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TRANSPORT AS A FACTOR IN THE DEVELOPMENT OF RURAL TOURISM IN AKTOBE REGION, REPUBLIC OF KAZAKHSTAN

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Abstract: Transport provision is a basic condition for the development of tourism, and in accordance with the country's development plans, tourism has been recognized as one of the priorities of economic development, including the development of rural areas. In the context of growing competition for tourists and taking into account the presence of tourist attractions and developed tourist infrastructure, the transport accessibility of the regions is becoming increasingly important. Despite the obvious importance of transport for all sectors of the economy, including tourism, if we take into account the size of the country, transport conditions for the development of tourism in Kazakhstan, especially rural tourism, have relatively little reflection in research topics, which was confirmed by literature studies on this topic. Therefore, the aim of the research undertaken is to analyze the spatial differentiation of the conditions for the development of tourism in Aktobezhsk Oblast in relation to the location of tourist attractions and transport accessibility. The research material includes data collected on the basis of field studies conducted in 2023-2024. Statistical data on transport in Aktobezhsk Oblast and its districts come from the Akimat of Aktobezhsk Oblast from the Department of Passenger Transport and Roads of Aktobezhsk Oblast. All factual material was verified and supplemented during field research. Using the developed criteria, an assessment of the accessibility of districts of Aktobe region, which have the potential for the development of rural tourism, not only domestic but also international, was carried out. The transport potential of Aktobe region is significant due to its size and geographical location. The region is served by rail, road, air and pipeline means of transport. However, the quality and density of transport infrastructure remain underdeveloped. The underdevelopment of the transport network, as shown by statistical analyses of road, railway and air infrastructure, strongly confirms the hypothesis that the current transport system, despite the abundance of natural resources, actually limits the tourist accessibility of Aktobe region. Similarly, the conducted classification of the number of tourist attractions in the Aktobe region, the ranking of counties and the transport accessibility of tourist attractions. In summary, transport infrastructure plays a key role in the development of rural tourism in Aktobe region. Improving the road network and improving the accessibility of remote areas will help to balance tourist flows and increase the economic impact of rural tourism development.

Keywords: agritourism, Aktobe region, rural tourism, tourist attractions, tourism, transport, transport accessibility

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INTRODUCTION

Tourism in Kazakhstan was becoming more and more popular, which resulted in the interest of numerous researchers (Kantarci, 2007a; 2007b; Smykova, 2015; Tleubayeva, 2019a; Wendt, 2020). Due to its importance, numerous studies were conducted in Kazakhstan, but most of them concerned mountain regions located in the south and south-east of the country (Ziyadin & Takhtaeva, 2014; Chernova & Sukhova, 2017; Aliyeva et al., 2019; Chlachula, 2019; Issakov et al., 2025; Artemyev et al., 2025). However, according to the government's decision (Zhidkoblinova, 2013; State Program for the Development of the Tourism Industry, 2019; Concept for the Development of the Tourism Industry, 2023), tourism is to constitute a rapidly growing sector of the economy (Abubakirova et al., 2016), both at the national and regional level (Aktymbayeva et al., 2020; Kenzhebekov et al., 2021; Tleuberdinova et al., 2022; Makhanova et al., 2022; Dłużewska et al., 2022; Seidualin et al., 2025), as well as rural tourism (Tleubayeva, 2019a; Pashkov, 2021; Wendt et al., 2021a; Saparov et al., 2024).

The Aktobe region was chosen as the object of the study. Aktobe region is one of the most prosperous regions of the Republic of Kazakhstan, with huge economic, cultural and tourist potential. Aktobe region is located in the northwestern part of the republic and borders six regions of the Republic, as well as the Orenburg Region of the Russian Federation in the north and the Karakalpak Autonomous Region of the Republic of Uzbekistan in the south. It is the second largest region in terms of territory (after Karaganda) – 300.6 thousand square kilometers, which is 11% of the state's territory. The average population density in the region is 3.12 people per 1 sq.km. of the territory of the state. Aktobe region has 12 regions (Table 1), each of which has unique potential in terms of tourist attractiveness (Sergeyeva et al., 2021;

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Berdenov et al., 2021; 2023; Khamit et al., 2024; Yakupova et al., 2024).The sphere of rural tourism in Aktobe region is in positive dynamics, the image of the region as an attractive territory for rural tourism is formed.

Table 1. Districts of Aktobe region (Source: Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, 2025)

Administrative unit	Population	Area km^2	Population /km^2	Rural area %	Rural pop. %	Rural pop. /area
1. Baiganin district	22 940	60 200	0.38	100.0	100.0	0.38
2. Uil district	16 088	11 200	1.44	100.0	100.0	1.44
3. Khobda district	15 974	14 000	1.14	100.0	100.0	1.14
4. Martuk district	29 717	6 500	4.57	100.0	100.0	4.57
5. Kargaly district	15 433	5 000	3.09	100.0	100.0	3.09
6. Hromtau district	46 597	12 800	3.64	99.8	35.0	1.20
7. Alga district	43 714	7 300	5.99	99.1	47.8	2.80
8. Mugalzhar district	65 738	29 500	2.23	99.9	24.1	0.50
9. Aitekebi district	20 632	36 800	0.56	100.0	100.0	0.56
10. Irgyz district	13 929	41 500	0.34	100.0	100.0	0.34
11. Shalkar district	42 362	61 000	0.69	99.9	34.0	0.20
12. Temir district	35 761	12 500	2.86	99.8	93.8	2.60
13. Aktobe city	570 475	2 300	248.03	0	0	0
14. Aktobe region	939 360	300 600	3.12	98.7	74.9	0.78

As of January 1, 2025, the population of the Aktobe region totaled 939.6 thousand people (Table 1), including 703.6 thousand urban residents (74.9%) and 235.9 thousand rural residents (25.1%). As we can see from the table, most of the territory of the Aktobe region consists of rural areas. The region has a total of 8 cities (Aktobe, Alga, Zhem, Kandyagash, Temir, Khromtau, Shalkar, Emba). The advantage of the region is that it has an advantageous geographical location, being at the junction of Europe and Asia. Caravans of the Great Silk Road passed through this land, connecting cities and countries. The modern map of the region is crisscrossed by highway lines, the largest of which is the global transport corridor "Western Europe – Western China".

Railway lines stretch in all directions, both to the European and Asian parts of the Eurasian continent. The sky is covered by a network of international air routes. Almost all airlines in the world use the services of a state-of-the-art, regional air navigation control center. A modern international airport can receive aircraft of all types.

