

**REPUBLIC OF AZERBAIJAN**

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**ABSTRACT**

of the dissertation for the degree of Doctor of Philosophy

**ECONOMIC-GEOGRAPHICAL ASPECTS OF THE  
REGULATION OF DEMOGRAPHIC DEVELOPMENT IN  
LANKARAN NATURAL PROVINCE**

Specialty: 5403.01 – Human geography

Field of science: Geography

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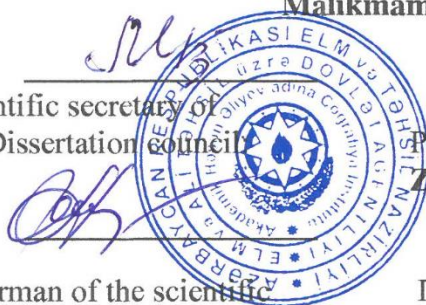
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## GENERAL CHARACTERISTICS OF THE WORK

**Relevance of the topic and its degree of use.** The efficient territorial organization of the economy and population in the regions of Azerbaijan, meeting the socio-cultural needs of the population at the level of modern requirements, and using local natural conditions and natural resources are of great importance for the transition to sustainable development. To implement this task, large-scale measures have been taken during the years of independence, and several State Programs on the development of regions have been adopted. The implementation period of four of them has expired. During this period, the transport and communication network has been reconstructed, numerous new socio-cultural facilities have been built, and the activities of most of the existing production and service enterprises have been restored.

Agrarian reforms in agriculture have allowed for the expansion of arable land, increased crop production in many areas, and increased productivity. Processing enterprises in the light and food industries operate on the basis of their use.

However, the population is still unevenly distributed among the regions of the country, and the discrepancy is growing. Concentration of the population in Absheron continues, which creates serious problems not only in the capital city, but also in other economic regions. In order to reduce the disproportions in the population in the country, it is important to develop their scientific and theoretical foundations, along with measures taken in the regions. The main trends in the dynamics of demographic indicators in the regions are expected to negatively impact the population growth, the maintenance of an optimal gender and age composition, and the provision of employment opportunities for the labor force soon. The low performance of sectors relying on the use of personnel within the employment structure remains a significant problem.

In recent times, birth and natural growth rates have been seriously declining, while migrations are continuing, albeit at a low level. Analysis of the causes of death among the population shows

that the share of circulatory system and degenerative diseases are gradually increasing.

The number of jobs in the regions lags behind the requirements of the demographic potential, the low level of socio-cultural services, and difficulties in providing housing do not allow the population to remain in their places, and at the same time, problems arise in attracting the population from surrounding areas to regional and district centers.

As a result, the population in the regions, including cities and towns located in the Lankaran-Astara economic region, is growing at a slow pace, and the level of urbanization is low. To solve the above problems, to increase the share of regions in the socio-economic development of the country, distribution and efficient use of demographic potential, it is necessary to carry out reforms in the economic, cultural, social, demographic spheres, as well as to develop their scientific-theoretical and methodological foundations, and to prepare proposals and recommendations of practical importance. Taking these into account, the study of the interaction between the population and economy is an important task.

Lankaran-Astara economic region, located in the south of the country, occupies a special place in terms of economy and population settlement. High natural population growth over many years has led to an increase in population and dense settlement. There are serious problems in its regulation and the expansion of the territory of settlements, for this purpose agricultural land is used and these areas are removed from crop rotation.

Effective use of settlement areas in the economic district, determination of ways to improve the economic structure of settlements, provision of jobs, raising the level of socio-cultural services, researching ways to increase their role in ensuring demographic development is an important task, their solution is of great importance.

Research on the socio-economic and demographic development of regions in Azerbaijan began in the 1960s, and the study of individual regions expanded in the 1970s and 1980s. These studies examined the natural and geographical conditions and natural

resources of the regions, their economic importance, their use, the socio-economic base of settlements, the factors determining their formation, demographic development trends, and the directions of reconstruction. Several dissertations have been completed on the subject of research to date.

However, in the modern era, difficulties remain in the demographic development of regions. The low level of urbanization and its slow growth, the weak socio-economic base of cities and towns, the fact that paid and socio-cultural and household services lag the current demand hinder sustainable development. To solve the problem, it is of great importance to conduct scientific research and prepare proposals and recommendations of practical importance.

**The object and subject of the research.** The research object of the dissertation work is the demographic development in the Lankaran-Astara economic region, the population of urban and rural settlements located here. The regulation of demographic development in the economic region, the efficient use of labor resources, the solution of the employment problem, the regulation of settlement, and the role of the efficient organization of the territorial structure of the economy in this process constitute the subject of scientific work.

**Goals and objectives of the research.** The purpose of the research is to develop economic, socio-cultural measures necessary to ensure demographic development in the Lankaran-Astara economic region, and to study the ways of sustainable economic and demographic development of the region.

To achieve these goals, the following tasks have been identified:

- Assessment of natural conditions and the territorial potential of the region in terms of demographic development.
- Determining the role of reforms carried out in the fields of industry, agriculture and social services during the years of independence in settlement of population.
- Development of economic sectors in settlements, study of the possibilities of natural conditions and ways of using natural resources in the development of agriculture, study of directions for mastering new settlement areas.

- Determining the changes that have occurred in the demographic situation in recent times, studying their impact on the number of the population, gender and age composition.

- Identification of measures that need to be implemented to reconstruct and strengthen the socio-economic base of settlements that have a serious impact on demographic development and their economic and geographical justification.

- Preparation of proposals on ways to improve demographic development in the economic region and study of the role of the legislative framework in its regulation.

- The regulation of settlement, identification of prospective development paths, and determination of directions for ensuring sustainable demographic development.

**Research methods.** Various research methods of economic geography were used in the process of completing the dissertation work. These include statistical analysis, desk analysis, mathematical modeling, historical, cartographic methods, field research, etc.

**Main provisions presented for defense:**

- Study of changes in the field of demographic development, management of settlement in the economic region during the years of independence, and determination of their consequences;

- The importance of measures taken to strengthen the socio-economic base of settlement, providing the population with jobs, and directions for improving socio-cultural services;

- Measures taken to eliminate problems in the regulation of settlement in conditions of high population density and limited land resources, the role of State Programs in this area;

- Measures necessary to maintain the demographic potential of settlements in place, directions for ensuring sustainable development of settlements.

**Scientific novelty of the research.** The scientific novelties of the conducted research include the following:

- The trends in the demographic development processes of the region during the years of independence have been identified, and their impact on population size, growth rate, and gender-age composition has been studied.

- Ways for the effective use of the existing natural and economic potential to reconstruct the socio-economic base of the settlement and ways to ensure its sustainable development have been identified;

- Internal differences in demographic development across administrative regions have been studied, and the reasons for the changes depending on local characteristics have been identified;

- The methods of utilizing local natural-economic potential in determining the priority directions of population settlement have been studied. In this process, the demographic development characteristics of the region were taken as the basis.

