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An Investigation of the Economic Competitiveness Status of Cities of Iran

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Abstract: The present study aims to explore the competitiveness of Iranian cities based on economic indices. The research is applied in terms of purpose and descriptive - analytical in terms of method. The population included all central cities in the country in 2011. In order to analyze the competitiveness of the central cities, 20 economic indices were extracted based on data from Statistical Yearbook of year 2011. In this study, Shannon's entropy model was used to measure the significance coefficient of each index, and the TOPSIS method was used to analyze the data. The results showed inequality in the enjoyment of economic competitiveness in central cities of Iran. The city of Tehran with the rate of 99% TOPSIS is in the first rank, Ahwaz and Isfahan ranked second and third, and Zahedan, Gorgan, Khoramabad, Ilam, Zanjan, Semnan, Qom, Sanandaj, Ardabil, Shahrekord, Birjand, Bojnoord, Karaj are ranked in the last. Given that in the present study, the indices of economic competitiveness were investigated at the center of city level, and evaluation of these indices at lower urban levels largely remained vague; thus, in this regard, it is proposed that measuring the economic competitiveness indices take place on the urban scale so that in addition to explaining inter-provincial differences, the inter-regional differences can be explained and revealed in small scales.

Keywords: Competitiveness, economic indices, TOPSIS, economic competitiveness, cities of Iran
JEL Classification: L16, C53, D61, N85

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1- Introduction

The Twenty-first century is the century of cities, because more than half of the world's population are urban dwellers. Along with the acceleration of urbanization, globalization also found an increasing speed and cities, which are the social and the global economy centers are getting connected through information and communication technologies (Madanipoor, 2008). Cities have long been the focus of major developments in human history. They not only interact with their hinterland, but also entered into social and economic relations with other cities in a hierarchical structure (Ghorbani et al., 2014). Urban globalization and urbanization of the world led to the changing role of cities in the global system and this phenomena made the free movement of goods, people, information and capital, smoother, faster, wider and more effective than ever. This issue highlighted the concepts such as competitiveness and competition among cities (Nejati Hosseini, 2011). Cities are national and international centers and engines of social and economic growth paving the ground for achieving national goals in the economic, social, political and cultural fields (Ni & Karl Kresl, 2010). What is obvious is that the development of the city affects from its dominant economic performance. This performance originates from the favorable local facilities and the surrounding villages, including the performance of local centrality, the dominant economic role (such as transportation, industrial and manufacturing, service, tourism, wholesale, mining, military, cultural and medical roles) and the expertise in it, determines its role in the national and regional economy. The main basis of urban studies and urban design is the economic base of the city, upon which employment, population, income, and ultimately the need for space are determined (Shi'e, 2007). The competitiveness of the metropolises pertains to the ability of a metropolis for the production and creation of a market of products provided with excellent value (not necessarily the lowest price) in relation to the similar products in necessarily metropolis. It also includes a metropolitan economy that generates high value services and products for its citizens and supports the export-based economy and enhances the quality and standard of living of its citizens. (Khajavi, 2010). One of the most significant platforms for creating a competitive city able to compete with other cities both internationally and at the national level is the knowledge and attention to popular indices of the world in the field of competition. Recognizing the status quo of the regions in terms of development indices and comparing them with each other are the first steps in regional planning, balancing, and providing social justice among regions. Therefore, the present study aimed at investigating the competitiveness of Iranian provinces in terms of economic indices. To achieve this, 20 economic indices were analyzed using TOPSIS. This research aims to answer the following questions:

- Can the provinces of Iran possess identical economic competitiveness?

- What provinces have the most and the least economic competitiveness in Iran?

2- Literature Review

a) Foreign Researches

Wei and Vukovic (2010) in a study entitled "Regional competitiveness", investigated the regional competitiveness in western China and the factors affecting it and finally proposed some practical

strategies on how to help the western regions create a favorable environment for attracting national and international investment.

Popescu (2011) used some criteria for social and economic development to prioritize urban areas. The results of this study showed that analyzing and measuring the effective factors on urban competitiveness can be a turning point in strategy development, which is the ultimate goal of urban and regional planning.

Kwon et al., (2012) did a research entitled "Measuring Urban Competitiveness Based on Innovation Indicators" in six suburban cities in South Korea. They selected 20 criteria for analysis and analyzed the criteria of each hierarchy using the criteria, and the strengths and weaknesses of each of the cities were examined. The results of the study showed that the city of Daejeon has high competitiveness among six cities.

Bruneckiene et al., (2012) in a study entitled "Indices for Urban competitiveness Measurement at the national and international level" case studied Kaunas in Lithuania with different methods such as SWOT. The results of this research showed that the concepts of urban and regional competition are closely related. No city, especially a small one can be independent which acts as a part of a larger hierarchical urban, regional, national, economic, and social system.

Singhal et al., (2013) in a study entitled "An Assessment Model for Urban Competitiveness: A Program for the Cities of England" case studied four cities in England with a multi-criteria decision-making, hierarchical analysis and Delphi analysis process. As a result, this research is emphasized on rebuilding of the business environment cooperation and promotion of urban competition strategies.

b) Iranian Researches

Vares et al., (2012) in a study entitled "the effect of global competitiveness on the economic success of the countries: a model for promoting national competitiveness" conducted using conventional correlation analysis and Shannon entropy. The results of correlation analysis on data of 139 countries in 2001 and 2011 showed that the 3 elements of access to technology, infrastructure and scientific and applied education are more significant among the 12 elements.

Rabi'e and Khajouie (2013), in a study entitled, "explaining the competitiveness strategies in Tehran based on a two-step design" first, the situation of Tehran in terms of 3 variables of competitiveness with other developing cities was analyzed and in the second step, using the results of the previous step, a competitive strategy was proposed using the SWOT and SPACE matrix tools for Tehran.

