RESEARCH PAPER

Urban Planning

An Analysis of the Price of Urban Housing Lands in Iran's Provinces during 2001-2011

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Abstract

Generally, more than 60 percent of land in cities and around 40 percent in small towns are utilized as housing areas. The present research aims to investigate the price of urban housing lands in Iran during the years 2001-2011 in different provinces. The method of research used in this paper is descriptive - analytical method. After gathering the data in this regard via the Central Bank of Iran, using Moran Coefficient in GIS software and GeoDa software, the spatial autocorrelation was calculated and the correlation between variables like the price of urban housing land, percentage of urbanism, the average of the area of housing units and the level of development in different Iranian provinces was calculated. The findings of this study reveal this fact that in 2011 only in some provinces is there a significant relationship between the price of urban housing lands and the level of development of provinces. Also, the price of urban housing lands in Iran during 2001-2011 is not correlated with variables of urbanism percentage and the average area of urban housing units in different provinces. Further, we can state that the price of urban housing lands in Iran during the years 2001-2011 has moved from an accidental distribution toward a cluster distribution and during this same period, the average index of changes in the price of urban housing lands all over the country has been equal to 877.32 percent; with such provinces as Ardebil, Hamedan, Razavi Khorasan and Bushehr respectively having the highest index of change in prices and such provinces as Northern Khorasan, Khuzestan, Tehran and Yazd with the lowest index.

1. INTRODUCTION

Architecture can create different feelings in its inhabitants and one of those feelings is the sense of life. Nowadays, there is this saying everywhere that, we want to build cities and buildings which play an effective role in preserving life. Unfortunately, in the contemporary period, with the dominance of the quantitative point of view regarding human desires, human life has been degraded to the level of mere material life and has deprived the living space of the people of a sense of life and vitality. However, in traditional societies, especially in traditional Iranian architecture, it was trying to build a building that would be life-giving for human life [1]. According to Kalb [2], generally, traditional and fine art designs look alive, whereas contemporary buildings and urban spaces generally lack this characteristic.

On the other hand, in many studies, although they strived to Human life is more directly affected by precipitation than any other atmospheric phenomenon [1-2]. The health and productivity of global land resources are declining, while demand for those resources is increasing [3]. Pressure on urban land is creating various challenges around urban land administration, planning and development [4]. Land changes caused by human disturbances are a driver of global change that directly affect the ecosystem structure and process and the supply capacity of ecosystem services [5-7]. The extraordinary growth in the number of cities and urban population during the past century has led to changes in patterns and systems of human residential places. Access to suitable, affordable and enough land as the first step in urban development has been a common concern for every country, especially the developing countries. In fact, the cornerstone of all human activity in past, present and future has been and will be the land, and cities have been the epicenter of human's use of lands [8].

Population has played a dominant role in urban

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expansion [9]. There are three basic conditions for the survival and development of human beings, namely food and clothing, housing and employment [10]. The fast growth of urbanism in developing countries and the issues resulting from the need for adapting the body texture of cities to the growing trend in urban systems both qualitatively and quantitatively, has given rise to a demand for lands suitable for construction in cities. This is while the supply of lands in such cities has been delayed because of different factors like land speculation, deficiency of infrastructure services, hereditary issues, legal and juristically red tape in registering and issuing title-deeds, limitations relating to regulations and rules of urban development, the natural terrain etc. [11]. Land speculation is one of the results of ever-growing prices of lands. Therefore, taking effective measures to increase the supply of land and stabilizing the prices in a somewhat balanced way in cities is stressed by urban planners and economic development theoreticians. The added value is the major cause of land use change. Therefore, the price of land is one of the factors in determining its use and change. One apparent economic offspring of manipulating the body texture of cities is the changes in prices [12].

Land is the essential element in the forming, growth, and development of cities. In other words, land is the basis for development of cities. Therefore, the quantity and quality of land supply to boost growth and development of a city has a key role in the forming of normality and abnormality in cities. Many of the theoreticians believe land to be a national wealth; hence its market is not an ordinary one, because it is not going to be adjusted to demand. Since the added value of land is much larger than other goods, its added value is the key factor in changing of urban space [13]. Land is a goods completely for the market, and hence very important in discussing the cost and value. Land as a whole is a complete supply by its nature, the revenue of which is solely determined by its demand. The demand for land itself, in a general view, is dependent on issues like population, marriage position, the number of people in households, culture and social relations in a society [14]. Principally, in a large scale, land is deemed as a "resource" and its utilization means utilizing resources. However, in urban scales, instead of evaluating land as having a potential for production or underground mineral resources, it is considered as having potential for on ground utilization, and to establish different activities on it [15].

Land, as the space of human life, is her base for life and death. It always acts as an ecosystem, i.e. a collection of live creatures and their natural habitat. Therefore, the function of every ecosystem depends on the kind and quality of the use made of land [16]. With this view in mind, land is the first and most essential element for every human activity including dwelling, working, life etc. [17]. Every piece of land has different characteristics. Factors like the position, kind of ownership, social and economic value have a role in land market and in some respects these factors may contradict [18]. From earlier times, land has been of significant importance to human in obviating his needs and today, it not only has not lost this significance, but, due to

growth in urbanism and the constructed spaces, has acquired a somewhat more important status [19]. It is essential to pay attention to land as a main and non-renewable resource in sustainable urban development, because land is among the main resources of sustainable urban development. According to this view, land is a common wealth and a suitable basis for citizens' activities and a tool for realizing the wants and wishes of human beings [20]. The acquisition of land in cities is usually made through preparation of arable, barren and sometimes cultivated lands and orchards around or with establishing new towns in the vicinity of main cities. If the costs of turning empty lands into urban lands are calculated, the reason behind the high price and value of such a commodity will be apparent and clear [21]. From the point of view of sustainable development, land and space is not a mere natural element to cater for economic and contextual needs of a city, but the main basis for all citizens' activities and a required means in realizing needs and wishes [22].

Generally, the urban lands are used for residential, commercial, industrial, business, entertainment, transportation and service purposes [23]. Land, because of its specialty and exceptionality is highly valuable. As a result, whoever is able to control land is in fact in control of its profitability. Today as well this value has risen due to growth in urbanism and spaces [24]. In Iran, generally, urban land development projects are known to find population-based criteria sufficient [25]. The most important part of a city is where people live and it includes a major part of utilized space as well; in a way that more than 60 percent of the area in small towns and 40 percent in big cities is allotted to housing uses [26]. What is stated as the price of land is, in fact, not the value of land in abstract, but its spatial locality. The value of a piece of land depends on the uses that may be made of it. The sizes of a piece of land, its position and access to urban services and other factors have an influence on it [27]. Considering the importance of housing and urban lands for housing use, different countries adopt different policies, in a way that housing policies in western states have inverted from financial aid to purposeful policies regarding low-income families or ones with special needs [28]. The aim of this research is investigating the price of urban housing lands in Iran during the years 2001-2011 and analyzing this with variables such as urbanism percentage and the average area of urban lands in different provinces. Iran includes 30 provinces (including the area of Alborz Province in Tehran Province) and according to the latest census in 2016 it has a population of 79926270 persons [29].

2. METHOD OF RESEARCH

The present research method was descriptive-analytical in nature. First, using a documental and librarian research the primary data was gathered to initiate the research process. Having acquired the relevant information on the price of urban housing lands through the Central Bank of Iran, using Moran Coefficient and GeoDa software, the spatial autocorrelation was calculated and the correlation between variables of price of urban residential areas,

percentage of urbanism, the average of the area of housing units and the level of development in different Iranian provinces was calculated.

