Lex Humana, Petrópolis, v. 13, n. 2, p. 100-119, 2021, ISSN 2175-0947

THE IMPACT OF DROUGHT ON POPULATION INSTABILITY IN RURAL SETTLEMENTS (CASE STUDY: VILLAGES OF KHOOSF COUNTY)

O IMPACTO DA SECA NA INSTABILIDADE DA POPULAÇÃO EM ASSENTAMENTOS RURAIS (ESTUDO DE CASO: VILLAGES OF KHOOSF COUNTY)*

Mahdi Niyazi**
Hamid Jafari***
Hamid Jafari***
Islamic Azad University, Iran

Abstract: Rural migration is a phenomenon that began in Iran with the industrialization of cities, the process of recruiting surplus youth, in the agricultural sector from villages to cities, in favor of industrial and service activities. Environmental degradation, drought, lack of employment opportunities in agriculture, degradation of water and soil resources and inequality of access to various opportunities are among the important factors that have led to the demographic displacement of rural areas and exacerbated the instability of rural settlements in Iran. Understanding the volatility of rural settlements and explaining them scientifically in the national space can guide planners in reducing ecological and social crisis, which in turn is a step towards utilizing the country's rural resources in the national economy. Therefore, the present study aimed to evaluate the impact of drought on population instability in the villages of Khoosf district and to provide appropriate solutions to sustain and sustain the population. The research is applied in terms of purpose and nature and is descriptive-analytical, in terms of methodology. The population consisted of 41 villages over 100 populations with 4226 households and 13892 populations which according to geographical distribution, population categorization and population decline during 2006 and 2016, 20% of them (8 villages) with 796 households was selected as sample. A total of 259 questionnaires (based on Cochran formula) were distributed among the sample households based on simple random method. In this study, one sample t-test was used to analyze quantitative data and Friedman test was used to rank the effect of drought on population instability. Based on the results of the present study, it can be concluded that drought has the highest relationship with population instability in the studied settlements.

Keywords: Drought, Population Instability, Rural Settlement

* Artigo recebido em 05/05/2021 e aprovado para publicação pelo Conselho Editorial em 25/05/2021.
** PhD Student, Department of Geography and Rural Planning, Mashhad Branch, Islamic Azad University, Mashhad, Iran Email: nyazimahdi@yahoo.com
*** Associate Professor, Department of Geography and Rural Planning, Mashhad Branch, Islamic Azad University, Mashhad, Iran Corresponding Author: Email: jafari1421@mshdiau.ac.ir.
**** Associate Professor, Department of Geography and Urban Geography, Mashhad Branch, Islamic Azad University, Mashhad, Iran Email: k-alizadeh@mshdiau.ac.ir

Resumo: A migração rural é um fenômeno que começou no Irã com a industrialização das cidades, o processo de recrutamento de jovens excedentes, no setor agrícola das vilas às cidades, em favor das atividades industriais e de serviços. Degradação ambiental, seca, falta de oportunidades de emprego na agricultura, degradação dos recursos hídricos e do solo e desigualdade de acesso a várias oportunidades estão entre os fatores importantes que levaram ao deslocamento demográfico das áreas rurais e exacerbaram a instabilidade dos assentamentos rurais no Irã. Compreender a volatilidade dos assentamentos rurais e explicá-los cientificamente no espaço nacional pode orientar os planejadores na redução da crise ecológica e social, que por sua vez é um passo para a utilização dos recursos rurais do país na economia nacional. Portanto, o presente estudo teve como objetivo avaliar o impacto da seca na instabilidade populacional nas aldeias do distrito de Khoosf e fornecer soluções adequadas para sustentar e sustentar a população. A pesquisa é aplicada em termos de finalidade e natureza e é descritivo-analítica, em termos de metodologia. A população consistia em 41 aldeias com mais de 100 populações com 4226 famílias e 13.892 populações que, de acordo com a distribuição geográfica, categorização da população e declínio populacional durante 2006 e 2016, 20% delas (8 aldeias) com 796 famílias foram selecionadas como amostra. Um total de 259 questionários (com base na fórmula de Cochran) foram distribuídos entre as famílias da amostra com base no método aleatório simples. Neste estudo, um teste t de amostra foi usado para analisar dados quantitativos e o teste de Friedman foi usado para classificar o efeito da seca na instabilidade da população. Com base nos resultados do presente estudo, pode-se concluir que a seca é a que apresenta maior relação com a instabilidade populacional nos assentamentos estudados.

Palavras-chave: Seca, Instabilidade Populacional, Assentamento Rural

Introduction

Villages are the oldest form of human settlements and rural areas are one of the oldest forms of human social life that have played a key role in the formation and prosperity of societies and civilizations in the past as basic communities. (JomehPour, 2008: 1). The phenomenon of migration exists in both developed and developing countries, but the type and nature of these migrations are different (Motiei Langroudi et al., 2013: 304). Rural-urban migration is a phenomenon that has appeared in the process of industrialization of countries and many social and spatial changes of societies are also due to it. It started in favor of industrial and service activities. Urban bias is defined as a kind of urban-rural relationship, and is the way in which governments divert resources from the agricultural sector to the non-rural sector. The urban bias argument argues that governments act to protect urban interests and discriminate against rural interests. Urban bigotry argues that financial, productive, and human resources are deliberately taken out of the village to benefit urban citizens (G.O.Brien, 2016, 28).

