

Research Paper: Analysis of the Factors Affecting the Changes in the Rural Land-Use System (Case Study: Astane-Ye-Ashrafiyeh Rural Areas in the North of Iran)

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ABSTRACT

Purpose: This research aimed to identify the factors on rural land use changes in Astane-ye-Ashrafiyeh County in Gilan Province.

Methods: This descriptive-analytical study uses field research methods to collect data. For analysis, the study used the One Sample T-test in SPSS software. The statistical population is 27 villages of Astaneh, and 381 rural households in these villages were selected in these villages to respond to the questionnaires. The number of samples was obtained from the Cochran formula.

Results: The results of the T-test showed that the economic dimension, with an average score of 3.26 and at a very low significance level, is the most critical component in changing the rural land use in Astane-ye-Ashrafiyeh. Physical-spatial, social-cultural, and institutional-management dimensions were ranked next, respectively.

Conclusion: The confirmatory factor analysis results showed that out of 36 studied factors, 13 were significant. These factors are youth unwillingness to engage in agricultural activities, willingness to settle in the city, uncontrolled land price by intermediaries, exploitation of agricultural land owners, low price of farm products, benefits from investors in the land and housing sector, tourism capabilities of the region, poor law enforcement and weak supervision of rural municipalities.

1. Introduction

With the beginning of the Industrial Revolution and from the middle of the 18th century, environmental crises and destructions accelerated, and the envi-

ronmental consequences of the economic growth pattern were noticed from the second half of the 20th century, especially from the 1960s. In the 1970s, in Stockholm, Sweden, the issue of the environment became the focus of discussions at international conferences. In this context, one of the main issues in the field of environment is land use changes and the severity of this issue in ru-

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ral communities. Land use changes are mainly affected by large-scale factors such as the global economy and climate issues, and topics such as demographic changes and local policies play a decisive role in addition to the factors above.

The lack of severe and conscientious attention to rural areas and the agricultural sector, as well as the reduction of the share of villages and rural regions in the strategies of economic development and industrial development, has caused the productive workforce of these places not to be able to provide economic livelihood and migrate to cities and areas around cities (Mehrabi et al., 2012: 312). The research results show that the increase in migration has caused informal land and housing markets to emerge and ultimately leads to a change in land use. In other words, in recent decades, at the same time as the world's population increases and the expansion of urbanization, a large part of rural land has undergone land use changes and replaced relatively permeable natural surfaces with impervious hard surfaces, including paved spaces, asphalt, and dense areas. Moreover, it is full of buildings. (Ahmedpour & Alavi, 2013: 140).

Therefore, large migrations to cities, in harmony with the natural growth of their population and the resulting accelerated urbanization, lead to not only the emergence of large cities but also cities by moving towards the living spaces around them, on agricultural and garden lands and finally the environment. have a natural effect and cause the transformation of villages and the formation of transitional villages and informal settlements around them (Ghademarzi, 2013: 62). One of the most critical primary consequences of rapid urbanization is the encroachment of the city on peri-urban spaces and incredibly fertile agricultural lands. The migration potential of the villages around the cities as a place to attract the urban poor population and the tendency of these villages to enter the legal area and integrate into the city intensify the land use changes of the peri-urban villages. In addition to the rapid economic growth and, as a result, the accelerated development of urban centers, spatial imbalance, administrative and political corruption, weak transparency, weak participation of citizens in the decision-making process, incorrect policies of governments, and lack of sufficient supervision are among the factors that lead to the escalation of the process of land use changes (Sedighi et al., 2017: 40).

Astane-ye-Ashrafiyeh in Gilan province is not exempt from these issues. Due to its location on the Rasht-Lahijan axis, this city has undergone many changes in land use, especially agriculture and forestry, in the last

few decades. In such a way, the authors have witnessed drastic changes in land use during their residence in this city, the consequences of which can be environmental pollution, lifestyle change, change in values, and change in the way of livelihood to follow. In this research, the researcher seeks to find the factors of land use change in the villages.