To measure autocorrelation, the Moran and Garry Coefficients are used [30]. These two models are similar; and are different only in mathematical definition and the scales of figures used. Most analyzers agree with Moran coefficient, mostly because its distribution of specifications is more suitable and instead of stressing the mean deviation, it estimates the difference between areas in comparison to each other [31]. Moran coefficient is calculated between +1 and -1; with the value +1 indicating a complete polar pattern, 0 values indicating an accidental convergence pattern and -1 value a scattered pattern. The greater the value of this coefficient is, the more convergence there is and the less this value, the more scattered a pattern will be. In addition to the single-variable Moran analysis, it is also possible to manipulate two or more variables to calculate the autocorrelation analysis among different variables using the GeoDa software.
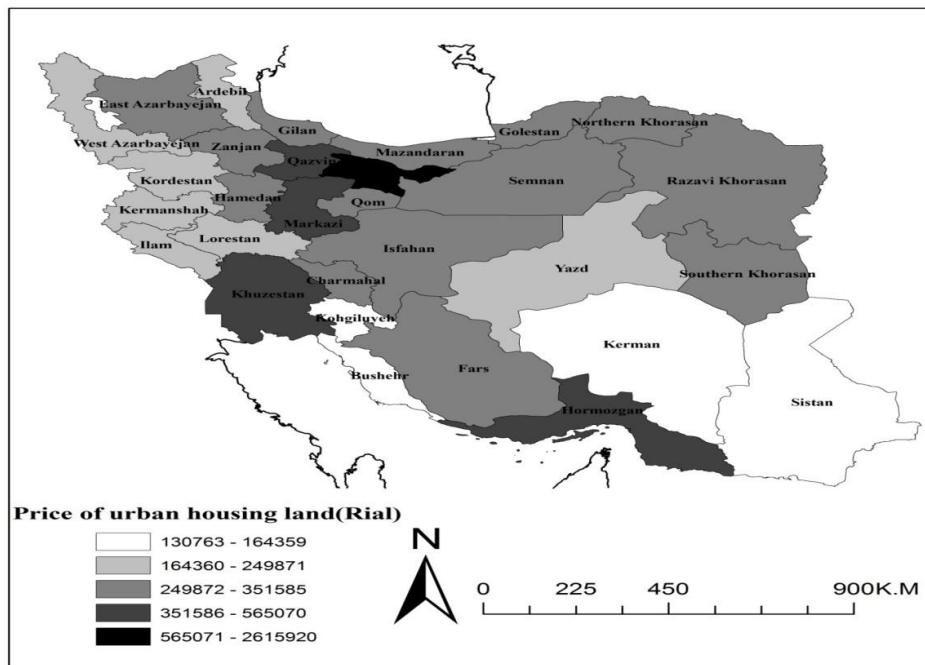
3. RESULTS

In this part the price of urban housing lands during 2001-2011 will be discussed. First, the value of urban lands in the years 2001, 2006 and finally 2011 is investigated and the changes in price of land during this period will be discussed along with the coefficient.

2001

Based on the initial investigations it was found that the average price of one square meter of urban housing land in all the urban areas of Iran in 2001 equals 632553 Rials. The highest price was that of Tehran Province and the lowest of Bushehr Province. The remarkable point here is that the price of one square meter of urban housing land in all the provinces is less than the average of the price of a square meter of urban housing land in the country as a whole, and only the price for one meter of such land in Tehran Province is higher than the national average by a wide margin. After Tehran Province, the price of one square meter of urban housing land in Qazvin, Hormozgan, Khuzestan and Markazi was the highest respectively. After Bushehr Province, the lowest price for one square meter of urban land was in Sistan-Baluchestan, Kohgiluyeh-Buyer'ahmad and Kerman Provinces.

Table 1 Average price of one square meter of urban housing land (Rial) in Iranian Provinces 2001 (32).

Province	East Azarbayejan	West Azarbayejan	Ardebil	Isfahan	Ilam	Bushehr	Tehran	Charmahal	South Khorasan	Razavi Khorasan
Price	317476	207606	183742	306629	200900	130763	2615920	273936	330716	330716
Province	North Khorasan	Khuzestan	Zanjan	Semnan	Sistan	Fars	Qazvin	Qom	Kordestan	Kerman
Price	330716	394471	334648	285569	137790	330443	565070	311483	249871	164359
Province	Kermanshah	Kohgiluyeh	Golestan	Gilan	Lorestan	Mazandaran	Markazi	Hormozgan	Hamedan	Yazd
Price	209211	138386	264395	351585	201208	335874	384084	423580	268004	199033

Fig. 1 Average price of urban housing land (Rials) in Iranian Provinces 2001

The average spatial autocorrelation of the price of one square meter of urban housing land in different provinces was investigated using Moran Coefficient, and since the Moran Coefficient value equaled zero, it indicates the accidental state of the spatial distribution of price in different provinces.
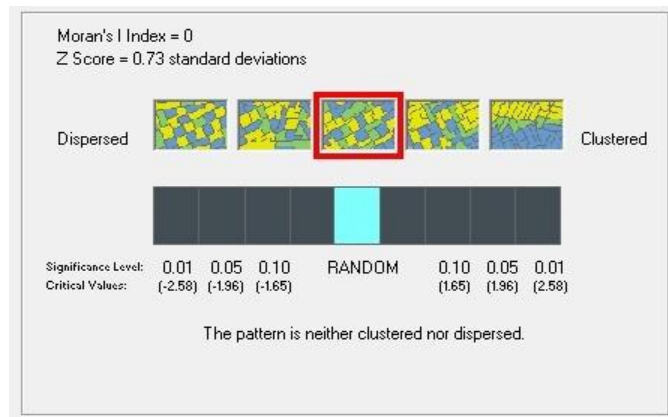
Fig. 2 Results of Moran Coefficient regarding spatial autocorrelation of the price of one square meter of urban housing land in 2001.

GeoDa software was used in order to investigate the spatial relationship among some variables. The following maps are the output from this software based on variables of price rate of urban housing land, urbanism percentage and the average area of housing units of different provinces in 2001.
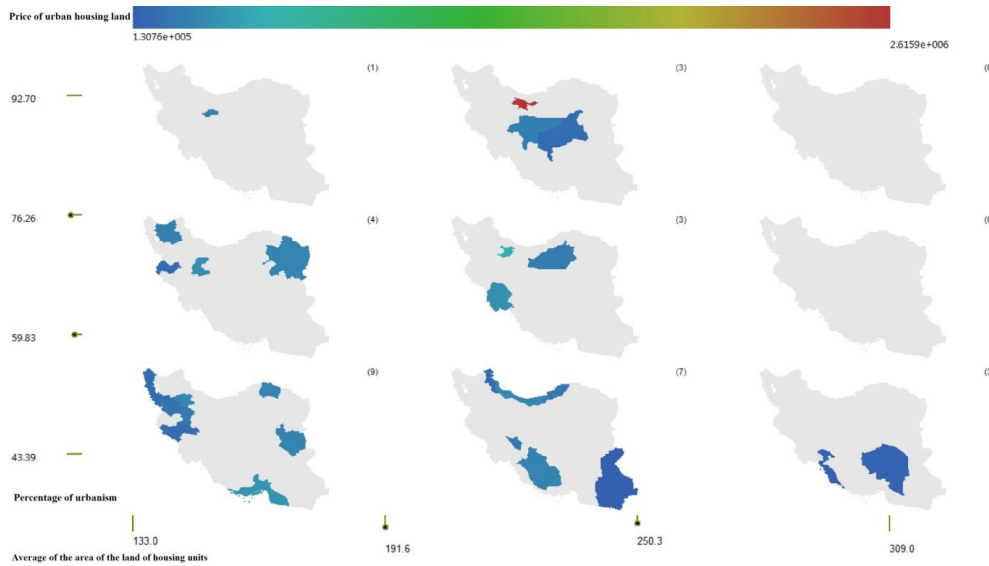