One of the factors that cause rural instability, lack of sustainability of rural youth and low attractiveness of rural environments is low welfare in rural communities of Iran. Capital is destroyed with improper development and without sufficient replacement, and

undoubtedly creates a situation of instability. The main argument for sustainable development is that all of these assets need to be addressed. Social mobility, especially in rural areas, involves geographical mobility because the opportunities for social mobility in rural areas are low and at a low level (Rostamalizadeh et al., 2013: 509). Migration, which is both a cause and a cause for the instability of any geographical area and is a general principle that shows itself in all factors, that is, by creating instability in any field, the rural person reacts by migrating or leaving the village (Bekan, 2015: 5). Migration is a well-known survival strategy used by the poor, especially rural residents (Chukwuedozie and etal, 2013: 1). Despite more than half a century of rural planning in Iran, signs of instability such as degradation of vegetation and unprincipled use of natural resources, unemployment and lack of sustainable employment, weak social foundations to generalize participation in spaces for the countryside is evident (Soleimani et al., 2014: 21). Recognizing the instability of rural settlements and its scientific explanation in the national space can be a guide for planners to reduce the political, economic, ecological crisis, which in turn is a step towards using the country's rural resources in the national economy (Barimani, 2002: 93).

Factors that have caused the depopulation of villages in Iran and intensified the instability of rural settlements are: New investments in urban industries, reduction of active force, increase in the number of elderly, environmental degradation, lack of infrastructure, poverty, stagnation of production, lack of employment opportunities in the agricultural sector, destruction of water and soil resources, inequality of access to various opportunities (Ltifeh et al., 2016: 142). Natural factors and the occurrence of unexpected and unpredictable events such as earthquakes, floods, droughts and famines, the traditional rural social system, especially for the educated youth, rapid rural population growth and high fertility disproportionate to employment conditions and agricultural and welfare facilities. , The relationship between urban and rural residents and cultural and intellectual attractions of the city, mass media attractions, transportation system and cultural centers of the city, the negative effects of second homes in rural areas, the effects of globalization (Bekan, 2015: 5).

Khoosf city was created in May 2012. According to the results of the census in 2016, the population of Khoosf city was 27599 people, of which 9306 people (33.7%) live in urban areas (Khoosf, Mohammadiyeh) and 18294 people (66.3%) live in rural areas. This indicates that the majority of the population in the area lives in villages. However, its trend has been decreasing during the 2006 to 2016 censuses, so that the rural population of the city has decreased by 10.86% compared to 2011 and by 21.1% compared to 2006. Also, the number of settlements with a population of Khoosf city, according to the census of 2016, was 196

points, while in 2006 this number was 272 points, which indicates the evacuation of 76 villages in the city.

Due to the fact that studies in the study area indicate a decrease in rural population, so the purpose of this study is to find and analyze the impact of drought on population instability in this village. Today, the rural settlements of the country are more than ever as unstable areas. Signs and symptoms of this instability are: severe soil erosion, waste and lack of proper use of surface and groundwater resources, lack of optimal allocation of water for various uses. , Destruction of vegetation and improper use of natural resources, unemployment and lack of sustainable employment, weakness of social foundations to generalize participation, lack of health, cultural services, etc., which is the manifestation of these instabilities, widespread migration of villagers to cities (Soleimani et al., 2014: 22). The situation of the country's villages from the perspective of sustainable development shows that our rural society has undergone extensive changes under the influence of trends and policies of recent decades, which shows the movement of villages towards environmental and human instability (Mohammadi et al., 2015: 64). The population of villages and the number of settlements in Khoosf city has decreased and due to the continuation of drought, soil salinity, reduction of water resources and drying of canals, lack of government funding, lack of attraction in villages and other problems in rural areas, study and study of population instability in rural settlements of Khoosf city, it is necessary and important in order to finally reduce the consequences of this instability. The purpose of this article is to investigate the effect of drought on population instability in the villages of Khoosf city and the hypothesis of this article is: There is a significant relationship between drought and population instability in the villages of Khoosf city.

Literature review

Mohammadi et al. (2016), The role of natural factors in the instability of rural settlements in the mountainous and foothills of the Zagros Case study: The villages of Marivan and Sarvabad counties. The results of this study indicate that out of 229 settlements in the study area, about 24 villages (10.48%) are in the sustainable area, 58 villages (32.25%) are in the semi-sustainable area and 147 villages (64.19%) are in the unsustainable area. Therefore, the study area is considered unsustainable in terms of environmental-ecological factors, so basic and serious attention to these factors to prevent risks and prevent wastage of capital, in any kind of planning is a requirement.

Bostani et al. (2016) had an analysis of the effects of drought on the instability of rural settlements in Darab city. The results of this study show that drought and reduced rainfall has reduced the yield of agricultural products, especially wheat, equivalent to 0.38 kg per millimeter of reduced rainfall per hectare. This reduction in production has led to a decrease in the income of rural residents and their migration, and ultimately to the instability of rural settlements. Studies also show that during the study period, 14 villages were abandoned and uninhabited and 32 villages were exposed to abandonment.