2. Literature Review

Land use is one of the basic concepts in urban and regional planning, which is affected by many factors, such as population changes, increasing migration from rural to urban areas, and rising urbanization rates (Doygun, 2008: 471). The land use plan is an essential means to achieve society's physical, economic, and social goals and shows the spatial aspect of all human activities on earth to meet material and cultural needs. The subject of land use studies is the nature of land phenomena and various exploitation methods (Shaw, 1993: 6). Land use is formed by two powerful components of the basic needs of human life and environmental-biological features and processes. In its general sense, land use is the type of land use in the current state, which includes all land use in different sectors of agriculture natural and industrial resources. In other words, it has all the activities in the region or district, residential areas, forests, pastures, mines, industrial facilities, and the like (Amirenjad, 2012: 88). The category of land use change is more critical in developing countries due to the weak management and the confusion of the political and economic structure (Long & Ulgati, 2017).

Land use and land cover change are the core of the human-environment system, the main field of land change science in studying global environmental changes (Liu et al., 2010: 483). "Change of use" is defined in paragraph "D" of the executive regulations of the law "Amendment of the Law on the Protection of the Use of Agricultural Lands" approved on 3/2/1386 in Iran as follows: "Any action that prevents the exploitation and continuation of agriculture in agricultural lands and gardens" (Droudian & Droudian, 2016: 84). The theory of land use changes have been presented in various disciplines such as economics, urban and regional knowledge, sociology, social physics, environmental history, environmental psychology, biology, ecology and geography. Each discipline has provided valuable insights into the process of land use change. However, until today, there is no single theory that fully presents the views of all relevant disciplines (Clark, 2010: 18). Currently, more than half of the world's population lives in cities, which implies the use and change of land use, the use of natural resources,

and the absorption of rural manpower in cities (Eppler et al., 2015).

In the villages around the cities, land use changes have become an increasingly severe issue. The nature of the lands of these villages is changing so that it moves away from the activity of the first economic sector, namely agriculture, which has a production nature, and approaches the third sector of the economy, which is service and residential. Getting out of the main activity of agriculture, the high speed of change of use inside the peri-urban villages and their physical expansion are happening continuously, and finally, it appears in the form of the city and the village intersection. In this regard, research has been carried out inside and outside the country, some of which are mentioned below.

Rahnama et al. (2010), in investigating the role of the government in the growth and physical expansion of Masal City, emphasizing the changes in the use of surrounding agricultural lands, concluded that there is a significant relationship between the administrative and political status of the city by the government and population density and physical expansion. Yasuri et al. (2014) investigated the role of the physical expansion of Rasht city in creating land use changes in the city's outskirts. The results show that from 1370 to 1390, about 3587 hectares of the outskirts of Rasht city have increased from 84053 in 1370 to 140355 units in 1395, which indicates a 67% increase in residential units during this period. Sejasi Khedari and Sadr al-Sadat (2014) studied a population using legal, physical-spatial, economic and social data. The results show that social and economic factors mainly influenced land use changes in the studied villages. Darban Astane et al. (2016) concluded that the most important economic factors of change of use are the low price of agricultural products, high cost of living, uneconomical income from agriculture, high inflation in the society and the social dimension, the essential and effective factors are the increase in the population of native residents of the villages, the unwillingness of young people to engage in agricultural activities, and the change in living standards and the desire for urbanization. Is. Amini et al. (2016) investigated the consequences of land use changes in Pirashhari villages. The results showed that the change in the use of agricultural land has a direct relationship with the change in economic performance in the sectors related to land and housing in the studied villages, and the more the performance of the villages changes, the more changes in the use of agricultural land can be seen. Aligholizadeh et al. (2018) found that many of the study area's agricultural lands, gardens, and forests were changed from 1366 to

1394 and turned into built uses such as second houses and service use. The main factors in land use changes have been uncontrolled tourism development.

Long et al. (2007) studied the issue of human driving forces in land use change. The results showed that land use change between 1987 and 1994 and 1994 to 2000 was analyzed using satellite images and social and economic information. Industrialization, urbanization, population growth, and economic transformation in China are the four human driving forces that cause land use change. They are located in the area. Hamer et al.'s research (2009) showed that the development of residential and recreational constructions has caused changes in rural landscapes and demand for land.

3. Methodology

The method of conducting this research is descriptive-analytical. First, a comprehensive list of influential factors in land use changes was selected. In the next step, these factors were refined by asking the opinions of professors and local administrators, and finally, 36 factors were selected in four dimensions (Table 1).