Ghaderi et al., (2013) in a study entitled "urban competitiveness, a strategy for improving the urban income", while considering the significance of the competitiveness of metropolises, he looked at its prerequisites. In general, the prerequisites for promoting the competitiveness of metropolitan areas fall into two categories: soft factors and hard factors. In this paper, after explaining the soft and hard factors affecting urban competitiveness, social capital factor is described as an example of soft factors affecting the competitiveness of metropolises. Finally, the current conditions of the metropolitan city of Shiraz is described to enhance its competitiveness. Using this framework, we can achieve the following basic objectives: improving the competitiveness

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of the city, improving the urban economic environment, coordinating and positive economic interaction with the global flow based on a set of theoretical support approaches to improve the urban competitiveness index.

Delbari (2014) conducted a theoretical study entitled "Factors affecting the economic competitiveness of cities, with an emphasis on urban competitiveness index" and finally presented some proposals.

Kargar Samani et al., (2014) in a study entitled "the effect of urban competitiveness on the national competitiveness" investigated 107 countries from around the world including 481 cities to assess the effect of the urban competitiveness on national competitiveness. The results indicated that there is a significant relationship between urban and national competitiveness. Finally, it was concluded that the urban competitiveness index can be used as a guide to fit urban policies. This could be a significant dimension of macroeconomic policy in the national arena and the pursuit of national economic development.

An overview of the abroad literature indicates that comprehensive studies were conducted on the competitiveness of cities to achieve regional balance in recent years, but an examination of the domestic literature pertaining to this study suggests that urban competitiveness indices, especially economic indices are not much considered at different spatial levels, and a small number of theoretical research on urban scale has been done in this case. Therefore, the present study aimed to explain the economic competitiveness of Iran's provinces at national level for regional equilibrium using the TOPSIS multi-criteria decision-making model, which can fill the gap in this field.

3- Theoretical Framework

Competitiveness

The concept of competitiveness is shaped by answering the question of why some countries are richer than others. A question that has been raised since Adam Smith and more commonly found among the scholars of economics, management, and commerce, and to this day is the concern of many governments (Patvandi, 2011).

Competitiveness is a key criterion for assessing the degree of success of countries in the field of political, economic and commercial competition; that is, each country, region, city or firm with high competitive ability in competitive markets can be said to be more competitive (Dadashpour & Ahmadi, 2010). Competitiveness refers to the dynamic process of acquiring assets and resources, turning them into competitive advantages and managing them with a strategy to achieve a superior competitive position (Vares et al., 2012). Shurchuluu (2002) believes that competitiveness determines the ability of a country or company to create more wealth than competitors in global markets, by creating an environment that is desirable to create sustainable value.

The following definitions can be used to identify the following characteristics for competitiveness: First, competitiveness is a relative concept that involves comparing performance between economic units. Secondly, competitiveness can be applied at different levels of the firm, industry, national economy, transnational and global, and thus, the proper definition of competitiveness at each level is different, since the objectives of each of these cases are different (Vares et al., 2012).

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Economic Competitiveness

According to the Organisation for Economic Co-operation and Development (OECD), competitiveness is a degree for a country that can provide products and services that have passed the international market test, and at the same time, it can increase or even maintain a high level of citizen's income (Dadashpour & Ahmadi, 2010). In fact, the main goal is to create conditions and a framework in which both firms and society can compete at one time and, consequently, create prosperity in society (Ghorbani et al., 2014).

Regional Balance

According to Shokooyi, whenever a part of the earth planet has such a face that it reaches to a degree of unity and harmony that differs from its adjacent parts, it is called region. In other words, unity is the basis of each geographic region. In another definition, the region is a realm with common social and economic issues that are caused by nature or other conditions. The region is one or more geographic spaces in which a nation's civilization needs a standard in order to meet its demands through material resources. The most practical and economically functional area is the most cost-effective spatial unit, part or time for resource allocation, in which the purpose of planning is merely economic growth and well-being (Zali, 2010).

Regional Planning in Iran

In 1974, Planning and Budget Organization with Setiran Company contracted land preparation studies in Iran. Based on this, the necessity of considering regional equilibrium and the necessity of using spatial planning and paying attention to regional policies have led to the establishment of a land use planning center in the planning and budget organization in 1974. The fact is that the pre-revolutionary development program did not succeed in creating regional equilibrium and intensified spatial inequalities and polarization. Regional planning has never existed and most of the policy-making has been regional and, to some extent, regionalization of national programs. The obvious outcome of the pre-revolutionary programs was a dramatic regional difference. According to the World Bank studies, in 1976, among the 17 countries selected from the north and south, Brazil and Iran had the largest regional disparity with the per capita GDP per capita. Therefore, after changing the regime, one of the major goals of the Islamic Republic of Iran, as stated in article 48 of the Constitution, is to create regional equilibrium. The success rate of the post-revolutionary programs suggests that although these programs have had a positive content flow in line with the ideals of the Islamic Revolution, there are still some regional barriers to regional development. Addressing this issue is important in this regard. One of the main goals of development programs, especially after the revolution, has been to achieve a balanced development throughout the country, and much effort has been made so far. Reducing the level of regional disparities, preventing congestion and over-concentration of the population, its activities and its consequences in metropolitan areas, utilizing the capabilities and capacities of marginal and low-income areas, creating employment and sustainable income, management of large-scale immigration flows and, ultimately, achieving the goals of balanced and sustainable national development, all depend on solving the

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root causes and obstacles of the implementation of regional management and planning processes (Seyfoddini & Panahandehkhah, 2010).