**Theoretical and practical significance of the research.** The analyses conducted during the research process and the results obtained play an important role in determining the directions of socio-economic and demographic development of the region. They can be used as a basis for determining the paths of demographic development in other economic regions.

The data and the analyses conducted in the dissertation can be used as a source in the educational process in secondary and higher education institutions. The dissertation is of great importance in the preparation of State Programs for the socio-economic and demographic development of regions.

**Approbation and application of research work.** The main provisions of the research conducted during the preparation of the dissertation were discussed at the following conferences and seminars: Republic scientific-practical conference on “Geographical problems of the regions of Azerbaijan” (Baku, 2016), Republic conference on “Problems of effective management in the modern era” (Baku, 2016), Scientific conference on “Demographic development in the Republic of Azerbaijan: Prospects of population settlement and regional problems” (Baku, 2016), III International scientific-practical conference on “Tourism and recreation in the 21st century: Problems and prospects” (Baku, 2017), I International scientific-practical conference on “Trends and prospects of tourism development in Kazakhstan and Central Asia” (Kazakhstan, Almaty, 2019), International scientific-practical conference on “Development

of the social protection system in Azerbaijan: yesterday, today and tomorrow” (Baku, 2019), Conference on “The role of tourism in ensuring sustainable development” (Baku, 2019), Permanent international conference of “XXIV Vavilovskih readings” on the theme “Human Safety and Sustainable Development of Society in the Face of the Challenges of Global Transformations” (RF, Yoshkar-Ola, 2021)

18 scientific articles have been published on the topic of the research work.

**Name of the organization where the dissertation work was carried out.** The dissertation was carried out at the Demography and Population Geography Department of the Institute of Geography named after academician H.A.Aliyev under the Ministry of Science and Education of the Republic of Azerbaijan.

**The structure of the dissertation.** The dissertation consists of an introduction, 4 chapters, a conclusion and a list of used literature. The volume of the work is 174 pages. The work consists of 50 tables, 5 maps, 6 figures, a list of 194 literature titles. Introduction – 6 pages, Chapter I – 22 pages, Chapter II – 38 pages, Chapter III – 53 pages, Chapter IV – 27 pages, conclusion – 3 pages, list of literature – 16 pages. It consists of 224160 characters without tables, graphs, figures and a list of literature.

## MAIN CONTENT OF THE DISSERTATION WORK

The **Introduction** to the Dissertation identifies the relevance of the topic, its goals and objectives, its object and subject, the research methods used, the research database and sources of information, the main provisions presented for defense, the scientific novelty of the research, its scientific and practical significance, and approbation of the dissertation work.

In the first chapter of the dissertation, titled “**The Importance of Population Studies and Modern Trends in Demographic Development**” the dynamics of demographic indicators were



examined, the ideas of modern and classical scholars were analyzed, and the importance and economic-geographical foundations of studying demographic development were examined.

Demographic indicators are subject to change as a result of socio-political, economic, socio-cultural processes occurring in a short period of time. They often change over long periods of time. Therefore, it is necessary to periodically regulate the negative processes taking place. For this, the current state of each aspect of the demographic processes taking place in the country should be continuously assessed, and the results it will lead to should be determined. For example, as a result of the decrease in the number of children born, the number of the population is increasing at a slow pace, and the share of children among the population is gradually decreasing. The ongoing processes lead to a decrease in the number of people of working age in the coming decades, it becomes difficult to train personnel and provide the industry with the necessary number employees. Therefore, maintaining the natural growth rate in the country at a level that ensures the increase in the population should be solved as an important task.

For this, it is necessary to conduct an active demographic policy, provide special benefits for second and third children. At the same time, solving the housing problem, expanding the area of housing built at the expense of state funds, and organizing social protection for low-income groups of the population are among the measures aimed at increasing natural growth in the country.

In 1995-2016, the birth rate per 1000 people in the country varied between 16-18, and the natural growth rate between 10-12. In recent years, these indicators have continued to decline, and the growth rate has fallen significantly below the amount that will ensure the growth of the population in the next 20-25 years, and in 2023 the natural growth rate was at the level of 5.2.<sup>1</sup>. While the minimum fertility rate, which ensures the increase in the population due to natural growth, is 2.15, it has currently decreased to 1.6 in the country, including 1.8 among the rural population. This indicates that

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<sup>1</sup> Population of Azerbaijan - 2023. Baku: State Statistical Committee, - 2024. - 140 pp.

the average number of children in families in the country is less than 2. The number of women participating in the process of natural growth is also rapidly decreasing<sup>2</sup>.

Trends affecting the gender composition of the population as one of the ongoing demographic processes are of great concern. The gender composition of the population is affected by changes in the gender composition of natural increase, the active participation of men or women in migration, and changes in the gender composition of death.

Recently, an increase in the number of boys among children born in Azerbaijan has been observed. In a short period of time, the ratio of women to men in the population has changed significantly. Therefore, it is important to prevent the processes that are taking place. For this, first of all, it is necessary to strengthen control over medical examinations of women during pregnancy. In 2009, the numerical superiority of women in the republic was 93.6 thousand people, and in 2019 it was 54.4 thousand people. This indicates that in the next one or two years, the differences in the number of women and men in the country will disappear, and even the number of men will increase.<sup>3</sup>

Today, the number of processes that have a serious negative impact on the demographic development of Azerbaijan includes the increase in divorces. Several factors can be cited that influence this process. First of all, the increase in early marriages, the difficulty of providing housing, the increase in the number of families living together, and the low level of material income of the population lead to an increase in divorces.

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<sup>2</sup> Borisov, V.A. Demography / V.A. Borisov. - Moscow: HOTA BEHE, - 2001. - 272 pp., Butov, B.И. Demography / V.I. Butov. - Moscow: MarT, - 2003. - 592 pp., Valentei, D.I., Kvasha, A.Ya. Fundamentals of demography. / D.I. Valentei, A.Ya. Kvasha, - Moscow: Mysl, - 1989. - 286 pp.

<sup>3</sup> Results of the 2009 Census of the Population of the Republic of Azerbaijan: [in 22 volumes]. Population size, location, gender, age composition and marital status. - Baku: State Statistical Committee, - v.1. - 2010. - 629 pp., Population census in the Republic of Azerbaijan. 2019: [in 30 volumes]. Population size, location, gender, age composition and marital status. - Baku: State Statistical Committee. Narinci Publishing House LLC, - v.1. - 2022. - 682 pp.

The increase in divorces seriously affects the number of children born and leads to its decrease. In 1985, 7879 divorces were registered in Azerbaijan, 90% of which (7088) fell on the share of the urban population. In 1989-1991, due to the outbreak of national conflicts and the dissolution of mixed marriages, divorces increased sharply, their rate per 1000 people increased by 2.0 times by 1990.