The questionnaire method was used to collect information. Based on 36 factors, a questionnaire was designed as a Likert scale and completed by households and residents in the villages of the studied city. For this purpose, the statistical population and the statistical sample of the research were examined.

The statistical population of the present study is all inhabited villages in Astane-ye-Ashrafieh city. According to the latest statistics of the general census in 2015, this city has 96 inhabited villages. Based on field studies and interviews with the council and villagers, the issue of land use change is very significant in relatively large villages with a population of more than 500 people.

Therefore, 27 villages with more than 500 people were selected. Next, based on Cochran's formula and the relative share of households in each village, the number of questionnaire samples was estimated for each village. Sample households were also randomly selected (Table 2). After determining the sample size and completing the questionnaires, the collected information was extracted, organized, and refined in the SPSS software environment. Next, the results were analyzed using descriptive statistics, frequency tables, t-tests, and confirmatory factor analysis.

Table 1. Indicators studied in the research

| Criterion | Indicator | Number |
|--------------------------|---|--------|
| Socio-cultural | Changes in living standards, changes in people's lifestyle, the pessimism of people towards agricultural work, the social climate of society, level of family education, desire to live in cities, the unwillingness of young people to engage in agricultural activities, increase in the population of native residents of the village, increase in the population of residential tourists and the need to land for construction, the role of second homeowners in the village, increased migration to the district. | 10 |
| Economical | Low price of agricultural products, high cost of living and uneconomical income from agriculture, small size of agricultural land, land exchange by intermediaries, lack of agricultural labor, profiteering of agricultural land owners, benefits from investors in the land sector and Housing, youth unemployment, high labor costs | 9 |
| physical-spatial | The expansion of transportation and transportation, the increase of restaurants and hotels around, the creation of infrastructure, the free development of roads and main roads, the pressure of city development, the creation of urban facilities in the vicinity of agricultural lands, the touristic nature of the area, the increase of construction and rental villas. | 8 |
| Institutional-management | Weakness of supervision of village councils, weakness of laws and regulations, weakness of supervision of government agencies, the law of inheritance and successive division of land, the effectiveness of the law on preservation of agricultural use and gardens, weakness of coordination between relevant organizations, dependence of organizations and departments on income caused by change of use, weakness Executive bodies in notifying the owners of agricultural land about the type of use and prohibition of change of use, weak treatment of lawbreakers | 9 |

**Table 2.** Distribution of the number and percentage of sample villages and the number of questionnaires of rural households by village and village in Ashrafieh province

| Row | Rural District | Village | Population | Number of households | Percent | Sample households |
|-------|----------------|------------------------------|------------|----------------------|---------|-------------------|
| 1 | Kiashahr | Lab-e Darya-ye Lasku Kalayeh | 633 | 240 | 3.7 | 14 |
| 2 | Dehshal | Sheshkal | 1140 | 412 | 6.4 | 24 |
| 3 | Dehgah | Allah Vajeh Sar | 508 | 149 | 2.3 | 9 |
| 4 | Dehshal | Fushazdeh | 584 | 191 | 2.9 | 11 |
| 5 | Dehshal | Dehshal | 502 | 201 | 3.1 | 12 |
| 6 | Dehshal | Sukhteh Kuh | 510 | 150 | 2.3 | 9 |
| 7 | Dehshal | Amir Hendeh | 767 | 308 | 4.7 | 18 |
| 8 | Gorka | Kinchah | 596 | 117 | 1.8 | 7 |
| 9 | Gorka | Nazok Sara | 521 | 153 | 2.4 | 9 |
| 10 | Gorka | Khoshkarvandan | 792 | 271 | 4.2 | 16 |
| 11 | Gorka | Estakhr-e Bijar | 1173 | 371 | 5.7 | 22 |
| 12 | Dehgah | Anbar Sar | 826 | 291 | 4.5 | 17 |
| 13 | Gorka | Tamchal | 885 | 267 | 4.1 | 16 |
| 14 | Gorka | Chur Kuchan | 1271 | 441 | 6.8 | 26 |
| 15 | Kisom | Chaldea | 534 | 83 | 1.3 | 5 |
| 16 | Chahar Deh | Gachara-ye Chahardeh | 583 | 226 | 3.5 | 13 |
| 17 | Kisom | Tejen | 514 | 96 | 1.5 | 6 |
| 18 | Kisom | Kisom | 1322 | 536 | 8.3 | 31 |
| 19 | Kiashahr | Eshman-e Kamachal | 504 | 125 | 1.9 | 7 |
| 20 | Kiashahr | Nabi Dehga | 503 | 123 | 1.9 | 7 |
| 21 | Dehgah | Salim Chaf | 545 | 129 | 2.0 | 8 |
| 22 | Kiashahr | Amir Keyasar | 918 | 340 | 5.2 | 20 |
| 23 | Dehgah | Dahaneh-ye Sar-e Sefidrud | 544 | 194 | 3.0 | 11 |
| 24 | Kisom | Niaku | 870 | 307 | 4.7 | 18 |
| 25 | Kisom | Siah Kucheh | 849 | 305 | 4.7 | 18 |
| 26 | Kiashahr | Safra Basteh | 1242 | 414 | 6.4 | 24 |
| 27 | Chahar Deh | Khalsha | 520 | 46 | 0.7 | 3 |
| Total | Total | - | 20156 | 6486 | 100.0 | 381 |