Given the necessity of integrated and balanced development across the country, recognizing the characteristics of different regions and their inequality is the basis of work in planning (Bayat, 2009). To eliminate these inequalities and transform the existing situation into a desirable situation proper planning should be done (Momeni, 1998). Therefore, for better planning of different areas, it is necessary to that classify these areas in order to be programmed to the extent of their enjoyment or lack of use (Hosseinzadeh Dalir, 2001). Analyzing the competitiveness indices in the central cities of the provinces and comparing the annual ranking of the competitiveness of these centers with each other reveal capacities, potentials and strengths, and, on the other hand, the challenges and weaknesses in different sectors. This requires identifying deficiencies in the economic competitiveness indices in the central cities of the provinces of the country using quantitative criteria and methods. The present study uses TOPSIS model to recognize the inequalities of the central cities of the provinces in terms of economic competitiveness indices.

4- Research Method

The method of this research is descriptive-analytical with an applied purpose. The statistical population of the present research includes all the provinces of the country in 2011 (31 Province). Resources to collect data for preparing the theoretical literature were library and internet documents, and documents and data were used for data collection and measurement. The documents were related to official sources, especially the Statistical Center of Iran as the country's official authority which was used to collect data. For analysis and explanation of economic competitiveness, the required data were extracted based on the statistical information of the Yearbook in 2011. Given the existence of multiple indices in economic competitiveness, in this study, taking into account available information and using the two variables of economic performance and structural-economic capacity, 20 indices were selected. The selected criteria in this study is to assess the competitiveness of the provinces derived from the selected indices in the previous studies. The raw data of selected indices were extracted from the Statistical Yearbook 2011 by the Statistical Center of Iran. The raw data were indexed for analyzing.

After the indexing step, the weight of the indices was calculated using the Shannon entropy weighting technique. In the next step, using TOPSIS technique, the degree of possession of each of the provinces of the country was determined in terms of economic competitiveness and the provinces of the country were classified into five categories of completely possessed, possessed, relatively possessed, unpossessed and completely unpossessed. Provinces with a score of over 50%, fall in a fully possessed class, between 20%-50% were possessed, between 10%-20% were relatively possessed, between 5%-10% were unpossessed, and below 5% were considered completely unpossessed (in this model, the greater value indicates a higher rank for the related provinces). At the final stage, using the ARC / GIS software, the levels of possess of the

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provinces were mapped out. Table (1) shows the indices used in the research. (Olson, 2004):

- Step 2, the formation of decision matrix: After collecting data and combining them, the matrix of raw data of each component is indexed in the study area.

- Step 3, standardizing the data: To normalize the decision matrix in TOPSIS method, fuzzy normalization is used. The advantage is that it is linear and all results are converted to a linear ratio. The equation (1) has been used to normalize the indices.

$$n_{ij} = \frac{x_{ij}}{\sum_{i=1}^{n} X_{ij}^{2}} \quad (1)$$

In this case, X_{ij} is the normalized value of option i of index j, n is the number of indices.

- Step 3, determining the weight of the criteria: To express the relative importance of the components, the relative weight of each component should be determined. For this purpose, the Shannon entropy method has been used in this study. The entropy method calculates the weights of each index based on the distribution of the values of the indices. Entropy has the capability to get it and moderate the weights obtained from the model if decision makers have an initial assessment of the importance of the indicators. Therefore, when the data of a decision matrix are fully specified, the entropy method can be used to evaluate the weights (Momeni, 2003), (Monfared et al., 2006). According to the entropy method, the greater the dispersion in the amount of one indicator, the more important it is (Poortaheri, 2015). In order to calculate the weight of the indices, Shannon entropy method is applied as follows (Zou et al., 2006):

1: Normalization of the matri

$$pij = \frac{aij}{\sum_{i=1}^{m} aij} \quad (2)$$

2: Calculating the amount of entropy E_j

$$E_i = -K \sum_{i-1}^{m} [P_{ij} \ln P_{ij}] \qquad K=1/1n(m) \quad (3)$$

In the above relation, In is a logarithm based on the p-number.

3: Calculating the degree of deviation (d)

$$d_j = 1-E_j \,;\, \forall_j \quad (4)$$

4: Calculating the weight of the indicators (W)

$$W_j = \frac{d_j}{\sum_{j=1}^{n} dj} \quad (5)$$

5: Adjustment of the index weight

$$W_j = \frac{\lambda jwj}{\sum_{j=1}^{n} \lambda jwj} \quad (6)$$

Step 4: Determining the distance between i_{th} option from the ideal option (The highest performance of each indicator)

Using equation 7, positive ideal will be:

$$A^{+} = \left\{ v^{+}_{\max 1}, v^{+}_{\max 2}, ..., v^{+}_{\max n} \right\} \quad (7)$$

Step 5: The distance of i-th option of the minimum option (the lowest performance of each indicator) is determined using equation (8):

$$A^{-} = \left\{ v^{-}_{\min 1}, v^{-}_{\min 2}, ..., v^{-}_{\min n} \right\} \quad (8)$$

Step 6: In this stage, the Euclidean distance of each of the options is calculated from the positive and negative ideal solutions for each component, using equations (9 and 10).

$$D_i^{+} = \sqrt{\sum_{j=1}^{n} \left(V_{ij} - V_J^{+} \right)^2} \quad (9)$$

$$D_i^{-} = \sqrt{\sum_{j=1}^{n} \left(V_{ij} - V_J^{-} \right)^2} \quad (10)$$

Step 7: The final ranking is obtained according to equation (11) (Table 7).

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$$CL_i = \frac{D_i^-}{D_i^- + D_i^+} \quad (11)$$

Step 8: The ranking of options is based on the amount of CL_i that fluctuates between zero and one. In this regard, 1= CL_i represents the highest rating and CL_i = 0 represents the lowest rating.