The aim of the study is to analyze the spatial differentiation of tourism development conditions in the Aktobe region in relation to the localization of touristic values and transport accessibility. The analysis of the spatial differentiation of tourist attractions in relation to the transport network will allow for the indication of (1) areas with difficult transport access to tourist attractions; (2) the indication of directions of necessary transport investments that may lead to an increase in the volume of tourist traffic, especially in the field of rural tourism. The hypothesis verified in the research is the poor development of the road network, which is characterized by too low density. Which is a barrier to the development of rural tourism.

LITERATURE REVIEW

One of the directions of development of the tourism sector, which is aimed at protecting and developing nature, cultural and historical heritage, attracting people to actively participate in solving their own financial problems, and promoting the employment of the unemployed, is the development of rural tourism. Rural tourism pursues the main goal - to form a new agro touristic product that goes beyond the traditional idea of the tourist offer, and which would consider the natural, historical and cultural specifics of the regions, as well as significantly diversify the traditional offer, which will be of the greatest interest in terms of attracting quite demanding foreign tourists.

World practice testifies to the most important role of tourism, based on the use of elements of the history of folk life, both in terms of generating income and providing conditions for recreating a natural viable historical environment (Hartman, 2023; Moldagaliyeva et al., 2024). Therefore, the cultural and folk-ethnographic aspect are the basis for the development of rural tourism (Deac et al., 2023; Mukatova et al., 2024). The development of rural tourism, which today is considered as a form of recreation for the urban population and as a form of activity of peasants who provide housing and food for vacationers, is a very important resource for the state. The basics of studying rural tourism were considered in foreign literature (Lane, 1994; Garrod, 2006; Wendt, 2020; Rosalina, 2023; Waleghwa, 2025). One of the most valuable competitive advantages of rural areas over urban ones is that they harmoniously combine rural and cultural values in the form of a special harmony of attractions (Trukhachev, 2015; Kadyrbekova et al., 2024).

In recent decades, the development of rural tourism has been growing in developed countries (and more recently in developing countries). The research results of various researchers indicate that the volume of tourist flow to rural areas depends on its territorial location (Mikhaylova et al., 2022; Firstianto et al., 2024; Chin et al., 2025), which means that it is also associated with the effectiveness of providing this complex of information about the material and spiritual culture of the population living in it (Tleubayeva, 2019b; Sergeyeva et al., 2023a; Wang et al., 2023). Rural tourism is a popular topic in the literature on tourism development (Nooripoor et al., 2021; Chen et al., 2022; Liu et al., 2023; Fu et al., 2024). However, a significant part of the research relates to the field of business recommendations, including the questions of whether rural subjects–farmers and other tourism products and services (He et al., 2021; Priatmoko, 2023; Hassan et al., 2024). Special attention is also paid to the study of the interrelationships between the various components

of rural activities (Shaken, 2020; Rakhimberdinova, 2022). It is necessary to pay close attention to the fact that rural tourism is an ideal springboard for the development of small and medium–sized businesses, which are characterized by some features – an orientation towards preserving environmental potential and a social component.

In addition, doing business in the field of rural tourism is directly interested in preserving the environment. This is objectively since an ecologically clean area, untouched nature, the availability of recreational resources such as forests, rivers, cultural and historical, architectural and archaeological sites are key conditions for the successful development of rural and sustainable tourism in the region in the long term (Aktymbayeva, 2017; Peira et al., 2021; Gao et al., 2023; Wendt & Bógdał-Brzezińska, 2024). In this regard, the active participation of an entrepreneur in environmental protection activities, restoration of cultural and historical monuments will become one of the indispensable conditions for the formation of permanent tourist flows, and consequently, increasing the incomes of individual citizens, regions and the state. This fact means that the entrepreneur is directly interested in the protection and reproduction of existing natural and cultural resources. Another conceptual feature of small business in the field of rural tourism is its pronounced social orientation. This is manifested in the activation of the comprehensive development of human capital, that is, in rural areas, the conditions necessary for proper rest are created (Tulla et al., 2017; Dong et al., 2025). Considering the above, it can be argued that in modern conditions rural tourism can become a significant source of additional and sometimes basic income for the rural population. This is especially true for depressed regions characterized by extremely low socio-economic development (Uskelenova & Nikiforova, 2024).

Rural tourism in Kazakhstan is a new socio–economic phenomenon focused on the use of natural, cultural, historical and other rural resources to create and offer a tourist product to a wide range of people (Kenebayeva, 2014; Zhenskhan et al., 2014; 2017). In this regard, it is necessary to proceed from the fact that the strategic priorities of regional policy aimed at stimulating the tourism sector in rural areas should be the concentration of tourist resources. This is necessary for the organization of rural tourism by creating destinations that include anchor tourist centers with a high potential for the formation of rural tourism tours and border areas to them (Shaikin et al., 2021).

The intensification of rural tourism will allow the development of territories that do not have promising industrial and agricultural organizations and thereby improve the socio-economic situation of the region. The resource potential of rural tourism is a set of interrelated and interacting opportunities that are used in tourism, as well as new ones formed in this activity and the use of factors of production in rural areas. Currently, with the development of tourism in Kazakhstan, more attention is required to search for tourist opportunities in the territory.

Rural tourism creates new jobs and brings real income to the regions, as well as allowing you to find means and ways to preserve nature. In many countries, the development of this type of sustainable tourism has become the main focus of protecting and recreating national rural landscapes. At the same time, industry has a serious multiplier effect and has a high social significance for the development of rural areas. Now, with the development of tourism entrepreneurship in Kazakhstan, a more careful attitude is required to search for tourist opportunities in the area and to detail the assessment of potential. In this regard, it is planned to obtain a methodology based on an analytical approach to real statistics.

This would help to identify new tourist advantages of the districts, find implicit advantages, and pay attention to those territories that were “in the shadow” of the tourist development process.

Research limitations in the work undertaken result from the adopted assumptions. Due to the availability of data, an analysis of the diversity of types and transport networks was undertaken. However, the full picture of the diversity of rural tourism shows the size of tourist traffic. Unfortunately, due to the lack of data showing tourist traffic, this is not possible. An additional limitation in rural tourism research is the problem of separating rural tourism from family trips, which are natural in each of the cases studied. In Kazakhstan, research is additionally hampered by strong family relations, a traditional way of life and the fact that most city dwellers came to them as part of the processes of migration and urbanization development. And traditional Kazakh society is still strongly connected with rural areas. However, research on the diversity of tourist attractions and transport accessibility shows the potential for the development of rural tourism.