Astana Ashrafieh city, with an area of 412.8 square kilometers, is located in the eastern region of Gilan province. This city is located in the coordinates of 37 degrees and 28 minutes to 37 degrees and 11 minutes north latitude, 49 degrees and 46 minutes to 50 degrees and 11 minutes east longitude.

Rahmatabad and Bluckat District is one of the four sections of Rudbar County, located between 37 degrees and 28 minutes to 37 degrees and 11 minutes north latitude and 49 degrees and 46 minutes to 49 degrees and 11 minutes east longitude of the meridian. Astana borders the Caspian Sea from the north, Lahijan City from the south and east, and Rasht City from the west. According to the last administrative and political divisions in 1400, Astana Ashrafieh has two divisions, four villages and 95 villages. The central part includes the Dehshal and Gurka districts. Kiashahr district also includes two villages, Kiashahr and Dehghah (Figure 1).

According to the results of the last population and housing census in 2015, Astana Ashrafieh city has 18111 households and 49146 people, of which 25059 are men and 24105 are women.

4. Findings

In the first step of the research findings, the importance of each indicator in the discussion of land use changes has been described using frequency tables. The information obtained from completing the questionnaires in the socio-cultural dimension showed that the role of second

homeowners in the villages, with an average score of 3.59, is the most important in land use changes in the villages of Astana Ashrafieh. In this context, the increase in the population of residential tourists, the need for land for construction, and the unwillingness of young people to engage in agricultural activities are ranked second and third. The results of examining the importance of the economic dimension showed that the factor of low price of agricultural products had an average score of 48.3. It is essential in the context of the subject being studied. The factors of lack of agricultural labor and land market were ranked second and third by the go-betweens with average scores of 3.46 and 3.38. In the economic aspect, the unemployment factor among the youth was the least important. The average score of this factor was equal to 2.93. Another dimension studied was the physical-spatial dimension. Based on the results obtained in this dimension, the tourism factor of the area was the most important, and the development of transportation and transportation was the least important. Finally, the results obtained for the institutional-management dimension showed that the factors of weak monitoring of village councils and the dependence of organizations and departments on income from land use changes with the same average score of 3.61 are the most critical in land use changes in rural areas of Astane-ye-Ashrafieh. In institutional management, minor importance was assigned to government institutions' supervision weaknesses. The results of this test are presented in Table 3.

