ANALYSIS OF THE SOCIAL NORM OF RECREATIONAL CAPACITY AND TOURIST SATISFACTION ON THE SOUTH-WESTERN SHORE OF LAKE ALAKOL

Adilet G. VALEYEV
"Institute of Geography and Water Security" JSC, Laboratory of Geotourism and Geomorphology; Al-Farabi Kazakh National University, Department of Geography and Environmental Sciences, Almaty, Kazakhstan, e-mail: adiletv@gmail.com

Akhmetkal R. MEDEU
"Institute of Geography and Water Security" JSC, Department of Natural Hazards, Almaty, Kazakhstan, e-mail: ingeo@mail.kz

Aiman A. ZHAKUPOVA*
Al-Farabi Kazakh National University, Department of Geography and Environmental Sciences, Almaty, Kazakhstan, e-mail: aiman.zhakupova15@gmail.com

Kamshat B. YEGEMBERDIYEVA
"Institute of Geography and Water Security" JSC, Laboratory of Geotourism and Geomorphology, Almaty, Kazakhstan, e-mail: kamshat.yegemberdiyeva@gmail.com

Zhanerke M. SHARAPKHANOVA
"Institute of Geography and Water Security" JSC, Laboratory of Geotourism and Geomorphology; Al-Farabi Kazakh National University, Department of Geography and Environmental Sciences, Almaty, Kazakhstan, e-mail: sharaphanova@gmail.com

Abstract: The study is aimed at determining the social norm of the density of people on the beach and identifying the weaknesses of the organisation of beach-bathing tourism for the rational use of recreational resources and the development of sustainable tourism. Aerial photography of the coast and conducting a sociological survey of vacationers, statistical approaches and Importance-Performance Analysis were used. The total threshold density on the beaches is estimated at 14 627 vacationers (3 m2/person), acceptable density at 5 683 vacationers (8 m2/person). Safety issues in the water area, pollution of the coast and lack of awareness among tourists are recommended for priority solutions. The results will improve the quality and safety of tourists' recreation and generally lay the foundation for the rational use of recreational resources and development of sustainable tourism on Lake Alakol.

Keywords: Lake Alakol, survey, social norm, importance-performance analysis, sustainable tourism

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INTRODUCTION

Lake Alakol is a large developing tourist center of beach-bathing tourism in the summer period. Over the last 10 years the transportation, hotel and recreational infrastructure on the lake shore has significantly improved. In the summer season daily flights and trains from major cities are launched. Construction of a new highway Almaty-Oskemen, allows comfortable access to the lake by buses and cars. The measures taken have contributed to a significant increase in tourist arrivals at the lake. According to local government estimates for 2022, the total number of tourists on the southwest coast reached more than 1.5 million people per season (Serikbayeva, 2023).

Given the significant recreational potential of Lake Alakol, the flow of tourists will increase every year (Aktymbayeva and Taukebayeva, 2015). Over the past years, anthropogenic (tourist) impacts on coastal areas have been increasing (Medeu et al., 2023). Recreational resources of the coast, beaches bring significant sources of income (Zacarias et al., 2011). The World Tourism Organization recommends a balance between environmental, economic and socio-cultural aspects of tourism development for long-term sustainability (UNEP and WTO, 2005). The main value of beach-bathing recreation is the natural resources that need to be preserved. The identification and application of sustainable ways to utilize recreational resources and develop sustainable tourism is in line with the global agenda (World Tourism Organization, 2015).

One of the tools for rational use is to examine the social norm of recreational capacity and the analysis of existing beach management conditions based on the tourists' opinions. Determining recreationist satisfaction with current conditions in Hawaii's coastal areas using the IPA approach was performed by (Needham et al., 2008). Assessing socio-cultural recreational capacity to support beach management at Praia de Faro, Portugal (Zacarias et al., 2011). Based on the attitude of tourists, studied the factors of competitiveness of tourist destinations in Jablanica district, Serbia (Djeri et al., 2018).

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* Corresponding author

This research method has also been applied in the following studies, which address the topics of competitiveness of the top six island destinations in Southeast Asia (Mustafa et al., 2020), performance and customer evaluation of green hotel attributes (Quan et al., 2022), local people's view of sustainable tourism principles (Akinci and Ökzüz, 2022) and for proposing appropriate measures to improve competitiveness based on optimizing resource allocation for Lisbon Metropolitan Area, Portugal (Rosário et al., 2024). The work (Adam et al., 2024) gives various attributes of tourism that influence and cause satisfaction and dissatisfaction of tourists, which can be found in the experience of sea tourism. Additionally, this study discusses how IPA can be used to influence future visitor research and management in marine parks.

The government's handling of transfer issues has opened up wide access for tourists to various recreational facilities in the country. Destination sites often have high tourist densities, with existing facilities and amenities unable to satisfy the needs of all tourists. Tourist destinations have limitations in their ability to accommodate only a certain number of people. At the same time, scholars recommend following not the physical but the real and effective recreational capacity, taking into account various limiting factors (Arias et al., 1999). The importance of investigating both the recreational potential and the infrastructural conditions capable of satisfying the natural needs of tourists has been noted (Zacarias et al., 2011).

The shores of Lake Alakol suitable for tourism are located on the south-western and eastern shores of the lake. Beach and bathing tourism are the basis for the development of local hotel business, tax revenues and seasonal jobs. The recreational attractiveness of landscapes and tourism and recreational potential of the Alakol Lake basin has been previously assessed (Mukayev and Gumilyev, 2020; Aktymbayeva and Taukebayeva, 2015). Most of the works are devoted to assessing the potential for tourism development, but now in the conditions of developed beach-bathing tourism, new ways of solving the needs of tourists and rational nature management are needed. The aim is to determine the social norm of the density of people on the beach and identify the weaknesses of the organisation of beach-bathing tourism for the rational use of recreational resources and the development of sustainable tourism on Lake Alakol.