MATERIALS AND METHODS

The research material includes data collected based on field research carried out in the period 2023-2024. Statistical data on transport in the Aktobe region and its districts come from the Akimat of Aktobe region from the Department of Passenger Transport and Highways of Aktobe region. All the factual material was verified and supplemented during field research (Sergeyeva et al., 2016; Kubessova, 2016; Sergeyeva et al., 2023b; data of the Department of Passenger Transport and Highways of Aktobe region and Agency for Strategic planning and reforms of the Republic of Kazakhstan, 2024).

Mathematical and statistical methods, valuation method, classic for research in the geography of tourism (Veal, 2017; Wendt & Bógdał-Brzezińska, 2018), were used to analyze the research results and the characteristics of rural tourism and transport net in the Aktobe region. Statistical methods were used for the analysis of spatial differentiation broken down into administrative units of the region. Administrative regions were subjected to a comparative analysis using quantitative methods (Creswell, 2003; Cheia, 2010) (Figure 1).

A simple ranking method was used to classify tourist attractions. For each group of tourist attractions (natural, geopolitical, historical, cultural), a ranking of Aktobe region districts was created, assigning 12 points to the first district in the ranking, and 1 point to the last one. It should be emphasized here that the weak point of this method is the adoption of the number of attractions in each group to determine the place of the district in the ranking. However, the choice of this approach allows for indicating the districts of Aktobe Region with the largest number of attractions. A similar solution was adopted for the classification of districts according to transport accessibility.

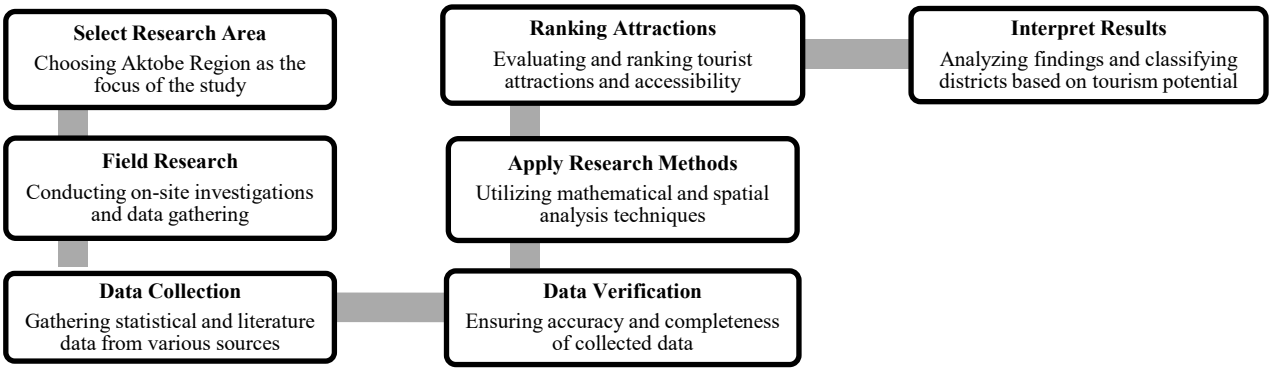

Figure 1. Stages of data collection, analysis, and interpretation for tourism research in the Aktobe Region (Source: Compiled by the authors)

Study area

Aktobe Region is located in the north-western part of Kazakhstan, between 51 and 45 degrees north latitude and 49 and 64 degrees east longitude. To the north, the region borders the Orenburg Region of the Russian Federation; to the west, it borders the West Kazakhstan and Atyrau regions; to the south-west, it borders the Mangystau Region; to the south, it borders the Republic of Uzbekistan; to the south-east, it borders the Kyzylorda and Ulytau regions; and to the east, it borders the Kostanay Region. The area of the region covers 300.6 thousand km². The length of the region from north to south is approximately 700 km, and from east to west, it is about 800 km. Aktobe Region consists of 12 administrative districts, with the regional center being the city of Aktobe (Figure 2).

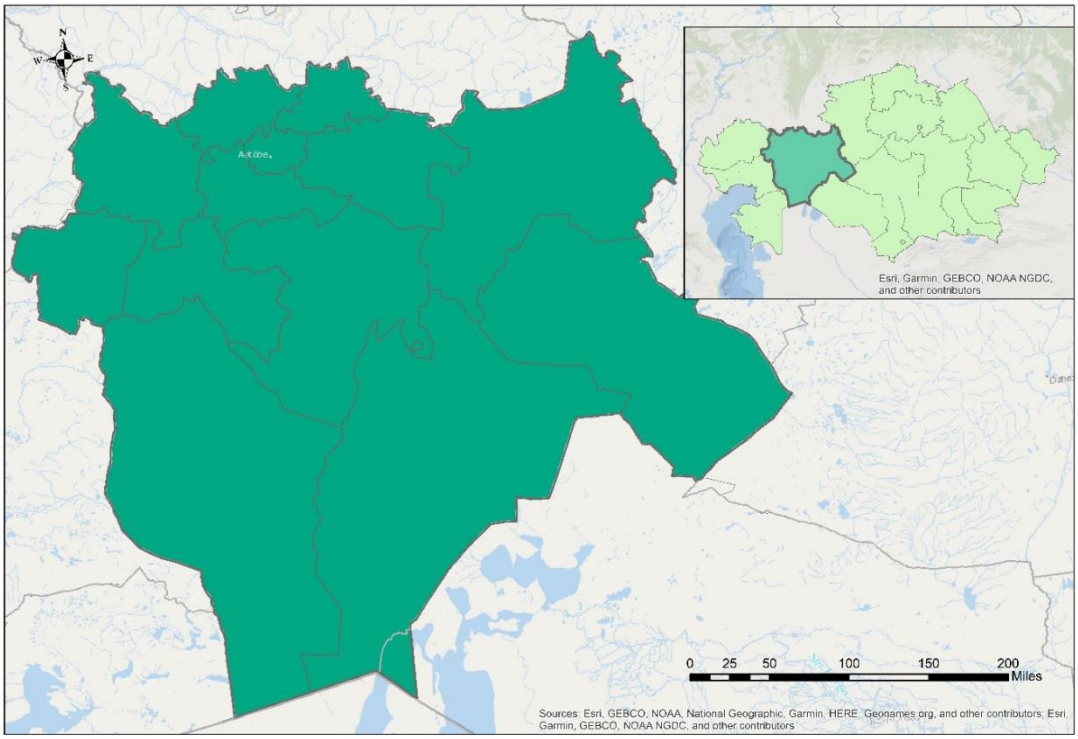

Figure 2. Study area – Aktobe Region, Kazakhstan (Source: compiled by the authors based on data from Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors)

RESULTS

Tourism values in the Aktobe region

The Aktobe region is characterized by the diverse landscapes of river valleys such as the Ural, Zhem, Elek, Uil, Sagyz, Ebeity, Torgay, Irgyz, Khobda, and others. These areas feature beautiful intrazonal landscapes and include steppe, semi-desert, and desert environments, each with its unique flora and fauna.