Although divorces were low in the 1990s and the first decade of the 21st century, starting in 2010, divorces have increased sharply simultaneously among the urban and rural population. Although 54.2 thousand marriages were registered in the country in 2023, divorces were more than 21.7 thousand. Of these, 14.8 thousand (68.4%) fall on the urban population. After 2015, divorces in cities have increased by 1.7 times, and in villages by 1.8 times.<sup>4</sup>

Along with demographic development, Azerbaijan also faces a number of problems in the field of settlement, and significant steps are required to address them. The most important issue is the uneven distribution of the population, including urban population, across regions. Currently, up to 30% of the country's total population, including more than half of the urban population, is concentrated in Absheron. The main reasons for this are the rather weak economic and socio-cultural base of settlement in the regions, problems in providing the population with jobs in the regions, the low level of socio-cultural services provided, etc.<sup>5</sup>

Up to 80-90% of the country's industrial and production funds, and the vast majority of production in this area, fall on Absheron. Therefore, the country's demographic potential has been accumulating here for many years.

Another important settlement problem related to this situation is the low level of urbanization in the regions, the weak development of cities, and the slow pace of demographic development over many years. In most economic regions, including Daghlig Shirvan, Lankaran-Astara, Guba-Khachmaz, Sheki-Zagatala, this indicator is

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<sup>4</sup> Population of Azerbaijan - 2023. Baku: State Statistics Committee, - 2024. - 140 pp.

<sup>5</sup> On the Paths to Independence 25. Azerbaijan National Academy of Sciences. Baku: East-West, - 2016. - 628 pp.

up to 30%. Cities that are the centers of administrative regions cannot fulfill the role of centers of socio-economic and demographic development.

In order to solve the above given demographic and settlement problems, it is necessary to create conditions for the development of cities, towns and large rural settlements, which are the main population centers, to ensure the development of agriculture, which is the basis of economic development in the regions, and to increase the share of this sector in the formation of the population's income.

The second chapter of the research work is dedicated to **“The current state of settlement and development problems”**.

Urban settlements play an important role in the settlement of the Lankaran-Astara economic region. At the beginning of 2024, the economic region had an urban population of 246.8 thousand people<sup>6</sup>. They constituted 26.3% of the total population of the economic region and 4.5% of the country's urban population (Table 1). The weak economic base of urban areas and the low level of socio-cultural services provided do not ensure demographic development. Therefore, the number of urban population in the region is growing at a slow pace and the level of urbanization has remained low for many years.

Urban settlement in the Lankaran-Astara economic region has a very large development potential. The development of cities in the region can be carried out in two main directions. One of them is the development of existing secondary urban areas, along with regional centers. This group in the region includes the city of Goytepe in the Jalilabad region and the city of Liman in the Lankaran region. The population of both cities is over 10000 people. They are located in a very favorable geographical location. By creating a socio-economic

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<sup>6</sup> Demographic indicators of Azerbaijan 2023. Baku: State Statistics Committee, 2024. - 617 pp.

and cultural base in these areas, it is possible to ensure that demographic development takes on a sustainable character<sup>7</sup>.

The second direction is to prioritize the development of settlements with a large population, to grant them city status, and to create a network of enterprises in the light and food industries and service sectors. The settlement of Arkivan in the region has a population of 17.8 thousand people and can be included in the list of cities<sup>8</sup>.

Thus, the analysis of the grouping of cities shows that the settlements located in favorable geographical position, having economic and socio-cultural potential, are continuously developing. Lankaran district is ahead in terms of the number of urban settlements and urban population in the region. Flat relief, favorable natural and geographical conditions, high natural growth, and the activity of labor-intensive agricultural sectors have created conditions for the development of settlement (Map-scheme 1).

In the dissertation, the cities that are the center of the region, as well as the modern socio-demographic development problems of the subordinate cities of the region and their main development stages are analyzed. Here, settlements also play an important role in the development of urban settlement. The regulation of their development is important for the demographic situation. The analysis provides a classification of regional cities.

Rural settlement occupies an important place in the economic region. The rural population has been the main source of population growth for many years. They have also had a positive impact on population growth in cities. The economic difficulties that arose during the years of independence led to a significant decrease in natural growth. Therefore, the rate of population growth in villages and cities has tended to decrease.

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<sup>7</sup> Problems of demographic development and population settlement in the Lankaran-Astara economic-geographic region / edited by R.M. Mammadov. - Baku: European Publishing House, - 2019. - 216 pp.

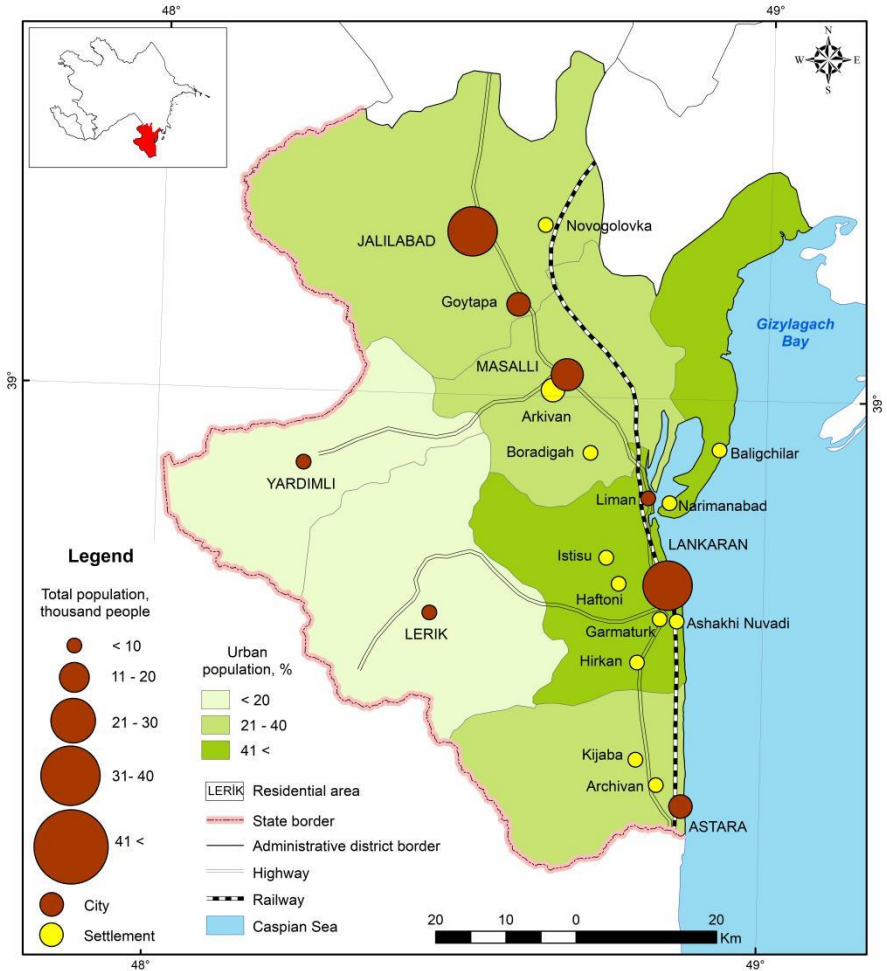
<sup>8</sup> Demographic indicators of Azerbaijan 2023. Baku: State Statistical Committee, - 2024. - 617 pp.

