

Research Article

Social Value Evaluation of Ecosystem Services in Global Geoparks Based on SolVES Model

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With the increasing demand for diverse ecosystem services, the assessment of ecosystem services has become a hot research topic. Taking Koktokay Global Geopark as the study area, the SoIVES model was used to quantitatively evaluate the various cultural services of the ecosystem in this area from the perspective of social attributes and spatial heterogeneity and to generate corresponding value index (VI) maps. The results show that aesthetic value index is the largest, while entertainment value index is the smallest. With the increase of distance from roads and water bodies, aesthetic value and entertainment value tend to decrease gradually. The value of popular science education still fluctuates slightly in locations far away from roads and water bodies. The value index of health care value fluctuates within a certain distance from the road and gradually decreases as the distance from the water body increases. The application of the SolVES model in a wide range of areas has achieved good results and provided a scientific basis for ecological construction and park planning.

1. Introduction

Ecosystem services are the environmental conditions and utility that humans rely on for survival from the ecosystem [1, 2]. Culture is an important service provided by the ecosystem to humans, including people through enriching their spirit and improving their cognition. The nonmaterial benefits of inspiration, entertainment, and aesthetic experience are obtained in the ecosystem [3]. Ecosystem services serve as a bridge linking the natural–human process. The benefits to humans can provide humans with tangible products and intangible services [4].

Since the concept of ecosystem services was proposed in the 1970s, it has become a hot topic for scholars all over the world. The research results involve its classification, impact of human activities, climate regulation, land policy impact [5, 6], and many other aspects, and mostly from the perspective of its natural utility. With the increasing pressure of human activities on ecology, the importance of social value evaluation becomes more prominent. Although this

problem has been widely concerned by people, the economic value of ecosystem services is still estimated mainly by monetization, and it is easy for decision makers and stakeholders to disperse the main purpose of ecosystem management only by measuring monetary value. As a comprehensive concept with multiple attributes, social value is ignored and avoided in the framework of ecosystem services research because it is difficult to quantify and evaluate.

In China, the Global Geoparks has received more and more attention. Since its opening as a relic resource, in addition to restoring the ecology, it has also provided people with comprehensive places such as science, education, leisure, and recreation with a higher scientific taste, and its social value has increased. Advantage. China is the country with the most Global Geoparks in the world. UNESCO has selected a total of 161 Global Geoparks, distributed in 41 countries and regions around the world. Of these, 41 are in China. The 2019 China World Geological Park Annual Conference reported that it has received over 500 million tourists from home and

abroad and plays an important role in national and regional economic sustainability. However, since most of the Geoparks were predecessors of state-owned mining areas, there are many management and planning problems. Especially at present, will the development of Global Geoparks in China only highlight a single type of display of geological value and lose the rich spatial information in the Geopark ecosystem? Reflecting the complete distribution of social value in park ecosystem services, it is easy to cause obstacles for visitors to identify the overall value of the park, resulting in incomplete evaluation or deviation of evaluation results for the policy-making of park managers and decision-makers, which are not conducive to park protection measures and sustainable development. With the increasing use of ecosystem services by humans, there is an urgent need for studies involving the quantification of various ecosystem service trade-offs. How to better understand and express the many value types of nature to plan development and serve human consumption? To answer this question, it is urgent to evaluate and analyze cultural services.

The perception and evaluation of services are related to the realization of national park value and the protection of ecosystem. Psychosocial and cultural studies suggest that value should be regarded as a psychological and cultural concept related to human perception. To break through the traditional way of evaluating the economic value of ecosystem services and consider the value of psychological well-being generated by the relationship between individuals and nature. In this way, respondents are introduced to various types of social values and are asked to locate these values across an entire geographical area. This kind of research idea, through the investigation and collection of social value information, analyzes the value distribution in different environments from the space, and defines the priority perception position of ecosystem within the park, and then determines the priority of management decision. The distribution value in the world geoparks and various protected areas is especially worth studying.

This review uses the SolVES model to incorporate social value into the ecosystem service evaluation process. The social value of ecosystem services in Koktokay World Geological Park was quantified, and the distribution of social values and its relationship with natural resources were studied. Discusses the influence of tourists' different tourism motivations on the spatial distribution of social value of ecosystem services, hoping to provide a basis for the protection and management of this park, which can not only carry the concept of value to the immaterial characteristic expressions but also can discover the spatial distribution of social value types in the potential physical environment. Especially in the Global Geoparks with a large research area, there is a strong exploratory and research potential for the types and distribution of social values of unknown points.

2. Materials and Methods

2.1. Study Area. Koktokay World Geological Park is located in Altai area, Xinjiang Uygur Autonomous Region, China, with a total area of 2337.90 km² and an elevation of

1072–3234 m. It is the first World Geological Park in China with relics of earthquake fault zones, typical mineral deposits, and mining sites as its main landscape (Figure 1). It is known as the world's rare "earthquake site museum." The No.3 mine in the park is known as the "world's largest mine," with rare super-large rare metal deposits and mining relics in the world, which is rich in 86 kinds of known minerals and more than 140 kinds of useful minerals in the world. It is a rare "natural mineral exhibition hall" in the world and a rare "hometown of precious stones" in China. It is recognized as the "Natural Geology Museum" by the global geological community. Koktokay Global Geopark integrates mountain scenery, waterscape, grassland, strange rocks, hot springs, and other wonders. In 1999, it began to develop tourism and successively won the "National Geopark, National A-level Tourist Attraction, International Original Ecological Tourist Attraction, and Global Geoparks." And many other honors occupy a very important position in the layout and development of geoparks in China and even the world. Natural and cultural resources coexist in the park, which has rich scientific connotation and strong local cultural characteristics. It is a comprehensive natural park that combines scientific research, science education, and tourism and leisure.