MATERIALS AND METHODS

The study used field methods: aerial photography (UAV), survey of vacationers. Statistical approaches for numerical data analysis and Importance-Performance Analysis. The field study was conducted from 1 to 30 July 2023. At the initial stage, recreational beaches, south-west coast near the village of Koktuma were surveyed by foot route. According to the observations, tourists are engaged in a section of the beach width of no more than 10 metres from the water's edge. In general, there are 3 categories of beaches actively used for beach-bathing tourism in the study area. These are the beach of Koktuma village, the beach of Onagash spit and the beach of the forest plantation area Figure 1.
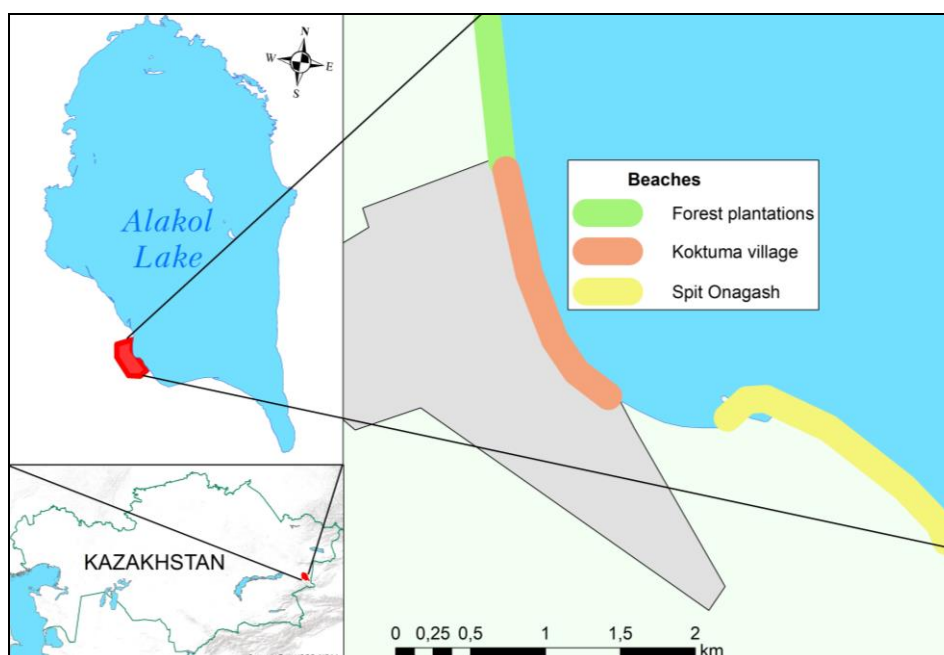

Figure 1. South-west shore of Lake Alakol

Aerial photography (UAV)

Aerial photography using an Autel EVO II UAV was used to determine the actual recreational load. Due to the lack of reliable data on the exact number of tourists visiting or staying on the beaches of Lake Alakol. During the aerial survey, the manual method of surveying along the shoreline was determined to be the optimal method to solve the current issue. The drone was operated at a relative altitude of at least 100 m from the beach, which is in accordance with the Drone Flying Regulations. The resolution of the aerial images in this case, allow to determine the silhouette of a person, without identification. Counting vacationers on the beach from aerial photographs made it possible to determine the actual recreational load (Moiseychuk, 2019) and the beach area per vacationer.

$$R = Ni \div Si,$$

where R – recreational load (people/ha), Ni – number of visitors to recreational facilities, Si – area of recreational territory.

Sociological survey of vacationers

The study adapted the questions of the questionnaire developed by (Needham et al., 2008) to suit local conditions. The questions are aimed at collecting data on the experiences and preferences of vacationers in the recreational area, on the beaches of the village of Koktuma. The questionnaire includes several blocks: socio-demographic characteristics, determination of the social norm for the density of people, level of satisfaction with natural conditions and amenities. The questionnaire was prepared in Kazakh and Russian. A site was identified to collect the preferences of vacationers on the central beach of the village of Koktuma, with a high density of tourists on the beach.

The survey was conducted by two interviewers daily from 9.00 to 12.00 and from 15.00 to 19.00. Respondents were asked to fill out a questionnaire, previously the interviewer informed them about the goals of sociological research. The principles of wide coverage of respondents' gender and age structure were observed, as well as participation of both tourists from different cities and regions and local population. During the study period, 200 respondents completed the questionnaires, representing an average of 10% of the total number of vacationers, which is in line with standard procedures in the recommendation (Needham et al., 2008). The average time to complete the questionnaire varies from 20 to 40 minutes. The refusal rate to participate in the study ranged from 10% to 30% of respondents.

Determining the norm of tourist density based on tourists' opinions

The structural-normative approach was used to determine the socio-cultural aspect of the perception of the acceptable value of population density on the beaches of Koktuma village. It involves identifying the value of a norm-standard based on the average opinion of people, regarding a condition or behaviour. Norms are described by means of a graph of the social norm curve, which reflects the value of change in the indicator according to the vertical axis. The minimum acceptable condition is the point at which the norm curve crosses the neutral line and the indicator conditions become unacceptable (Needham et al., 2008). In our study, this point represents the quality standard or acceptable threshold value of tourist density on the beach of Koktuma village. The questionnaire used 6 photographs of the central beach of Koktuma village Figure 2. The question asked respondents to rate the acceptability of the density of people in each photograph on the beaches of Koktuma village from 1 to 5 points, where 1 is very unacceptable and 5 is very acceptable.