Namdar et al. (2016) studied the analysis of socio-economic and environmental dimensions of drought crisis and its effects on rural households: a case study of villages in Zarrin Dasht. The results showed that the crisis of successive droughts was associated with significant effects on economic, social and environmental dimensions in the villages of the region, among which, the economic effects of this phenomenon are more than other dimensions and the permanent outflow of labor from agriculture, rural migration and reduced area under cultivation have affected production.

Khaledi et al. (2015) investigated the factors affecting the ability of farmers to adapt to climate change (Case study: wheat farmers in Sarpol-e Zahab, Kermanshah province). They concluded that several factors affect the adaptability of farmers to climate change, which can be strengthened by taking a fundamental step to increase the adaptability of farmers and make society resilient to climate change. The mentioned factors can be listed as follows: income, experience, participation of family members in agricultural work, level of mechanization, number of family members, total amount of agricultural land, benefit of educational and meteorological services, wheat yield per hectare, membership in social institutions, Loan amount, skills, production costs per hectare, level of education and quality of land.

Mohammadi et al. (2015) investigated the instability of rural settlements from the perspective of councils and villages in the mountainous region and the foothills of the Zagros (study of villages in the cities of Marivan and Sarvabad). From the perspective of councils and villagers, the study area has been economically and environmentally-ecologically very unstable, and these two dimensions have had the greatest impact on rural migration and rural instability, and cultural-social and institutional-political factors have little impact on rural instability.

Soleimani et al. (2014) investigated the population stability of rural settlements in arid and semi-arid areas (case study of Sarayan city. The results of their research showed that the

most important factor that causes instability of rural population in arid and semi-arid areas and also plays a role in population instability in the study area is water shortage.

Eftekhari et al. (2014) analyzed the role of subsistence diversity in the resilience of rural households in drought conditions (Case study: Drought-prone areas of Isfahan province). The results showed that the adoption of subsistence diversity approach has led to more resilience of households in drought conditions. This diversity of livelihoods is more pronounced in villages exposed to more severe drought.

Ejemaei et al. (2014) assessed the sustainability of rural settlements (Case study: Firoozabad Fars rural settlements). The research showed that the environmental dimension has had the greatest impact on rural settlements, the share of annual water resources reduction and water quantity among the environmental dimensions has been more than others. Spatial analysis also shows that the villages that have been more unstable have been moved to the edge of the plain.

Rostamalizadeh et al. (2013) studied the factors affecting the survival of rural youth (Case study: Ahar city). The research showed that the most important factors in the exclusion of young people from rural communities and their tendency to urban areas are: lack of welfare facilities, lack of educational and cultural facilities, lack of health facilities, lack of proper jobs and work problems, lack of transportation and The transfer and non-fertility of agricultural lands.

Shafiee Sabet (2013) conducted research on agricultural and non-agricultural employment: Challenges, opportunities and instability of rural settlements in Tehran and Alborz. The results of this study show that agricultural and livestock activities have not led to the development of conversion industries and workshops in rural areas. The capability of the rural environment and its infrastructure has a significant impact on increasing agricultural and non-agricultural activities. Also, the amount of distributed loans has a significant effect on increasing non-agricultural activities in rural areas of the region. Lack of support for small and peasant farmers has caused the capability of the rural environment, the ability and skills of activists and infrastructure of the rural environment in the field of agriculture and non-agriculture have not been used properly.

Nouri et al. (2013) studied the role of agriculture in the sustainability of the rural population (Case study: Dehdez district; Izeh city). The results indicate that economic and infrastructure indicators (lack of employment, lack of income, lack of facilities and structural weakness, etc. in the agricultural sector, in the field of population instability and increasing migration has been effective. On the other hand, despite the average improvement in

production of some crops due to changes in cultivation, no significant contribution has been made to the stability of the rural population; Therefore, the agricultural sector of the study area with respect to (single-sample t-test) and the obtained number (less than 0.05), due to structural weakness and related indicators, has not been effective in preventing migration and population stability and its weaknesses are not a solid reason for the villagers.

Mekaniki et al. (2013) investigated the collective instability of rural settlements, the challenge of arid and desert areas; a case study: Birjand city. In this paper, the results show that the evacuation trend of villages has intensified in recent years and small settlements (mostly less than 50 people) are more vulnerable to the phenomenon of population evacuation, which itself causes an imbalance in the spatial system of settlements in such areas. Njuguna (2016) examined government measures to prevent rural-to-urban migration in Africa. This paper shows that the development of infrastructure in rural areas as well as the relationship between urban and rural areas is one of the main elements of reducing rural poverty.

Methodology

In the 2016 census, 41 villages had a population of more than 100 people, 20% of whom were selected as a sample. In selecting the sample villages, geographical distribution, population classification and population reduction during the period 2004-2014 have been considered, and finally 8 villages were selected as the sample. Then, according to the total number of households in these villages (796 households), 259 questionnaires were distributed in these villages based on Cochran's formula. (Table 1)

Table 1: Spatial distribution of the questionnaire

No.	Name of the village	Number of households	Number of questionnaires in proportion to the number of households
1	SarvAbad	94	31
2	Ark	45	15
3	Binabad	48	15
4	Hamand	55	18
5	SalmAbad	54	17
6	AkbarAbad	88	29
7	TaghiAbad	72	23
8	GhalehZari	340	111
Sample community size		796	259

In this study, the most appropriate tool was a questionnaire. In this study, Cronbach's alpha method was used to measure reliability, which is used in most scientific researches. In

the pilot sample, Cronbach's alpha coefficient for questionnaire variables was measured as shown in Table 2.