Table 1.

## Change and growth of the number of the urban population in the economic region

Administrative districts	Number of population, thousand people						Population growth, percent			Growth from 1989 to 2019	
	1989	1999	2009	2019	2024 January 1	1989-99	1999-09	2009-19	thousand people	percent	
Astara	16.1	18.5	22.1	32.9	33.6	114.9	119.5	148.9	16.8	2.0 t.	
Jalilabad	35.8	47.3	55.9	56.3	58.1	132.1	118.8	100.7	20.5	157.3	
Lerik	5.8	6.6	7.3	8.3	8.7	113.8	110.6	113.7	2.5	143.1	
Lankaran	72.7	77.1	82.8	86.7	87.5	106.1	107.4	104.7	14.0	119.3	
Masalli	21.4	14.4	31.0	50.1	51.6	67.3	215.3	161.6	28.7	2.3 t.	
Yardimli	3.4	3.6	6.6	6.9	7.3	105.9	183.3	104.6	3.5	2.0 t.	
Economic region	155.2	167.5	205.7	241.2	246.8	107.9	122.8	117.3	86.0	155.4	
Repub. of Azerb.	3805.9	4064.3	4739.1	5440.3	5547.8	106.8	116.6	114.8	1634.4	142.9	

**Source:** Demographic indicators of Azerbaijan - 2018. Baku: State Statistical Committee, - 2019. - 560 pp, p. 72, Demographic indicators of Azerbaijan 2023. Baku: State Statistical Committee, 2024. - 617 pp, p. 79, Results of the 2009 census of the population of the Republic of Azerbaijan: [in 22 volumes]. Population size, location, gender, age composition and marital status. - Baku: State Statistical Committee, - v.1. - 2010. - 629 pp., Population census in the Republic of Azerbaijan. 2019: [in 30 volumes]. Population size, location, gender, age composition and marital status. - Baku: State Statistical Committee. Narinci Publishing House LLC, - v.1. - 2022. - 682 pp.



Map-scheme 1. Urban settlement of the economic region. **Source:** Demographic indicators of Azerbaijan-2023. Baku: State Statistical Committee, - 2024, - 618 pp.

Rural settlements differ from each other in terms of population size, economic structure, the role of these sectors in the development of settlements, development prospects, and natural and geographical conditions of the area in which they are located. In most cases, villages are divided into groups according to the number of their population.

Such grouping allows us to determine the development prospects of villages, study their territorial distribution, conduct their functional classification, and determine the conditions for building a network of socio-cultural facilities<sup>9</sup>.

Analysis of the grouping of rural settlements and rural population in the Lankaran-Astara economic region shows that in the Lerik and Yardimli districts, located in medium and high mountainous areas, the majority of villages have a population of up to 500 people. There are difficulties in creating an infrastructure network in this group of villages. In other districts, whose territory is located in the Lankaran lowland, foothills and low mountainous zones, there are few number of small villages. There are many rural settlements with a population of more than 1000 people in these districts. There are 12 rural settlements with a population of more than 2000 people in the economic region. They have a leading position in rural settlement and are of great importance in its regulation (Table 2).

The conducted analyses show that villages with a relatively small population, up to 500 people, and the number of people gathered in them, are growing at a slow pace, that is why, this group of villages continues to lose its demographic potential. Villages with a population of more than 1000 people are growing. Demographic development in the rural settlements belonging to higher groups is continuous. Villages with a population of more than 5000 people and their population are increasing at a high rate. Their development is very important for the future development of the region.

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<sup>9</sup> Gokchaili, Sh.Yu. Rural settlement and its transformation / Sh.Yu. Gokchaili. - Baku: Azerbaijan State Publishing House, - 1987. - 143 pp., Mamedov, K.V. Demographic development in the Azerbaijan SSR / K.V. Mamedov. - Baku: - 1980. - 243 pp., Mehraliyev, E.K. Geographical problems of population formation and distribution in the Azerbaijan SSR / E.K.Mehraliyev. - Baku: Elm, - 1984. - 196 pp..



Table 2

## Grouping of villages and rural population in the economic region

Groups, people	1999			2009			2019		
	villages		rural population	villages		rural population	villages		rural population
	number	percent	number, people	number	percent	number, people	number	percent	number, people
0-50	22	3.5	729	22	3.4	758	17	2.7	536
50-100	38	6.0	297	32	5.0	2600	28	4.4	2120
100-200	75	11.8	11592	64	10.0	9728	56	8.8	8320
200-500	178	27.9	58534	175	27.2	58277	173	27.1	57549
500-1000	157	24.6	113822	151	23.5	109535	147	23.0	107331
1000-2000	100	15.7	141401	125	19.4	175113	127	19.9	174355
2000-3000	34	5.3	81093	36	5.6	89028	47	7.3	113741
3000-5000	24	3.8	89781	26	4.0	99300	28	4.4	105556
5000<	9	1.4	63047	12	1.9	75588	15	2.4	96847
Total	638	100.0	562970	643	100.0	619927	638	100.0	666355

**Source:** Results of the 1999 census of the population of the Republic of Azerbaijan: [in 9 volumes]. Population size, gender-age composition. - Baku: State Statistical Committee, - v.1. - 2000. - 565 pp., Eminov, Z.N. Population of Azerbaijan / Z.N.Eminov. - Baku: Chirag, - 2005. - 560 pp., p. 435. Results of the 2009 census of the population of the Republic of Azerbaijan: [in 22 volumes]. Population size, location, gender, age composition and marital status. - Baku: State Statistical Committee, - v.1. - 2010. - 629 pp., Population census in the Republic of Azerbaijan. 2019: [in 30 volumes]. Population size, location, gender, age composition and marital status. - Baku: State Statistical Committee. Narinci Publishing House LLC, - v.1. - 2022. - 682 pp., pp. 165-207.

Most of the cities and towns in the Lankaran-Astara economic region are located in the Lankaran plain along the shores of the Caspian Sea. In total, there are 11 urban settlements in the economic region, located from the level of the Caspian Sea (-26 m) to the ocean level, with a population of 101.4 thousand people. This area accounts for 52.4% of the region's urban settlements and 42.0% of the urban population<sup>10</sup>.