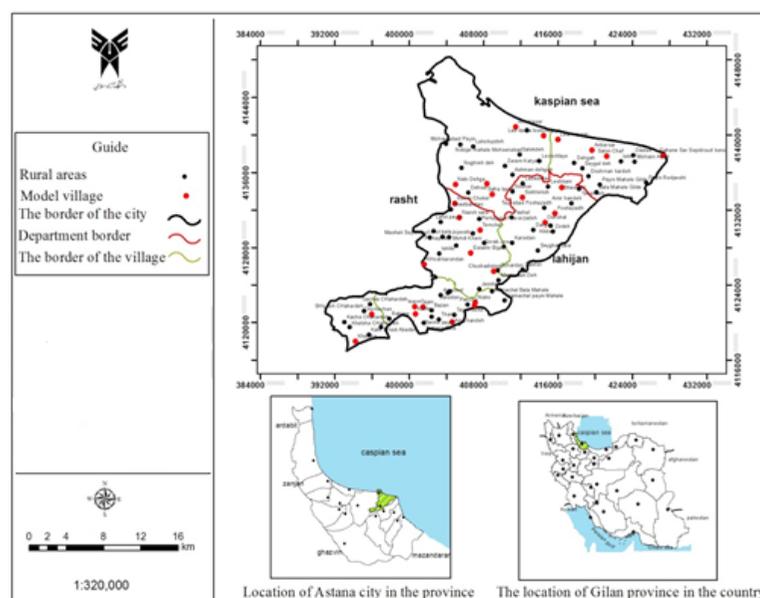


Figure 1. Geographical range of study

In the following, using the t-test, the status of four primary variables has been investigated. The results of the T-test showed that the economic dimension, with an average score of 3.26 and at a very low significance level,

is the most critical component in changing the rural land use in Astane-ye-Ashrafiyeh. Physical-spatial, social-cultural, and institutional-management dimensions were also in the following ranks (Table 4).

Table 3. Frequency and relative frequency of the importance of factors in land use changes in Astane-ye-Ashrafiyeh city

| Study dimensions | Factors | Very low | Low | Medium | High | Very high | Total | Mean |
|--|--|----------|-------|--------|-------|-----------|--------|------|
| Socio-cultural | Change in living standards, change in people's lifestyle | 85 | 74 | 81 | 55 | 86 | 381 | 2.96 |
| | | 22.3 | 19.4 | 21.3 | 14.4 | 22.6 | 100 | |
| | Pessimism towards agricultural work | 54 | 95 | 62 | 88 | 82 | 381 | 3.13 |
| | | 14.2 | 24.9 | 16.3 | 23.1 | 21.5 | 100.0 | |
| | The social condition of the society | 88 | 64 | 93 | 64 | 72 | 381 | 2.92 |
| | | 23.10 | 16.80 | 24.41 | 16.80 | 18.90 | 100.00 | |
| | Level of education in the household | 68 | 95 | 64 | 43 | 111 | 381 | 3.09 |
| | | 17.8 | 24.9 | 16.8 | 11.3 | 29.1 | 100.0 | |
| | Willingness to settle in the city | 48 | 118 | 72 | 54 | 89 | 381 | 3.05 |
| | | 12.6 | 31.0 | 18.9 | 14.2 | 23.4 | 100.0 | |
| | The unwillingness of young people to engage in agricultural activities | 50 | 65 | 71 | 93 | 102 | 381 | 3.35 |
| | | 13.1 | 17.1 | 18.6 | 24.4 | 26.8 | 100.0 | |
| | Increase in residents of the village | 85 | 91 | 45 | 92 | 68 | 381 | 2.91 |
| | | 22.3 | 23.9 | 11.8 | 24.1 | 17.8 | 100.0 | |
| The increase in non-local residents and the need for land for construction | 81 | 31 | 43 | 72 | 154 | 381 | 3.49 | |
| | 15.7 | 6.0 | 8.3 | 14.0 | 29.8 | 100 | | |
| The role of second house owners | 45 | 64 | 54 | 58 | 160 | 381 | 3.59 | |
| | 11.8 | 16.8 | 14.2 | 15.2 | 42.0 | 100.0 | | |
| Increase in immigration to the region | 45 | 99 | 59 | 56 | 122 | 381 | 3.29 | |
| | 11.8 | 26.0 | 15.5 | 14.7 | 32.0 | 100.0 | | |
| Economical | Low price of agricultural products | 53 | 37 | 85 | 85 | 121 | 381 | 3.48 |
| | | 13.9 | 9.7 | 22.3 | 22.3 | 31.8 | 100.0 | |
| | High cost of living and low income from agriculture | 57 | 61 | 56 | 101 | 106 | 381 | 3.36 |
| | | 14.96 | 16.01 | 14.70 | 26.51 | 27.82 | 100.00 | |
| | The small size of the agricultural land | 81 | 63 | 52 | 82 | 103 | 381 | 3.17 |
| | | 21.3 | 16.5 | 13.6 | 21.5 | 27.0 | 100.0 | |
| | Uncontrolled land prices by intermediaries | 79 | 63 | 23 | 65 | 151 | 381 | 3.38 |
| | | 20.7 | 16.5 | 6.0 | 17.1 | 39.6 | 100 | |
| | Lack of agricultural labor | 70 | 28 | 65 | 92 | 126 | 381 | 3.46 |
| | | 13.6 | 5.4 | 12.6 | 17.8 | 24.4 | 100 | |
| | Exploitation of agricultural landowners | 56 | 65 | 71 | 99 | 88 | 379 | 3.24 |
| | | 14.70 | 17.06 | 18.64 | 25.98 | 23.10 | 99.48 | |
| | Benefits from investors in the land and housing sector | 75 | 53 | 41 | 92 | 120 | 381 | 3.34 |
| | | 19.7 | 13.9 | 10.8 | 24.1 | 31.5 | 100.0 | |
| Unemployment among youth | 89 | 96 | 45 | 56 | 95 | 381 | 2.93 | |
| | 23.4 | 25.2 | 11.8 | 14.7 | 24.9 | 100 | | |
| High cost of labor | 74 | 86 | 41 | 107 | 73 | 381 | 3.05 | |
| | 14.3 | 16.7 | 7.9 | 20.7 | 14.1 | 100 | | |