Table 2: Cronbach's alpha coefficient of the questionnaire

Variables	Cronbach's alpha coefficients
Lack of facilities and services	0.882
Drought	0.904

Due to the fact that Cronbach's alpha coefficient is more than 0.7, the reliability of both desirable evaluation and internal validity is confirmed. The present study used Delphi technique to assess the validity of the questionnaire. In this way, the researcher-made questionnaire, after reviewing and correcting the issues raised by the professors, was finally approved by the supervisors and advisors, and the questionnaire was finalized in the form of 22 questions based on the Likert scale. In this research, descriptive statistical methods (frequency, frequency percentage and average) are used to analyze the data. In inferential statistics, a one-sample t-test was used to examine the status of variables and the effect of each variable on population instability in rural settlements.

In order to rank each of the factors (lack of facilities and services, drought and economic factors (unemployment and low income), Friedman ranking test is used. The software used in this study for data analysis is SPSS software.

Findings

Khoosf city is located in the southwest of South Khorasan province and in the range of 57 degrees and 57 minutes to 59 degrees and 22 minutes' east longitude and 31 degrees and 20 minutes to 33 degrees and 13 minutes' north latitude (Statistical Yearbook of South Khorasan Province, 2016: 62). This city is limited to Sarayan and Birjand cities from the north, Nehbandan city from the southeast, Kerman province from the south, Sarbisheh city from the east and Tabas city from the southwest (Rasti, Ashrafi, 2016: 47).

Khoosf city with an area of 16029 kilometers square, which is equivalent to 10.6 percent of the area of South Khorasan province. It now has 2 districts and 5 villages. According to the 2016 census, the population of Khoosf city is 27,600 people with 7942 households, of which 9307 people live in urban areas and 18293 people live in villages and hamlets of the city.

Table 3: Political divisions and size of Khoosf city in 2016

City	Section	Name of the village	Rural Center	Date of Establishment	Area (km^2)	Rural population 2016
	Markazi	Khoosf	Khoosf	1987	5072	6466

Khoosf		Khor	Khor	2012	1122	2476
	Majan Plain	Majan Plain	Majan	1987	736	3520
		Barakouh	Gol	1990	539	2406
		GhalehZari	AliAbad	1990	8365	3425

Source: Management and Planning Organization of South Khorasan Province, Deputy of Statistics and Information

Khoosf city naturally includes three parts: mountain plains (Khoosf village), eastern foothills (Barakuh and Majan plain villages) and dry deserts in the western half (GhalehZari village) (Nikzad, Sedighiyan, 2015: 2).

Khoosf has a relatively high altitude from the surface of the high seas so that the height of most of its points is not less than 800 to 900 meters. The high part of Khoosf is not very high compared to altitudes such as Alborz and Zagros, so that no point of it even reaches 3000 meters. In Khoosf city, highlands and mountain ranges are located in the northern and northeastern parts.

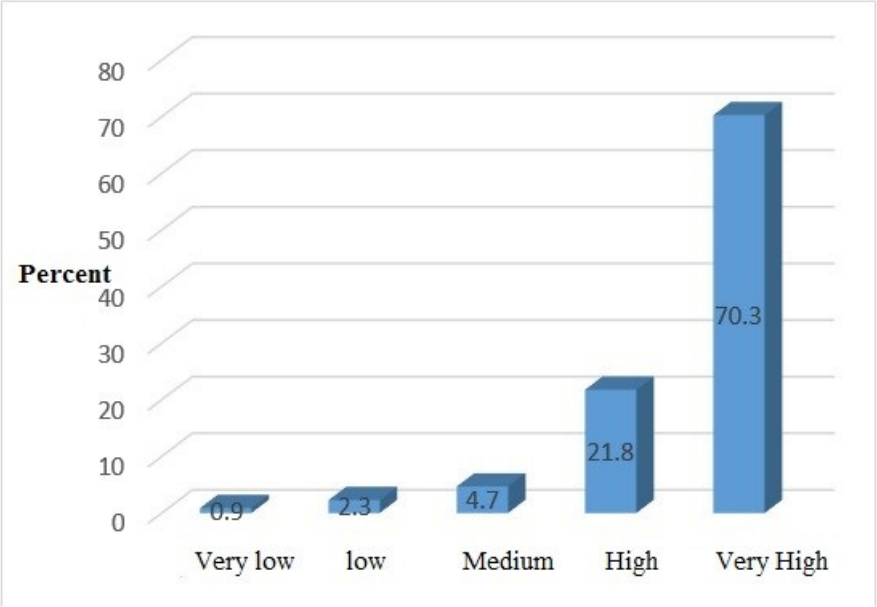
The average annual rainfall in the study area and in the statistical period of 20 years is 91.5 mm. Also, the highest average monthly rainfall is in January and 28 mm and the lowest average rainfall is in September and zero mm. The highest rainfall in winter is 62.2 mm and the average rainfall during the 20-year statistical period is 91.5 mm. The role and importance of groundwater resources in areas such as the city of Khoosf, which have almost no surface water resources is very prominent. All agricultural activities in this city depend on groundwater resources such as wells, aqueducts and springs (Khatib et al., 2016: 56). The village of medicinal plants was established for the first time in the country in the city of Khoosf and was inaugurated and put into operation in March 2017. Also, a farm of medicinal plants is being built by the private sector.