2.2. Data Sources. With the help of SolVES 3.0 model, it is necessary to conduct a survey of value types before analyzing the social value of ecological services of the Koktokay Global Geopark, taking into account the subjectivity of the social value of ecological services, based on the observed direct or indirect ecological space in a certain area. It is difficult to accurately evaluate its value. In view of this, the method of evaluating the willingness to pay of the sample plot based on expert knowledge is adopted, and the feedback of the interviewed experts is used in the form of a questionnaire to determine the relevant value of social ecological services [7]. In order to ensure that the interviewed experts have a clear understanding and grasp of the quantity, quality, and other indicators of ecosystem services of Koktokay Global Geopark, personnel with ecological and geological knowledge background and familiar with the situation of Koktokay Global Geopark are selected as respondents to ensure the reliability of the questionnaire results. On the one hand, the content of the questionnaire includes the distribution of the social value of different types of ecosystem services, on the other hand, the points that can reflect the social value of ecosystem services are marked on the map.

This article comprehensively considers the characteristics of the natural environment of the Koktokay Global Geopark and the status quo of the park planning, combined with the situation of tourists' amusement toys, and taking the park's planned tour routes as a reference, the undeveloped Sai Hengbulak scenic spot in the park is included in the study area at the same time (Figure 2).

At present, there is no unified classification of the social value of ecosystem services in the world. For the choice of social value, this review refers to Clement's research results on the social value and preference of American national

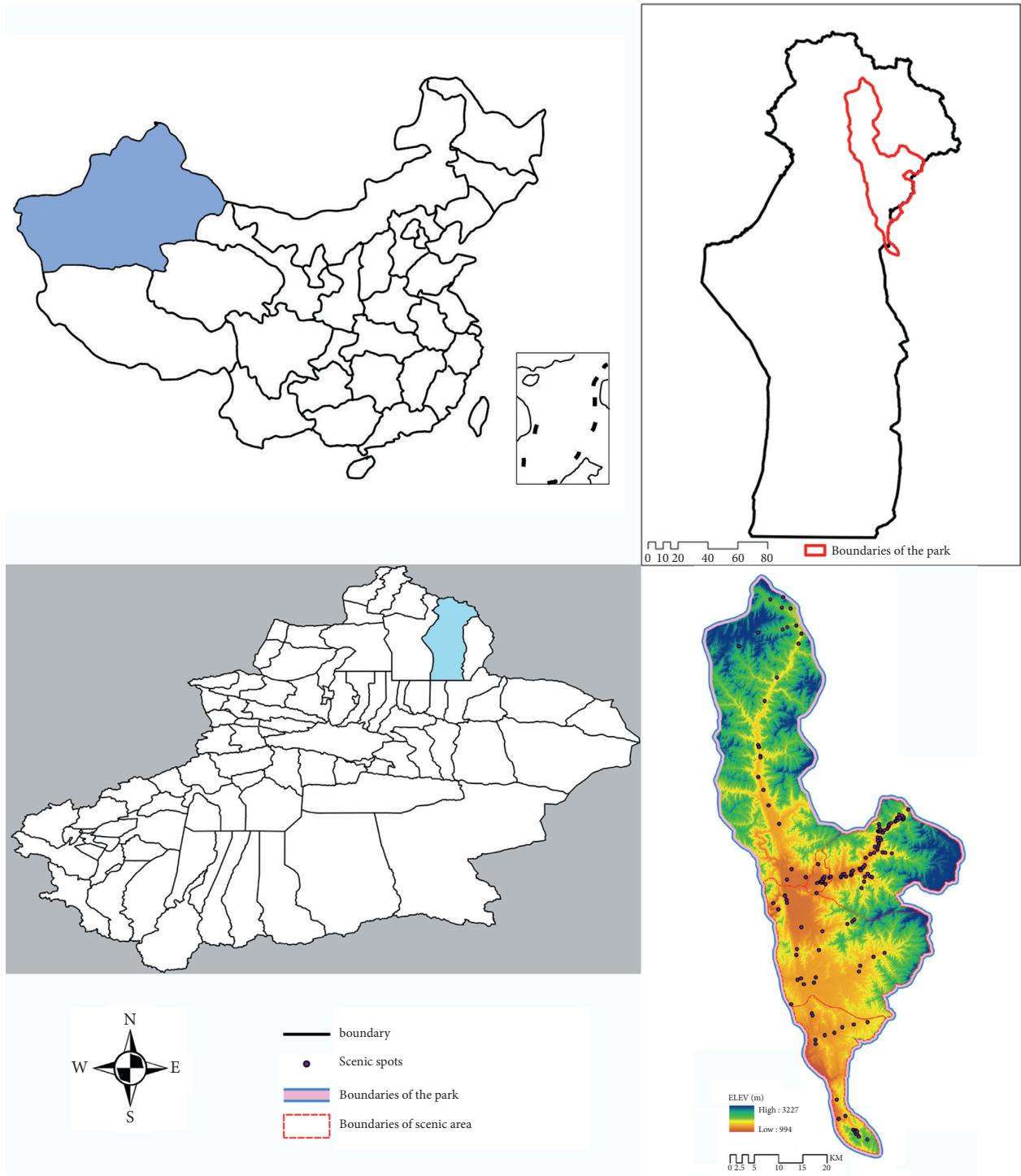


FIGURE 1: Location of the study area.

forest parks [8–10] and summarize the classification and connotation of different value types in the process of earlier studies on the social value of ecosystem services.

In combination with the key points concerned in the planning of Koktokay Global Geopark, a field visit was conducted on June 19, 2018. According to the characteristics of the natural environment and historical background of the park and repeated discussions with experts familiar with the

park, the types of social values with strong relevance to Koktokay Global Geopark were selected finally to determine the park’s aesthetic value, science education value, entertainment value, and health value.