The main tourist sites for visiting the Aktobe region can be divided into several categories:

- Historical and cultural sites
- Natural sites

Natural tourist attractions represent a broader category that encompasses not only geological features but also biological, climatic, and landscape elements of interest to tourists. These attractions may be associated with ecosystems, flora and fauna, water resources, climatic zones, and protected areas. They are commonly used in ecological and recreational tourism. Examples include nature reserves, national parks, waterfalls, lakes, and forested areas.

In the Aktobe region, natural monuments are classified into geological, paleontological, landscape, and botanical types. There are 33 natural sites of local significance and 33 cultural and historical sites in the districts of Aktobe region, including 7 of national significance and 26 of local significance (Figure 3).

One of the most significant in historical and cultural terms is the mausoleum of Abat–Baytak. The Abat–Baytak necropolis dates to the 14th century and is located in the Khobda district, 12 kilometers from the village of Taldysai. The monument has more than 200 memorial architectural structures, mainly stone–cutting steles-kulpytas. It is an outstanding monument of medieval architecture and the only portal–domed tent mausoleum preserved on the territory of Kazakhstan.

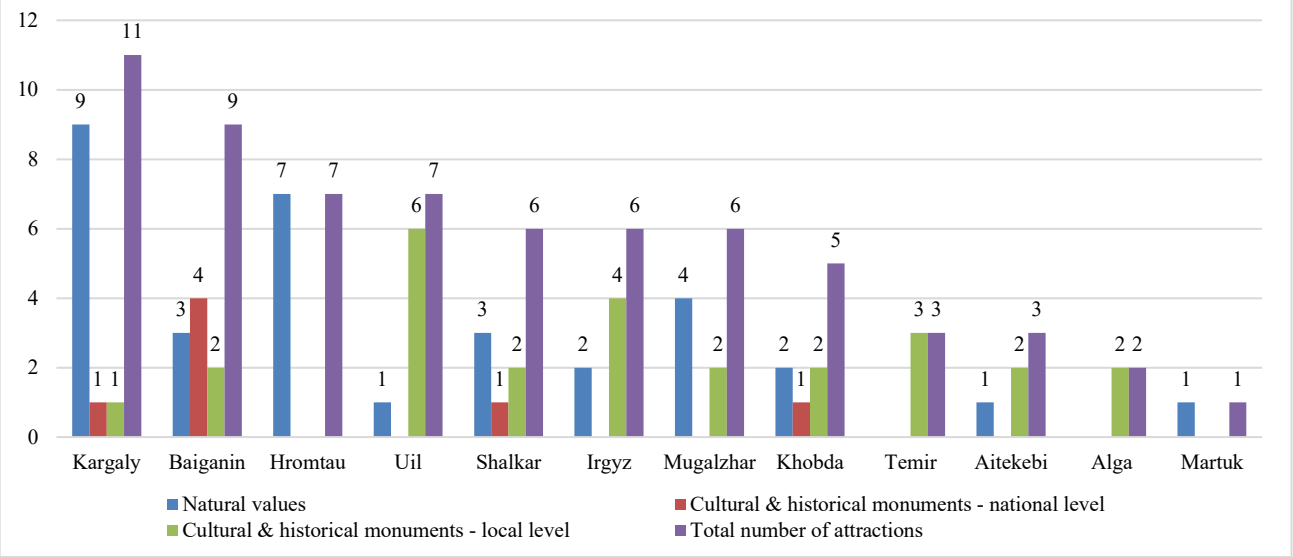

Figure 3. Classification of number of touristic values in Aktobe region and ranking of districts (Source: Author's elaboration based on Sergeyeva et al., 2016)

Koblandy Batyr Memorial Complex - The memorial complex consists of a mausoleum where the remains of Koblandy are buried (Koblandy Batyr is a famous historical figure who lived in the XIV–XV centuries.), a Hall of Fame and an obelisk. The top resembles a helmet with a shield and a bow placed next to it. The main wall of the mausoleum is about 7 meters high and is built of Russian-made red burnt bricks. The mausoleum was built in the form of a batyr's helmet, to which 15 supports are adjacent along the perimeter.

Historical and architectural complex "Keruen-saray". Shopping malls – Located in the Wilsky district in the village of Uyl. the main provisions of the Kokzhar Fair were approved on September 7, 1866, by the Minister of Internal Affairs of Russia. The Kokzhar Fair officially opened in 1867 in the Kazbek parish of the Ural region.

Yeset Kokiuly Memorial Complex - Location: Aktobe region, Alga district, 3 km away. east of the village of Bestamak. Date of the monument: 1667-1749 the memorial complex of Yeset batyr Kokiuly was built in 1992 on the site of the destroyed mausoleum. On the territory of the necropolis there are also mounds of the VI–V centuries, stone fences of the XIX century, a house for pilgrims. The mausoleum of Daribai – the mausoleum of Yeset batyr Kotybaruli, who lived in the nineteenth century, was built in 1890 from raw and burnt bricks.

The mausoleum was rectangular in shape, had a dome and painted walls. However, under the influence of natural factors, this mausoleum was destroyed. In 1993, the mausoleum was reconstructed in accordance with modern architecture, using elements of the national style. Khan Molasi Necropolis. The burial place of Abilkayir Khan. – located in Aktobe region, Aitekebi district, 77 kilometers southeast of Tolybai village, 4 kilometers 400 meters southwest of the confluence of the Ulkayak and Kabyrga rivers. The Khan Molasy burial site contains about 1,000 graves. As a result of many years of research to establish the historical identity of Khan Abilkair Kazhysultanuly (1693-1748), the remains found at the Khan Molasi necropolis were reburied, and in 2011 an obelisk was erected at this place.