The Lankaran-Astara economic region is one of the regions where rural settlements are of great importance and where the number of rural population is large. The economic region ranks first in the country in terms of the number of rural population. In 2019, 666.3 thousand people lived in the villages located here. By determining the distribution of urban and rural populations by altitudinal zones, the characteristics of their distribution across the territory are studied, areas suitable for settlement are compared, and directions for their efficient use are developed.

Although the vast majority of the rural population in the Lankaran-Astara economic region is concentrated in the Lankaran lowland, there are also sufficient places suitable for settlement in the low and medium mountainous zones. Yardimli and Lerik districts are located entirely in the middle and high areas of the Talish Mountains. In mountainous areas, the rural population is mainly located in intermountain depressions, river valleys, and lowlands. Due to the increase in the population, some villages are expanding. However, in most cases, problems arise in the territorial expansion of villages in mountainous areas.

The villages and settlement of the rural population in the economic region are analyzed based on census materials from 1999, 2009, and 2019. In 2019, about 666.4 thousand people lived in the 638 rural settlements included in the economic region, which constituted 73.4% of the total population.

The third chapter of the dissertation is devoted to the analysis of **“Main trends and regional characteristics of demographic development”**. This chapter analyzes the dynamics of natural growth

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<sup>10</sup> Population Census of the Republic of Azerbaijan. 2019. Statistical collection. - Baku: - c.A. - 2022. - 465 pp.

and development problems in the research region, infant mortality, marriages and divorces, age-gender and ethnic composition of the population, population dynamics, and employment structure.

Analysis of the dynamics of birth, death and natural increase indicators in the economic region during the years of independence shows that the economic difficulties that arose in the 90s of the 20th century led to their decrease. The processes of decrease continued until the first years of the 21st century. As a result, the population growth rate decreased significantly.

After 2005, the birth rate in the economic region has fluctuated between 19-21 per 1000 people, and the natural growth rate has varied between 14-15. In 2023, they were at the level of 13.1 births and 7.6 natural growth. This indicates that the natural growth rates in the region have continued to decline in recent years. In Astara, Yardimli, Lerik and Jalilabad districts, the natural growth rate is above the average regional indicator. However, Lankaran and Masalli districts are distinguished by a low natural growth rate<sup>11</sup>.

Among the problems that have arisen in the field of demographic development in the country in recent times, it is possible to include serious changes in the gender composition of the population. In the Lankaran-Astara economic region, there are significant differences in the gender composition of children, as well as the mortality rate of men and women. In 2008, the number of boys born in the economic district was 1150 more than girls, and the natural increase was 960 more. In 2015, the difference between the births according to these indicators was 1275 people, the natural increase was 939 people, in 2023 it was 927 people and 422 people, respectively.

In the 21st century, the dynamics of the annual number of child deaths in the country did not fundamentally change. In the period after 2008, its annual number in the republic has varied between 1700-2000 people, or 11-12 people per 1000 live births. In Western European countries, these indicators vary between 3-4, that is, they are currently 3-3.5 times higher in the country.

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<sup>11</sup> Demographic indicators of Azerbaijan 2023. Baku: State Statistical Committee, 2024. - 617 pp.

Although the infant mortality rate in the country decreased significantly in 2023, its rate per 1000 live births has changed little. In the economic region, these indicators have increased significantly. Therefore, in 2023, there were 259 infant deaths in the region (21.2 per 1000 live births). Although there were no sharp differences in their number between administrative regions, the number was higher in Masalli, Jalilabad and Lankaran regions, each of which recorded more than 50 infant deaths<sup>12</sup>.

The absolute number of marriages and divorces varies according to the total population. Therefore, the number of divorces increased from 289 in 2005 to 586 in 2015 and 1439 in 2023. Its coefficient per 1000 people increased from 0.4 to 1.5 in 2023. Divorces are more common in Lankaran and Masalli districts<sup>13</sup>.

The age composition of the population in the Lankaran-Astara economic region is studied in three main groups. These are the population groups below working age, at working age, and above working age. Due to the high natural increase in the republic in 1999, the share of the population group below working age was 33.88%, and the population of retirement age was 8.72%<sup>14</sup>.

The analysis of the distribution of the population into three large groups and the distribution of the number of people included in them shows that in the period up to 2019, the share of children under 15 years of age in the country continued to decrease, but the share of the retirement-age population increased. In recent years, these processes have been taking place more intensively.

Although the share of the working-age population in the economic region at the beginning of 2024 was close to the average, the share of the retirement-age population is low. After 2019, the

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<sup>12</sup> Demographic indicators of Azerbaijan 2023. Baku: State Statistical Committee, 2024. - 617 pp.

<sup>13</sup> Demographic indicators of Azerbaijan - 2009. Baku: State Statistical Committee, - 2010. pp. 121-130, Demographic indicators of Azerbaijan - 2015. Baku: State Statistical Committee, - 2016. pp. 352, 358-359, Population of Azerbaijan - 2023. Baku: State Statistical Committee, - 2024. pp. 112-114.

<sup>14</sup> Results of the 1999 census of the population of the Republic of Azerbaijan: [in 9 volumes]. Population size, gender-age composition. - Baku: State Statistical Committee, - v.1. - 2000. - 565 pp.

number of the population group below working-age was 77 thousand people less. In general, the share of children under 15 years of age in the administrative districts included in the region has continued to decrease since 1999. In 2024, their lowest share was recorded in Lankaran district (21.3%), and a relatively high level was recorded in Yardimli district (26.8%). In the remaining administrative districts, children make up 22-24% of the population<sup>15</sup>.

The share of women among the population in the Lankaran-Astara economic region was 50.3%. They are 4700 more than men. As a result of the demographic processes taking place, the number of men in the Masalli region exceeded that of women. In other administrative regions, except for the Lankaran region, the specific weight of women among the population has significantly decreased. This is also proved by the relative quantities showing the number of women per 1000 men<sup>16</sup>.

The Lankaran-Astara economic region is considered the main region where the Talysh people live. Therefore, 86.2 thousand of the 87.6 thousand Talysh people registered in the country live here, and their share among the population is 9.49%. The number of other nationalities in the economic region is small, including 230 Russians, 346 Turks, and 9 Tatars<sup>17</sup>.

In the context of the interaction of socio-economic and demographic factors, the dynamics of the population is also observed in the Lankaran-Astara economic region located in the south of the country. Its number generally tends to increase (Table 3).

Starting from the second half of the 1990s, economic difficulties, a decrease in the income of the population, and a decline in the standard of living have also had a negative impact on demographic development.

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<sup>15</sup> Statistical indicators of Azerbaijan - 2009. Baku: State Statistical Committee, - 2010. - 840 pp., Statistical indicators of Azerbaijan - 2018. Baku: State Statistical Committee, - 2019. - 812 pp.