The contents of the questionnaire include the following: (1) value distribution for different ecosystem cultural services; (2) mark the points reflecting the social value of these ecosystem services on the map. Experts are invited to assign

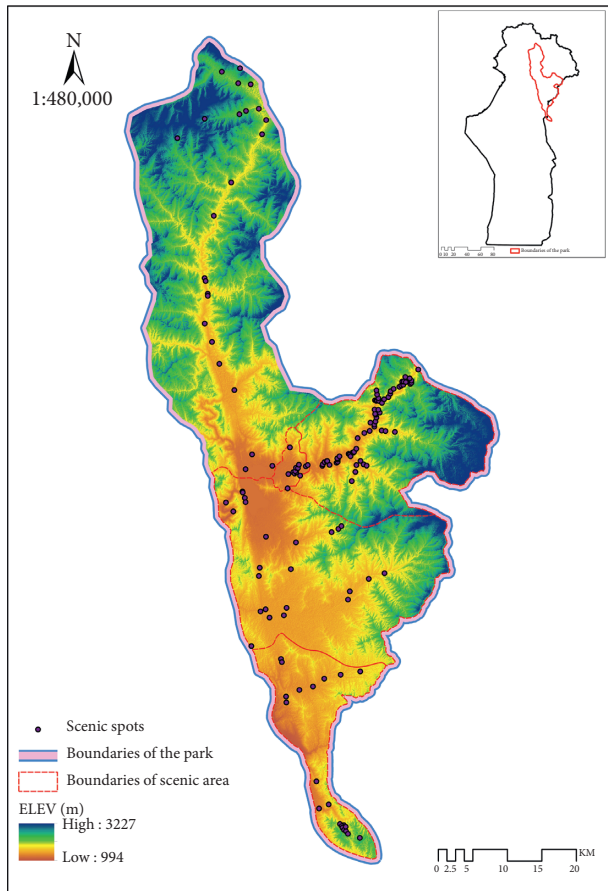


FIGURE 2: Location map of scenic spots in Kокtokay Global Geopark.

the assumed 100 yuan to the four important social value types of ecosystem services according to their own cognition of concept in Kокtokay Global Geopark, and find the corresponding points on the gradients of the points of the social value types of ecosystem services assigned with scores, so as to obtain the spatial position of each social value type of ecosystem services.

This time the questionnaire was sent to 15 experts, 15 questionnaires were returned, and the recovery rate was 100%. The experts who returned the questionnaires will further communicate with each other to ensure that the experts understand the contents of the questionnaire accurately. The descriptions of the 12 value types are shown in Table 1.

The value types marked with * are used in this article to study the social value of ecosystem services in the Kокtokay Global Geopark.

3. SolVES Model

3.1. Model Processing. The social values for ecosystem services (SolVES) model was developed in cooperation with the US Geological Survey and Colorado State University [11]. It is an application based on geographic information system technology that can quantify the various social values of ecosystem services and perform spatial analysis. At present, some countries have tried to apply it to evaluate the value of

ecological services to society, and achieved some results [12], and some domestic parks, such as forest parks and wetland parks, have also begun to try to use this model for evaluation [13–15]. Its powerful spatial analysis module is composed of social value, value mapping, and value conversion mapping. Using the first two modules together on the basis of a large number of questionnaires, we can grasp the known social value, spatial distribution, and its relationship with environment and landscape resource conditions. The third module transforms the statistical model results of the software output into areas of similar geographic environments without survey data and speculates about the social value of ecosystem services in that area.

SolVES 3.0 model evaluates different audiences on the original basis from the combination of spatial and nonspatial responses and public value and preference surveys, and scores them quantitatively. Get a quantitative 10-point social value measure-value index, and measure the social value. The tool can calculate variables that can characterize environmental geographic data, such as land types. The distance to roads, distance to water, and distance to other types of lands from the feature point to the road are used to obtain the geographic environment data layer. It is integrated with the maximum entropy model (Maxent) to generate a complete distribution map of social values. A reliable statistical model is provided to describe the relationship between value indices and explanatory environmental variables. The model is used to examine the suitability of the study area, and the value transfer method is used to cover the social value to similar areas.

3.2. Maximum Entropy Model. Maximum entropy (Maxent) model, as a classical criterion of “equal possible distribution” of uncertain parts in probability model, has become a classical classification model at present with its quasi-high accuracy. In the process of analyzing the SolVES model, Maxent is used to simulate the geographical distribution of species in the experimental area by means of machine learning. It mainly depends on the point data of observation points that may be collected to judge these point data and the environmental variables that influence the environmental adaptability of the selected species. Finally, it is estimated that the probability distribution generated by Maxent is comprehensive. Each location has a value from 0 to 1, which indicates the probability that the location is a suitable habitat for the species given the environmental conditions and the known existence of the species.

In the social value mapping environment, when the respondent recognizes the location of a given environmental feature and assigns the intensity of social value, the SolVES model uses Maxent to generate and describe the relationship between the mapping location and environmental variables to enhance the expression of functions (See Social Values for Ecosystem Services, Version 3.0 (SolVES 3.0)—Documentation and User Manual) (Figure 3).

3.3. Environment Data Preparation. SolVES 3.0 model analysis the needs to run the environmental data layer first. The environmental data of the Kокtokay Global Geopark

TABLE 1: The description of 12 value types.