The interaction of rural tourism with the environment determines the overall comfort of the region for the development of rural tourism, especially sustainable tourism. Natural and recreational resources are natural conditions, natural phenomena, create comfortable conditions for recreational and tourist activities and contribute to the organization of recreation and wellness. The main ones among them are climate, water areas, landscape, as well as some natural objects with cognitive and attractive properties. The steppe zone of Aktobe region has a unique combination of natural and recreational resources that cover a variety of natural landscapes. We offer a brief overview of the natural heritage of the districts. The interaction of rural tourism with the environment determines the overall comfort of the region for the development of rural tourism. Natural and recreational resources are natural conditions, natural phenomena, create comfortable conditions for recreational and tourist activities and contribute to the organization of recreation and wellness. The main ones among them are climate, water areas, landscape, as well as some natural objects with cognitive and attractive properties. The steppe zone of Aktobe region has a unique combination of natural and recreational resources that cover a variety of natural landscapes. We offer a brief overview of the natural heritage of the districts. The most striking natural landmark of the region is the Aktolagai plateau.

Aktolagai is a mountain range with a length of 90 km on the territory of Bayganin district, Aktobe region. It is a geological and geomorphological object of the state nature reserve fund, which has national and international significance. The peculiarity of the landscape of these places is the extremely thin cover of the Cretaceous mountains. In places, nature has created entire labyrinths of sheer walls, columns, niches, ledges, terraces, landslide amphitheaters of isolated outliers. Aktolagai is the former bottom of the world ocean.

Akkum (kaz. ak - bely, kum - sand) is a sandy valley located on the right bank of the Sagyz River in the Altai Batyr village of Bayganin district. Length 40 km, width 15 km. Here, the sands are fine-grained, loose, and little affected by the soil formation process. The state nature reserve "Ebita" (complex) is located on the territory of the Kargaly district. It is one of seven reserves of local importance. The motives of the organization are the preservation of reference areas of grass–grass steppes; unique kolochny forests of the steppe zone of birch, alder, poplar; habitats of red-book species of flora and fauna, picturesque areas in the valleys of the Zhaiyk, Ebita, Terekla Rivers. The picturesque coastal area of the Kargaly reservoir, located in a depression between the mountains, attracts with its unique beauty and the spirit of harmony. At the moment, the Qargaly Eco Resort recreation area is being built on the shore of the Kargaly reservoir.

Aschylysai waterfall is one of the most attractive tourist spots in the Aktobe region, located at a distance of 120 km. from the city of Aktobe. Located in a picturesque gorge among mountain rocks, hills, forests and lakes, it is in the heart of the Kargaly district. The waterfall was created by man in the 70s of the last centuries, when it was decided to build a special diversion of waters from the Great Aschylysai Sea in the gorge of the Ebita River, in other words, to create an artificial drain of water from melting glaciers. The Ebita River then flows into the Urals. The best time to visit the waterfall is from the end of April to the end of June, then the waterfall dries up. There is not much time for big water, but it encourages tourists not to postpone the trip for a pleasant adventure. Barkyn Sands is one of the few places where you can take therapeutic sand baths, useful for diseases of the musculoskeletal system, neuritis and sciatica.

This technique has scientific evidence behind it. It is believed that the sea used to overflow at this place. Now the water has drained away, leaving extraordinary hills of sand with an area of 35 thousand hectares. Irgyz-Turgai State Natural Reserve with an area of 763.5 hectares is located on the territory of Irgiz district.

The biodiversity of this territory is unique. There are 29 species of mammals, 250 species of birds, 14 species of reptiles, 4 species of amphibians and 10 species of fish on the territory of the reserve.

The Irgiz-Turgai State Natural Reserve is one of the largest and almost the only strictly protected steppe territory created for the purpose of preserving and restoring natural complexes, protecting habitats (wintering grounds, lettings, lambing), and migration routes of the saiga, a representative of the Betpakdal population.The Orkash Nature Reserve is a tract located near the village of Karakol in the Mugalzhar district of the Aktobe region of Kazakhstan. The tract was formed because of the weathering of the sandstone massif. It consists of extensive lowlands with sections of birch-aspen spikes located in them, between which there are bumpy sands, as well as a section of sand dunes.

Among the many types of tourism, it is worth paying attention to geotourism, which has been developing rapidly over the past few years. In its most general form, it involves visiting unique geological and geomorphological sites in order to satisfy one's own interest in natural phenomena. All geological objects in the Aktobe region are located in rural areas. The main objects of a geological nature include the Zhamanshin meteorite crater and the Aidarliasha geological section. Zhamanshin (kaz. zhaman shyn — zhaman — bad; shyn — peak, glassy brittle rock) is an impact crater in the Irgiz district of Aktobe region. It was in these places that a huge meteorite (possibly an asteroid or a comet nucleus) with a diameter of 200 to 400 meters fell about a million years ago. The diameter of the crater (along with the shaft), according to recent data, is about 13 kilometers, and its depth today is about 300 meters. In fact, Zhamanshin is a unique place where fossilized mollusks and corals can be found, and also, in fact, the first on the structure and composition of the tektites of the Zhamanshin crater are divided into two independent groups: zhamanshinites and irgizites (after the name of the Irgiz river).

Geomorphological section "Aidarlyasha" - at the beginning of the 20th century, scientists discovered clam shells frozen in stone on the banks of a steppe river in Kazakhstan. whose age was estimated at 350 million. This indicated that there was a sea here hundreds of millions of years ago instead of the Kazakh steppe. There are also several sanatoriums in the region for recreational and health purposes. Pantotherapy clinic "Zaru" is a modern sanatorium-pantotherapy, maral breeding farm "Zaru", located in the village of Kazanka in the Martuk district of the Aktobe region. Antler baths, phyto barrels, panto inhalations, massages – all procedures are based on natural medicinal raw materials given by marals. They were imported from East Kazakhstan Region in the amount of 150 heads.

Antlers are cut off from animals once a year. Antlers are used for diabetes mellitus, nervous disorders, mental and physical exertion. The course of treatment lasts from 5 to 10 days. The cost of the stay includes accommodation, four meals a day with eco-products from your own farm.

The Shipager Sanatorium is located in the Alga district. Since 2001, the sanatorium has been accepting vacationers for treatment, prevention and rehabilitation. It offers such services as mud treatment, bischofite baths, coniferous baths, pearl baths, phyto barrel, etc. Figure 4 shows the popular attractions of the region.