The photographs were captured using UAVs from the same angle at different times. Images without vacationers were recorded at 6 a.m., then, as the number of vacationers increased, 5 more photos were taken with the peak of the visit in the afternoon. The visible, covered area of the beach was pre-measured to be 10*100 metres. Thus, the number of vacationers in the photos were: A – empty, B – 42, C – 79, D – 122, E – 250 and F – 353 people. After entering the questionnaire data into Excel, the response values from 1 to 5 were converted from -2 to 2, according to the Likert scale (Zacarias et al., 2011). Based on the average scores, a graph of the social norm curve was created.
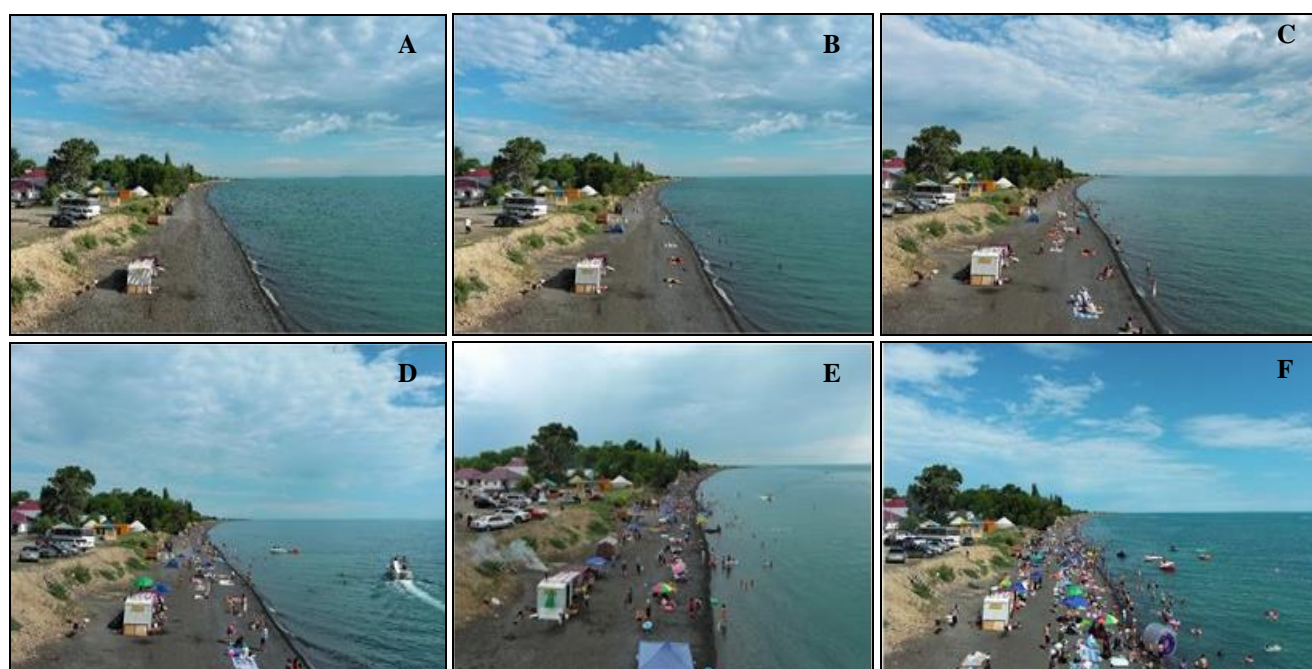

Figure 2. Photographs of the shore of Lake Alakol for measuring utilisation rates (A – empty, B – 42, C – 79, D – 122, E – 250 and F – 353 people)

Importance-performance (IP) analysis

IPA is a statistical approach to determine the relative importance of attributes and their performance (efficiency,

effectiveness) based on the opinions of respondents. This approach is based on data obtained through a survey, questionnaire of respondents. IPA allows to identify the strengths and weaknesses of the object under study, and to justify in practical terms ways to solve them (Martilla and James, 1977). Importance-performance (IP) analysis is a useful tool for measuring the relationship between users' satisfaction with specific attributes and the importance they place on those attributes (Needham et al., 2008). IPA allows the values of performance and importance attributes to be correlated into a two-dimensional graph to simplify the interpretation of the resulting data. This graph classifies the attributes into four categories or quadrants to prioritise the allocation of limited resources. These four quadrants are commonly labelled as "Concentrate Here" (Q1), "Keep up the good work" (Q2), "Low priority" (Q3), and "Possible overkill" (Q4) (Martilla and James, 1977; Chu and Choi, 2000). The Importance-Effectiveness table is analysed by examining each attribute in order of relative importance, moving from the top of the table to the bottom (Martilla and James, 1977).

Using a single set of attributes to estimate importance and effectiveness, allows direct comparison of these dimensions using an IPA graph (Dwyer et al., 2012). Empirically, customer satisfaction has been found to be influenced by both expectations related to certain important attributes and judgements of attribute effectiveness (Martilla and James, 1977). IPA clearly shows the strengths and weaknesses of the studied characteristics from the point of view of customers, allowing to identify existing problems, as well as to develop individual marketing strategies (Chu and Choi, 2000).

For respondents to rate attributes, it is most effective to use a five- or seven-point rating scale, with the middle position providing a useful basis for dividing the table (Martilla and James, 1977). For proper interpretation of the results, it is important to choose the appropriate location of thresholds for the vertical and horizontal lines separating the quadrants (Sever, 2015). To construct the graph coordinates, studies mainly use mean values (Sampson and Showalter, 1999; Dwyer et al., 2012; Needham et al., 2008), actual values of the original attribute scale (Oh, 2001; Simpson et al., 2020); and median values (Martilla and James, 1977). Regardless of the statistical approaches used to utilise the data, it is common for mean values to act as thresholds. Performance and importance values are used as coordinates to plot individual attributes as a two-dimensional matrix (Sampson and Showalter, 1999).