Social value type	Social value description
Aesthetic value*	Discover the enjoyment of beauty from the scenery, sight, touch, smell, hearing, etc., of the area, and the scenery is gorgeous and colorful.
Value of popular science education*	Basic materials for education can be provided. Passing knowledge to tourists, providing opportunities for popular science education and learning, and enhancing their understanding of the natural environment.
Cultural value	There is an important cultural landscape or a species has important cultural value. The cultural heritage and cultural atmosphere are strong, and the cultural activities carried out by people are rich and colorful.
Entertainment value*	Provide opportunities for outdoor recreational activities. Seek physical and psychological relaxation.
Health care value*	Take into account both physical and mental health care, have a good ecological environment and humanistic environment, and focus on recuperation, nourishment, old-age care, and health preservation, and improve the quality of life.
Spiritual value	A landscape that is sacred, pious, or that makes people feel awe and respect, can purify the soul. Reflect national wisdom, promote national spirit, and enhance national cohesion.
Economic value	Can produce economic benefits, drive local economic development, solve employment, etc.
Future value	The future is positioned in the acquisition of learning, opportunities for collaboration, development potential, or all possibilities that can adapt to changes in demand.
Intrinsic value	The intrinsic value of the ecosystem.
Scientific research value	Provide opportunities for investigation, research, and experimentation to understand the inner nature and laws.
Sustainable value of life	The material cycle and energy exchange of the ecosystem.
Biodiversity value	Ornamental, medicinal, practical, production, etc., are directly useful. It also has the effect of conserving water sources, improving the climate, absorbing pollutants, and maintaining the balance of the ecosystem.
Historical value	The country's historical phenomena, historical events, historical figures, etc., as well as the facts and processes of historical aspects. Movement that they constitute. Preserved folk customs, historical traditions, etc.
Heritage value	Has outstanding universal values from a historical, artistic, or scientific point of view.

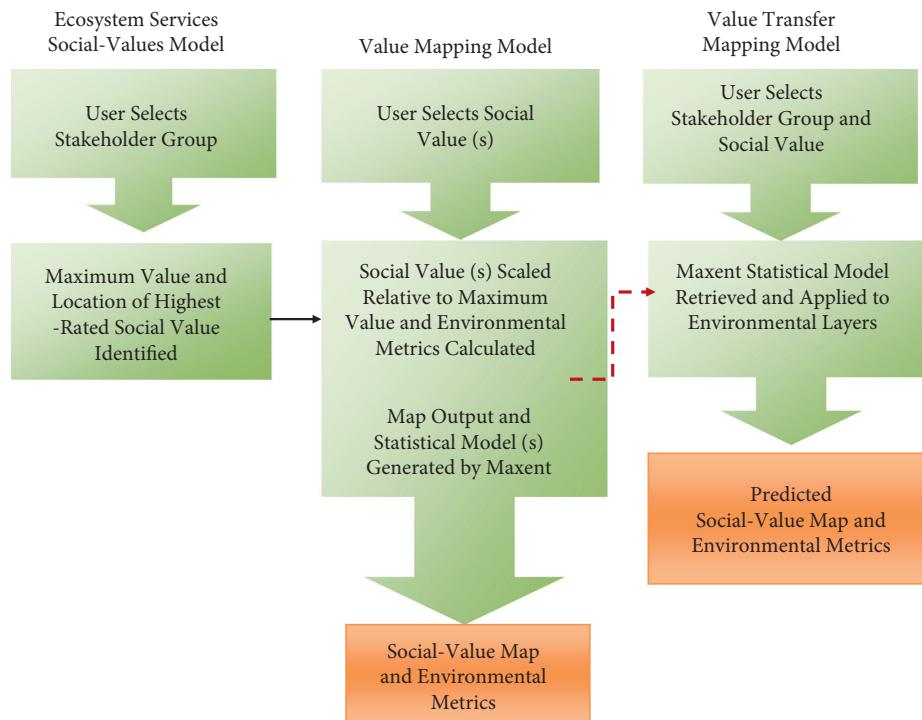


FIGURE 3: Generalized SolVES 3.0 process flow.

used in this review include the following: the park boundary, water body, and road feature layer that are obtained by digitizing the park planning extent map and the resource distribution map. Based on the distribution of roads and water bodies, three environmental layers are extracted, namely, road Euclidean distance layer (DTR) representing the nearest distance between each element point in this area and water Euclidean distance layer (DTW) representing the nearest distance between each element point in this area. Vectorize the social value points performed by the experts to obtain the social value point layer as shown in the Figure 4.

3.4. Model Operation Based on Environmental Data and Survey Data. Environmental data based on raster datasets share a common projection and range as the background layer of the social value map. At the same time, load the point element data of the measurement points, the vectorized data of the research area, and the survey statistics table into SolVES. For each survey point's social value type, a kernel density surface is generated weighted by the total amount of values assigned to each social value type. Divide the selected nuclear density surface by the maximum grid value generated by the social value model for ecosystem services. Value index can be used to measure and compare social value types and investigate the value differences of subgroups. In the analysis of various social value types in different locations in a survey area, the higher the value of the value index corresponding to the social value type, the higher the valuation of the survey area.

Call the Maxent module, take the social value points that have been obtained as sample points, and use machine learning to estimate the maximum entropy probability according to constraints such as environmental geographic data [16]. For each selected social value type or survey location, a logical layer with a range of 0–1 (range from 0 to 1) is generated. The logical layer index is multiplied by the maximum value index corresponding to many different social value types. After taking its integer value, the final social value index VI map and related environmental indicators are generated (Figure 5).

The performance of the model is evaluated by the AUC under the operating characteristic curve (ROC curve). The closer the AUC value is to 1, the more effective the model is. When the AUC value is 0.5–0.7, it is considered that the quasidetermination is low, and when it is between 0.7 and 0.9, it is considered to have certain accuracy, and above 0.9 has higher accuracy.

4. Results and Analysis

4.1. Value Index of Various Types of Social Value. According to the average nearest neighbor index statistics (Table 2), the R value of the social value of each ecosystem service is less than 1, which belongs to the agglomeration mode. Among the four types of social values, the aesthetic value is the highest, the entertainment and health care values are the lowest, and among the four types of society value types, the value index of aesthetics and popular science education is close to 9, and the other two social value indexes are low. The order of social values of various types of ecosystem

services from high to low is aesthetic value > Science Education > health value > Entertainment value.

4.2. Spatial Distribution of Various Social Values of Ecosystem Services. According to the VI map generated by SolVES model in Figure 6, the spatial distribution of the four social value types is generally the same. On the whole, the central part of the study area has high social value. Due to the convenient transportation, rich water systems, diverse geomorphic types, and diverse geological landscape forms in the area. Because there are concentrated mountain woodlands, canyon rivers, mineral resources, cold polar lakes, and Kazakh traditional villages, it is an area with a relatively concentrated rate of tourists' visits, and forms an area with high social value.