Table 3. Frequency and relative frequency of the importance of factors in land use changes in Astane-ye-Ashrafieh city

| Study di- mensions | Factors | Very low | Low | Me- dium | High | Very high | Total | Mean |
|------------------------------------|--|-------------|-------|-------------|-------|--------------|--------|------|
| Physical- spatial | Expansion of transportation and communication | 68 | 70 | 86 | 82 | 75 | 381 | 2.27 |
| | | 17.8 | 18.4 | 22.6 | 21.5 | 19.7 | 100.0 | |
| | Increasing restaurants and hotels | 84 | 67 | 74 | 67 | 89 | 381 | 3.03 |
| | | 22.0 | 17.6 | 19.4 | 17.6 | 23.4 | 100.0 | |
| | Infrastructure establishment | 89 | 69 | 73 | 76 | 74 | 381 | 2.94 |
| | | 23.4 | 18.1 | 19.2 | 19.9 | 19.4 | 100.0 | |
| | Development of highway and main roads | 54 | 75 | 78 | 76 | 98 | 381 | 3.23 |
| | | 14.2 | 19.7 | 20.5 | 19.9 | 25.7 | 100.0 | |
| | The pressure of city development | 45 | 84 | 88 | 75 | 89 | 381 | 3.21 |
| | | 11.81 | 22.05 | 23.10 | 19.69 | 23.36 | 100.00 | |
| Institu- tional - managerial | Creating urban facilities around agricultural lands | 24 | 46 | 113 | 112 | 86 | 381 | 3.50 |
| | | 6.30 | 12.07 | 29.66 | 29.40 | 22.57 | 100 | |
| | Tourism capabilities of the region | 24 | 35 | 64 | 93 | 165 | 381 | 3.89 |
| | | 6.30 | 9.19 | 16.80 | 24.41 | 43.31 | 100 | |
| | Increasing construction of rental villas | 24 | 46 | 85 | 111 | 115 | 381 | 3.65 |
| | | 6.30 | 12.07 | 22.31 | 29.13 | 30.18 | 100 | |
| | Weakness of rural municipalities' supervision | 16 | 71 | 81 | 92 | 121 | 381 | 3.61 |
| | | 4.2 | 18.6 | 21.3 | 24.1 | 31.8 | 100 | |
| | Limitation of rules and regulations | 117 | 62 | 56 | 61 | 85 | 381 | 2.83 |
| | | 30.7 | 16.3 | 14.7 | 16.0 | 22.3 | 100 | |
| Institu- tional - managerial | Weak supervision of government agencies | 98 | 104 | 81 | 74 | 24 | 381 | 2.53 |
| | | 25.7 | 27.3 | 21.3 | 19.4 | 6.3 | 100.0 | |
| | Law of inheritance and successive division of land | 56 | 52 | 77 | 90 | 106 | 381 | 3.36 |
| | | 14.7 | 13.6 | 20.2 | 23.6 | 27.8 | 100 | |
| | The law on preservation of agricultural land use | 122 | 80 | 65 | 61 | 53 | 381 | 2.59 |
| | | 32.0 | 21.0 | 17.1 | 16.0 | 13.9 | 100.0 | |
| | Weak coordination between relevant organizations | 15 | 71 | 84 | 120 | 92 | 382 | 3.54 |
| | | 3.9 | 18.6 | 22.0 | 31.5 | 24.1 | 100.0 | |
| | The income of organizations earned through land use changes | 45 | 52 | 54 | 86 | 144 | 381 | 3.61 |
| | | 11.8 | 13.6 | 14.1 | 22.5 | 37.7 | 100 | |
| Institu- tional - managerial | Weakness of agriculture-related organizations in preventing land-use changes | 90 | 86 | 59 | 88 | 58 | 381 | 2.84 |
| | | 23.6 | 22.5 | 15.4 | 23.0 | 15.2 | 100 | |
| | Poor law enforcement | 86 | 58 | 49 | 91 | 97 | 381 | 3.14 |
| | 22.5 | 15.2 | 12.8 | 23.8 | 25.4 | 100 | | |