Impact of water resources reduction on population instability

Table 4: Frequency distribution of the impact of declining water resources on population instability

Items	Frequency	Percent
very little	2	0.9
Low	6	2.3
Medium	12	4.7
High	57	21.8
Very High	182	70.3
Total	259	100

According to the results of Table 5-14, the respondents found the effect of reducing water resources on population instability to be 70.3% very high, 21.8% high, 4.7% medium, 2.3% low and 0.9% very effective and they have expressed little.



Graph 1. Frequency percentage of the impact of water resources reduction on population instability

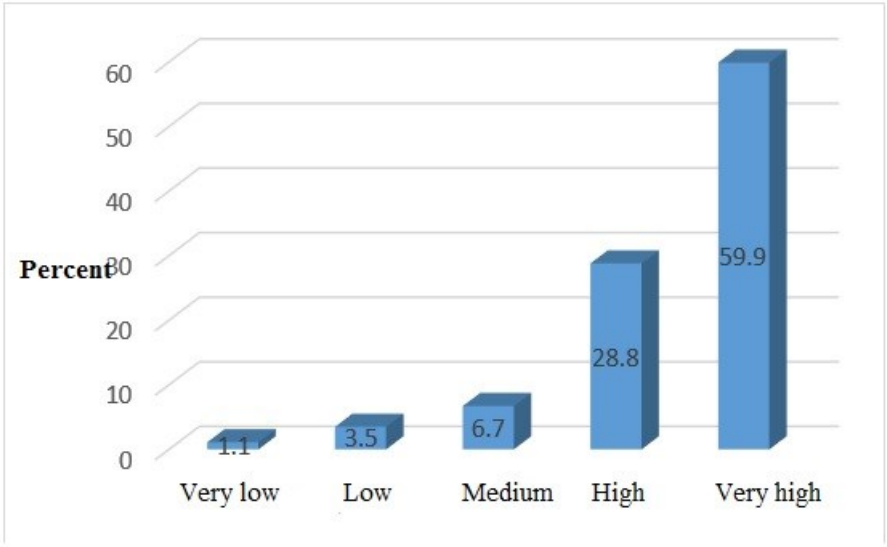
Based on the results of the above table and chart, a total of 92.1% of respondents considered the impact of declining water resources on population instability to be high and very high.

Impact of declining acreage on population instability

Table 5: Frequency distribution of the effect of reducing the area under cultivation

Items	Frequency	Percent
very little	3	1
Low	9	3.5
Medium	17	6.7
High	75	28.8
Very High	155	59.9
Total	259	100

According to the results of Table 5, the respondents found the effect of reducing the area under cultivation on population instability to be 59.9% very high, 28.8% high, 6.7% moderate, 3.5% low and 1% Very little.



Graph 2. Percentage of the effect of reducing the area under cultivation in population instability

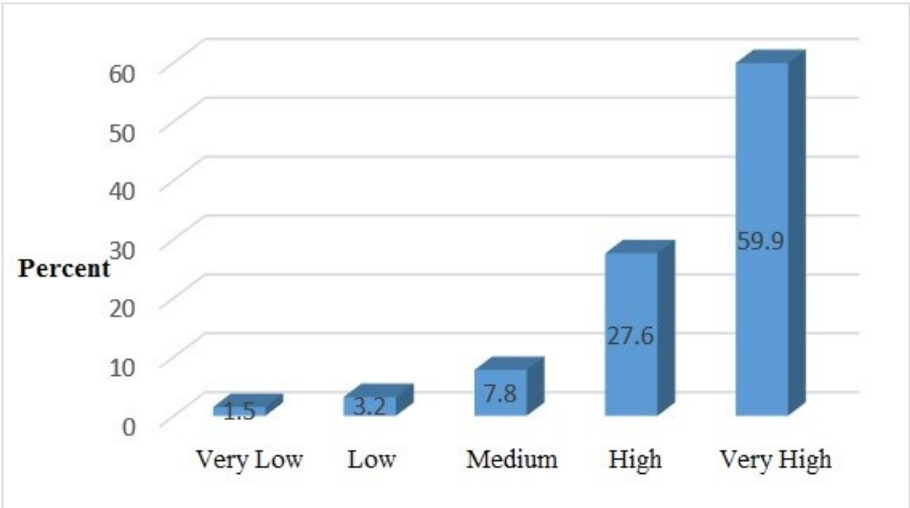
Based on the results of the above table and graph, a total of 88.7% of respondents considered the impact of reducing the area under cultivation on population instability to be high and very high.

Impact of declining agricultural production on population instability

Table 6: Frequency distribution of the impact of reduced agricultural production on population instability

Items	Frequency	Percent
very little	4	1.5
Low	8	3.2
Medium	20	7.8
High	72	27.6
Very High	155	59.9
Total	259	100

According to the results of Table 6, the respondents expressed the impact of reduced agricultural production on population instability as 59.9% very high, 27.6% high, 7.8% medium, 3.2% low and 1.5% very low.