RESULTS AND DISCUSSION
Actual recreational load
The actual recreational load was determined on the basis of geo-information analysis and processing of aerial photographs Table 1. Aerial photographs for two different survey periods of 7 July (35 images) and 21 July (35 images) 2023 were used. Using Paint graphic editor, the number of recreationists on the beaches was calculated visually. The width of the beach ranges from 5 to 20 m or more. However, tourists are mostly located within 10 m of the beach from the water's edge. The distribution of vacationers on the beaches is uneven. The most popular places for tourists are observed in places of organized descent from the coastal ledge and access roads. Therefore, the smallest free beach area per person is on the beach of Koktuma village (11.4 m^2), and the largest on the beaches of forest plantation (41.5 m^2).

Table 1. Numerical calculations of actual recreational load

Beaches	Average number of tourists per day	Length of shoreline, m	Beach area, m^2	Man / ha	Are / Person, m^2	Length of shoreline per 1 tourist, m
Forest plantations	201	834	8 340	241	41.5	4.2
Koktuma village	2 191	1 570	15 700	1 396	11.4	1.1
Onagash Spit	1 074	2 254	22 540	477	20.1	2.1
Total	3 466	4 658	46 580			

Survey respondents
A total of 36% of respondents were male and 64% were female (72 males, 128 females). The average age of the respondents was 45 years. Respondents under 30 years old were 18%, between 30 and 39 years old were 27%, between 40 and 49 years old were 15%, between 50 and 59 years old were 14% and 26% were over 60 years old. Among the respondents, 62% came from Almaty, 31% from the regions of Kazakhstan, 4% local and 3% from the Russian Federation. More than 82% prefer to spend time swimming in the lake, the remaining 18% prefer sunbathing and just passive recreation on the beach.
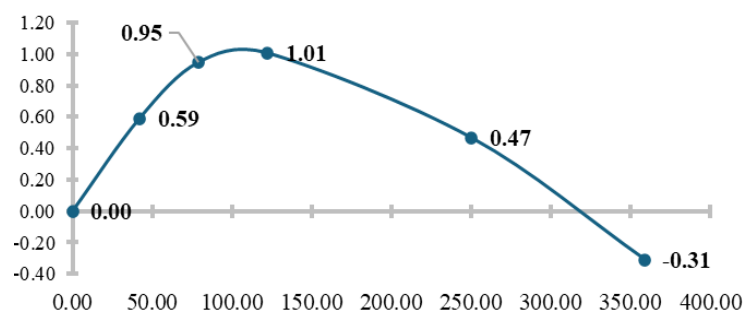

Figure 3. Average estimates of the social acceptability curve. Value of the curve intersection
with the axis at the level – 314 people (Y - respondent preferences, X - number of people in the photo)

Social norm (acceptability) of the density of people on the beach

The social norm/acceptability curve shows that on average respondents rated positively the density of people in photos B (0.59), C (0.95), D (1.01) and E (0.47) Figure 3. The density of people in photo F (-0.31) and the empty beach in photo A (0.0) were considered unacceptable by most respondents. Photos C and D received the most attention from respondents.

The maximum acceptable density of vacationers was 314 people in an area of 10*100 metres. This is the value of the point where the social norm curve crosses the neutral line. This value is the threshold level of acceptable density (social norm) of people on the beach. The graph shows that social acceptability decreases as the number of visitors increases. Values above the social norm, will contribute to worsening conditions. The majority of respondents considered the most favourable acceptable density of people on the beaches of Koktuma village 122 people, the image D (1.01), is located at the peak of the graph. Since the value received the maximum average score we interpreted it as the most favourable acceptable tourist density.

To determine the overall quality standard for tourist density of the entire study area, the social norm (threshold) values are extrapolated to the landscape level and aggregated to the entire site (Needham et al., 2008). The total length of the study area beaches is 4658 metres and the results of the extrapolation of the social norm threshold values are shown in Table 2. The total maximum allowable number of people on all beaches according to the sociological survey was 14 627 people. The size of the beach surface per bather is 3 m^2. Provided the values of acceptable tourist density (122 people per 10*100m), the recreational capacity of the beaches will be 5 683 people. The surface area of the beach per bather will be 8 m^2.

Table 2. Social norm of recreational capacity

Beaches	Threshold tourist density, persons (10*100) m	Total number of tourists, people	Area/ Person, m^2	Acceptable tourist density, persons (10*100) m	Total number of tourists	Area/ Person, m^2
Forest plantations		2619			1018	
Koktuma village	314	4930	3	122	1915	8
Onagash Spit		7078			2750	
Total		14627			5683	

The results obtained are applied data for recreational coastal resource management, coastal management and organisation. The socio-cultural assessment can reflect the real desire of people when using the beach and leisure activities (Zacarias et al., 2011). The application of the assessment results will ensure the quality of leisure activities on the beaches of Koktuma village, as well as the principles of rational use of recreational resources.

Zoning of the recreational area of Koktuma village

Active types of recreation include boat trips on the lake water area. Unfortunately, on the coast there is no definite place for watercraft for landing, disembarkation of people. They can quietly cruise in the coastal shallow part between the buoys and the shore, creating inconvenience and sometimes posing a danger to vacationers. Every year cases of tourists' injuries from the activities of watercraft in the coastal water area are registered. In this regard, the respondents were asked the question "Should the beaches of Koktuma village be zoned so that different types of recreation (activities) do not overlap in the same areas?" More than 83% of respondents believe it is necessary to zone the beaches to organize safe recreation, noting the increased noise and air pollution from watercrafts. At the same time, 12% of respondents consider it unnecessary to zone the territory and 5% answered that they do not know.

