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Assessment of the Degree of Development of the Cities of Gilan Province, Iran (Economic Approach)

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Abstract

Intense population focus and imbalance are characteristic of third world countries, resulting from polarized growth policies. So, a limited number of areas have key roles and the other areas act as marginal. The first step to solve this problem is to understand disparities in economic, social, and cultural aspects. This paper seeks to measure the degree of development of the cities of Gilan province, Iran according to some development indexes in order to obtain the rates and causes of regional inequalities along with a way to reduce the underdevelopment of the region. Therefore, economic indexes have been used. After the analysis of the model, the results indicated that there is a fundamental difference among the cities with respect to development indexes; they are ranked based on developmental degrees as follow: Rasht, Bandar Anzali, Astaneh Ashrafieh, Lahijan, Roudbar, Masal, Rudsar, Amlash, Siahkal, Some'esara, Langrood, shaft, Astara, Rezvanshahr, Fuman, and Talesh.

Keywords: Morris coefficient, Development, Gilan province cities, Facilities distribution.

Introduction

Today, problems such as unemployment, poverty, food shortages, migration, and urbanization threaten rural areas in developing countries seriously, and our country is no exception to this (Azkia, 2002). Implemented policies and programs could not have been useful to eliminate these defects because they have been designed regardless of environmental features and capabilities (Gylfason, 2001). In fact, the necessary policy in the adjustments of problems should be based on the available capabilities and potentials to create a logical connection between them so that the country walks on a comprehensive and sustainable development (Paply, 2002). In fact, it is necessary to provide the required conditions, using human and material resources available, to develop the agriculture and rural development objectives of growth and improvement of social and economic life (Asadi, 2001). The first step is to know the developed and underdeveloped cities of Gilan, or to put it more correctly, understanding the rate of development of the cities because without knowing deprivation and underdevelopment, the effort to eliminate or reduce it, would not be possible. In the present study, after explaining the economic development indicators, the mentioned indicators were calculated for 16 cities of Gilan, thereby enabling to assess the degree of development.

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Theoretical foundations

The world economy is changing at an unprecedented rate. Some countries are using this wave of change to drive rapid growth in their economies. The knowledge economy is often the subject of misunderstanding and mistrust but its importance is an inescapable economic reality (Levy et al., 2011). Some economic concepts introduced by evolutionary economists have been successful in describing economic growth than that of knowledge-based economy' (KBE). Recent studies on economic growth in a globalizing world, however, indicate knowledge as the main driver of the economy. Many developed countries recognized the importance of KBE in the face of fierce global competition. European Union (EU), for example, emphasized Knowledge-based Economy to reform the economic base of EU countries (Chandra & Yokoyama, 2011).

The first and most important goal of all governments is development. Surely one of the most important factors of development is economic development, but this is not the only parameter since development is not merely an economic phenomenon. Therefore, the principal aim should be to create a desired pattern of public revenue growth which will cover all segments of society (Todaro, 1999). Development not only includes improving productivity and earnings, but also includes variations in the political, institutional, social, and administrative structures and their reform as well as the public opinion (Omydany, 2008). Therefore, some of the following can be noted as the objectives of development in its new concept: securing people confidence, reducing poverty and unemployment, adjusting income and wealth, increased social welfare, provision of public participation, providing more freedom, formation and development of democracy, reconstruction of human independent nature (Rezvani, 2002). Uneven distribution of resources and activities and uncoordinated inter-provinces and the intra-provinces developments have been the concerns of social and economical organizations and institutions (Neumayer, 2001). The studies of international institutions and researchers in the fields of industrial, agricultural, service, etc. capacities and capabilities confirm the unequal distribution of services and facilities in different fields (Sabbagh Kirmani, 2001). The general objectives of regional planning and economic development are social justice, welfare, and wealth distribution among the population. To achieve the aforementioned goals in each society, it is needed to prepare, formulate and implement various programs, because one of the most important characteristics of dynamic and healthy economy is fair and equitable distribution of resources and development scores among the majority population in each district, region, or country (Ziadi et al., 2010). Hence the planners are trying to eradicate poverty through the provision of programs to reduce the gaps and inequalities (Fukuyama, 2005).

