

In this article, the development level of the counties in Kurdistan province was analyzed from different aspects by determining the degree of development. In this analysis, concepts such as the degree of development and the rank of development of a county represented the level of access of that county to the indices on which the analysis was based and we called them as development indices. Therefore, the counties that contained larger degree of these indicators were categorized into developed, and those counties which have poor amounts of these indicators and have the more distance with desired county, are among the underdeveloped counties compared to other counties. Generally in this study though using 5 indicators of cultural, economic, health, education, infrastructure and transportation, which included 20 variables, and also utilizing the results of the census in 2006 beside using Morris index , the degree of development of the counties in Kurdistan province, was determined which the results were presented in Table 2. The point in this table is that

in whole province there is only one developed county (Bijar) and one developing county (Sanandaj) and there other are in fact deprived counties. So according to the results of the study, the first hypothesis, which mentioned it seems that majority of the counties of the province are deprived and the second hypothesis, which mentioned that there is a developmental gap between the counties of the province, are proven and the third hypothesis which mentioned it seems Bijar County and Sanandaj county have a better situation in terms of the development is also true. According to the aforementioned items it can be acknowledged there is a significant difference between the counties of Kurdistan province in terms of development. As a result, the areas didn't experience equal and even development. After Islamic revolution, the investment has been uniformly distributed, but since it wasn't in accordance with the needs of the population and regional potentials, it led to unequal development of the areas.

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