Availability of beach infrastructure

To analyze the availability of coastal recreational infrastructure, 2 blocks of closed questions were used, the first "How many objects have you seen" and the second "How many objects do you think there should be?". The list of subjects was developed based on field observations and the results of similar studies. The number of amenities necessary to meet the needs of tourists on the beach area (10*100 m). Table 3 shows the average values of the respondents' responses. The respondents noted the presence of one garbage can, although there are 3 garbage cans at the exit from the central beach, the remaining points correspond to our observations. The response interval ranges from 1 to 20 pieces of objects.

Table 3. Mean values of responses of the number of items on the central beach of Koktuma village

Question How much:	Toilets are paid	Toilets are free	Garbage cans	Picnic tables	Benches	Info/signs
you have seen	1	0	1	0	0	0
should be	6	10	15	13	15	13

Importance-performance (IP) analysis

A total of 14 attributes are proposed for tourists' evaluation - importance and satisfaction with the natural conditions and facilities at the beaches of Koktuma village. Generally, respondents indicate high importance of providing beaches of Koktuma village with each of the proposed attributes Figure 4A. More than 90 % of respondents consider it important to have pebble beaches, information signs about rules, rubbish bins and urns, no entrance fees, cleanliness of the area, and to have clean lake water. The presence of benches is considered neutral and not important by 17.8 % of respondents, and picnic tables by 28 % respectively. The characteristic of avoiding crowds of people was considered important by only 62.2% of vacationers, which is the lowest level among the proposed components'.

The general indicators of respondents' satisfaction with the existing natural conditions and available facilities for vacationers on the beach are shown in Figure 4B. More than 60% of respondents are satisfied with the condition of the pebble beaches, the purity of the lake water and the absence of fees for visiting the beaches. These are the only attributes that more than half of the respondents are satisfied with. More than 80% of vacationers are extremely dissatisfied with the facilities for tourists, including: picnic tables, benches, showers or rinsing stations, beach locker rooms, information signs about the rules, garbage cans. This also includes the indicator of the absence of garbage, which is left by the tourists themselves. Basically, the garbage consists of various packaging, leftover food and beverage bottles.

There are 2 reasons for tourists leaving garbage behind, this is low education about the culture of respect for the environment, as well as the lack of urns and garbage cans within walking distance. 89.5% of respondents are extremely dissatisfied with ensuring safety on the water – the presence of rescuers. Moreover, tourists have repeatedly noted the absence of a lifeguard observation tower on the beaches of the village of Koktuma and a stationary rescue and medical center on the coast. 68.4% of respondents are dissatisfied with the availability of parking, while many tourists get to the lake by public transport (trains and buses), so about 17% of respondents are neutral about this attribute.
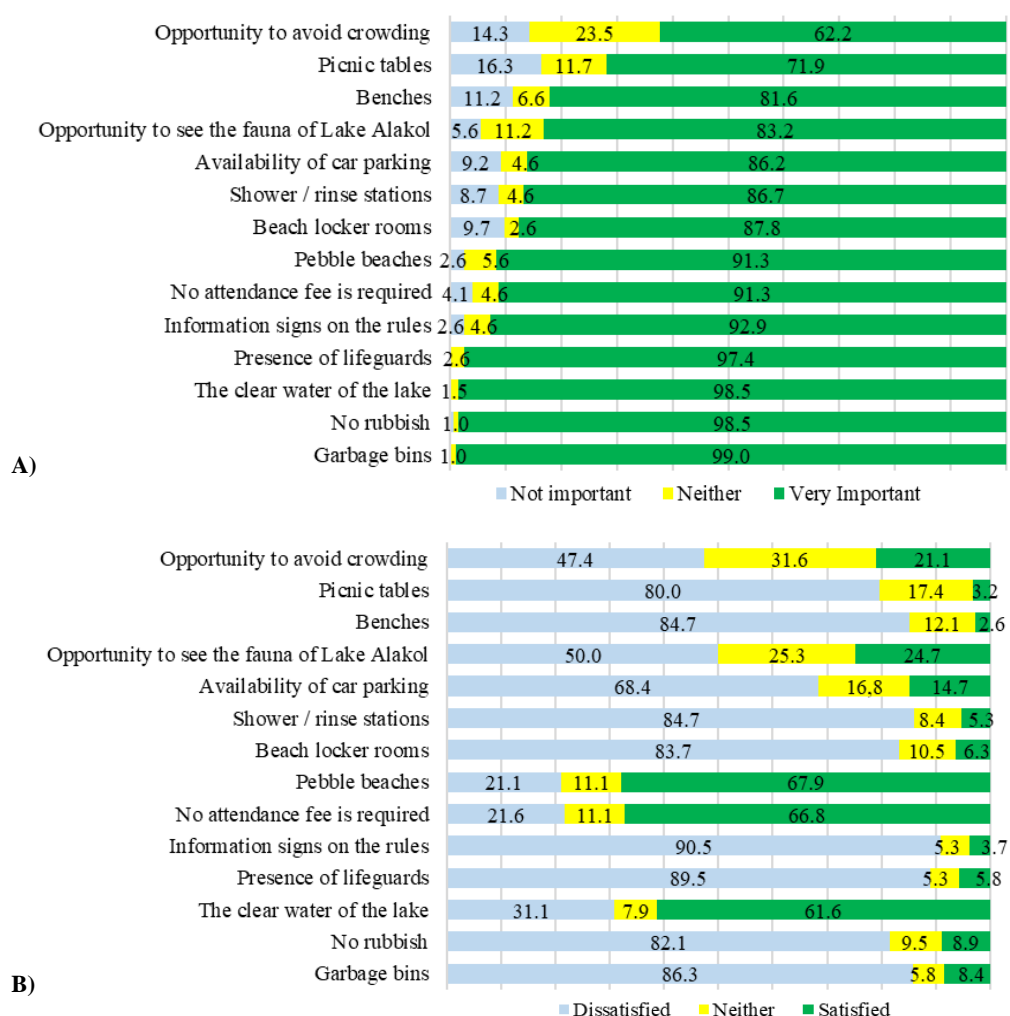
Figure 4. Relative importance A (Importance) and satisfaction B (Satisfaction) of natural and infrastructural conditions at the beach of Koktuma village, based on respondents' opinion in per cent of each category (Source: personal original data)