In the World Development Report of 2012, World Bank has done a survey about the development indicators of 213 countries of the world. According to the report, Iran's average annual economic growth in the 11-year period from 2000 to 2011 is estimated at 4.5%. Also, based on government deficit in 2011, the GDP of Iran is estimated at 0.5%, and in from this aspect Iran is ranked 48th in the world. According to the pseudo-money index, the GDP of Iran is 4.5 percent. According to the data available in the report, Iran's economic growth during the period of 2000-2011 has been higher than those countries of the Organization for Economic Cooperation and Development (OECD).The higher economic growth of Iran, in compare with the countries were surveyed, is due to the fact that most of the member countries of the OECD are from developed and advanced countries, while Iran is a developing country. Among the countries which are the members of OECD, the largest economic growth is dedicated to Slovakia, Poland and the Republic of Korea, and the smallest is dedicated to Italy, Portugal and Japan (Jangani et al., 2013).

Development indexes

Economists were the first who set to provide indicators on the economy and economic planning and used parameters such as per capita income, gross national product (GNP) for the purposes of economic planning and policy making (Hetneh, 2002). In the late 1950s and early 1960s providing social indicators were of interest to planners and professional associations, and these indicators were used for decision making, policy making, and planning (Beugelsdijk, Schaik, 2005). New development indicators are defined in four groups by the United Nations (Alipur, 2009):

- Social indicators (such as education, employment, health, housing, welfare and social justice, cultural heritage, poverty and income distribution, crime, population, social and ethical values, the role of women, access to land and other natural resources, and social structure)
- Economic indicators (such as economic dependence or independence, energy, production and consumption patterns, waste management, transportation, mining, economic and development infrastructure, trade, and productivity)
- Environmental indicators (such as groundwater, freshwater, agriculture and food security, urbanization, coastal areas, protecting coral reefs and marine environment, marine, species diversity and biotechnology, sustainable forest management, air pollution and ozone depletion, global climate change and sea level rise, sustainable use of natural resources, sustainable tourism and land use changes)
- Institutional factors (such as integrated decision making, capacity building, science and technology, public awareness, cooperation and international agreements, government and the role of civil society, institutional and legal framework, disaster preparedness and public participation).

Literature review

Development evaluation and determining the degree of development due to problems such as the impossibility of measuring factors such as Gross National Income, Gross Income per capita, economic prosperity and ... made the economists and experts of the United Nations to use the economic - social development indicators for the first time (Vlkak and Narayan, 2005). The first thing that was done in this area was a report in 1954 by the United Nations as an international measure of living standards published by a group of experts. It divided living standards into 12 indices: health, food and nutrition, education, literacy and training, working conditions, employment status, total consumption and savings, transportation, housing including home loans, clothing, recreation and leisure, social security, and human freedom.

This report is the basis for many subsequent works in this area. Years later, the United Nations (1991), in a report, examined the degree of countries' development using three indicators of life expectancy, literacy rate, and per capita income. Many African countries, Central and South America, and Asia were low in terms of human development, and they stated that economic growth is essential for the development of those countries (Mansouri, 1996).

Ziadi et al. (2000) studied the degree of development of villages in Yazd province in 70 development indexes in five different sections, using numerical taxonomy and classified them according to development indicators. Rezvani (2002) in his study entitled "Measurement of the degree of development of the country's provinces using taxonomic analysis" addressed the provinces using 24 indicators in the fields of education, construction, healthcare and communications. The results show that there are many differences between regions in terms of development. The provinces of Gilan, Tehran, Semnan and Yazd, had the highest and the