Also, in Aktobe region, there is great potential to develop rural tourism in the field of saumalotherapy and koumiss treatment, shubatotherapy specializing in the production of koumiss (fermented milk product made from mare's milk and saumal (fresh mare's milk, has medicinal properties, shubata (fermented milk product made from camel milk) providing sightseeing and tourist services within the framework of enterprises. The functioning of enterprises that produce koumiss and saumal lies in the fact that the family enterprise produces small amounts of high-quality koumiss, selling products mainly for sale. The owners of the production are constantly searching for outlets to a paying audience through the sale of koumiss and saumal through dairy stores, dairy boutiques and direct sale to tourists and tourists (Sergeyeva et al., 2024).

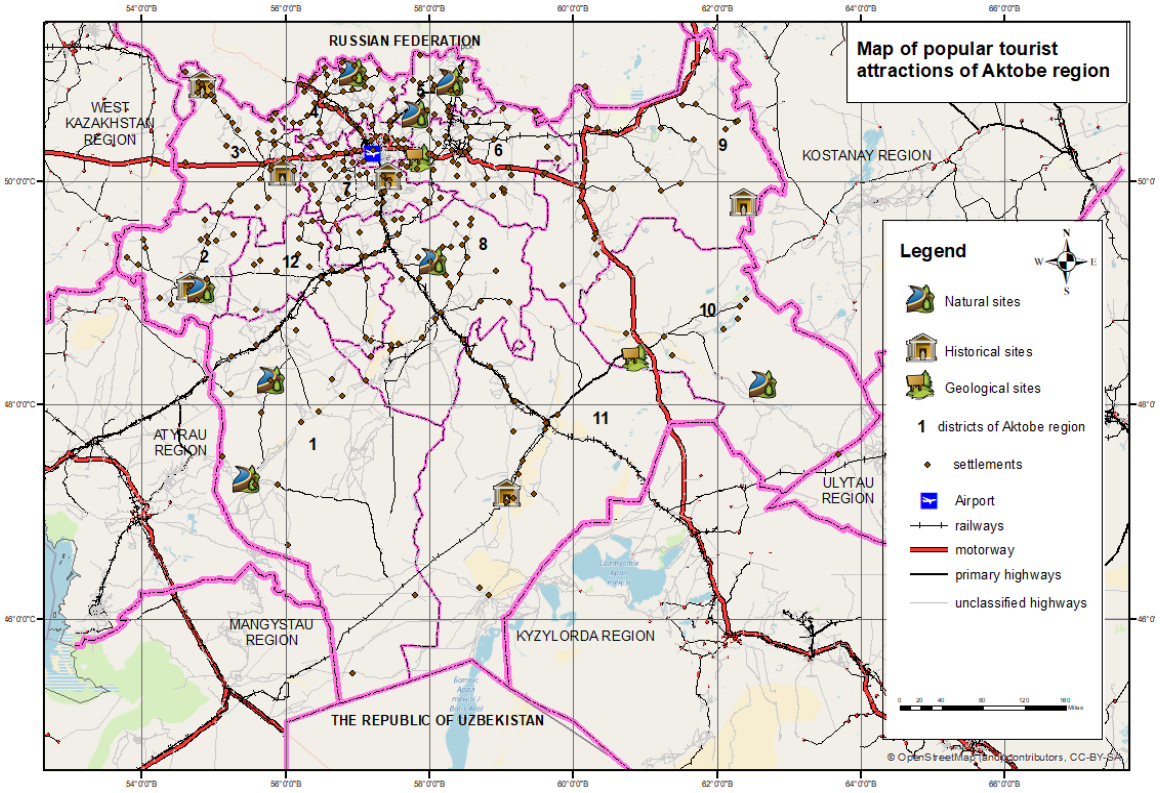

Figure 4. Map of popular tourist attractions of Aktobe region. 1. Baiganin district; 2. Uil district; 3. Khobda district; 4. Martuk district; 5. Kargaly district; 6. Hromtau district; 7. Alga district; 8. Mugalzhar district; 9. Aitekebi district; 10. Irgyz district; 11. Shalkar district; 12. Temir district (Source: Map compiled by the authors based on data from Visit Aktobe, 2024)

Transport net in Aktobe region

The total length of the road network in the Aktobe Region is 6,553 km, including 1,893 km of national roads, 1,057 km of regional roads, and 3,602 km of local roads. Aktobe Region is connected to the West Kazakhstan and Kyzylorda Regions via the Samara-Shymkent highway, to the Atyrau Region via the Aktobe-Atyrau-Astrakhan highway, and to the Kostanay Region via the Aktobe-Astana highway. Additionally, through the Aktobe-Martuk-Russian border, Aktobe-Orsk, Karabutak-Komsomol-Severnoe-Ushkatty highways in the north, and the Shubarkuduk-Uil-Kobda-Sol-Iletsk highway in the northwest, the region has direct access to the Russian Federation (Figure 5).

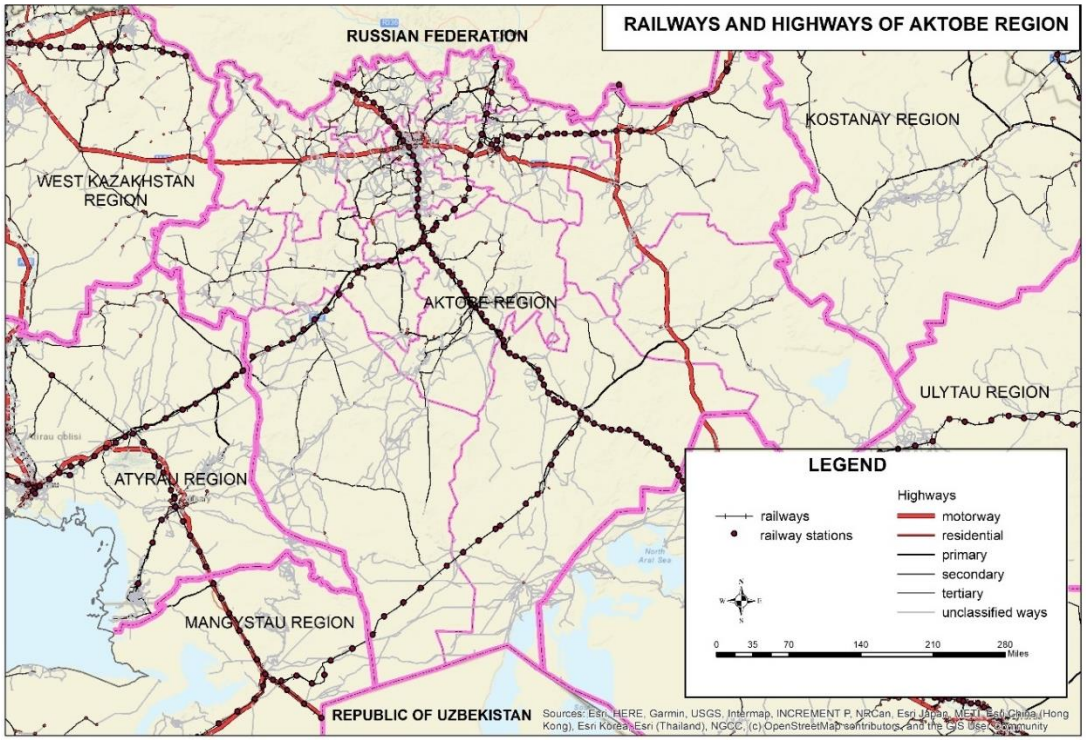

Figure 5. Road and railway system in Aktobe region (Source: OpenStreetMap; Compiled by the authors)