Half of the surveyed tourists are satisfied with the opportunity to see the fauna of Lake Alakol or treat the component neutrally. Similarly, respondents rated satisfaction with the characteristic – the ability to avoid crowds, more than 31% of tourists are neutral and more than 21% are satisfied. However, more than 47% of respondents are dissatisfied with the large crowd of people on the beaches. Considering that about 15% of respondents consider this indicator not important Figure 4A and more than 52% are neutral or satisfied with Figure 4B, it suggests that for a certain part of society, avoiding crowds is not a problem compared to other attributes of the beach. It is also worth considering the cultural aspect, according to steppe traditions, crowding and tolerance are considered a common and favorable phenomenon. This also includes the opportunity to see the fauna and partially picnic tables and benches. Statistical analysis of the results of the respondents' answers on 14 components of relative importance tourist satisfaction with natural conditions and facilities are shown in Figure 5.

The average value of importance attributes is 4.56. Most of the values of attribute scores by the respondents are classified as very important. However, the values of the components – "opportunity to avoid crowding" and

"opportunity to see fauna" are close to neutral. The average value of satisfaction with all attributes is only 2.16 points. This indicates low satisfaction of tourists with the existing conditions, except for "the condition of pebble beaches", "no fee for visiting", as well as "clean water of the lake". In general, the investigated attributes on the beaches of Koktuma village do not correspond to the level of stated importance or expectation of tourists.
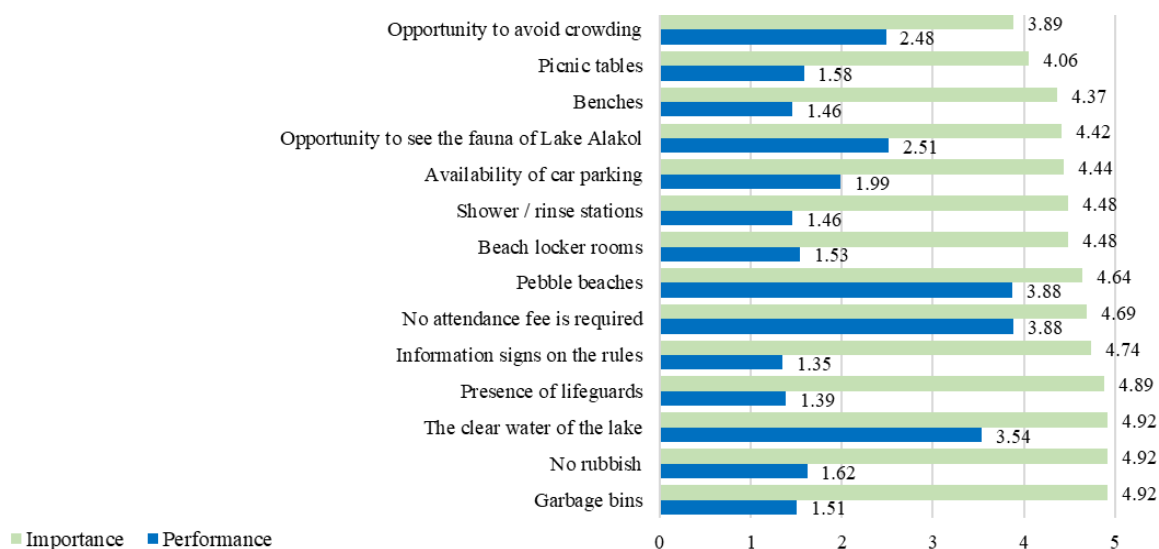

Figure 5. Mean value of Importance and Performance attributes (Source: personal original data)

To simplify the interpretation and classification of attributes, the results of the questionnaire (importance and performance) are presented in a two-dimensional IPA graph (Figure 6). The matrix is constructed by the average values of relative importance (ordinate axis) and satisfaction (abscissa axis). The intersection of the two axes formed 4 quadrants of the IPA matrix, on which the average values of the 14 attributes under consideration are plotted.
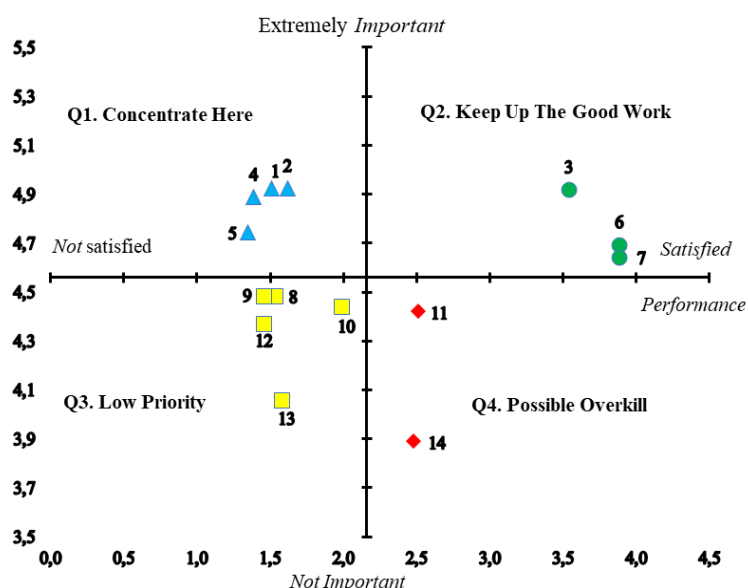