To classify the data based on the level of economic competitiveness of the central provinces of Iran, first determine the range of changes in the points obtained in TOPSIS model, and then determine the number of classes by using Sturgess empirical formula (equation 12).

$$K = 1+3/32\ LogN \quad (12)$$

In the above relation, K is the number of classes. The class distance is obtained by dividing the value of R (range of variations) by the calculated value for the number of classes (K).

In the following, the indicators used in the research are introduced. Indicators used in this research have been extracted from the articles on "Measuring the Competitiveness of Chinese Cities" (So & Shen, 2004), "Measuring Urban Competitiveness in Chinese Cities in 2000" (Jiang & Shen, 2010) and the book "Attitudes to Modern City Patterns" (Gorbani et al., 2014). In this research, the indicators used in Table 1 for measuring the economic competitiveness of the central cities of the country's provinces have been used. These indicators are counted with careful study of the research.

Table1. Indices used in the research

Row	Variable	Row	Variable
X1	The number of branches of state banks	X11	The ratio of food and tobacco expenses to total costs
X2	The number of ATM devices of state banks	X12	Credit of Capital Asset acquisitions (million Rials) (percent)
X3	Facilities of state banks (billion Rials)	X13	Cost credits (million Rials) (percent)
X4	Deposits of State banks (billion Rials)	X14	Number of cooperative companies in percent
X5	The value added share of service sector (percent) *	X15	Investment of Corporative companies (million Rials)
X6	The value added share in the mining industry (percent) *	X16	Cooperatives providing the needs of producers (million Rials)
X7	The value added share of agricultural sector (percent) *	X17	The number of transactions registered (percent)
X8	Per capita gross domestic product (thousand Rials) *	X18	The number of industrial workshops
X9	Gross domestic product (million Rials) *	X19	Economic participation rate (percent)
X10	growth rate of total price Index (percent)	X20	Unemployment rate (percent)

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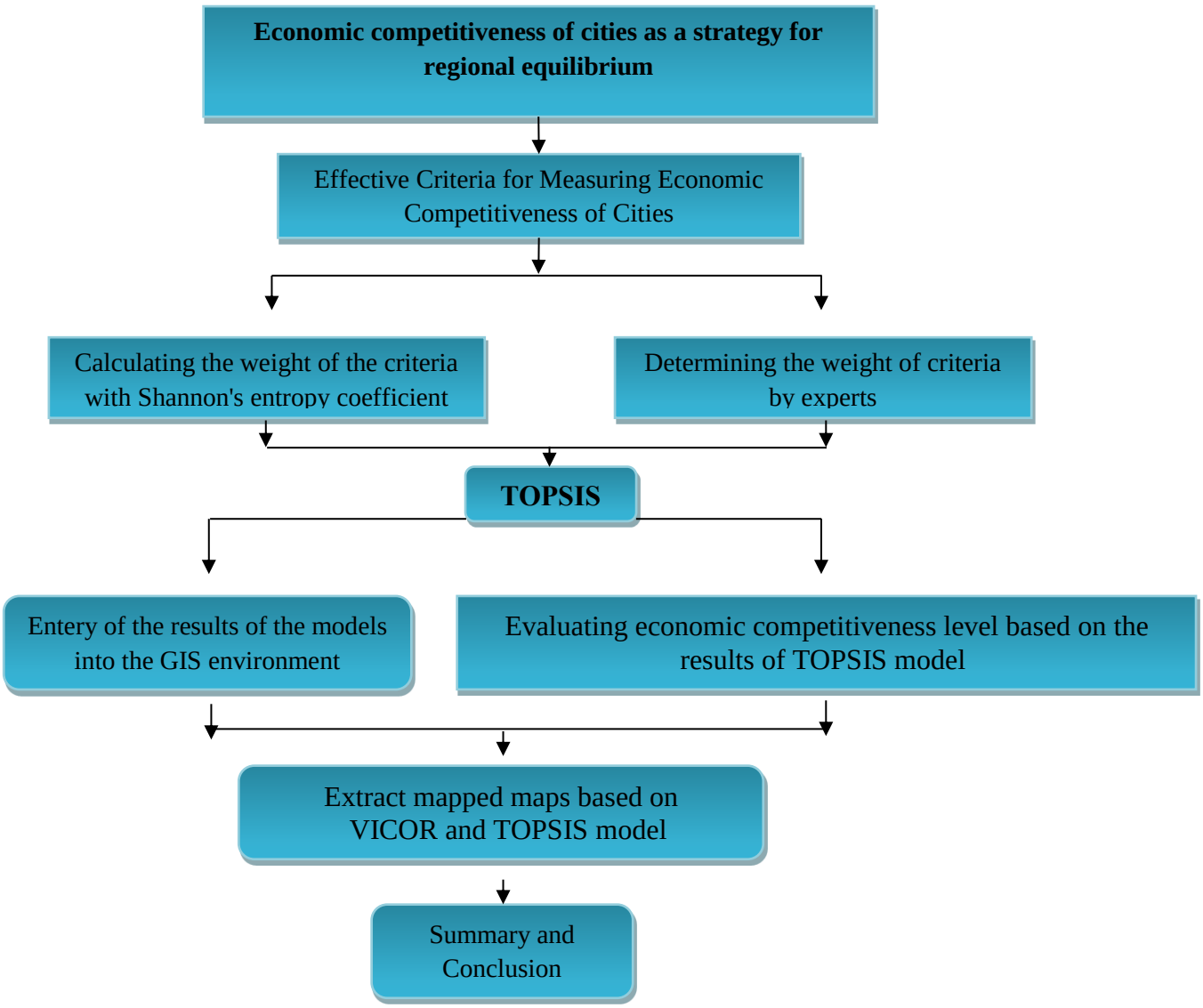

5- Research Findings

In this research, a multi-criteria decision-making model of TOPSIS has been used to evaluate and rank the economic competitiveness of the central cities of the Iran's provinces. In this study, according to the rates of TOPSIS, each of the central cities of the provinces of the country was ranked in five groups. Finally, in order to analyze the information, the level of enjoyment of each of the central cities of the provinces in terms of economic competitiveness indicators was mapped. In this regard, using field studies and library studies, information on the economic indicators of the central cities of the provinces has been prepared in which X represents the indexes studied.