The international investment megaproject “Western Europe – Western China” has been successfully completed in the Aktobe Region. The total length of this corridor is 8,445 km, including 2,787 km across Kazakhstan. Of this, 621 km of the transport corridor pass through the Aktobe Region. It also facilitates the transportation of tourists, as it is located in the very center. The total length of the railway network in the Aktobe Region is 1,514.4 km, featuring 29 railway stations and 23 passenger platforms. At Aktobe station, 10 passenger trains operate, including 4 transit routes and 6 domestic routes within Kazakhstan. Currently, railway connections from Aktobe cover eight destinations, including: Kyzylorda Region via Sekseul station; Atyrau Region via Sagyz station; Kostanay Region via Aiteke Bi station; West Kazakhstan Region via Jaysan station; Southern Ural and Russian Federation via Nickeltau station.

Within the boundaries of the Aktobe railway division, there are six junction points: Zhaisan, Orsk – Novy Gorod, Aiteke Bi, Sagiz, Sekseul, and Tassai. Among them, Orsk – Novy Gorod is an interstate junction and is part of the South Ural Railway (RZD, Russian Federation). The remaining junctions connect as follows: Sekseul with the Kyzylorda railway division; Sagiz with the Atyrau railway division; Zhaisan with the West Kazakhstan railway division; Aiteke Bi with the Kostanay railway division and Tassai with the Mangystau railway division. The railway network includes 96 control points, comprising 54 stations, 36 passing loops, and 6 block posts.

The aviation potential of the region significantly contributes to the development of transport and logistics. The Aliya Moldagulova International Airport meets all the necessary requirements for establishing an aviation hub in the region.The airport's designed capacity allows for the handling of 400 passengers per day; however, during peak periods, three to four flights can serve up to 2 000 passengers simultaneously.The airport continues to increase its volume of aircraft and passenger services annually. Currently, flights operate to nine destinations, including five domestic routes (Astana, Almaty, Aktau, Atyrau, and Turkestan) and four international routes (Istanbul, Sharm El-Sheikh, Doha, and Phuket) (Figure 6).

Figure 6. Airport Aktobe and fly connection (Source: Department of Passenger Transport and Highways of Aktobe region, 2025a “Transport indicators of Aktobe region” Unpublished report. Compiled by the authors)

By the end of 2024, the airport handled over 900,000 passengers, ranking sixth among national airports, following Almaty, Astana, Shymkent, Aktau, and Atyrau. In 2024, the airport aims to serve 1 million passengers and enter the top three national airports. Additionally, new flight routes are planned, including: Kazan, Russia (twice a week);

Tbilisi, Georgia (twice a week); An increase in flight frequency to Sharm El-Sheikh, Egypt, from two to three times per week. The road network development in Aktobe Region is uneven, with well-maintained national highways contrasting with less developed local roads. The Aktobe region has 314 settlements. Mugalzhar district leads in the number of settlements with 34 followed by Martuk, Shalkar, and Khobda districts. In terms of road density, Martuk, Kargaly, Hromtau, and Alga districts have the highest indicators, while Shalkar and Temir districts have the lowest density of transport roads. Regarding the number of railway stations, Mugalzhar and Shalkar districts are leading. Meanwhile, Irgyz, Uil, and Khobda districts have no railway network. The airport is located in the regional center, Aktobe city. The fastest travel time from a district to the airport is 2 hours from Alga district. Martuk, Kargaly, Khobda,

and Khromtau districts are also relatively closer to the airport, with an estimated travel time of 2.5 to 3 hours. The most remote districts from the airport are Shalkar and Irgyz districts, with a travel time of 7.5 to 8.5 hours (Table 2).

Table 2. Ranking of the district of Aktobe region by road density and access to railway stations and travel time to the airport (Source: Department of Passenger Transport and Highways of Aktobe region, 2025b. Transport indicators of Aktobe region. Unpublished report; Compiled by the authors)

Administrative unit	Road density	The number of railway stations	Travel time to airport (hour)	Number of points
1. Baiganin district	14.1	6	5	24
2. Uil district	25.3	*	4.5	22
3. Khobda district	17.5	*	2.5	31
4. Martuk district	47.9	10	2.2	32
5. Kargaly district	51.64	2	3	15
6. Hromtau district	24.3	6	2.46	27
7. Alga district	35.5	7	2	29
8. Mugalzhar district	15.1	19	2.31	34
9. Aitekebi district	14.1	8	5.5	27
10. Irgyz district	6.64	*	7.5	18
11. Shalkar district	5.3	21	8.5	32
12. Temir district	7.3	4	3	23
Aktobe region	264.68	80		314

DISCUSSION

Aktobe region from the point of view of tourism, as it is shown (Figure 1; 2), is rich in natural values that enable the development of sustainable tourism and rural tourism. The results of research conducted in other regions of Kazakhstan (Sergeyeva et al., 2022; 2024; Kubessova, 2016), in North Kazakhstan (Dmitriyev et al., 2021a; 2021b; Wendt et al., 2021a), West Kazakhstan (Aktymbayeva et al., 2017) or in the Altai Mountains (Chernova & Sukhova, 2017; Chlachula, 2019) confirm our results. Transport accessibility, as an economic and geographical category, is defined differently in scientific literature: in relation to the transport complex as an industry indicator, to social development as a factor of population mobility, and to economic development as a factor of economic connectivity efficiency. A precise definition of this indicator and a formalized approach to its calculation have significant practical importance. A considerable number of scientific studies, both foreign and domestic, have been dedicated to transport accessibility (Khadaroo & Seetanah, 2008; Virkar & Mallya, 2018; Samková & Navrátil, 2023; Rohini & Meenakshi, 2024). Many of these studies focus on transport networks as key elements shaping accessibility (Michniak et al., 2015; Dinu, 2018; Pellegrino, 2021).