Figure 6. Importance-performance matrix of Koktuma village beach
1 - Garbage cans; 2 - No garbage; 3 - The clear water of the lake; 4 - lifeguards; 5 - Information signs about the rules;
6 - No attendance fee is required; 7 - Pebble beaches; 8 - Beach locker rooms; 9 - Showers/Rinse Stations; 10 - Availability of parking;
11 - Opportunity see the fauna of Lake Alakol; 12 - Benches; 13 - Picnic tables; 14 - Possibility to avoid crowding

In the first quadrant (Q1) "Concentrate Here", there are 4 attributes: "presence of garbage cans", "absence of garbage", "presence of rescuers" and "information signs about the rules". These parameters directly indicate the existence of issues related to safety in the water area, pollution of the coast with solid waste and lack of awareness among tourists about the rules of conduct and organisation of the coast. The second quadrant, "Keep up the good work" (Q2), includes 3 parameters: "clean lake water", "no fee is required for visiting" and "condition of pebble beaches". The respondents rated the high importance and satisfaction of these attributes. These attributes are one of the main factors in attracting tourists and increasing their number. The "Low priority" quadrant (Q3) includes 5 characteristics: "beach locker rooms", "showers/rinsing stations", "parking availability", "benches" and "picnic tables".

The values of the attributes "beach locker rooms" and "rinsing showers" are located close to the abscissa axis, to the boundary of the importance of the components, therefore, these amenities should also be improved. The component picnic tables on the beach is of least importance according to the respondents. The fourth quadrant "Possible overkill" (Q4) included the attributes "the opportunity to see the fauna of Lake Alakol" and "the opportunity to avoid crowds of people", while this attribute was marked by respondents as the least important. For most respondents, the congestion of people does not cause inconveniences, given that the survey takes place on the central beach, where there was a high density of tourists.

The survey of respondents shows the need to focus on solving issues related to the availability of garbage cans, keeping the coast clean (including cleaning the territory, information support, the presence of bins), the presence of lifeguards on the shore and in the water area, as well as information signs about the rules (containing information about the rules of conduct in the coastal zone, location schemes and emergency contacts services, respect for nature, zoning map). In fact, we determined the presence of 3 large garbage cans at the exit from the central beach, where the survey was conducted, there are only 18 garbage cans on the entire coast, but there are no average bins on the beach. The pollution of the beach is observed everywhere with solid household waste. There was no radio room, medical posts, and a lifeguard observation tower on the central beach. During the study, a rescue boat was seen once, as well as a detour of the local beach. Not a single information sign about the rules was found on the beach.

CONCLUSION

Application of questionnaire methods allowed to determine the social norm of tourist density on the beach of the village of Koktuma and to identify the actual problems of the organisation of beach tourism. Quantitative parameters of capacity are defined, the problems of the organisation of beach tourism are scientifically substantiated.

The results of norms of recreational loads or capacity allow to plan and develop sustainable beach tourism, rationally use coastal resources. Therefore, for the infrastructural organisation of the territory in the short term it is recommended to use socially acceptable density of tourists (8 m^2 per 1 person) 5 683 people, and for the medium term to use the values of threshold density of capacity (3 m^2 per 1 person) 14 627 people.

As the number of holiday homes and holidaymakers increases, expand the necessary facilities on the beach. The existing infrastructural living conditions provide up to 4,000 people per day, while the facilities on the beach do not cover the needs of tourists. The opinions of vacationers regarding the organisation of the beach are of high practical importance for local administrative authorities and businessmen.

The work covers the main basic characteristics of the organisation of beach and bathing tourism, these are safety, basic necessities, zoning of the coast, ecology. They are the identified weaknesses of the organisation of beach and bathing tourism. The solution of which will significantly improve the quality and safety of tourists' recreation and, in general, lay the foundations for the rational use of recreational resources and the development of sustainable tourism on Lake Alakol.

In general, the recommendations of the IPA analysis quadrants have a scientifically sound practical application for the development of sustainable tourism. In an emerging market economy, it is important to comply with international sustainable development agendas, especially when involving natural sites in tourism activities.

This will allow the rational use of coastal recreational resources, develop sustainable tourism and, in general, preserve the natural wealth for future generations. In addition to its contributions, the current study also has some limitations. Data were collected over a short period of time and in a specific part of Lake Alakol.

Therefore, the results obtained cannot always be generalized to the entire coastal area of the lake. Future studies should consider the remaining beaches of Lake Alakol using explanatory factor analysis, IPA and/or other methods in the context of developing sustainable tourism in the study area by incorporating the principles of sustainable tourism developed by the World Tourism Organization.

REFERENCES

Adam, S. M., Afandi, S. H. M., Mohamad, W. N. W., Shuib, A., & Awang, R. J. (2024). Importance-Performance Analysis (IPA) Approach of Marine Park Tourism Destinations: A Case Study of Kapas Island Marine Park, Terengganu. *Pertanika Journal of Social Sciences and Humanities,* 32 (1), 87-106 https://doi.org/10.47836/pjssh.32.1.05

Akinci, Z., & Ökzüz, E. N. (2022). The local people's view in tourism context of sustainable tourism principles: An Importance-Performance Analysis. *Advances in Hospitality and Tourism Research*, 10(4), 501-529, https://doi.org/10.30519/ahtr.894259

Aktymbayeva, A. S., & Taukebayeva, M. T. (2015). Geoecologicheskaya kharakteristika I otsenka turistko-rekreatsionnogo potenciala Alakolskogo regiona [Geoecological characteristics and assessment of the tourist and recreational potential of the Alakol region]. *Science news of Kazakhstan,* 2 (124), 83-104, (in Russian).