Fig. 3 Spatial autocorrelation among variables of price, average of the area of the land of housing units and the percentage of urbanism 2001 (including Tehran)
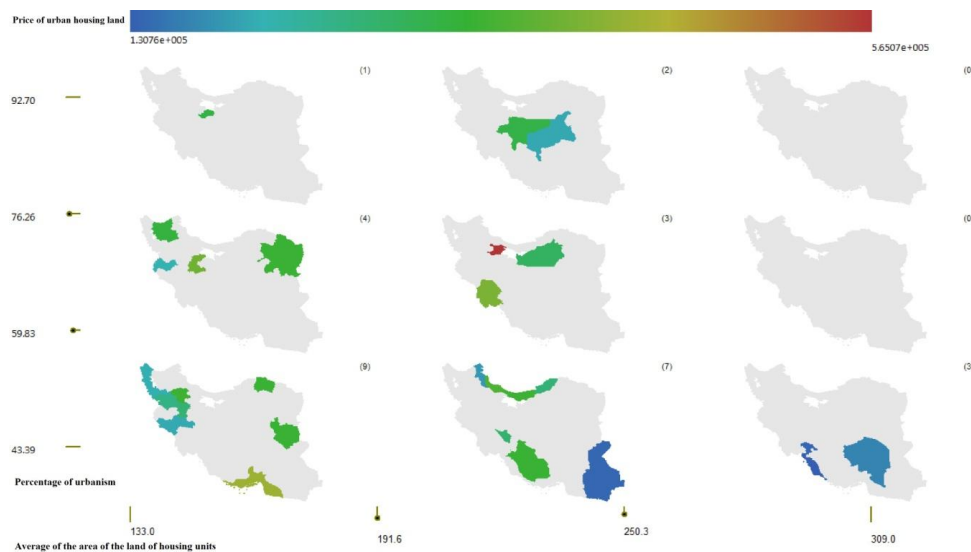

Fig. 4 Spatial autocorrelation among variables of price, average of the area of the land of housing units and the percentage of urbanism 2001 (excluding Tehran)

In the above figure, the average price of urban housing land is specified by a color spectrum over the figure, with each province taking a specific color according to the corresponding price. In other words, blue color shows low price, green shows medium price, and red showing high price. The average of the area of the land of housing units is portrayed on the horizontal axis and the urbanism percentage on the vertical one. As you can see in Fig. 3, only Tehran Province has a high price; considering the huge difference between Tehran and other provinces, it has undermined other provinces. Therefore, in order to better specify the status of other provinces, they were compared with each other excluding Tehran Fig. 4.

As the figures indicate, in provinces of Kerman, Bushehr and Kohgiluye-Buyerahmad the price for one square meter of housing land and the percentage of urbanism is low, however, the average of housing units is high. In Yazd the price is low and in Isfahan it is average, but the urbanism is high and the amount of the area of housing units is average. In Semnan and Khuzestan Provinces the prices are moderate and it is high in Qazvin, but in these two provinces the percentage of urbanism is average. Sistan-Baluchestan and Ardabil Provinces have a low level of prices but Gilan, Mazandaran, Golestan, Fars and Cheharmahal-Bakhtiari Provinces have an average standing; this is while the urbanism percentage and the area of housing lands are average.

The price of one square meter of housing land in Qazvin is on a moderate level, but considering the urbanism percentage it stands on a high level and the amount of area of housing land is low. Kermanshah Province has a low price level and other provinces like Eastern Azerbaijan, Razavi Khorasan and Markazi have a moderate level of price, but their urbanism percentage is average and the area of housing units has a low ranking. And finally, West Azerbaijan, Ilam and Lorestan have low price and Kurdistan, Northern Khorasan, Southern Khorasan, Hormozgan, Hamedan and Zanjan have an average position as to their price. All over these nine provinces urbanism has an average position, but the area of housing units has a low position. Considering the aforementioned data, it can be stated that in 2001 there is not a significant relation among the variables of the price per square meter of housing land, the average area of housing units and the percentage of urbanism in different provinces.

2006

The average price per each square meter of housing land in all districts of Iran in 2006 was 2574192 Rials. As with prices in 2001, only Tehran province stands above the average, but the difference has diminished compared to the previous period. Golestan, Isfahan, Qom, and Eastern Azerbaijan have the highest price ranking respectively, after Tehran. The lowest prices are in Kohgiluye-Buyerahmad, Kerman, Yazd and Kurdistan Provinces respectively. The average area of buildings with housing use in urban areas of Iran in 2006 show an area of 199 square meters, which like the year 2001, 11 provinces are below and 19 provinces above the average. One noticeable point in the average area of urban lands of residential buildings in 2006 is that Tehran Province has the highest average of the area of urban land for residential buildings and, at the same time, with the highest prices. After Tehran, there come provinces of Kerman, Fars, and Yazd. Qom, Markazi, Kermanshah and Razavi Khorasan have the lowest area of urban housing lands respectively.

Table 2 The price of one square meter of urban housing land (in Rials) in different provinces in 2006 and percent of changes 2001-2006 (32)

Province	East Azarbayejan	West Azarbayejan	Ardebil	Isfahan	Ilam	Bushehr	Tehran	Charmahal	South Khorasan	Razavi Khorasan
Price	2364961	1403818	1236985	2422288	1087840	1105818	7800969	1376010	2035330	1627070
Percent of changes	644.92	576.19	573.21	689.97	441.48	745.66	198.21	402.31	515.43	391.98
Province	North Khorasan	Khuzestan	Zanjan	Semnan	Sistan	Fars	Qazvin	Qom	Kordestan	Kerman
Price	1029859	1870112	1256801	1959962	1042302	1650937	1704348	2416244	856501	668001
percent of changes	211.40	374.08	275.55	586.33	656.44	399.61	201.61	675.72	242.77	306.42
Province	Kermanshah	Kohgiluyeh	Golestan	Gilan	Lorestan	Mazandaran	Markazi	Hormozgan	Hamedan	Yazd
Price	1257986	605672	2555651	2001504	1111034	2364041	1714643	1244623	1956726	771003
Percent of changes	501.30	337.66	866.60	469.28	452.18	603.84	346.42	193.83	630.11	287.37

The average of changes in urban housing land in Iran during 2001-2006 was equal to 306.95 percent, with the highest index if changes respectively in Golestan, Bushehr, Isfahan, and Qom Provinces and the lowest index of changes respectively in Hormozgan, Tehran, Qazvin, and Northern Khorasan.