<sup>16</sup> Demographic indicators of Azerbaijan 2023. Baku: State Statistics Committee, 2024. - 617 pp.

<sup>17</sup> Population census in the Republic of Azerbaijan. 2019: [in 30 volumes]. National composition of the population. - Baku: State Statistical Committee Narinci Publishing House LLC, v.21. - 2022. - 810 pp., pp.58-65

Table 3

## Changes in the number of population in the economic region

Administrative regions	Number of population, person					1989-2019	
	1989	1999	2009	2019	2024	person	%
Astara	69.7	84.3	96.2	107.9	111.9	38.2	154.8
Jalilabad	132.5	170.0	192.3	207.0	217.3	74.5	156.2
Lerik	53.8	63.3	74.5	82.4	86.1	28.6	153.2
Lankaran	163.6	189.9	205.7	223.7	227.5	60.1	136.7
Masalli	143.3	173.9	197.1	221.1	226.7	77.8	154.3
Yardimli	40.0	49.0	58.1	65.4	68.4	25.4	163.5
Economic region	602.9	730.5	823.9	907.5	937.7	304.6	150.5
Republic of Azerb.	7021.2	7953.4	8922.4	9951.4	10180.8	2930.2	141.7

**Source:** Demographic indicators of Azerbaijan - 2018. Baku: State Statistical Committee, - 2019. - p. 70., Demographic indicators of Azerbaijan 2023. Baku: State Statistical Committee, - 2024. - pp. 74-75, 83-88.

At the same time, the increase in women's employment, the expansion of their independence, the increase in divorces, the increase in the age of marriage, the intensity of migrations have led to a decrease in the number of people starting families, and the decrease in the number of children in families has led to a decrease in the population growth rate. Therefore, in the economic region and in the individual administrative regions included in it, the population growth in 1999-2019 was close to the average indicators for the country. During the period of analysis, this indicator for the economic region was 150.5%, and for Azerbaijan 141.7%.

The weak economic base of the cities and settlements located in the Lankaran-Astara economic region, their activity mainly based on the processing of agricultural products and the problems in this area, the high level of natural growth in the region for many years and the increase in the working-age population have created difficulties in solving the unemployment problem.

Due to the predominance of the rural population, the number of people engaged in agriculture is also high. Many people also work in the trade, service and construction sectors (Figure 1).

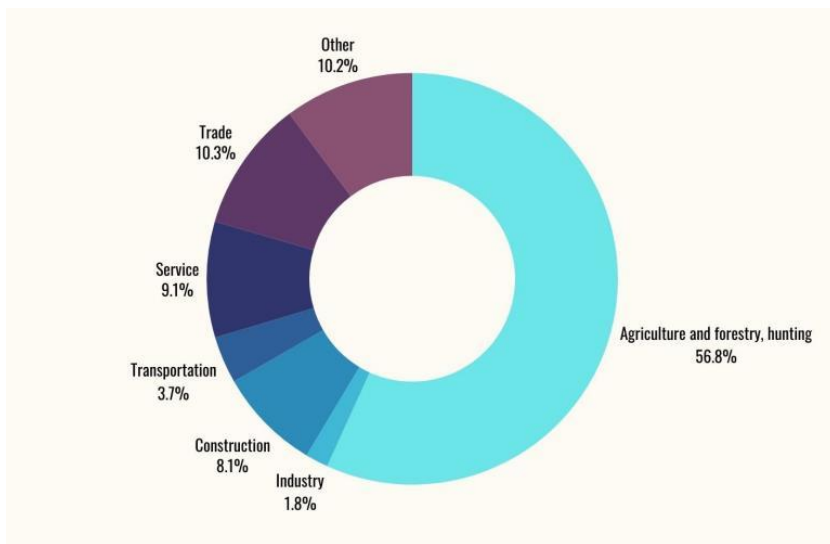


Figure 1. Employment structure of the population in the economic region, in percentages. **Source:** Population Census of the Republic of Azerbaijan. 2019. Statistical collection. - Baku: - v.A. - 2022. - 465 pp.

The fourth chapter of the dissertation is dedicated to **“Priority directions of population settlement and regulation of demographic development”**. Here, the ways of population settlement and regulation of demographic development, the main directions of economic and socio-cultural development, and the legislative basis for the regulation of demographic development are studied.

The settlement of the Lankaran-Astara economic region, located in the south of the country, depends on the development of cities and towns. The cities of Lankaran and Jalilabad play a major role here, and it is necessary to maintain and expand these functions in the future.

Socio-economic development is a key factor in ensuring the future development of cities. It is important to increase the role of agricultural areas in the development of cities, and to establish primary and final processing enterprises for products related to this sector.

In the system of urban settlement in the economic region, settlements occupy a special place<sup>18</sup>. They are considered as an intermediate stage in the transformation of rural areas into cities. However, despite this, settlements belong to different groups according to the number of their population, and their economic and socio-cultural base is often weak. Therefore, although some settlements have had this status for several decades, their demographic development is very slow, they do not have the potential to influence the surrounding rural settlements, and most of them are not even able to maintain their demographic potential.

According to the requirements of the existing Law "On Administrative Territorial Structure", only the settlement of Arkivan (population 17.8 thousand people) located in the Masalli district can be granted city status.<sup>19</sup>

The majority of settlements in the region have a rural lifestyle, and the basis of their economy is the processing of agricultural products. However, the areas included here are not capable of ensuring the development of settlements. The incomes obtained from these areas are low, and there are no enterprises that carry out the primary processing of their products.

The tasks of reconstruction and regulation of rural settlements in the Lankaran-Astara economic region must be solved. Rural settlements in the region play an important role in the territorial distribution of the population and the development of territories. The rapid growth of the population, along with the rapid growth of existing rural settlements, leads to their territorial expansion, and the occupation of new land areas by settlements, industries, service facilities, and transport and communication lines. Therefore, the Lankaran lowland, areas of the Mughan and Salyan plains close to the economic region, and the foothills and low mountainous zones of the Talysh Mountains have been completely used, and the areas

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<sup>18</sup> Eminov, Z.N. Population of Azerbaijan / Z.N. Eminov. - Baku: Chirag, - 2005. - 560 pp.

<sup>19</sup> Law of the Republic of Azerbaijan on Territorial Structure and Administrative Territorial Division // Azerbaijan Newspaper. - 2001, October 26.



suitable for agriculture in these areas continue to decrease from year to year.

At the same time, there are still many problems in the demographic development of villages and the provision of socio-cultural services to the population. Taking these into account, it is necessary to determine the main directions of regulating rural settlement in the economic region. The development of measures in this direction is of great importance for the management of future course of action.