Table 4. Summary of the results of the sample t-test

| Variable | T-test statistic 3 | | | |
|--------------------------|--------------------|--------------|-------|-------|
| | Average score | Significance | High | Low |
| Socio - cultural | 3.17 | 0.001 | 0.756 | 0.411 |
| Economical | 3.26 | 0.000 | 0.231 | 0.335 |
| Physical-spatial | 3.21 | 0.000 | 0.126 | 0.252 |
| Institutional-management | 3.11 | 0.002 | 0.334 | 0.341 |



In the continuation of the research, confirmatory factor analysis has been used to identify the factors better. This method is used to summarize information. The most crucial goal of confirmatory factor analysis is to determine the power of the predefined factor model with a set of observed data. In other words, confirmatory factor analysis determines whether the number of factors and variable loadings measured on these factors are consistent with what was expected based on the theory and theoretical model. In other words, this type of factor analysis tests the degree of conformity between the theoretical and empirical constructs of the research. The confirmatory factor analysis results for the four dimensions of the research are presented in Table 5.

The results showed that the importance of three factors was confirmed among the ten factors studied in the socio-cultural dimension, with a variance of 59.19 and a factor score of 5.13. These factors are, respectively, the unwillingness of young people to engage in agricultural activities, the desire to settle in cities, and the increase in migration to the region. The results of the KMO test with a rate of 0.581 and the acceptability of the Bartlett test result (sig: 0.000) show the significance of this analysis.

Based on the results obtained for the economic dimension of the research, out of the nine factors studied, the importance of 4 factors, including the land exchange through intermediaries, profit-seeking by agricultural land owners, the low price of agricultural products, and the benefits of investors in the land and housing sector, is confirmed. The results of the KMO test with a rate of 0.726 and the acceptability of the Bartlett test result (sig: 0.000) show the significance of this analysis. According to the confirmatory factor analysis results in the physical dimension, two factors, i.e., the touristic nature of the area and the increase in constructions and rental villas, are the most important. The results of the KMO test with a rate of 0.635 and the acceptability of the Bartlett test result (sig: 0.000) show the significance of this analysis. Finally, the confirmatory factor analysis confirmed the importance of four factors: weak treatment of law-breakers, weak monitoring of government institutions, weak monitoring of rural assistants, and the dependence of organizations and departments on the income caused by the change of use in the institutional management dimension. The results of the KMO test with a rate of 0.711 and the acceptability of the Bartlett test result (sig: 0.000) show the significance of this analysis.