The fact that the Moran Coefficient was equal to 0.13 indicates the movement of the variable of the price of housing land to a cluster spatial distribution in different provinces. This distribution is reliable at a 99 percent level. In other words, the output of Moran Coefficient in 2006 as compared to 2001 shows an almost similar price in adjacent provinces, while in 2001 the prices in different provinces had an accidental distribution.
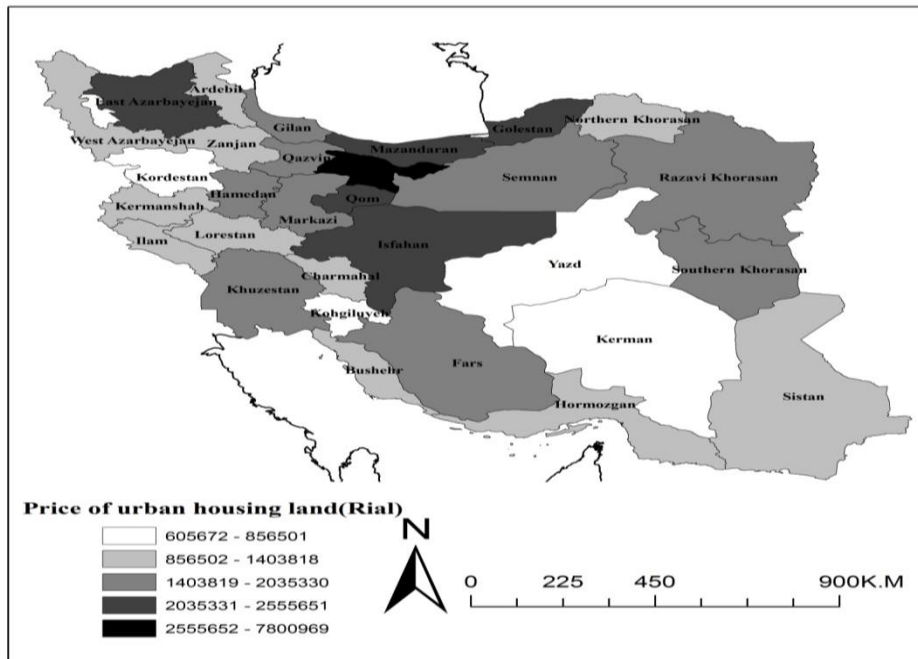
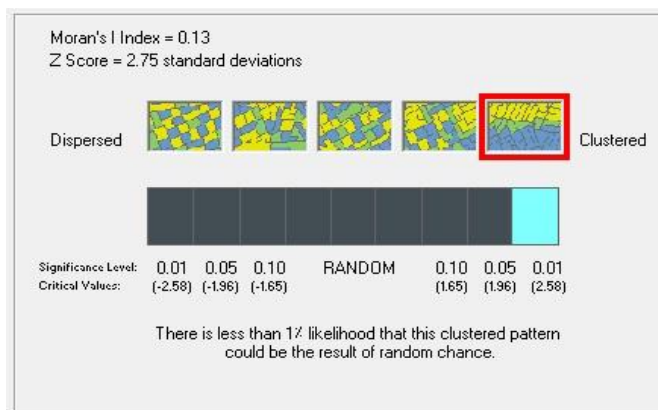**Fig. 5** Average price of urban housing land (Rials) in Iranian Provinces 2006

Fig. 6 Results of Moran Coefficient regarding spatial autocorrelation of the price of one square meter of urban housing land in 2006
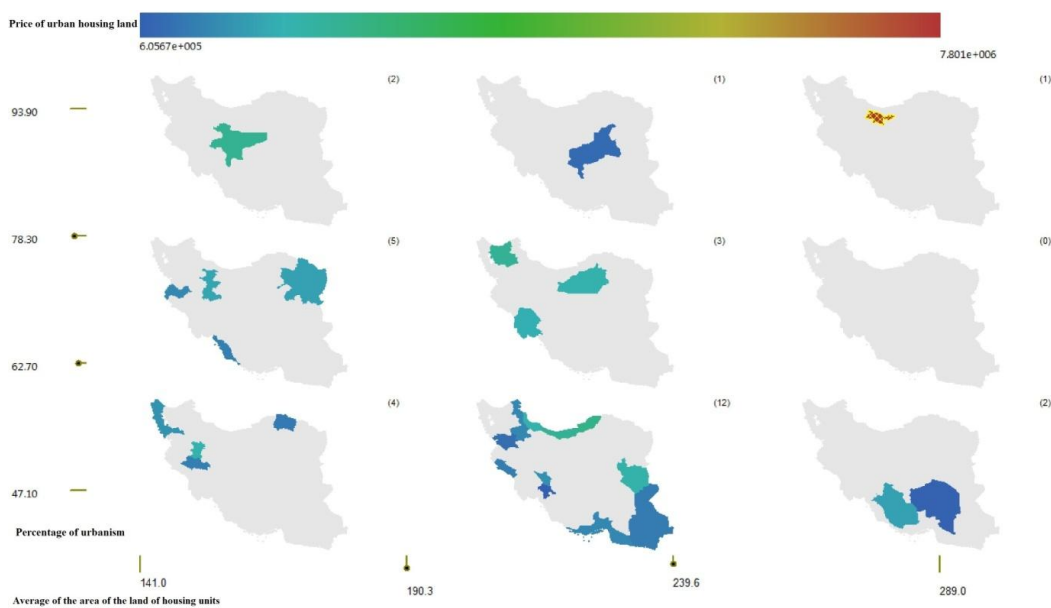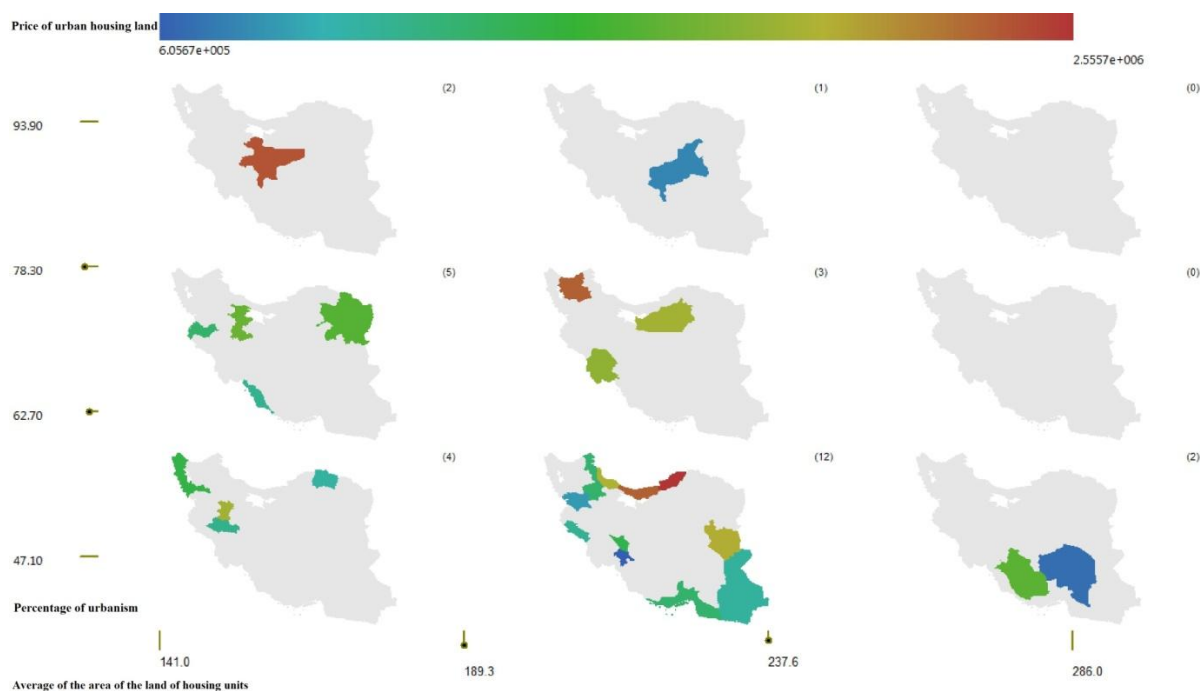