provinces of Sistan and Baluchestan, West Azerbaijan, and Ardebil had the lowest level of development. Mousavi (2003) evaluated regions of Iran in terms of development based on 31 indices, and ranked various regions on the basis of various indicators of development (economic, social, cultural, etc.). Their findings suggest that the conclusion that regional inequalities are associated with the geographical inequalities. In general, there are significant differences along the North to the South, West to East, North West to South East, and Center to the surrounding areas in terms of enjoying economic, social, and cultural development facilities. Monfaredyan (2007) in a study entitled "Ranking Shiraz urban areas in terms of development" assessed the inequities of the city by ranking them. In this study, four general indicators were considered in the fields of education, health, and public urban services and examined during the years 2004-1994. Techniques of numerical taxonomy and the Kuznets inverse are the main methods applied in the research. Final ranking of the results shows that in the case of non-equality of the indicators studied, the reduction of inequalities are generally in Shiraz. Ziadi et al. (2010) in an article entitled "Measuring the degree of development of Azerbaijan province by HDI method" examined the cities' degrees of development in order to measure regional disparities' rates and causes. In this study, seven socio-economic, demographics, housing facilities, health, employment, natural infrastructure, economic, and agricultural factors, and the combination of seven factors in three periods of 1986, 1996, and 2006 have been used. The results show that there is a substantial difference among the cities of the province regarding the development indicators. These cities are ranked in three groups of deprived, semi-deprived, and developed that over time the rate has increased.

Methodology

The present study is an applied, descriptive, and analytical research. The population includes 16 cities of Gilan province. In this research, 7 indicators related to presumed economic growth potential. To explain the development of the cities of the province, Morris coefficient of development and the Standard score are used. Morris technique is the latest and most practical method of regional planning which is easier to work with and enjoys many efficient performances of taxonomy models as well. In this method, using a variety of economic, social, and physical variables, we can grade and classify settlements, identify central places, and determine the role of development of each unit among other units (Alipur et al., 2009). Also, for comparing the scores of units or various groups with each other, the standard scoring method is used. In this method, the standardization of various parameters is done to be compared with each other. This is done by transforming the data into standard scores thus, called the "standard deviation of the mean indices." To determine the level of unequal distribution of a particular factor in the province, the coefficient of variation is used. Data processing and analysis and graph drawing is done in Excel.

Structure of Morris's Model

The United Nations Development Program (UNDP) has developed a model for ranking areas in terms of development (physical-human), which is both the most recent official pattern used globally, and has the ability to expand and cab be replaced them in planned areas with different and varied scales. This model is known as Morris's model. Morris's model using available information for each settlement unit identifies the developmental location of each unit in terms of per selected indicators, and finally sets up the average of the set of indicators using the index of development analysis methodology simply but worthy of attention, and then pays to rank the settlements.

Morris's developing method

The use of this method has seven steps, which in summary are:

1- Setting the indexes table (in the first column, the settlements and in the subsequent columns, the indicators)
2- Standardization of the numbers in the indexes table using the Morris's unbalanced Coefficient Equation:

$$Yij \frac{Xij - Xj\min}{Xj\max - Xj\min} * 100 \quad (1)$$

Yij = Morris's unbalanced coefficient (for i variable in j unit);
Xij= Represents the variable's number;
Xjmax= Maximum values of variables per column;
Xjmin= Minimum values of variables per column;

3- For ranking the numbers derived from Morris's unbalanced coefficient, the largest number gets 1, and this rating reflects more facilities of that settlement;
4- Calculating the final coefficient of development through the following equation:

$$Di = \frac{\sum Yij}{N} \quad (2)$$

$\sum Yij =$ Total uneven developmental coefficients;
N= number of indices

5- The final ranking of settlements by using the numbers obtained from the final coefficient of development and the leveling of settlements (the larger the number Di, the more developed settlement);
6- The classification of settlements using the final coefficient of development and drawing the corresponding chart;
7- Calculating the correlation coefficient to determine the type of relationship between the desired index and the final coefficient of a settlement's development.

Results

To study the development of the cities of Gilan province, the latest data released by the Statistical Center of Iran (Iran Statistical Center, 2009, and the organizations' and agencies' data) have been used. Some indicators are extracted from the raw data. After processing, the coefficients or ratios are obtained and then used. Seven indicators used include: labor, local market size, location, higher cultural and educational services, and specialized health services. The results are given in table 1.