Aesthetic values are more concentrated in parts of the Cocosuri, Irtysh Grand Canyon Scenic Area, and Sai Hengbulak Scenic Area. The Yanshanian bell-shaped and cone-shaped granite landscapes are mainly represented by Shenzhong Mountains. Irtysh River source scenery, canyon scenery, hot springs, waterfalls, and other natural landscapes are also taken. The granite landform is distributed in a belt along the Irtysh River, including 1 world-class landscape, 2 National landscapes, and more than 20 provincial landscapes. The whole scenic spot has beautiful and charming scenery.

The entertainment value is mainly concentrated in Cocosuri, Birch Forest, and Irtysh Grand Canyon Scenic Area, which is rich in water system, lush in vegetation and open in terrain, and is an area with relatively concentrated natural and cultural landscapes.

The value of popular science education is mainly concentrated in the Karashanger Scenic Area, the Science Museum, the No. 3 Mine Scenic Area, and the Irtysh Grand Canyon Scenic Area. This area is mainly composed of world-class geological relics, including the Fuyun magnitude 8 earthquake and its seismic faults. With the three main bodies of relics, super-large rare metal deposits and mining relics that are rare in the world, and the granite landscape of the Altai Mountains, the geological scientific value is extremely high, and the relics are of high grade. It is the best place for popular science education.

The recreational values are mainly distributed near the water area, especially around the gold-plated areas of Cocosuri, Eremu Lake, Canyon Granite Tour Area, and Betula Forest, which are rich in water resources, vegetation, open terrain, and moderate elevation, suitable for recreational health.

4.3. Relationship between Various Value Types and Environmental Factors. The fluctuation range of the park's aesthetic value index is mainly 0–250 m. There is a dense road network in Koktokay Global Geopark, and tourists show good viewing enthusiasm for the scenic spots with strong accessibility. However, the value index of its aesthetic value gradually decreases for the areas more than 250 m away from the road due to factors such as reduced accessibility, blocked sight by mountains, and inconvenient access due to poor road conditions.

Within the range of 200–450 m from the water body, the aesthetic value index of Koktokay Global Geopark fluctuates greatly, and then as the distance from the water body is

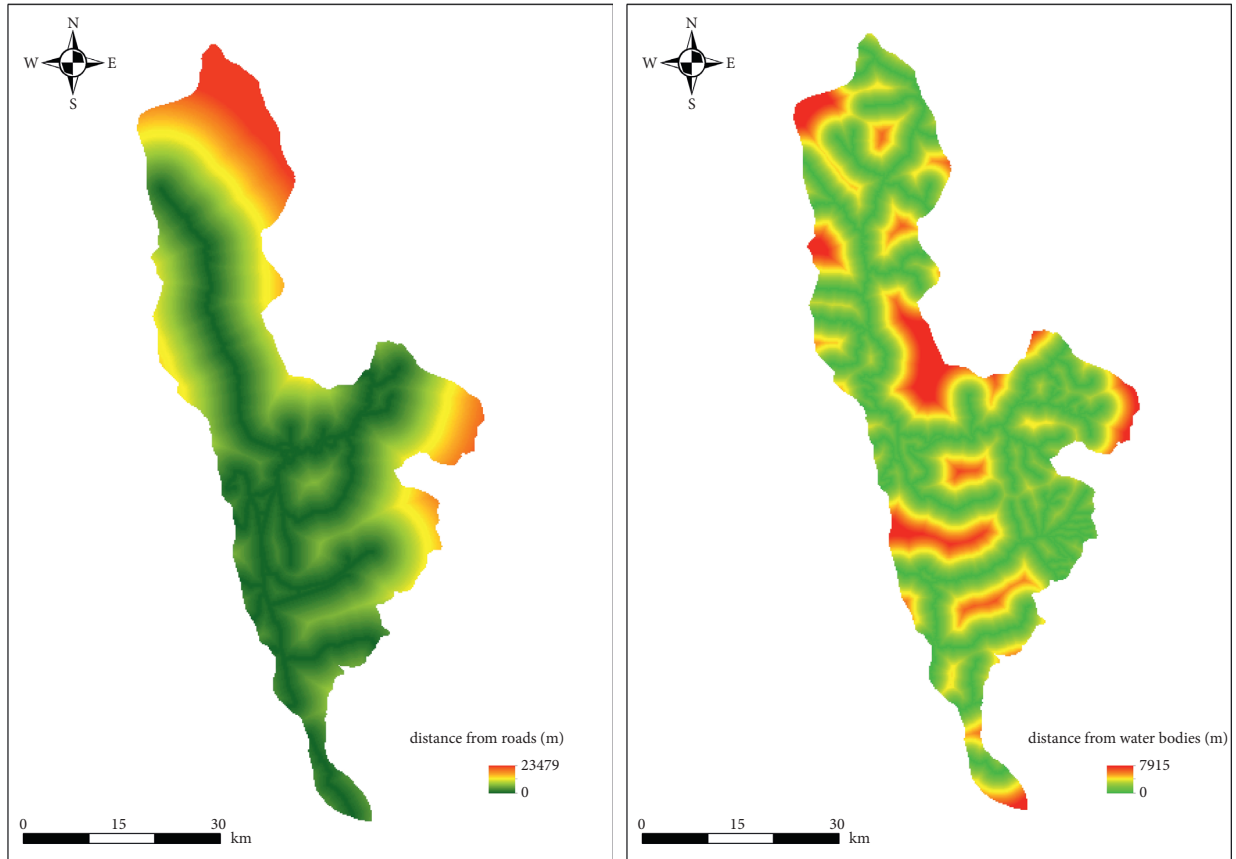


FIGURE 4: Environment element layer: ((a) DTR environment layer; (b): DTW environment layer).