Fig. 7 Spatial autocorrelation among variables of price, average of the area of the land of housing units and the percentage of urbanism 2006 (including Tehran)

Fig. 8 Spatial autocorrelation among variables of price, average of the area of the land of housing units and the percentage of urbanism 2006 (excluding Tehran)

Analyzing the status of urban housing land in 2006 including Tehran it can be stated that the huge difference between Tehran and other provinces has led to a situation in which all the other provinces fall below the average and we see an uneven distribution. However, excluding Tehran, it can be stated that the conditions change; as shown in Fig. 8 in which the relation among the variables of the average of one square meter of housing land, the average of the area of housing units, and the urbanism percentage is specified without including Tehran. According to this information, it can be said that Fars Province has an average price level and Kerman has a low level, but the area of housing units in these provinces is high and the percentage of urbanism is low. The provinces of Eastern Azerbaijan, Semnan, and Khuzestan have a high price level but have an average status regarding the area and the percentage of urbanism. In Northern provinces and Southern Khorasan the price level is high, in Eastern Azerbaijan, Hormozgan, Zanjan, Ilam, and Cheharmahal-Bakhtiari the level is average, and in Kurdistan, Kohgiluye-Buyer'ahmad and Sistan-Baluchestan have a low level of prices, but in all of these provinces the urbanism percentage is low and the area of housing units stands on an average level. Isfahan has a high price and urbanism level, but with a low level of the area of housing units. In Razavi Khorasan, Qazvin, Markazi, Bushehr, and Kermanshah the status of the price level and the percentage of urbanism stands on an average level, but the area of housing units is low. Northern Khorasan with a low level of prices, Western Azerbaijan with average level of prices, and Hamedan with a high level, and in all of them the urbanism condition and the area of housing units are on a low level. According to the aforementioned data, we can say that the type of correlation among these variables is higher as compared to the same variables in 2001, but totally there is not a significant correlation between these variables.

2011

The average price of one square meter of housing land in all the districts of the country in 2011 is 6182070 Rials and Tehran province stands far above the average in relation to other provinces and like the previous periods it is just Tehran which ranks higher then the average. And Qazvin, Razavi Khorasan, Markazi, and Hamedan rank higher after Tehran. Kerman, Kohgiluye-Buyer'ahmad, Yazd, Sistan-Baluchestan Provinces have the lowest price level for urban housing lands.

Table 3 The price of one square meter of urban housing land (in Rials) in different provinces in 2011 and percent of changes 2006-2011 [32]

Province	East Azarbayejan	West Azarbayejan	Ardebil	Isfahan	Ilam	Bushehr	Tehran	Charmahal	South Khorasan	Razavi Khorasan
Price	4596522	3199643	3617481	4750173	3193355	2207813	20127825	2917813	3886701	5802886
Percent of changes	94.35	127.92	192.44	96.10	193.55	99.65	158.01	112.04	90.96	256.64
Province	North Khorasan	Khuzestan	Zanjan	Semnan	Sistan	Fars	Qazvin	Qom	Kordestan	Kerman
Price	2314079	2793375	3752995	3308277	1677494	2853898	6172320	4705223	2711466	1565948
Percent of changes	124.69	49.36	198.61	68.79	60.94	72.86	262.15	94.73	216.57	134.42
Province	Kermanshah	Kohgiluyeh	Golestan	Gilan	Lorestan	Mazandaran	Markazi	Hormozgan	Hamedan	Yazd
Price	3259993	1641584	3355672	3485478	2368901	4200433	5301233	3815434	4751393	1665283
Percent of changes	159.14	171.03	31.30	74.14	113.21	77.68	209.17	206.55	142.82	115.98

The index of changes in the average price for urban land during the years 2006-2011 has been lower compared to the years 2001-2006 in a way that the average index of changes in prices in Iran has been 140.15 percent, with Qazvin, Razavi Khorasan, Kurdistan, and Markazi with the highest changes and Golestan, Khuzestan, Sistan-Baluchestan, and Semnan with the lowest degree of change.
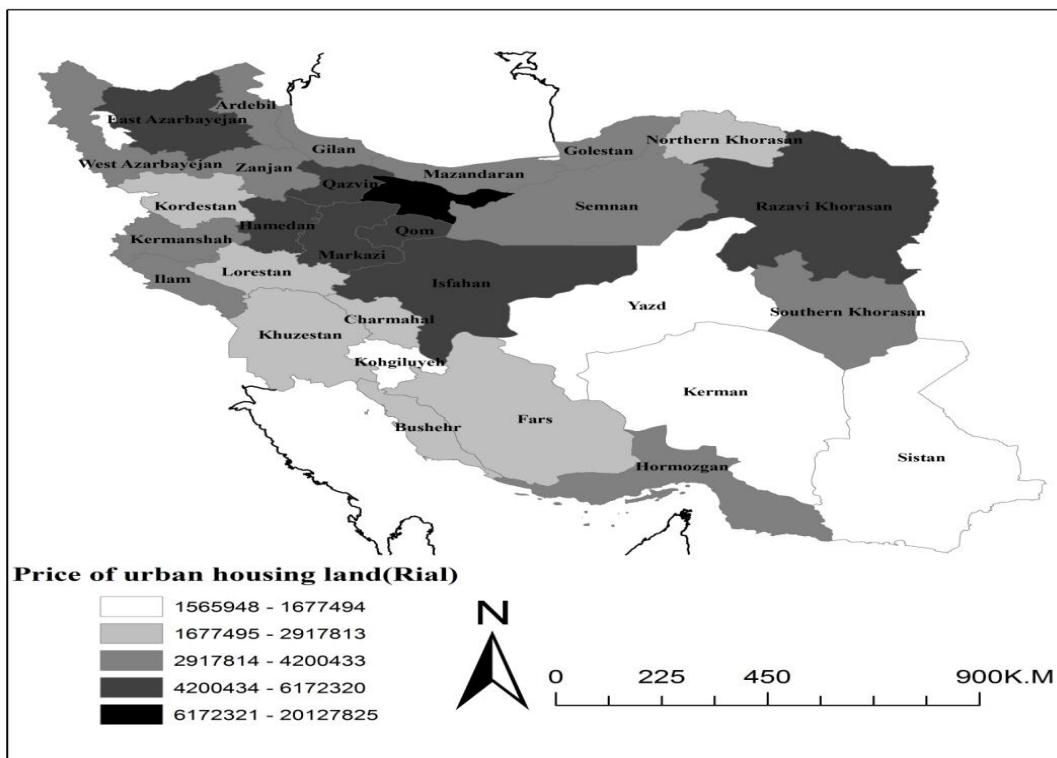