Chu, R. K. S., & Choi, T. (2000). An importance-performance analysis of hotel selection factors in the Hong Kong hotel industry: a comparison of business and leisure travellers. *Tourism Management,* 21(4), 363–377. https://doi.org/10.1016/S0261-5177(99)00070-9

Djeri, L., Stamenković, P., Blešić, I., Milićević, S., & Ivkov, M. (2018). An importance-performance analysis of destination competitiveness factors: case of Jablanica district in Serbia. *Economic Research-Ekonomska Istrazivanja,* 31(1), 811–826. https://doi.org/10.1080/1331677X.2018.1456351

Dwyer, L., Cvelbar, L. K., Edwards, D., & Mihalic, T. (2012). Fashioning a destination tourism future: The case of Slovenia. *Tourism Management,* 33(2), 305–316. https://doi.org/10.1016/j.tourman.2011.03.010

Martilla, J. A., & James, J. C. (1977). Importance-Performance Analysis. *Journal of Marketing*, 41(1), 77–79.

Medeu, A., Valeyev, A., Akiyanova, F., Lyy, Y., Issanova, G., & Ge, Y. (2023). Assessment of the Vulnerability of the Coast of Lake Alakol to Modern Geomorphological Processes of Relief Formation. *Land,* 12(7). https://doi.org/10.3390/land12071475

Arias, M. C., Mesquita, C A. B., Méndez, j., Morales, M. E., Aguilar, N., Cancino, D., Gallo, M., Jolón, M., Ramírez, C., Ribeiro, N., Sandoval, E., & Turcios, M. (1999). *Capacidad de carga turística de las áreas de uso público del Monumento Nacional Guayabo, Costa Ric*a. WWF Centroamérica, 75 p.

Moiseychuk, N. V. (2019). Nagruzki na sredu osushchestvlenii turistsko-rekreatsionnoy deyatelnosti v biosfernom rezervate "Zapadnoye Polesye" (Belorusskiy sektor) [Environmental pressures from tourism and recreational activities in the "Western Polesie" Biosphere Reserve (Belarusian sector)] // *Sustainable development: regional aspects : proceedings of the XI International Scientific and Practical Conference of Young Scientists.* Brest, Belarus, 458–460, (in Russian).

Mukayev, T. Z., Ozgeldinova, O. Z., Janaleyeva, M. K., Ramazanova, Y. N., & Zhanguzhina, A. A. (2020). Assessment of the tourist recreation capacity of lake Alakol basin. *GeoJournal of Tourism and Geosites*, 30(2spl), 875–879. https://doi.org/10.30892/gtg.302spl13-517

Mustafa, H., Omar, B., & Mukhiar, S. N. (2020). Measuring destination competitiveness: an importance-performance analysis (IPA) of six top island destinations in South East Asia. *Asia Pacific Journal of Tourism Research,* 25, 223 - 243. https://doi.org/10.1080/10941665.2019.1687534

Needham, M. D., Tynon, J. F., Ceurvorst, R. L., Collins, R. L., Connor, W. M., & Culnane, M. J. W. (2008). *Recreation carrying capacity and management at Pupukea Marine Life Conservation District on Oahu, Hawai'i.* Final project report for Hawai'i Division of Aquatic Resources, Department of Land and Natural Resources. Corvallis: Oregon State University, Department of Forest Ecosystems and Society, 74 p.

Oh, H. (2001). Revisiting importance-performance analysis. *Tourism Management,* 22, 617–627.

Quan, L., Kim, K. K., & Han, H. (2022). Customer views on comprehensive green hotel selection attributes and analysis of importance-performance. *Journal of Travel & Tourism Marketing,* 39(6), 535-554. https://doi.org/ 10.1080/10548408.2022.2162657

Sampson, S. E., & Showalter, M. J. (1999). The performance-importance response function: Observations and implications. *Service Industries Journal,* 19(3), 1–25. https://doi.org/10.1080/02642069900000027

Serikbayeva, A. (2023). Pearl of Kazakhstan. Kazakhstan truth, 04.08.2023. https://kazpravda.kz/n/zhemchuzhina-kazahstana-gx/

Sever, I. (2015). Importance-performance analysis: A valid management tool? *Tourism Management,* 48, 43–53. https://doi.org/ 10.1016/j.tourman.2014.10.022

Simpson, G. D., Patroni, J., Teo, A. C. K., Chan, J. K. L., & Newsome, D. (2020). Importance-performance analysis to inform visitor management at marine wildlife tourism destinations. *Journal of Tourism Futures,* 6(2), 165–180. https://doi.org/10.1108/JTF-11-2018-0067

UNEP & WTO. (2005). *Making Tourism More Sustainable*. A Guide for Policy Makers, United Nations Environment Programme (UNEP) and World Tourism Organization (WTO), 212 p. https://doi.org/10.18111/9789284408214

World Tourism Organization. (2015). *Tourism and the Sustainable Development Goals*, UNWTO, Madrid.

Zacarias, D. A., Williams, A. T., & Newton, A. (2011). Recreation carrying capacity estimations to support beach management at Praia de Faro, Portugal. *Applied Geography,* 31(3), 1075–1081. https://doi.org/10.1016/j.apgeog.2011.01.020