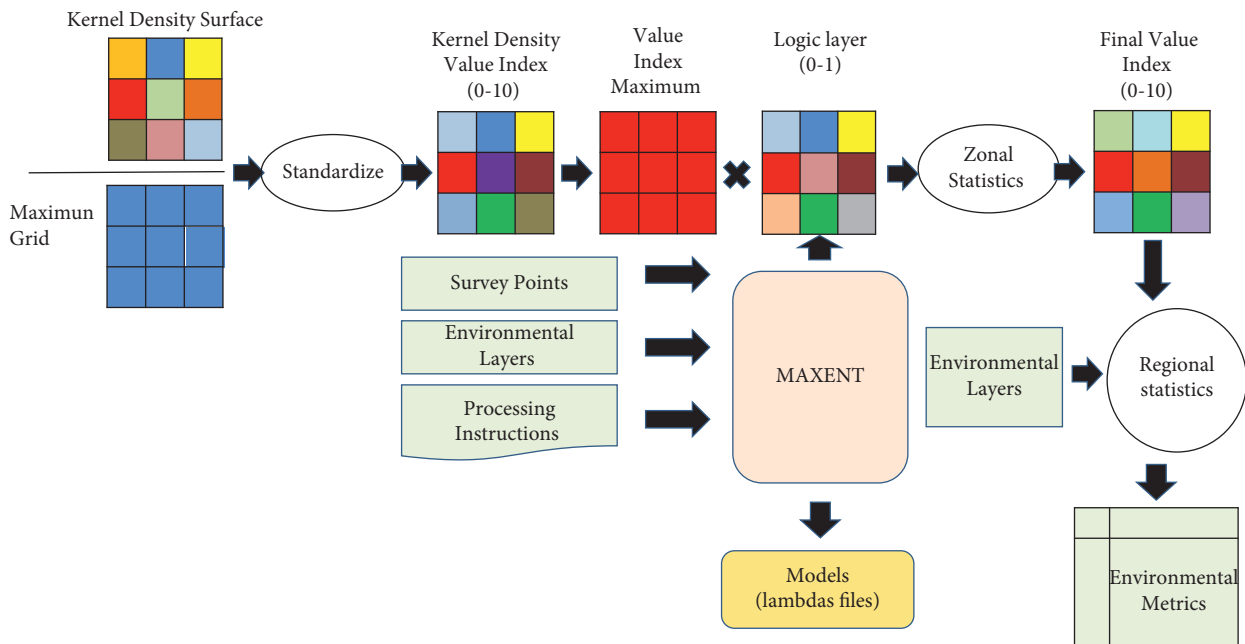


FIGURE 5: Ecosystem service social value module operation flow chart.

farther, the aesthetic value index gradually decreases. This is because in the area close to the water body, the vegetation is luxuriant, and the mountain scenery is scattered. There are

more viewing platforms near the water body for tourists to enjoy. Xinjiang has a shortage of water resources and areas with relatively rich water resources are rich in forests and

TABLE 2: The maximum value index and agglomeration of various social values of Koktokay Global Geopark.

Ecosystem serves society	Social value point	Average nearest neighbor	Z	Maximum value
Types of value	Total	Index		Index
Aesthetic value	307	0.82	-19.634	8
Value of popular science education	162	0.72	-17.814	7
Health care value	84	1.43	-11.876	5
Entertainment value	62	0.91	-9.37	4