Fig. 9 Average price of urban housing land (Rials) in Iranian Provinces 2011

The amount of Moran Coefficient which shows the spatial autocorrelation of the price of urban housing lands in 2011 is 0.1, which indicates a cluster distribution of prices with a reliability level of 95 percent. This reliability level has diminished compared to 2006 cluster distribution and the prices in this period are moving toward an accidental distribution compared to 2006.
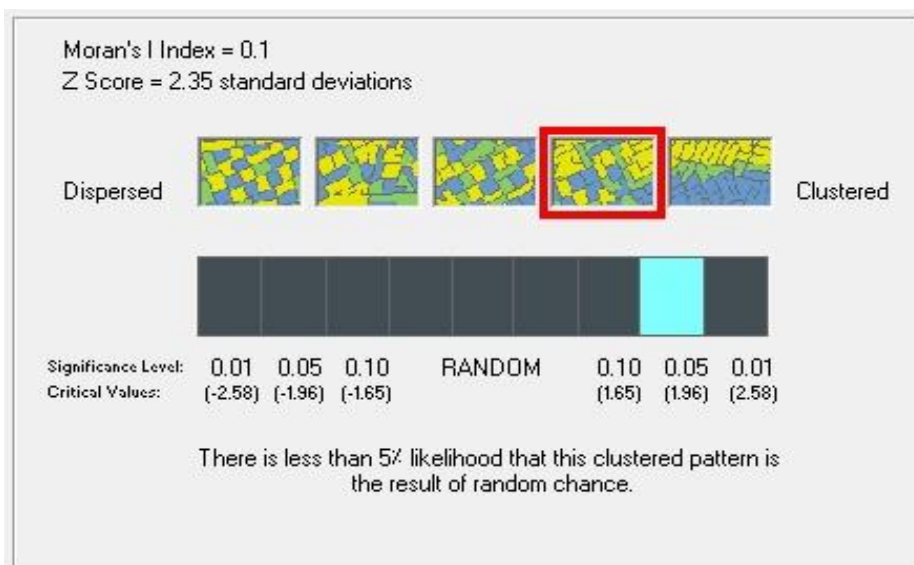

Fig. 10 Results of Moran Coefficient regarding spatial autocorrelation of the price of one square meter of urban housing land in 2011
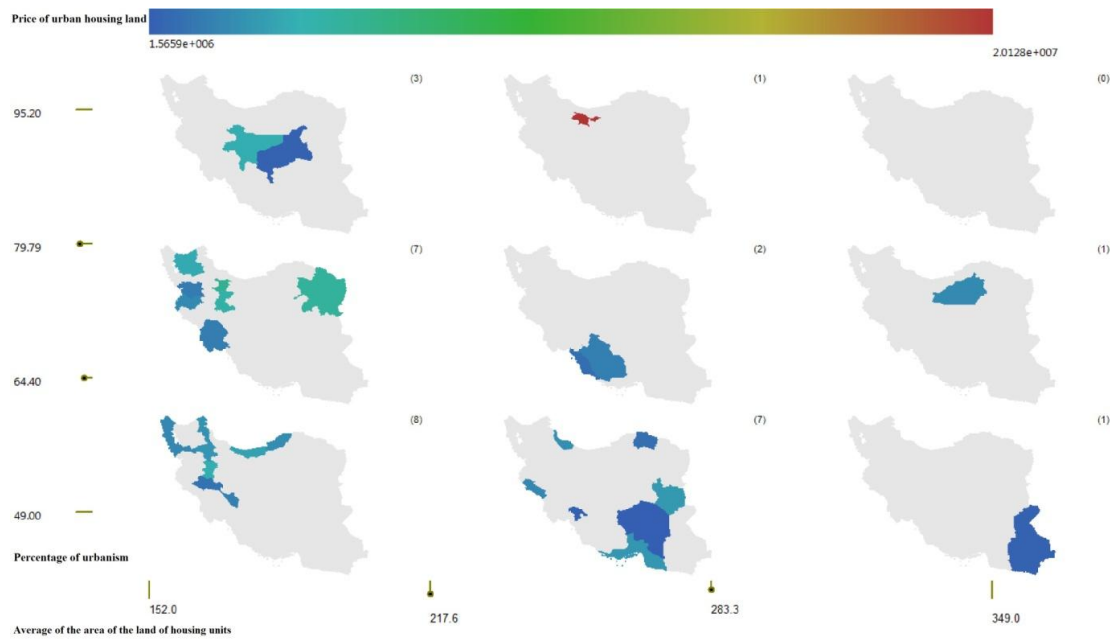
Fig. 11 Spatial autocorrelation among variables of price, average of the area of the land of housing units and the percentage of urbanism 2011 (including Tehran)
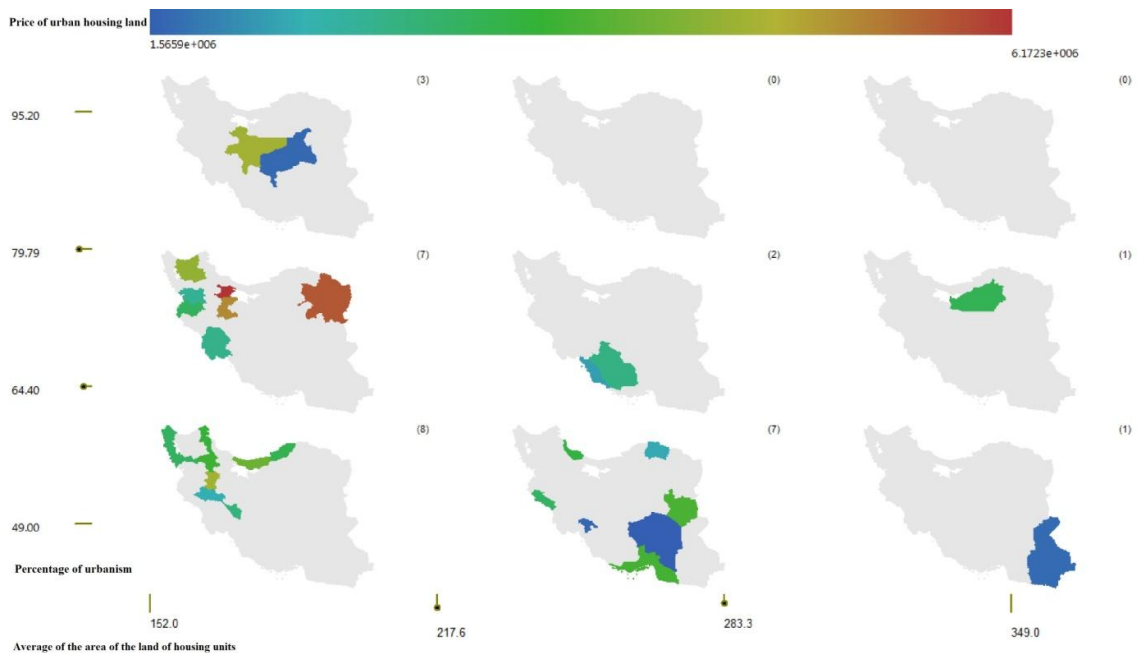

Fig. 12 Spatial autocorrelation among variables of price, average of the area of the land of housing units and the percentage of urbanism 2011 (excluding Tehran)

The investigation of price of land in 2011 and its relation to variables of the average area of urban land of residential buildings and the percentage of urbanism revealed that the huge difference between Tehran and other provinces has overshadowed the prices in other provinces as was the case in previous periods. In analyzing the status of provinces without including Tehran it can be stated that Semnan Province has a medium level regarding the price per one square meter and the percentage of urbanism, but it stands on a high level regarding the area of the housing units. Sista-Baluchestan has a low level regarding the price and the percentage of urbanism, and a high level regarding the area of the housing units. Fars Province has a moderate standing as to prices and Bushehr has a low level, but the area of urban housing units and the percentage of urbanism in these two provinces is moderate. The Provinces Southern Khorasan, Hormozgan, Gilan, and Ilam have a moderate price level, and Northern Khorasan, Kerman, Kohgiluyeh-Buyer'ahmad have a low price; all these seven provinces stand on a low level regarding urbanism percentage and on a moderate level as to the area of housing units. In Isfahan, the price for one square meter of housing land is very high, but in Yazd there is a low level of prices; however, the two have a high status regarding the percentage of urbanism, but at the same time the area of housing units is on a low level.