Graph 3. Frequency percentage of the impact of declining agricultural production on population instability

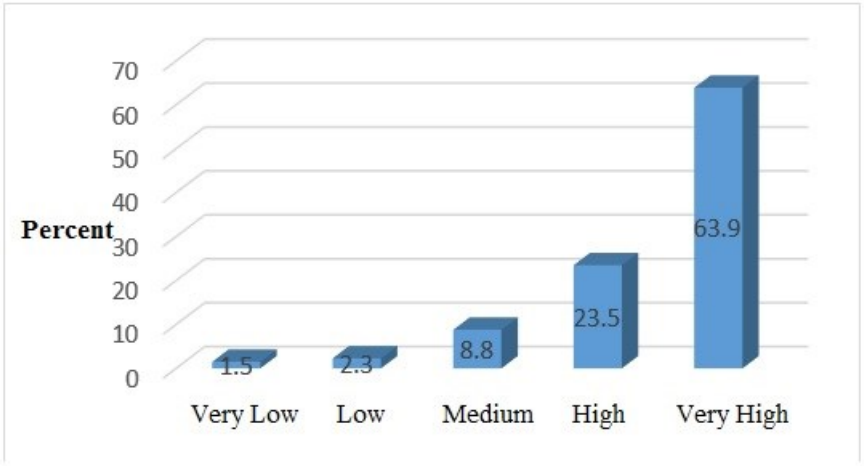
Based on the results of the above table and chart, a total of 87.5% of respondents considered the impact of reduced agricultural production on population instability to be high and very high.

Impact of drought on population instability

Table 7. Frequency distribution of the impact of drought on population instability

Items	Frequency	Percent
very little	4	1.5
Low	6	2.3
Medium	23	8.8
High	60	23.5
Very High	166	63.9
Total	259	100

According to the results of Table 5-19, the respondents expressed the impact of drought on population instability as 63.9% very high, 23.5% high, 8.8% moderate, 2.3% low and 1.5% very low.



Graph 4. Frequency of the impact of drought on population instability

Based on the results of the above table and chart, a total of 87.4% of respondents considered the impact of drought on population instability to be high and very high.

Conclusion

Drought seems to have had the greatest impact on the population instability of the studied rural settlements. Based on the results of Table 8, it can be seen that for the variable of drought and all its dimensions, the t-statistic is positive and the significance level is zero (which is less than 0.05), which indicates that the average for all these variables is 3. They have been more and have had a significant effect on population instability in rural settlements of Khoosf city. Therefore, the third hypothesis is confirmed.

Table 8. Results of one-sample t-test for drought and its dimensions

Variable	Average	t Statistic	*df*	Sig. Level
Reduction of water resources	4.58	38.52	343	0.000
Decreased area under cultivation	4.43	31	343	0.000
Reduction of agricultural production	4.41	29.90	343	0.000
Increasing rural poverty	4.36	26.91	343	0.000
Damage to the economy	4.98	27.99	343	0.000
Total (drought)	4.44	37.38	343	0.000

One of the most important issues for researchers and government officials in recent decades is the issue of population instability in rural settlements and its social, cultural,

economic and security consequences. What seems to be important at the beginning is to identify the factors affecting the population instability of rural settlements and find solutions to reduce population instability and its negative effects and consequences. The present study showed that the main cause of population instability in rural settlements in the study area drought and lack of facilities and services. Considering that the most important factor of population instability is the cause of drought and on the other hand is the most important source of income for villagers from the agricultural sector, managers and planners of rural areas should consider the economic programs and policies of the agricultural sector and related activities. Prioritize and contribute to the sustainability of the population in the villages. One of the main problems of the studied villages, especially Hamand and Sarvbad villages is the lack of water for agriculture to the extent that some farmers use tankers to irrigate their saffron trees and fields in the villages and bear the heavy costs of this type of irrigation.

Due to the recent droughts in the studied villages, except for GhalehZari, which does not have an aqueduct, the aqueducts were used for agriculture and drinking until many years ago. There are no villagers and they use tap water. Ark village is a tourist destination, but it is the only village with more than 50 households in the city that does not have the blessings of piped water.

There are some difficulties such as:

- The sale of raw agricultural products such as jujube, pomegranate and saffron and medicinal plants is another problem of the studied villages and this causes the villagers to have a small income.
- Lack of advertising for agricultural and livestock products, especially for camel milk and buttermilk, which is produced in the villages of Sarvabad and Hamand.
- Existence of many brokers and intermediaries in the market of buying and selling agricultural and livestock products, which makes brokers buy farmers' products from farmers at a low price and make the most profit, leaving the farmer and rancher empty-handed.
- Existence of long-term droughts and pest infestations on agricultural fields, especially pistachios and wheat, which unfortunately farmers use various poisons and chemical fertilizers without scientific knowledge and consultation with agricultural jihad experts and through the use of their personal experiences and those of their relatives. Which causes a lot of damage and they have to pay a lot of money first for the

preparation of pesticides and fertilizers, etc., and on the other hand, their products are destroyed.