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Table 2. Decision Matrix (components used in research)

X20	X19	X18	X17	X16	X15	X14	X13	X12	X11	X10	X9	X8	X7	X6	X5	X4	X3	X2	X1	Center of provinces
8.8	39.8	732	5.1	8.54	43487	5	4.15	2.84	25.63	60.94	163683096	44342	4.45	2.27	3.73	87211	88565	1012	734	**Tabriz**
13	41.9	333	3.51	2.5	482348	8.87	3.94	3.19	26.54	100.3	888442090	29454	4.18	0.62	2.13	44721	58169	757	523	**Urimia**
12.7	42.6	215	1.61	0.27	1372	1.04	1.99	1.33	32.99	60.69	43690920	35151	2.72	0.21	1	18645	28135	424	266	**Ardabil**
13.2	39.6	1876	6.44	6.86	1529116	3.68	5.36	3.67	25.23	62.44	295627861	61532	5.02	6.28	6.02	218572	170240	1855	1222	**Isfahan**
19.3	38	528	3.25	1.25	1363	3.49	1.81	1.54	26.29	124.2	43680920	31282	1.37	0.12	0.44	56444	48247	682	360	**Karaj**
15.7	36.9	51	0.75	0.82	2147	1.32	1.79	1.32	30.14	105.6	48878234	86307	0.91	2.27	0.43	9733	19129	274	194	**Ilam**
11	34.1	98	1.56	2.72	1512	0.94	2.66	3.78	27.28	103	119549513	126704	1.45	4.32	1.15	34557	26380	456	318	**Bushehr**
11.3	36	2845	7.23	1.10	1143981	13.11	8.45	8.58	18.03	67.57	13399968480	90568	4.82	11.82	41.86	1653856	1468707	4386	2597	**Tehran**
13.3	36.7	225	1.11	1.14	14942	3.11	1.81	1.36	28.65	120.2	31954613	35878	1.77	0.23	0.72	19210	24209	343	262	**Shahrekord**
8.4	38.1	113	0.59	1.09	7887	0.47	1.82	1.95	30.98	44.29	24419506	36081	1.33	0.16	0.57	13586	16341	339	194	**Birjand**
9.1	36.5	1085	6.92	1.11	14066745	7.36	6.4	5.91	30.91	44.75	245247143	41282	7.11	1.82	6.38	137163	110759	1696	1088	**Mashhad**
12.1	37.8	75	0.75	1.41	493	0.85	1.59	1.58	25.28	58.87	31036785	37002	1.32	0.27	0.71	11266	17004	235	150	**Bojnoord**
10.5	33.7	416	5.19	2.88	26273	2.08	5.68	9.33	32.44	63.39	614725318	137477	6.4	31.58	4.61	120435	80053	1160	889	**Ahwaz**
8.4	41.6	211	1.19	0.79	17978	4.06	1.99	1.89	29.15	64.26	41263910	41962	2.23	0.61	0.75	24475	30139	363	239	**Zanjan**
10.3	33.9	870	0.98	2.29	3919	2.08	1.96	1.28	23.81	79.13	40098338	64211	1.47	0.66	0.74	18486	25945	386	266	**Semnan**
9.9	26.1	103	1.47	5.01	21893	1.23	3.2	5.27	36.71	111.1	49769902	18209	2.32	0.23	1.22	31316	20672	538	386	**Zahedan**
18.5	37.3	649	6.51	5.88	29729	4.62	5.77	5.19	23.77	109.9	191266871	42236	7.86	1.89	4.35	139297	104121	1377	1081	**Shiraz**
12.4	39.8	671	1.52	1.14	20384	2.26	1.79	1.36	27.03	65.71	65131708	53718	2.29	1.37	1.21	26691	40272	457	291	**Qazvin**
9.8	34.5	423	1.5	1.03	2162	1.32	1.35	2.86	22.4	58.94	46672519	41387	0.76	0.45	1.24	32367	31123	381	234	**Qom**
14	39.9	143	1.73	1.85	69104	5.66	2.43	4.14	29.97	91.37	45265938	30844	1.96	0.21	1.15	21898	24691	454	279	**Kurdistan**
12.1	34.3	145	3.2	4.68	27796	2.26	3.99	4.69	27.11	56.18	126690972	42985	7.41	2.32	2	74199	71501	1010	670	**Kerman**
15.7	33.2	241	2.38	2.07	19354	3.87	3.27	4.31	26.27	76.97	77813547	40830	2.65	0.67	1.81	33324	50378	640	447	**Kermanshah**
14.1	30.2	53	2.97	0	790	0.57	1.85	1.98	30.97	86.41	111436350	166537	1.01	6.52	0.51	8156	14455	212	128	**Yasooj**
8.7	38.6	250	1.86	3.97	38549	2.83	2.92	1.95	26.32	73.07	59753906	35418	3.18	0.25	1.47	33202	50177	430	317	**Gorgan**
16.6	38.8	476	2.81	1.8	26460	1.79	4.36	2.38	27.97	55.62	102743967	41877	3	0.73	2.7	51072	62907	736	603	**Rasht**
19.2	37	218	2.2	2.29	2869	1.42	2.63	2.48	26.07	73.33	55220178	31407	2.79	0.32	1.34	22574	34296	550	359	**Khoramabad**
10.2	39.1	699	4.26	6.86	28484	3.68	5.02	4.57	26.92	63.66	167503858	55148	9.87	1.17	3.86	78943	111683	993	710	**Sari**
11	36.9	610	1.63	1.74	14899	3.02	2.21	1.54	25.55	59.33	87948491	63162	2.48	1.93	1.6	36746	35512	520	360	**Arak**
11	32.8	199	1.95	4.08	1809	1.04	2.83	3.19	30.99	53.24	83995168	53882	1.96	1.12	2	40296	5398	576	352	**Bandar Abbas**
12.4	37.9	357	2.02	1.25	24147	2.83	2.67	2.51	24.6	70.87	66442862	39094	3.38	0.53	1.57	29628	32307	488	347	**Hamedan**
6	35.6	392	1.35	2.61	1116492	4.15	2.3	1.86	25.97	63.44	67714850	63529	1.94	1.68	1.16	43895	46600	605	454	**Yazd**