They also highlight that transport accessibility is largely associated with indicators of transport development (provision) in a given territory or city (Wendt et al., 2021b; Sánchez-Rivero et al., 2024; Syzdykbayeva et al., 2025). The development of rural tourism in the region depends on the accessibility of key attractions from major transport roads, railway stations, and travel time to transport hubs (Sergeyeva et al., 2022; Saparov et al., 2024).

The transport potential of the Aktobe region is considerable. The region operates railway, road, air, and pipeline transportation modes. However, the quality and density of the transport infrastructure remain underdeveloped. It is worth noting that, due to its favorable geographical location, the region has a well-developed transport infrastructure. The length of major railway routes such as Uralsk – Mangystau and Central Asia – Europe exceeds 1,000 km. The international highway "Western Europe – Western China" also passes through the region. An analysis of table 2 reveals the influence of these factors on the tourism potential of rural areas.

In 2025, the average population density of the Aktobe region was 3.1 people per square kilometer. The territory of the Aktobe city administration had the highest population density in the region, where the regional center, the city of Aktobe, is located. The Alga, Martuk, and Hromtau districts had population density above the regional average.

In the other ten administrative districts of the Aktobe region, population density varied from 0.3 to 3.1 people per square kilometer. The largest districts, such as Irgyz (41 500 km²), Baiganin (60 200 km²), and Shalkar (61 000 km²), are characterized by low population density (less than 1 person per km²) and limited transport accessibility, making them less favorable for rural tourism development.

Conversely, areas such as Martuk (6 500 km²) and Kargaly (5 000 km²) feature higher population density (4.57 and 3.09 people per km², respectively) and a more developed road network, making them more suitable for tourism (Table 1). Geographical diversity of population density and transport accessibility with relatively low domestic demand for agritourism services (Tulbayeva et al., 2017; Saparov et al., 2024) may result in low level of utilization of the region's tourist potential, which is confirmed by other studies on the development of rural tourism in Kazakhstan.

The analysis of data on natural resources and historical landmarks shows that the most attractive districts for rural tourism development are Kargaly, Hromtau, and Mugalzhar. These areas are rich in natural landscapes and cultural sites, making them appeal for rural tourism. However, the success of tourism in these districts will depend on the efficiency of the transport infrastructure. For instance, Mugalzhar district has 19 railway stations, facilitating travel for visitors. Meanwhile, Irgyz and Baiganin districts possess natural attractions but lack railway stations, which may hinder tourist influx (Figure 5 and Table 2). A well-developed road infrastructure is crucial for the growth of the tourism industry and the enhancement of its overall potential (Dmitriyev et al., 2021b; Wendt et al., 2021b).

A vast steppe territory requires a reliable and extensive road network to ensure connectivity between settlements. The density of roads is a key criterion for assessing the state of road infrastructure. The leader in road density in the Aktobe region is Kargaly district (51.64 thousand km/km²), followed by Martuk district (47.9 thousand km/km²) and Alga district (35.5 thousand km/km²). Above-average transport infrastructure development is characteristic of Uil, Hromtau, Mugalzhar, Aitekebi and Baiganin districts. The lowest road density is observed in Shalkar (5.3 thousand km/km²), Irgyz (6.64 thousand km/km²) and Temir (7.3 thousand km/km²) districts.

CONCLUSION

The transport potential of the Aktobe region is considerable. The region is served by rail, road, and air transportation systems. However, the quality and density of transport infrastructure necessary for the development of rural tourism remain insufficiently developed. Based on data analysis, several patterns can be identified. The conducted research and data analysis covering the diversity and geographical distribution of natural assets indicates the presence of numerous tourist attractions in the Aktobe region. Many of these can be incorporated into the region's tourism offerings to enhance rural tourism development. The study has achieved its goal of analyzing the conditions for tourism development in the Aktobe region through spatial differentiation, based on the distribution of tourist attractions and their transport accessibility.

It enabled the identification of areas with limited transport access to tourist sites (Shalkar, Irgyz and Temir districts), as well as the determination of priority areas for investment in transport infrastructure that could foster an increase in tourist flows, particularly in the rural tourism sector. The highest road density is observed in the border districts of Kargaly, Martuk, Alga, as well as in the city of Aktobe, with figures ranging from 24.3 to 51.64 km/km². The lowest road density is recorded in the Shalkar district — 5.3 km/km². A comparative analysis of the current state of the transport network in the Aktobe region reveals an overall lack of well-developed road infrastructure.

More than 60% of roads in the region are in poor condition. Priority infrastructure development is needed in districts with high tourism potential— Kargaly, Martuk, Alga, Mugalzhar. Meanwhile, areas with average transport accessibility, such as Mugalzhar and Baiganin, may be promoted as destinations for niche tourism (e.g., ecotourism, adventure tourism), but this requires the expansion of the road network and the establishment of logistics hubs.

Since all districts in the Aktobe region are rural, and tourist attractions—particularly natural monuments—are scattered throughout the region, air transport is not a viable option for most tourists. The only airport is in the city of Aktobe. Additionally, the absence of railway stations in the Irgyz, Uil, and Khobda districts restricts access to these areas by rail. Therefore, road transport remains the most viable means of reaching tourist destinations. The use of railway routes for tourism is also promising. Districts with well-developed rail networks, such as Mugalzhar and Shalkar, can be considered as hubs for organizing tourist excursions.

Developing tourist routes based on accessibility is critical for attracting visitors. Routes should consider not only natural and cultural attractions but also convenience of transportation access. The underdevelopment of the transport network, as shown by statistical analyses of road, rail, and air infrastructure, strongly supports the hypothesis that the current transport system, despite the abundance of natural assets, limits the tourism accessibility of the Aktobe region.

To stimulate demand, it is important to recognize that despite the variety of tourist attractions, the lack of developed transport infrastructure, telecommunications, and basic public services undermines the region's competitiveness in the tourism market. Therefore, improving the accessibility of tourist sites and developing tourism infrastructure is essential. This requires the implementation of phased activities, including construction or major repair of roads leading to tourist attractions, installation of road signs and informational boards for tourist sites and improvement of surrounding areas, particularly through the development of camping zones. Enhancing the road network and improving the accessibility of remote areas will help balance tourist flows and increase the economic impact of rural tourism development.

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