- Low irrigation efficiency due to the use of traditional irrigation methods such as flooding, furrowing and furrowing and water transfer in all studied villages, which is done with soil atmospheres.
- Following the drought in the last two decades, rained agriculture, which was previously one of the main sources of income for farmers and had a low cost, has disappeared and agriculture has become dependent on low-water aqueducts and deep and semi-deep wells.
- Today, organic agriculture is considered as one of the sustainable agricultural systems, but unfortunately in this field, training has not been given to farmers in this city, especially farmers in the studied villages, and farmers have not been able to develop this type of agriculture due to low education.

There are some solutions such as:

- Due to recent droughts and water shortages for the agricultural sector, as well as a sharp decline in water quality, the city's agricultural jihad is better to promote the cultivation of crops that require less water (such as saffron) and to update irrigation systems and use methods Act under pressure.
- In order to solve the problem of selling raw agricultural products and since the relationship between industry and agriculture is established with the creation of conversion and complementary industries, more attention is paid to creating rural industries and considering special facilities for these industries, especially for Taghiabad and Vakbarabad villages in the center. The agricultural hub is located in Majan district and Ark village, despite the abundance of medicinal plants, can lead to prosperity and strengthen the agricultural and industrial sector in the sample villages and increase the income of farmers and the stability of the rural population.
- A comprehensive program should be prepared for the agricultural sector in Khoosf city and for each of the products, especially jujube, pomegranate, saffron and cotton, in addition to increasing income for farmers to cultivate and produce professionally and also to meet the needs of the city's industries. The sale of products at low prices to brokers is prevented and also prevents the loss of agricultural products.
- Considering that in the future more attention will be focused on the production of organic agricultural products, it is necessary for the public sector to promote and train this type of agriculture in the studied villages.

- It is recommended that in order to strengthen the agricultural sector and increase production, low-interest, low-interest facilities be paid to farmers with maximum supervision, and in providing collateral and guarantees required for these facilities, the operating banks accept the executive plans.
- Due to the severity and duration of droughts and the consequences of it, it is better to put conservation agriculture on the agenda, which can be used to reduce many restrictions on rained and even irrigated cultivation. In conservation agriculture, three principles of low tillage or no tillage, maintenance of vegetation at the soil surface and observance of crop rotation are considered.
- Due to the problems of lack of fertile soil and water in the city and the lack of young people to do heavy agricultural work and high costs of traditional agriculture, it is better to promote hydroponic crops that can be done in all studied villages.

References

Jomeh Pour, Mahmoud, (2008), An Introduction to Rural Development Planning: Perspectives and Methods. Third edition. Tehran: Samt Publications

Motiei Langroudi, Seyed Hassan, Rezvani Mohammad Reza, Nourbakhsh, Seyed Morteza, (2014), Explaining the Appropriate Strategy for Population Sustainability in Rural Settlements Case Study: Hashtrood County, Rural Research Quarterly, Volume 5.

Rostamalizadeh, Valiollah, Ghasemi Ardahai, Ali and Rostami, Nayer (2013), Factors Affecting the Sustainability of Rural Youth, Case Study: Ahar County, Rural Research, Volume 4, Number 3.

Bekan, Maryam, (2015). Factors of instability of rural settlements, 3rd International Congress of Civil Engineering, Architecture and Urban Development, Shahid Beheshti University, Tehran.

Barimani, Faramarz, (2002), The Instability of Rural Settlements and Its Developments in the Recent Century, Case Study: Sistan, The First National Conference on Iranology, Tehran.

Latifeh, Nahid, Jahani, Mehdi and Jafari, Hamid, (2016), Economic Factors Affecting the Instability of Rural Settlements, Case Study: Villages of Damavand County, Rural and Development Quarterly, Volume 19, Number 1.

Mohammadi, Saadi, Taleshi, Mostafa and Rostami Shahbakhti, (2015), Instability of rural settlements from the perspective of councils and villages in the mountainous region and the foothills of the Zagros, a case study: villages of Marivan and Sarvabad counties, Scientific-International Quarterly Geography of Iran, 13th year, No. 46.

Taleshi, Mostafa and Amirfakhrian, Mostafa, (2011), Instability of Rural Settlements and the Future of Urbanization in Khorasan Razavi. Geography (Scientific-Research Quarterly of the Iranian Geographical Society), New Volume, Ninth Year, No. 29.

Arfaei, Masoumeh, Haji Hosseinnejad, (2008), The effectiveness of training courses for ranchers in Ashtian region, Journal of Agricultural Extension and Economics, first year, No. 3.

Ismail Nejad, Morteza, Borhani, Reza, Hosseinzadeh Kermani, Mahmoud, Alizadeh, Arash, (2016), Planning and Planning Studies of South Khorasan Province (Climate Situation Analysis), South Khorasan Governorate.

Afrakhteh, Hassan, Riahi, Majid, Javan, Farhad, (2015), Economic Sustainability of Rural Settlements in Rezvanshahr, Geography (Quarterly Journal of the Iranian Geographical Association), New Volume, Thirteenth Year, No. 46.

Badri, Seyed Ali, Portaheri, Mehdi, (2012), Introduction to Sustainable Rural Development, First Edition, Organization of Municipalities and Rural Affairs

Bazrafshan, Javad, Rezaei, Somayeh, Mansouri Daneshvar, Mohammad Reza, (2013), Evaluation of the effects of industrial units on rural economy, Case study: Central part of Firoozabad city, Fars province, Journal of Rural Research and Planning, No. 4.