Reference: (Statistical Center of Iran- Statistical Yearbook, 2011)

Determining the weight of different indices is necessary in all decision-making problems. In this study, Shannon entropy weighting technique has been used to calculate the relative importance of the components (Table 3).

Table3. Studied components and their weights

Row	Variable	Weight	Row	Variable	Weight
X1	The number of branches of state banks	0.05	X11	The ratio of food and tobacco expenses to total costs	0.06
X2	The number of ATM devices of state banks	0.05	X12	Credit of Capital Asset acquisitions (million Rials) (percent)	0.06
X3	Facilities of state banks (billion Rials)	0.04	X13	Cost credits (million Rials) (percent)	0.06
X4	Deposits of State banks (billion Rials)	0.04	X14	Number of cooperative companies in percent	0.05
X5	The value added share of service sector (percent) *	0.04	X15	Investment of Corporative companies (million Rials)	0.03
X6	The value added share in the mining industry (percent) *	0.04	X16	Cooperatives providing the needs of producers (million Rials)	0.05
X7	The value added share of agricultural sector (percent) *	0.05	X17	The number of transactions registered (percent)	0.05
X8	Per capita gross domestic product (thousand Rials) *	0.06	X18	The number of industrial workshops	0.05
X9	Gross domestic product (million Rials) *	0.05	X19	Economic participation rate (percent)	0.06
X10	growth rate of total price Index (percent)	0.06	X20	Unemployment rate (percent)	0.06

According to the ideal and the least criteria, using equations 7 and 8, the positive ideal matrix and the negative ideal matrix were developed. Indicators used in the model are of two types of profit and cost, with the cost indicators shown in dark colors (those indicators that are of cost type, the highest value is considered the least and vice versa).

Table4. Positive ideal and negative ideal

Index	X 1	X 2	X 3	X 4	X 5	X 6	X7	X 8	X 9	X10
A^+	1.09	1.49	33.05	33.98	0.18	0.14	0.05	0.07	19.63	0.00
A^-	0.05	0.07	0.12	0.17	0.00	0.00	0.00	0.00	0.00	0.15
Index	**X11**	**X12**	**X13**	**X14**	**X15**	**X16**	**X17**	**X18**	**X19**	**X20**
A^+	0.04	0.05	0.05	0.07	19.97	0.06	0.12	1.16	0.07	0.02
A^-	0.07	0.01	0.01	0.00	0.01	0.00	0.00	0.02	0.04	0.06

At this stage, the point with the shortest distance from the positive ideal and the longest distance from the negative ideal is desirable. At this point, calculation and determination of the distance can be obtained by Euclidean method using the equations 9 and 10 indicating the best and worst distance from the positive ideal.

Finally, the final ranking was obtained by equation 11. In order to classify the provinces of the country in terms of possessing the economic competitiveness index based on the results from TOPSIS model, first, the range of changes in the obtained scores is determined in TOPSIS model, and then, using the Sturges' experimental formula (equation 12),

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number of classes are determined. In the present study, the number of classes was divided, according to the results of TOPSIS model to four classes of completely possessed, possessed, relatively possessed, unpossessed and completely unpossessed (Table 5).

Table5. The separation size, ranking and rate of possession based on TOPSIS

• TOPSIS privileges				Ranking		
Province	Di -	Di +	TOPSIS Value	Ranking	Amount	Competitive position
East Azarbaijan	808.78	112.38	0.12	Tehran	Above 50%	Fully possessed
West Azarbaijan	860.01	61.33	0.07	Khuzestan	20 to 50 percent	Possessed
Ardabil	891.11	30.03	0.03	Esfahan		
Esfahan	717.95	203.97	0.22	Khorasan Razavi	20 to 10 percent	Fairly possessed
Alborz	921.01	1/42	0.00	Fars		
Ilam	887.56	33/75	0.04	Mazandaran		
Bushehr	839.11	82.23	0.09	East Azarbaijan		
Tehran	5.98	920.97	0.99	Kerman	10 to 5 percent	Unpossessed
Chaharmahal	899.15	21.99	0.02	Bushehr		
Southern Khorasan	904.32	16.83	0.02	Kohgiloyeh		
Khorasan Razavi	752.60	169.36	0.18	Gilan		
North Khorasan	899.79	21.36	0.02	Markazi		
Khuzestan	500.10	421.94	0.46	West Azarbaijan		
Zanjan	892.76	28.38	0.03	Hormozgan		
Semnan	893.56	27.66	0.03	Kermanshah		
Sistan	886.94	34.17	0.04	Qazvin		
Fars	789.83	131.33	0.14	Hamedan		
Qazvin	876.39	44.77	0.05	Yazd		
Qom	889.05	32.09	0.03	Sistan	Under 5%	Fully possessed
Kurdistan	890.01	31.11	0.03	Golestan		
Kerman	834.15	86.99	0.09	Lorestan		
Kermanshah	867.69	53.45	0.06	Ilam		
Kohgiloyeh	844.70	76.81	0.08	Zanjan		
Golestan	880.06	41.06	0.04	Semnan		
Gilan	850.58	70.56	0.08	Qom		
Lorestan	883.20	37.93	0.04	Kurdistan		
Mazandaran	806.15	115.02	0.12	Ardabil		
Markazi	860.75	60.43	0.07	Chaharmahal		
Hormozgan	863.49	57.70	0.06	Southern Khorasan		
Hamedan	875.50	45.64	0.05	North Khorasan		
Yazd	874.39	48.79	0.05	Alborz		