Looking at the rural settlement system of the region, it is seen that the villages create an area covering the Lankaran and Astara districts in the Lankaran lowland. In addition to the high density of villages here, the population of the localities is also large and continues to grow. Therefore, it is necessary to increase the number of cities and towns at the expense of rural settlements with a large population. The way to eliminate some of the villages close to the district centers and merge them into cities is also an important step for the regulation of settlement areas.

*The second* area can be distinguished by the villages located in the Masalli district. As a result of administrative-territorial changes carried out in 2013, several village settlements near the district center were merged into it. Consequently, the population of Masalli city increased several times, and the villages were abolished.

*The third* settlement area has emerged around the cities of Jalilabad and Goytepe. Recently, the population in this area has been steadily increasing. However, the number of urban settlements is low. There are few settlements within the district, and the existing Novogolovka settlement is uninhabited. Therefore, villages with large populations should be included among the settlements. This measure is essential not only to facilitate their future development but also to regulate the development of surrounding areas.

In the region, a special rural settlement area can be distinguished with Yardimli and Lerik cities as centers. The formation of large villages in the low and mid-mountain areas is hindered by natural-geographical conditions. Additionally, within the framework of regulation measures, it is necessary to develop the centers of rural

territorial units and ensure their connection to the transportation and communication network.

Like other regions of the country, the Lankaran-Astara economic region faces challenges due to the weak development of industry, its low share in the country's industrial production, and low employment levels in this sector, which negatively impact the development of settlements. Problems persist in fully overcoming the difficulties that arose during the transition period, restructuring existing enterprises technically and technologically, and restoring their operations. Addressing these issues requires the allocation of state funds. Currently, only 0.6% of the country's industrial products are produced in the economic region, and only 2.5% of those employed in the industrial sector belong to this region<sup>20</sup>.

The development of industry in the economic region should primarily be based on the processing of agricultural products. Since there are no significant industrial mineral deposits in the area, it is possible to strengthen the economic potential of cities and towns by establishing light and food industry enterprises.

Overall, in the Lankaran-Astara economic region, it is necessary to ensure the development of agriculture, increase income, boost the volume of produced goods, and, based on this, develop the processing industry. To achieve this, it is essential to enhance the productivity of locally suitable crops and expand the material and technical base of farms operating in this sector. Establishing specialized centers for large-scale procurement of cultivated products, and setting up cold storage facilities and storage chambers are among the necessary measures. These centers will also contribute to job creation, improve employment opportunities for the rural population, and form the foundation for building the economic base. It is crucial to recognize that Lankaran-Astara is an agricultural region, and its economic development largely depends on this sector. Therefore, to ensure the region's sustainable development, priority

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<sup>20</sup> Statistical indicators of Azerbaijan - 2022. Baku: State Statistical Committee, - 2023. - 722 pp.

should be given to expanding the cultivation of crops that are efficient to grow and economically more profitable.

One of the key factors that significantly impacts the improvement of living standards is the provision of paid social services, as well as the volume of trade and public catering services. In the regions, the limited availability of jobs lagging behind of demographic potential, low income levels, and the sparse network of trade and public catering facilities result in low service provision in this sector. While the average paid services per capita in the republic amount to 919.1 manat, in the economic region it is only 371.33 manat (2023). Specifically, for household services, these figures are 98.10 manat and 38.74 manat, respectively. It should be noted that the high national average is influenced by significantly higher figures in Baku compared to other regions<sup>21</sup>.

In recent years, the tourism industry, distinguished by its development and significant medical-geographical, historical-cultural, anthropogenic-archaeological, and infrastructure potential, has become increasingly important in the country's economy.

## RESULTS

1. In economic regions such as Lankaran-Astara, Mountainous Shirvan, Guba-Khachmaz, and Sheki-Zagatala, the low level of urbanization (up to 30%) and the underdevelopment of cities have resulted in slow demographic growth over the years. Cities that serve as administrative district centers fail to fulfill their roles as hubs of socio-economic and demographic development (3, 4).

2. Analysis of the grouping of cities shows that settlements located in favorable geographical conditions and having economic and socio-cultural potential are continuously developing. Lankaran district is ahead in terms of the number of urban settlements and

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<sup>21</sup> Geography of the Republic of Azerbaijan: [in 3 volumes]. Regional geography. Baku: - v.3. - 2015. - 400 pp., Regions of Azerbaijan -2022. Baku: State Statistical Committee, - 2023. - 865 pp.

urban population in the region. Flat relief, favorable natural and geographical conditions, high natural growth, and the activity of labor-intensive agricultural sectors have created conditions for the development of settlement. Although the economic region has been distinguished by high natural growth rates for many years, due to the weakness of the economic, socio-cultural base in cities and settlements, the lag of socio-cultural services from modern requirements, and difficulties in providing jobs, they cannot accept and maintain their demographic potential along with the rural population. Therefore, the number of urban population is growing at a slow pace. This is more clearly evident in Lankaran, Yardimli, and Lerik districts (1, 2).

3. The rural population occupies the main place in the economic region. The main source of population growth for many years has been at the expense of the rural population. Although economic difficulties in the early years of independence had an impact on population growth, the rural population has maintained a superior position in the comparison of urban and rural population growth in the administrative territories of the economic region (15).

4. Analysis of the grouping of rural settlements and rural population in the economic region shows that in the Lerik and Yardimli regions, located in medium and high mountainous areas, the majority of villages have a population of up to 500 people. There are difficulties in creating an infrastructure network in this group of villages. In other regions, whose territories are located in the Lankaran lowland, foothills and low mountainous zones, there are few small villages. There are many villages with a population of more than 1000 people in these region and 90 rural settlements with a population of more than 2000 people in the economic district. They have a leading position in rural settlement and are of great importance in its regulation.

The conducted analyses show that villages with a population of up to 500 people and the number of people living in them are growing at a slow pace, meaning that this group of villages continues to lose their demographic potential. Villages with a population of more than 1000 people and their population is increasing. (13)

5. Analysis of the distribution of the rural population in the economic region by altitudinal zones shows that the areas suitable for settlement are in the Lankaran lowland. Here the absolute altitude is below ocean level. The flat and smooth relief, high indicators of natural growth, and the development of labor-intensive agricultural areas have led to the formation of large rural settlements. The location of regional centers and settlements here has also affected the increase in the number of villages and their territorial expansion. Therefore, the vast majority of the rural population is concentrated in areas up to 200 meters. The location of Lerik and Yardimli regions in areas with an absolute altitude of more than 500 meters and the large number of villages lead to the accumulation of groups with a population of more than 500 people (8).