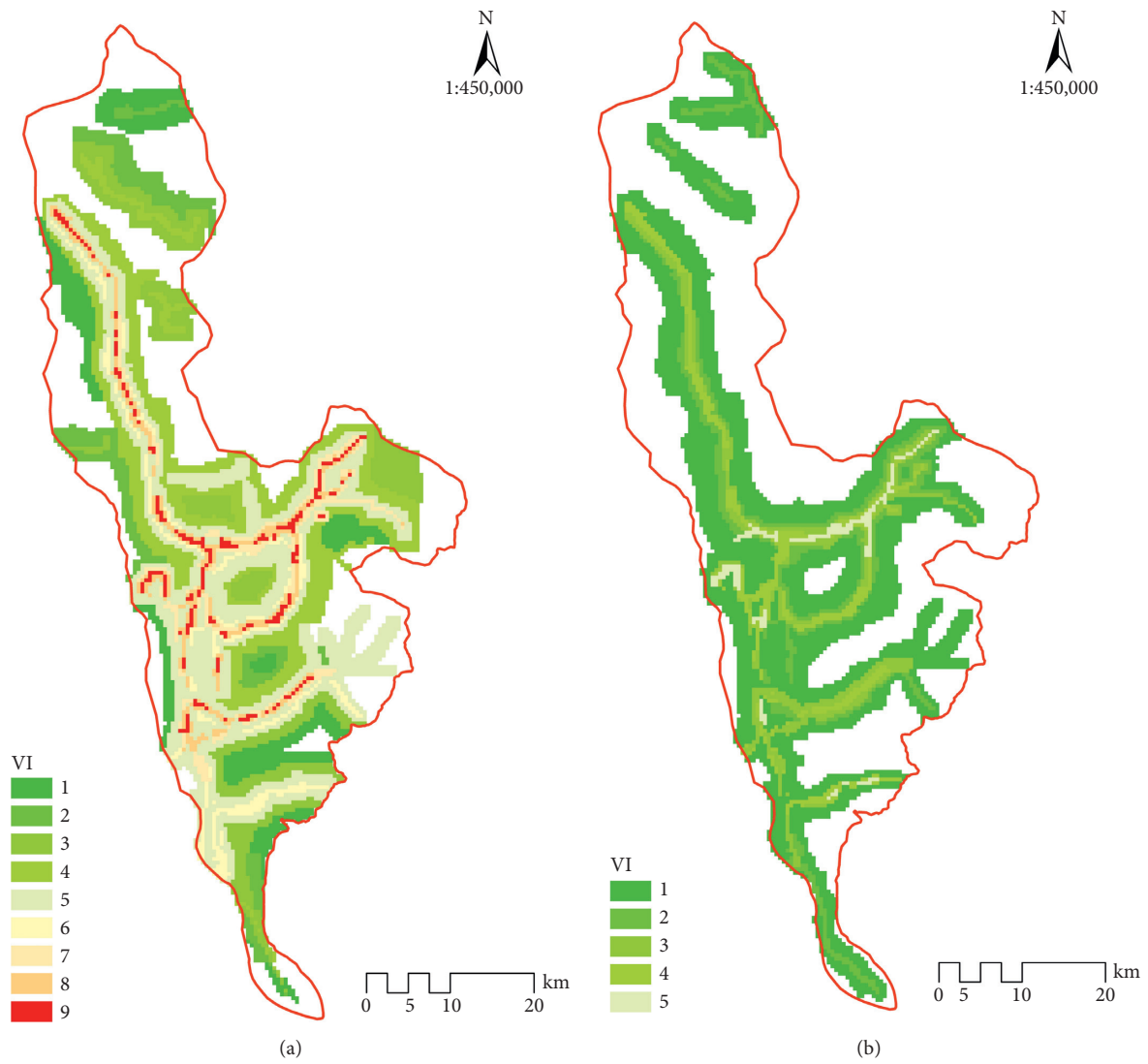


FIGURE 6: Continued.

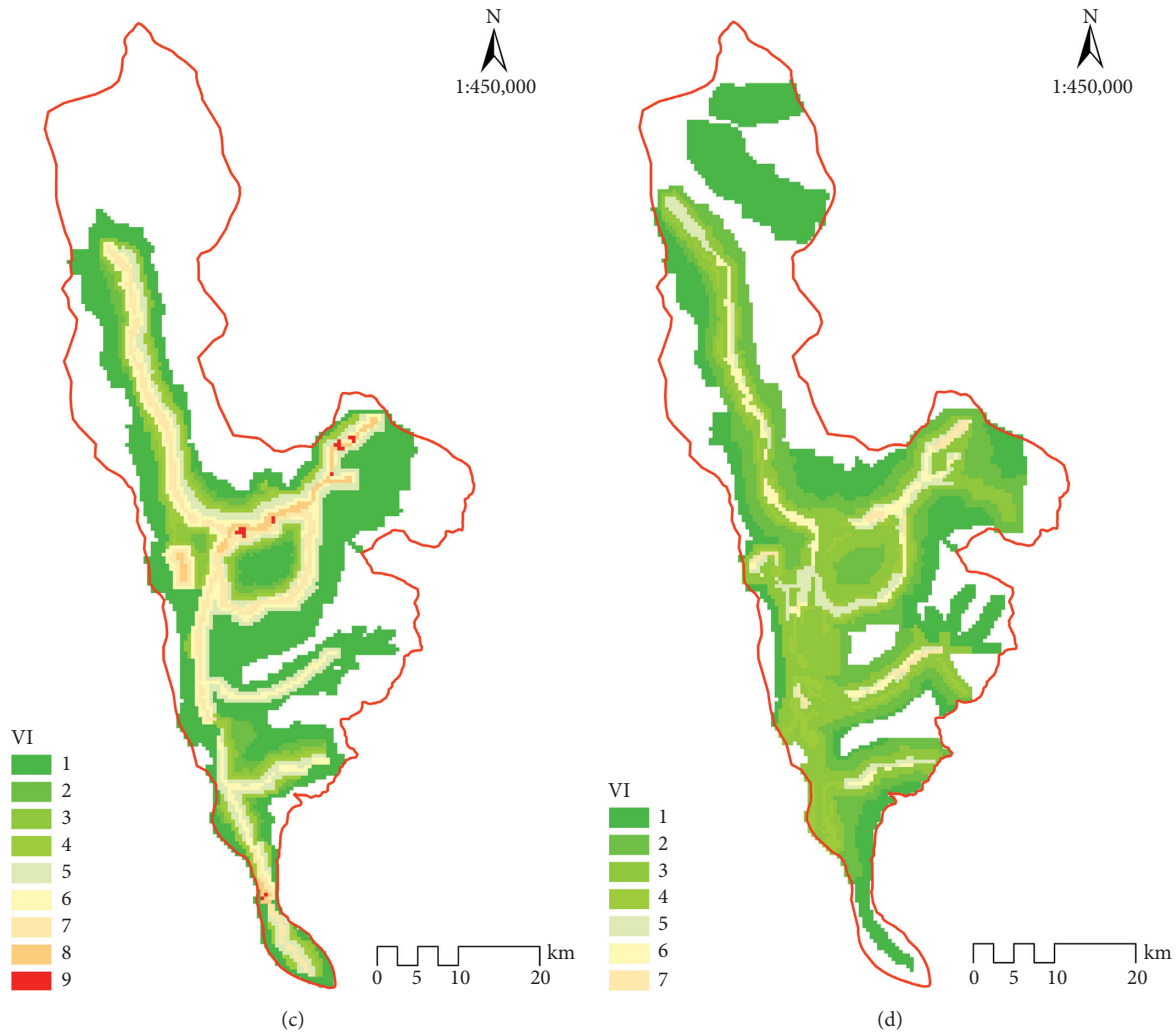


FIGURE 6: Spatial distribution of value indexes of four types of social values of Koktokay Global Geopark: (a) value indexes of aesthetic; (b) entertainment; (c) popular science education; (d) recuperation of Koktokay Global Geopark.

grasses. Pleasanter it is the closer the distance to the water, the higher the favorability of tourists toward the scenery.