The analysis of competitiveness indices by using the TOPSIS model for ranking the economic competitiveness of the central cities of the provinces shows that Tehran is considered as the most enjoyable city in terms of having economic competitiveness indicators that is more favorable than other central cities of the provinces. After

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the city of Tehran, Ahwaz and Isfahan cities are in second place; i.e. prosperous cities. The cities of Holy Mashhad, Shiraz, Sari and Tabriz are among the relatively prosperous cities with a modest economic competitiveness. Kerman, Bushehr, Yasuj, Rasht, Arak, Urmia, Bandar Abbas, Kermanshah, Qazvin, Hamedan and Yazd cities are in unpossessed place. The last rank includes Zahedan, Gorgan, Khorramabad, Ilam, Zanjan, Semnan, Qom, Sanandaj, Ardebil, Shahrekord, Birjand, Bojnord and Karaj, which are among fully unpossessed cities that should be prioritized in future planning for other cities.

In response to the first question of research that "Can the provinces of Iran possess identical economic competitiveness or not?" According to the findings of the research, the provinces of the country do not possess equal competitiveness capability, so that the distance between the province of Tehran as the most possessed province of the country with other provinces was high and the gap between the provinces indicates an unbalanced distribution of economic competitiveness indices in the provinces, and by calculating the mean of priority coefficient (first, the TOPSIS rate of each group is summed up and then divided by the number of provinces in the same group) which is shown in Figure (1). The gap between the completely possessed provinces (99%) with the completely unpossessed provinces (3%) is very high. The existence of such a gap in possessing economic competitiveness indices among the provinces of the country clearly shows the failure of regional planning and territorial planning in Iran which leads to problems such as migration to the center of the country, population imbalance, outsourcing construction in the center of the country, and hence the rise of suburbanization in Iran. In response to the second question, Tehran was the most possessed province and the Alborz province the most unpossessed province in terms of indices of economic competitiveness indices. Figure (1) shows the average priority coefficient of the provinces of Iran. Figure 2 shows the map of the province's possession regarding economic competitiveness indices using the results of TOPSIS model.