Papeli Yazdi, Mohammad Hossein, Rajabi Sanajerdi, Hossein, (2010), Theories of the city and its surroundings, fourth edition, Samt Publications.

Payetakhti Oskooi, Seyed Ali, Tabaghchi Akbari, Laleh, (2015), A Study of the Relationship between Literacy Rates and Immigration in Iran, Journal of Sociological Studies, Year 7, No. 26.

Pourtaheri, Mehdi, (2015), Application of Multi-Index Decision Making Methods in Geography, Tehran, Samt Publications.

Tavakoli, Morteza, Fazelnia, Gharib, Ashineh, Hassan, (2015), Study and analysis of the role of rural management in rural population sustainability (Case study: Kahnooj city), First International Conference on Geographical Sciences, Kharazmi Institute of Science and Technology, Shiraz.

Bazrafshan, Javad, Rezaei, Somayeh, Mansouri Daneshvar, Mohammad Reza, (2013), Evaluation of the effects of industrial units on rural economy, Case study: Central part of Firoozabad city, Fars province, Journal of Rural Research and Planning, No. 4.

Jalalian, Hamid, (2017), The position of the village in regional planning, Samt Publications. Tehran.

Jahanbakhsh, Saeed, Rezaei, Somayeh, Ghasemi, Ahmad Reza, Tadini, Masoumeh, (2011), Synoptic Analysis of Spring Glaciers, Tabriz, Case Study: Spring Cold 2003-2004, Geographical Research Quarterly, Volume 20, Number 3.

Khobnejadian, Sadegh, Jorfi, Abdolamir, (2015), Types of Immigration and Its Methods in International Law, Islamic Azad University, Fars Science and Research Branch, Shiraz.

Rostamalizadeh, Valiullah; Ghasemi Ardaei, Ali (2017), staying or leaving; Rural Youth Migration Challenges, Journal of Rural Research, No. 30.

Zomordian, Mohammad Jafar, (2012), Geomorphology of Iran (structural processes and internal dynamics), Ferdowsi University of Mashhad Press.

Soleimani, Masoumeh, Bouzarjomehri, Khadijeh, Javan, Jafar, Anabestani, Ali Akbar, (2015) Explaining the effective factors on the instability of rural settlements in Iran, Journal of Rural Research and Planning, Fourth Year, No. 3.

Sadeghi, Saeed, Hosseinpour Niazi, (2015), The Role of Migration in Rural Settlements (Case Study: Valiabad Village, Rey City), The First Conference on Challenges and Presenting New Urban Management Solutions, Basij Organization for the Underprivileged of Tehran Municipality.

Taleshi, Mostafa, Amirfakhrian, Mostafa, (2011), "Instability of rural settlements and the future of urbanization in Khorasan Razavi". Geography (Scientific-Research Quarterly of the Iranian Geographical Society), New Volume, Ninth Year, No. 29.

GolKar, Hamidreza, Rezainejad, Mohammad, Tavousi, Mojtaba, (2016), Climatic zoning of South Khorasan province with GIS software, Journal of Water and Soil Resources Protection, Year 6, Number 1.

Madani, Hassan, Shafighi, Sirus, (2017), General Geology, Amir Kabir University of Technology Press (Tehran Polytechnic).

Mechaniki, Javad, Tajrizi, Elham, (2012), Demographic instability of rural settlements The challenge of arid and desert areas: A case study of Birjand city, Birjand University.

Mechaniki, Javad, Arzumandan Mofrad, Razieh, Nejati, Behnaz, (2016), Planning and Planning Studies of South Khorasan Province (Demographic Changes of the Province), South Khorasan Governorate

Naseri, Hamidreza, Azizabadi Farahani, Yousefi and Ramkhasti, Zahra, (2017), The effect of drought on the socio-economic situation of rural areas south of Birjand, 4th International Conference on Environmental Planning and Management, Tehran

Nowruzzadeh, Abbas, (2017), Meteorology and Climate Compatible Architecture Design, Quarterly Journal of New Research in Geographical Sciences, Architecture and Urban Planning, First Year, Fifth Issue.

Velaei, Mohammad, Abdollahi, Abdollah, Manafi Azar, Reza and Safari, Navid, (2015), Analysis of Factors Affecting Sustainable Rural Development with Emphasis on Entrepreneurship, Case Study: Merhamat Abad Shamali Village-Miandoab County, Regional Planning Quarterly, Year 5, No. 19.

Bacon-Shone ،john;2015; Introduction to Quantitative Research Methods; The University of Hong Kong.

Bhaga, Ram, (2017), Migration and Urban Transition in India: Implications for Development, UNITED NATIONS EXPERT GROUP MEETING ON SUSTAINABLE CITIES, HUMAN MOBILITY AND INTERNATIONAL MIGRATION Population Division Department of Economic and Social Affairs United Nations Secretariat,New York UN/POP/EGM/2017/3

Chukwuedozie K. Ajaero and Patience C. Onokala،2013 ،The Effects of Rural-Urban Migration on RuralCommunities of Southeastern Nigeria ،Department of Geography, University of Nigeria, Nsukka.

Melesse ;Birhanu, Nachimuthu; Dr.Kavitha ; 2017; A review on Causes and Consequences of Rural- Urban Migration in Ethiopia; International Journal of Scientific and Research Publications, Volume 7, Issue 4.