Table 5. Results of confirmatory factor analysis

| Dimension | Factors | Commonalities | Cumulative percentage variance | Total factor score | Tests |
|--------------------------|---|---------------|--------------------------------|--------------------|--------------------------|
| Socio-cultural | Youth unwillingness to engage in agricultural activities | 0.651 | 59.19 | 5.13 | KMO= 0.581 Sig. 0.000 |
| | Willingness to settle in the city | 0.620 | | | |
| | Increase in immigration to the region | 0.581 | | | |
| Economical | Uncontrolled land prices by intermediaries | 0.741 | 67.13 | 6.71 | KMO= 0.726 Sig. 0.000 |
| | Exploitation of agricultural landowners | 0.722 | | | |
| | Low price of agricultural products | 0.701 | | | |
| | Benefits from investors in the land and housing sector | 0.689 | | | |
| Physical-spatial | Tourism capabilities of the region | 0.511 | 61.35 | 5.41 | KMO= 0.635 Sig. 0.000 |
| | Increasing construction of rental villas | 0.501 | | | |
| Institutional-management | Poor law enforcement | 0.736 | 71.44 | 7.59 | KMO= 0.711 Sig. 0.000 |
| | Weak supervision of government agencies | 0.728 | | | |
| | Weak supervision of rural municipalities | 0.688 | | | |
| | The income of organizations earned through land use changes | 0.674 | | | |
| | | | | | |

5. Discussion

Due to the fast pace of changes in the modern world, land has become a commodity that can only be sold and made a profit. Earth is the mother of nature and the friend of modern man. The earth is a tool constantly undergoing tremendous changes in the service of humanity. Therefore, knowing these changes and the factors affecting them can lead us to a way to reduce the speed of these changes. Existing agricultural lands by converting other natural resources such as forests and pastures over many years and by spending many resources such as Manpower, cost, and time have been created. The formation of these lands to create an environment for cultivation requires a process of several hundred years and is time-consuming. Based on this, agricultural lands are precious and limited resources, and the need for these lands to meet the needs of the growing population shows its importance more than ever. In this regard, the need to preserve and maintain such lands is natural and, of course, necessary due to the importance of agricultural products from the economic point of view and to meet the livelihood needs of the population. Nevertheless, indiscriminate destruction and conversion of agricultural lands can be observed in villages and around cities every year. Thousands of hectares of agricultural land in the country are converted into houses, roads, factories, and other facilities, and a significant part of the lands in the agricultural sector, regardless of agricultural production priorities, change the type of exploitation or, in other words, are changed. In addition, at the same time as the population expands, the rapid rate of urban development has also caused extensive changes in the land use pattern around the cities; in developing countries, including Iran, this growth has been faster, and as a result, it has led to profound changes in the field of land use.

In this research, the issue of rural and agricultural land use changes in Astana Ashrafieh city villages and the factors affecting this issue were investigated. The results showed that 36 factors impact the mentioned issue at first glance. A more detailed investigation and completion of the questionnaire by the local community showed that some factors have an undeniable and significant role. Based on the results of this research, 13 factors have the most influence and importance in land use changes in the studied city, which local administrators should consider. The results showed that the unwillingness of young people to engage in agricultural activities is one of the most critical factors in land use changes in the studied rural community. In this context, it should be said that the government's lack of support for agricultural activities, the high cost of providing agricultural inputs, and the

lowering of the value of agricultural activities compared to service and industrial activities play a role in this field. Also, speculation in the land market, rising prices of residential land in cities, and the influx of people from cities to villages have caused changes in land prices and increased the willingness of farmers to sell agricultural land and change its use. Another critical factor in this context is that people coming from other provinces to buy agricultural land and expand villa construction have reduced the desire of young people to engage in agricultural activities. The results of this part of the research, i.e., the unwillingness of young people to engage in agricultural activities, the low prices of agricultural products, and the expansion of villa construction, overlap with the results of [Darban Astana et al.'s research \(2016\)](#). Among the other essential factors in the research results, we can mention the weak treatment of lawbreakers, the weak monitoring of government agencies, and the weak monitoring of village assistants. These results were confirmed in the research of [Rahnama et al. \(2010\)](#), who examined the role of the government in rural land use changes. The lack of a specific law, accurate and specific statistics on agricultural land, and the weak supervision of local institutions such as village councils and village councils have led to the spread of land use changes in rural communities. Based on the research results, another undeniable factor in rural land use changes is the benefits of investors in the land and housing sector. This issue is related to the expansion of urban fringes and the excessive growth of cities. This topic is discussed in the research of [Yasuri et al. \(2014\)](#) and the research of [Sejasi Khedari and Sadr al-Sadat \(2014\)](#).

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Conflict of Interest

The authors declared no conflicts of interest.

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