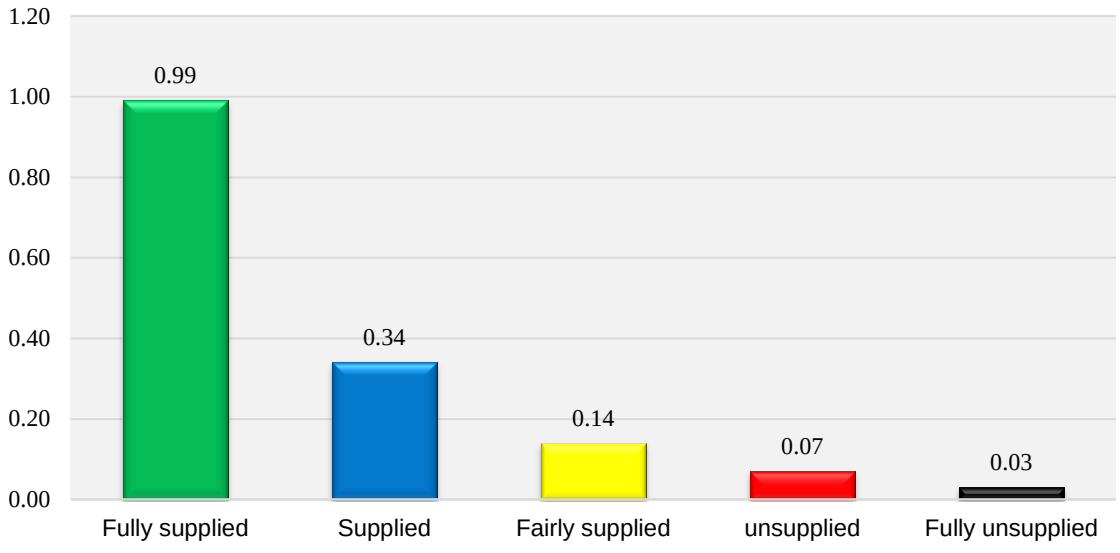

Fig1. The average priority coefficient of the provinces of Iran

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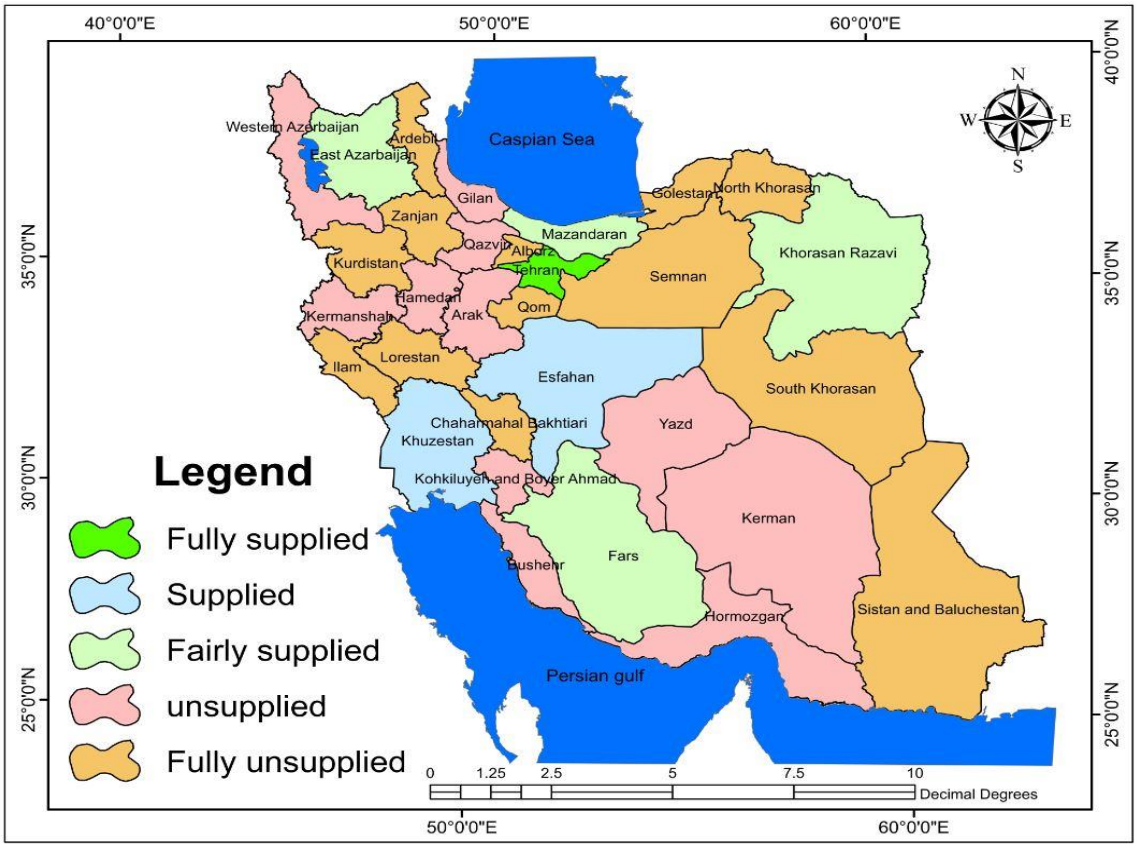

Fig2. Provinces' possession regarding economic competitiveness indices with TOPSIS model

6- Conclusion and Discussion

Competitive cities can boost their economies among other cities. One of the most significant areas for creating a competitive city that can compete with other cities, both internationally and nationally is recognizing and paying attention to the world's most popular indices of competition. Therefore, the present study aimed at measuring the economic competitiveness of the provinces of Iran and ranking according to economic indices in search of the answer to the question "What provinces have the most and which provinces are in an unfavorable situation that should be prioritized?" In this research, TOPSIS technique was used for leveling the provinces of Iran from the point of view of economic competitiveness. The results of the research indicate the following:

1- With TOPSIS 0.99%, Tehran province alone falls in the completely possessed class which is the index of competitiveness economic.

2- With TOPSIS, 0.46% and 0.22% Khouzestan and Esfahan respectively fall in the second and third class of possessed.

3- Provinces of Khorasan, Fars, Mazandaran and Eastern Azerbaijan fall within the relatively possessed provinces.

4- Provinces of Kerman, Boushehr, Kohgiluyeh and Boyer Ahmad, Gilan, Markazi, Western Azerbaijan, Hormozgan, Kermanshah, Qazvin, Hamedan, Yazd fall within the unpossessed provinces.

5-Provinces of Sistan, Golestan, Lorestan, Ilam, Zanjan, Semnan, Qom, Kurdistan, Ardebil Chaharamahal and Bakhtiari, South Khorasan, North Khorasan and the Alborz Province fall within completely unpossessed class.

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6- Among 31 provinces 7 province fall in suitable possessed class.

The findings of this study confirm the inequality in economic competitiveness indices among the central cities of the country's provinces. In addition, the results showed that some cities have high competitiveness and some others have low competitiveness. This has created a gap in having economic competitiveness indicators among the central cities of the country's provinces. The hypotheses of this research based on the gap between the central cities of the provinces of the country in terms of competitive ability with regard to upstream documents were also confirmed. Furthermore, the results of Vares et al., (2012), Rabieh & Khajooei (2013), Kwon et al., (2012), Bruneckiene et al., (2012), and Singhal et al., (2013), based on assessment model for urban competitiveness, confirm the difference in enjoying competitiveness among different urban areas.

The gap among the provinces of Iran in possessing the economic competitiveness indices led to the imbalance of the region and consequently caused many problems in the national arena. In line with the findings of the present study, the following suggestions are effective on improving the economic competitiveness of the provinces in the country:

- Adoption of strategies to eliminate deprivation in terms of economic competitiveness indices in disadvantaged and unpossessed provinces;

- Measurement of the spatial distribution of the economic competitiveness indices in the provinces, continuously and annually to determine the effectiveness of the conducted plans, especially in deprived provinces such as Sistan, Golestan, Lorestan, Ilam, Zanjan, Semnan, Qom, Kurdistan, Ardebil, Chaharmahal and Bakhtiari, South Khorasan, North Khorasan, Alborz;

- Prevention from immigrations in deprived provinces by creating employment policies and strengthening economic indices in these provinces.

- Given that the data on economic competitiveness are updated and presented annually, it is recommended that this study be carried out according to the data for the coming years, and the changes be observed annually.

- Considering that in this research the economic competitiveness indices have been evaluated in the provinces of the country, hence, the evaluation of these indices at the lower levels of the city remains largely unclear and vague. Therefore, it is suggested to measure the economic competitiveness indices in urban scales, in order to clarify and reveal the differences within the regional scale in small scale.

- It is proposed to pay attention to the deprived provinces of the country from the point of view of economic competitiveness indices in order to provide national equilibrium in the country.

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