Razavi Khorasan, Qazvin, Markazi, and Eastern Azerbaijan have high price levels, Khuzestan, Kermanshah, and Kurdistan have an average price level, with the urbanism percentage being medium, but the area of housing units has a low ranking. Ardebil, Western Azerbaijan, Golestan, Zanjan and Chearmahal-Bakhtiari have a moderate price level, Mazandaran and Hamedan have a high price level and Lorestan has a low price level; however, in these provinces the percentage of urbanism and the area of housing units have a low ranking. Based on these data, we can conclude that the correlation between such variables has diminished compared with 2006, but it is higher compared to 2001. In a nut shell, there is no significant correlation between these variables, as the tables indicate. Using the GeoDa software the spatial autocorrelation among the variables of price per one meter of urban housing land and the level of development of the

provinces in 2011 was calculated; the Moran Coefficient value between these variables was 0.289, which shows an accidental distribution tending to a cluster sampling. The slope of the regression line of Moran is positive and indicates that there is a correlation between the level of development of provinces and the price of urban housing land in 2011, but this correlation is weak and is only noticeable in some provinces. In provinces of Tehran, Mazandaran, Qazvin, Markazi, Qom and Semnan the price of land increases as the level of development increases, and in Hormozgan, Fars, and Khuzestan the price of land decreases as the level of development decreases. The significance of this correlation for Hormozgan, Markazi, and Qazvin is 99 percent, and 95 percent for Tehran, Mazandaran, Qom, Semnan, Fars, and Khuzestan. But in other provinces there is not a significant correlation between the price of land and the level of development.
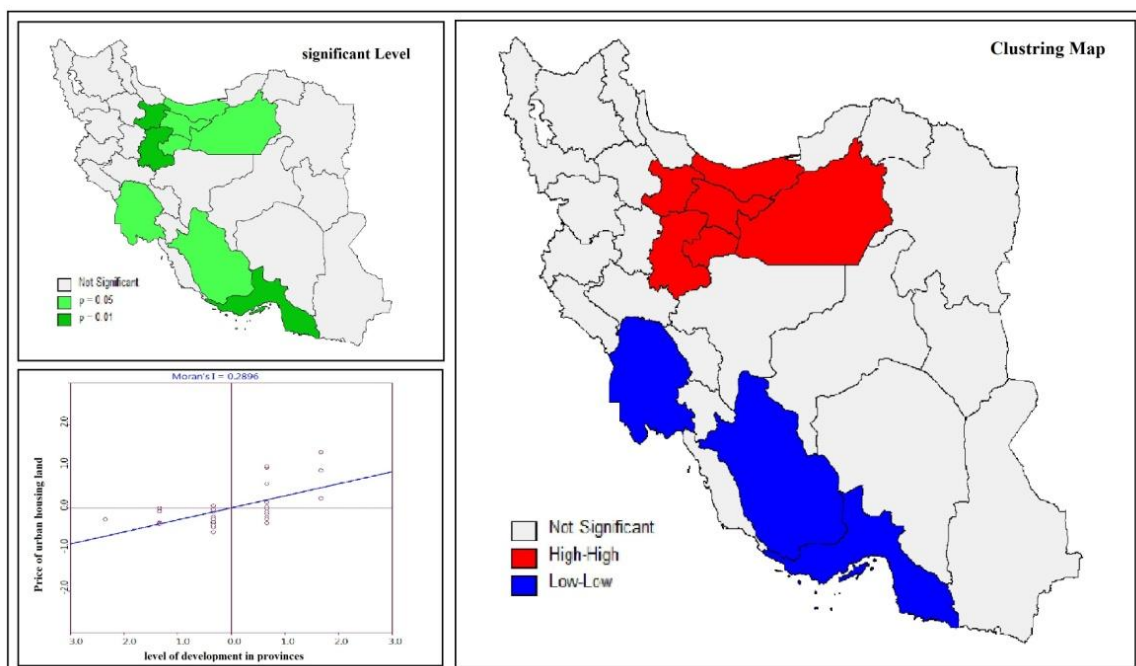

Fig. 13 Spatial autocorrelation between the price of urban housing land and the level of development in provinces 2011 (32, 33) And the researcher's calculations

4. CONCLUSION

After investigating the trend of changes of the average price of urban housing land in Iranian provinces during 2001-2011 it was found that the average index of changes

in urban housing land nationwide was 877.32 percent and in this context the provinces Ardebil, Hamedan, Razavi Khorasan, and Bushehr had the highest index of changes, while Northern Khorasan, Khuzestan, Tehran and Yazd had the lowest index of changes.

Table 4 Percent of changes of the price of one square meter of urban housing land in different provinces of Iran in 2001-2011 [32]

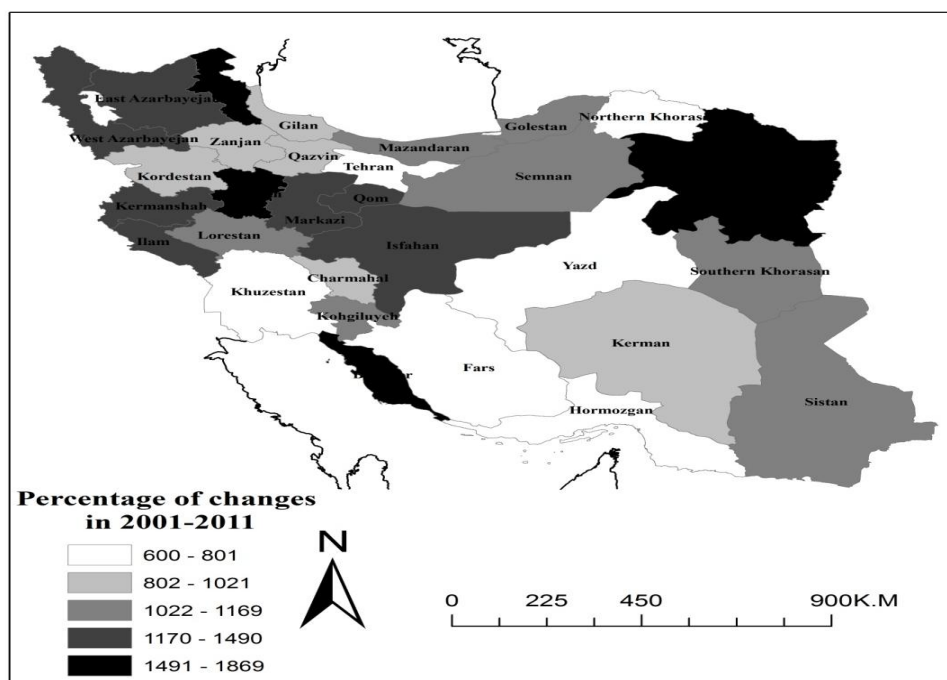| Province	East Azarbayejan	West Azarbayejan	Ardebil	Isfahan	Ilam	Bushehr	Tehran	Charmahal	South Khorasan	Razavi Khorasan
Percent of changes	1347.83	1441.20	1868.78	1449.16	1489.52	1588.40	669.43	965.14	1075.23	1654.64
Province	North Khorasan	Khuzestan	Zanjan	Semnan	Sistan	Fars	Qazvin	Qom	Kordestan	Kerman
Percent of changes	599.71	608.13	1021.47	1058.48	1117.42	763.65	992.31	1410.58	985.14	852.76
Province	Kermanshah	Kohgiluyeh	Golestan	Gilan	Lorestan	Mazandaran	Markazi	Hormozgan	Hamedan	Yazd
Percent of changes	1458.23	1086.23	1169.18	891.36	1077.33	1150.59	1150.59	800.75	1672.88	736.68