6. Analysis of the dynamics of birth, death and natural growth indicators in the economic region during the years of independence shows that the economic difficulties that arose in the 90s of the 20th century led to their decrease. The processes of decrease continued until the first years of the 21st century. As a result, the population growth rate has significantly decreased. In recent years, as well as in the country, the number of children born in the region and the natural increase tends to decrease. This decrease is faster among the urban population. Therefore, in the region, which has been distinguished by high natural growth for many years, its coefficients are close to the average indicators for the country. Due to the large share of the rural population in the economic region, the natural growth rate among them is several times higher than that of the urban population. In the Jalilabad, Yardimli and Lerik regions, the urban and rural population are distinguished by high indicators of natural growth (9).

7. In Lankaran-Astara, the infant mortality rate among the urban population is 3.49 times higher than that of the rural population. Infant mortality is very high in Masalli, Lankaran and Astara districts (17).

8. Although the population growth in the Lankaran-Astara economic region has decreased significantly compared to previous years, it is still above the average for the republic. The high rate of natural growth over many years has also had an impact on the change

in its number. Currently, the continuous development of the socio-economic base in Jalilabad district and the reforms carried out in agriculture ensure the population growth along an upward trajectory. (14)

### **Suggestions**

1. In order to solve the above given demographic and settlement problems, it is important to create conditions for the development of cities, towns and large rural settlements, which are the main population centers, and to ensure the development of agriculture, which is the basis of economic development in the regions, as well as to conduct their scientific analysis.

2. It is necessary to strengthen the economic, socio-cultural base in cities and towns, bring socio-cultural services to the level of modern requirements, and provide the population with jobs.

3. It is necessary to accelerate the process of transforming large rural settlements into towns and cities.

4. It is necessary to improve the level of medical services provided to women and children, establish pediatric centers, provide them with a material and technical base, and train medical personnel in this field in the region.

### **Scientific works published on the topic of the dissertation:**

1. Baghirova, M.I. The influence of demographic potential on economic and social development // - Materials of the Republic scientific-practical conference on “Geographical problems of Azerbaijan regions”, - Baku: BSU, - 28 April, - 2016, - pp.152-155. (in Aze.)

2. Baghirova, M.I. Mutual effects of demographic development and economic situation // - Materials of the Republic conference on “Problems of effective management in the modern times”, - Baku: ATMU, - 28-29 October, - 2016, - pp. 34-36. (in Aze.)

3. Baghirova, M.I. Characteristics of demographic conditions in Lankaran-Astara economic-geographic region // - Materials of the scientific conference on “Demographic development in the Republic of Azerbaijan: prospects of population settlement and regional problems”, - Baku: Azərbaycan Geographical Society of Azerbaijan, Institute of Geography named after acad. H. Aliyev, - 12-13 September, - 2016, - pp. 111-115. (in Aze.)

4. Baghirova, M.I. Problems of demographic development / Lankaran State University, Natural Science Series, - Lankaran: LSU, - 2017, - pp. 89-93. (in Russ.)

5. Baghirova, M.I. Development prospects of winter tourism in Azerbaijan // - Materials of the III International scientific-practical conference on “Tourism and recreation in XXI century: Problems and perspectives”, - Baku: ATMU, - 7-8 April, - 2017, - pp. 222-229. (in Aze.)

6. Baghirova, M.I. The influence of free economic zones on socio-economic development / - “Tourism and hospitality studies” international journal, - Baku: ATMU, - 2017, - pp. 141-147 (co-author: Alasgarova F.G.). (in Aze.)

7. Baghirova, M.I. Ecotourism - development and impact // - Materials of the I International scientific-practical conference on “Trends and prospects for tourism development in Kazakhstan and Central Asia”, - Almati: KSPU named after Abay, - 14-15 March, - 2019, pp. 203-205. (in Russ.)

8. Baghirova, M.I. Economic-geographical problems of effective organization of economy and controlling of distribution of the population in the southern border of the Republic of Azerbaijan (in the example of Lankaran-Astara economic region) / - “Problems of Geography”, - Book 3-4, - Sofia: 2019, - pp. 115-125. (in Eng.)

9. Baghirova, M.I. Influence of mortality indicators on demographic development in Azerbaijan // - Materials of the International scientific-practical conference “Development of social protection system in Azerbaijan: yesterday, today and tomorrow”, - Baku: The Ministry of Labor and Social Protection, - 26 December 2018, - 2019, - pp. 337-340 (co-authors: Eminov Z.N., Mammadov I.B., Abasova L.M.). (in Aze.)

10. Baghirova, M.I. Modern problems of the resort-tourism industry in the Republic of Azerbaijan and their solutions // - Materials of the Conference on “The role of tourism in ensuring sustainable development”, - Baku: BSU, - 15 May, - 2019, - pp. 408-414 (co-authors: Eminov Z.N., Baghirova F.R.). (in Aze.)

11. Baghirova, M.I. Grouping of settlements in Lankaran-Astara economic district / - News of the Pedagogical University Mathematics and natural sciences series, - C.67, №4, Baku: 2019, – ASPU, - pp. 51-59. (in Aze.)

12. Baghirova, M.I. Reconstruction of economic structure and use of labor resources in Lankaran-Astara economic region / - Geography and natural resources №1(11), - Works of Geographical Society of Azerbaijan, - Baku: 2020 – ANAS, - pp. 76-84. (in Aze.)

13. Baghirova, M.I. Problems of settlement and regulation of demographic development in the Lankaran-Astara economic region / - Socio time, Scientific journal, - R.F., Yoshkar-Ola: 2020, – PSTU, - pp. 44-56. (in Russ.)

14. Baghirova, M.I. Employment of the population in the Lankaran-Astara economic region of Azerbaijan // - “Human Security and Sustainable Development of Society in the Face of the Challenges of Global Transformations”, Proceedings of the International Interdisciplinary Scientific Conference, - R.F., Yoshkar-Ola: 3 December 2020, - 2021, part I, – PSTU, - pp.118-123. (in Russ.)

15. Baghirova, M.I. Population dynamics and its impact on demographic development in the Lankaran-Astara economic region of the Republic of Azerbaijan / - Russian scientific journal Bulletin of the National Academy of Tourism, - Saint Petersburg - 2021, - pp. 51-54. (in Russ.)

16. Baghirova, M.I. Main directions of economic and socio-cultural development in the Lankaran-Astara economic region of the Republic of Azerbaijan / - Scientific notes of the Crimean Federal University named after V.I. Vernadsky, - Simferopol, - 2021, - pp. 3-12. (in Russ.)

17. Baghirova, M.I. Infant mortality (under one year of age) in Lankaran-Astara economic region of Azerbaijan / - Nakhchivan



University Scientific Works, - Nakhchivan: Nuh, - 2023, - № 1, - pp. 226-231. (in Russ.)

18. Baghirova, M.I. Assessment of the demographic situation in the Lankaran-Astara economic region of the Republic of Azerbaijan / - Astrakhan Bulletin of Environmental Education. Astrakhan, - 2023, - № 3 (75), - pp.130-137. (in Russ.)



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