After reviewing the various indicators mentioned in the previous sections and considering the average coefficient of development and mean of each group, the average of the coefficients of each indicator group was calculated; the table above has been obtained. According to this table, Rasht has the highest level of development with regard to the listed indexes, and Bandar Anzali and Lahijan are placed the next in the category. The lowest level of development in the province is Talesh located at the bottom of the table. In Table 2, the cities are ranked based on the degree of development:

Table 1. The degree of development of the cities of Gilan

Cities	Mean	Specialized health services	Higher cultural and educational services	Infrastructure networks	location	Local market size	Human capital	Labor
Astara	34.23	47.63	57.62	12.5	25	4.14	46.2	46.49
Astaneh ashrafiye	43.71	47.94	33.84	37.06	53.37	12.24	63.76	57.74
Amlash	35.25	23.97	35.09	37.55	32.9	2.39	52.29	62.55
Bandar anzali	47.05	50.03	53.67	32.4	68.58	8.8	65.99	49.9
talesh	32.33	21.77	24.5	31.86	48.37	21.4	36.76	41.64
Rasht	60.85	60.65	55.52	37.32	69.23	100	45.47	57.73
Roodbar	43.73	64.73	46.16	19.13	48.53	8.15	73.07	46.33
Roodsar	39.89	44.59	45.86	37.93	34.82	18.07	53.29	44.32
Rezvanshahr	33.35	15.76	33.85	35.97	60.9	4.58	38.78	43.61
Siakal	33.24	33.31	40.92	20.08	45.5	2.32	43.74	46.84
Shaft	40.28	35.12	18.41	83.57	59.25	6	51.13	28.5
Some'sara	39.66	41.75	34.45	47.21	61.19	15.66	54.07	23.26
Fouman	37.15	46.47	27.31	41.72	59.63	10.67	48.26	25.98
Lahijan	46.02	59.6	43.85	42.6	49.39	20.68	50.13	55.86
Langerood	37.55	35.48	33.63	24.28	42.27	13.33	65.6	48.23
Masal	36.15	50.26	37.41	30.44	58.37	2	50.36	24.2

Conclusion

To study the development of the cities of Gilan province, the latest data released by the Statistical Center of Iran (Iran Statistical Center, 2009, and the organizations' and agencies' data) have been used.

Some indicators are extracted from the raw data and after processing; their coefficient or ratio was obtained, and then used. 7 indicators used are included in the following seven groups: labor, human capital, local market size, location, infrastructure networks, higher education and cultural services, specialized medical services. In terms of labor index, the highest rate of development belonged to Amlash followed by Astaneh Ashrafieh and Rasht. At the end of the list is Some'esara. In terms of human capital index, Roudbar has the highest rank followed by Bandar Anzali and Langueroud. At the end of the list is Talesh. In terms of the size of the local market, Roudbar has the highest rate of development with respect to the investigated sub-indicators, and Siahkal and Masal fall in the subsequent ranks. The city is the least developed. In terms of location, Rasht has the highest rate of development and Talesh and Lahijan are located next. Masal is the lowest. In terms of infrastructure networks, Shaft has the highest rank, and then Some'esara and Lahijan. Astara is the least developed. Assuming higher educational and cultural services, Astara, Rasht, and Bandar Anzali are top

rated and they enjoy favorable conditions. Shaft is ranked the last. In terms of specialized health services, Roudbar ranks first; Rasht and Lahijan are the next with quite a higher standard. Rezvanshahr with a lower rating is the last category.

After reviewing the various indexes mentioned in the previous sections and calculating each city's coefficient of development and the mean value of the seven groups, the average of the coefficients of each indicator was calculated. Priorities of the cities of Gilan province are: Rasht, Bandar Anzali, Lahijan, Roudbar, Astaneh Ashrafieh, Shaft, Roudsar, Some'esara, Langrood, Fuman, Masal, Amlash, Astara, Rezvanshahr, Siahkal, and Talesh.

Table 2: Prioritizing cities in terms of the degree of development

Priority	City	The degree of development
1	Rasht	60.85
2	Bandar anzali	47.05
3	Lahijan	46.02
4	Roodbar	43.73
5	Astane ashrafiye	43.71
6	Shaft	40.28
7	Roodsar	39.89
8	Some'sara	39.66
9	Langrood	37.55
10	Fouman	37.15
11	Masal	36.15
12	Amlash	35.25
13	Astara	34.23
14	Rezvanshahr	33.35
15	Siakal	33.24
16	talesh	32.33

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