Fig. 14 Percent of changes of the price of one square meter of urban housing land in different provinces of Iran in 2001-2011

Finally, it can be stated that the price of urban housing land in Iran during 2001-2006 shows an accidental distribution tending toward a cluster distribution, and during 2006-2011 this cluster distribution has rather lost its intensity, but compared to 2001-2006 it still shows an inclination toward a cluster distribution and in a general sense the average price of urban housing land during 2001-2011 has moved from an accidental distribution to a cluster distribution. Further, it can be stated that the price of urban housing land in Iran during this 10-year period has not been influenced by such variables as the urbanism percentage, the average area of the housing units, and that there is a significant correlation between the level of development of provinces and the price of urban housing land in 2011 in some provinces. Access to information was one of the most important limitations of this research.Political and economic factors are very effective in determining the price of urban residential land in the cities of developing and third world countries, like Iran. It is thus suggested to study the relationship between these factors and urban land price (especially residential) in the future research, if access to this information is possible. Moreover, study at the level of each province or city can be very useful.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

REFERENCES

[1] Levizzani V, Amorati R, Meneguzzo F. A review of satellite-based rainfall estimation methods, Music-Multiple-Sensor Precipitation Measurements, Integration, Calibration and Flood Forecasting, 2002.

[2] Rahimpour Golroudbary V, Zeng Y, Mannaerts C, Su Z. Detecting the effect of urban land use on extreme precipitation in the Netherlands, Weather and Climate Extremes, 2017, Vol. 17, pp. 36-46.

[3] Cowie AL, Orr BJ, Castillo Sanchez VM, Chasek P, Crossman ND, Erlewein A, Louwagie G, Maron M, Metternicht GI, Minelli S, Tengberg AE, Walter S, Welton Sh. Land in balance: The scientific conceptual framework for land degradation neutrality, Environmental Science & Policy, 2018, Vol. 79, pp. 25-35.

[4] Chitonge H, Mfune O. The urban land question in Africa: The case of urban land conflicts in the city of Lusaka, 100 years after its founding, Habitat International, 2015, Vol. 48, pp. 209-18.

[5] Nelson E, Sander H, Hawthorne P, Conte M, Ennaanay D, Wolny S, Manson S, Polasky S. Projecting global land-use change and its effect on ecosystem service provision and biodiversity with simple models, PLOS One, 2010, Vol. 5, pp. 1-22.

[6] Pickett STA, Cadenasso ML. The ecosystem as a multidimensional concept: Meaning, model, and metaphor, Ecosystems, 2002, Vol. 5, pp. 1-10.

[7] Wang J, He T, Lin Y. Changes in ecological, agricultural, and urban land space in 1984-2012 in China: Land policies and regional social-economical drivers, Habitat International 2018, Vol. 71, pp. 1-13.

[8] Mirkatoli J. An introduction to managing urban land supply, Gorgan, Iran: University of agriculture and natural resources of Gorgan, 2010.

[9] Seto KC, Fragkias M, Güneralp B, Reilly MK. A meta-analysis of global urban land expansion, PLOS One, 2011, Vol. 6, pp. 1-9.

[10] Wei YD. Zone fever, project fever: economic transition, development policy, and urban expansion in China, Geographical Review, 2015, Vol. 105, pp. 156-77.

[11] Samadi R. Analyzing and modeling the role of urban land market in spatial locative development of district 3 of Mashhad, Gorgan: Gorgan University, 2012.

[12] Ardeshiri M, Zahmatkeshan M. Land bank and its necessity in magacities case sample: Shiraz. The first conferance urban planning and management Mashhad, Iran, 2006.

[13] Ashrafi A. City, Tehran: Art university of Tehran, 1998.

[14] Abedin Darkoush S. An introduction to urban economy, Tehran, Iran, Tehran university, 2008.

[15] Bahreini SH. The process of urban planning, Tehran, Iran, Tehran University, 2008.

[16] Shokouee H. New viewpoint in urban geography, Tehran, Iran, Samt, 2008.

[17] Razavian MT. Land use planning of urban, Tehran, Iran, Monshi, 2002.

[18] Motamedi M. Land and its importance in urban development, periodical of municipalities, 2002, Vol. 37, pp. 15-26.

[19] Sadeghian S, editor land information system as a tool in urban development planning the conference on land and urban development, Tehran, Iran: the center for studies and research on urban planning and architecture of the housing and urban development ministry, 2000.

[20] Hekmat Niya H. land use planning in Bahabad using SWOT analysis. the periodical of Islamic-Iranic urban studies, 2010, Vol. 1, pp. 79-97.

[21] Yazdani F. housing investment market, contex and framework. periodical of housing economy, 2003, Vol. 21, pp. 23-41.

[22] Ziari K. Land use planning of urban, Yazd, Iran, Yazd University, 2002.

[23] Morsi M. The role of the state in managing urban land supply and prices in Egypt, Habitat International, 2003, Vol. 27, pp. 429-58.

[24] Zanganeh Y. An introduction to urban economy, Tehran, Iran, Azarakhsh, 2010.

[25] Yaran A, Mohammadi Khoshbin H. The role of housing in the regional development approach of small cities, International Journal of Architectural Engineering & Urban Planning, 2012, Vol. 22, pp. 20-5.

[26] Pourmohammadi MR. Land use planning of urban. Tehran, Iran: Samt, 2008.

[27] Majedi H. Land as the main issue in urban development Periodical of Abadi, 2009, Vol. 33, pp. 18-27.

[28] Turner B, Whitehead C. Reduction housing subsidy: Swedish housing policy in an international contex, Urban Studies, 2002, Vol. 39, pp. 201-17.

[29] www.amar.org.ir. www.amar.org.ir, 2017.

[30] Rahnama MR, Zabihi J. An analysis of urban public facilities incourse of spatial justice using integerate access model in Mashhad, The Periodical of Geography and Development, 2011, Vol. 9, pp. 5-26.

[31] Hayati S. urban smart growth (case study: Mashhad city), Mashhad: Ferdowsi university of Mashhad, 2012.

[32] Central bank of Iran CB. The head management of economic statistics, Tehran, Iran: office of economic statistics and bureau of construction statistics, 2012.

[33] Ministry of the Interior of Iran IR. level of development in provinces of Iran, Tehran, Iran, Ministry of the Interior of Iran, 2012.

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