Within a distance of 0–500 m from roads, the recreational value of parks fluctuates continuously, indicating that many locations within this range are given higher recreational value. Beyond 500 m, the recreational value index gradually decreases where the road radiates farther away. In areas close to major highways or tourist routes, parks provide services, recreational facilities (reception and commercial services), while in areas farther away from roads, the density of facilities decreases and the value of recreation decreases as traffic accessibility decreases.

In the range of about 0–350 m away from the water body, the amusement value of the park fluctuates greatly, and tourists have the greatest recreation motivation in this range. In the area close to the water body or wetland, the vegetation coverage is high, and the landscape is more vibrant. Visitors can not only enjoy, swim, and coke but also extend their viewing vision and expand their sensory space. At the same time, the nearby scenery, abundant forest and grass, together with the water body enhance the aesthetic feeling of the landscape, and make tourists feel better about the water body

scenery. In the area beyond 350 m, the farther away from the water body, the tourists' leisure willingness gradually decreases.

Within the range of 0–850 m from the road, the value of popular science education in the park fluctuates greatly, and the VI value of the popular science value gradually decreases with the distance from the road, but within the ranges of 400–600 m and 800–1000 m. The value of VI also fluctuates in places far away from the road, indicating that the road environment and the value of popular science education are not necessary environments. At the same time, the VI value of science education value fluctuates at a distance of 800 m from the water body, which also shows that the water environment is not a necessary environment for the formation of science education value (Figure 7).

Within the range of 250–700 m, park recreation value fluctuates greatly and decreases with distance from road. This is mainly due to the convenience of providing recreational services in areas close to the road network, and tourists prefer to go to recreational services that maintain an appropriate distance from the road. At the same time, in the range of 0–500 m away from the water body, the health care

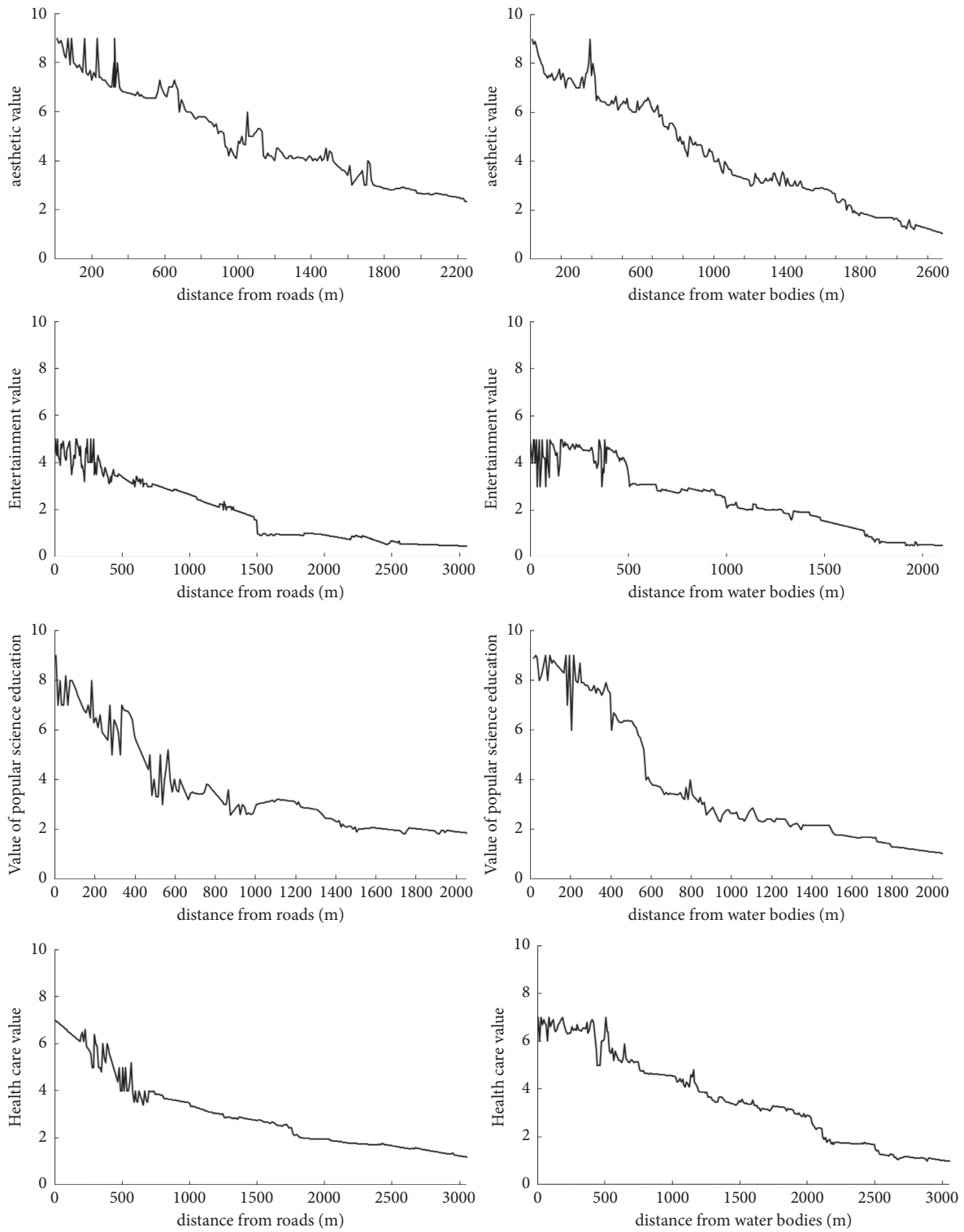


FIGURE 7: The relationship between four social service values and elements DTR and DTW.

value fluctuates greatly, mainly because the vegetation near the water body is lush and the air quality is good, and tourists have higher demand for healthcare projects, while the healthcare value decreases gradually in areas far away from the water body.

The relationship between various value types and DTR and DTW is shown in Figure 8. The four types of ecosystem service social value types are negatively correlated with DTR and DTW high. The relationship between the type of social value of ecosystem services and DTR can be used to predict

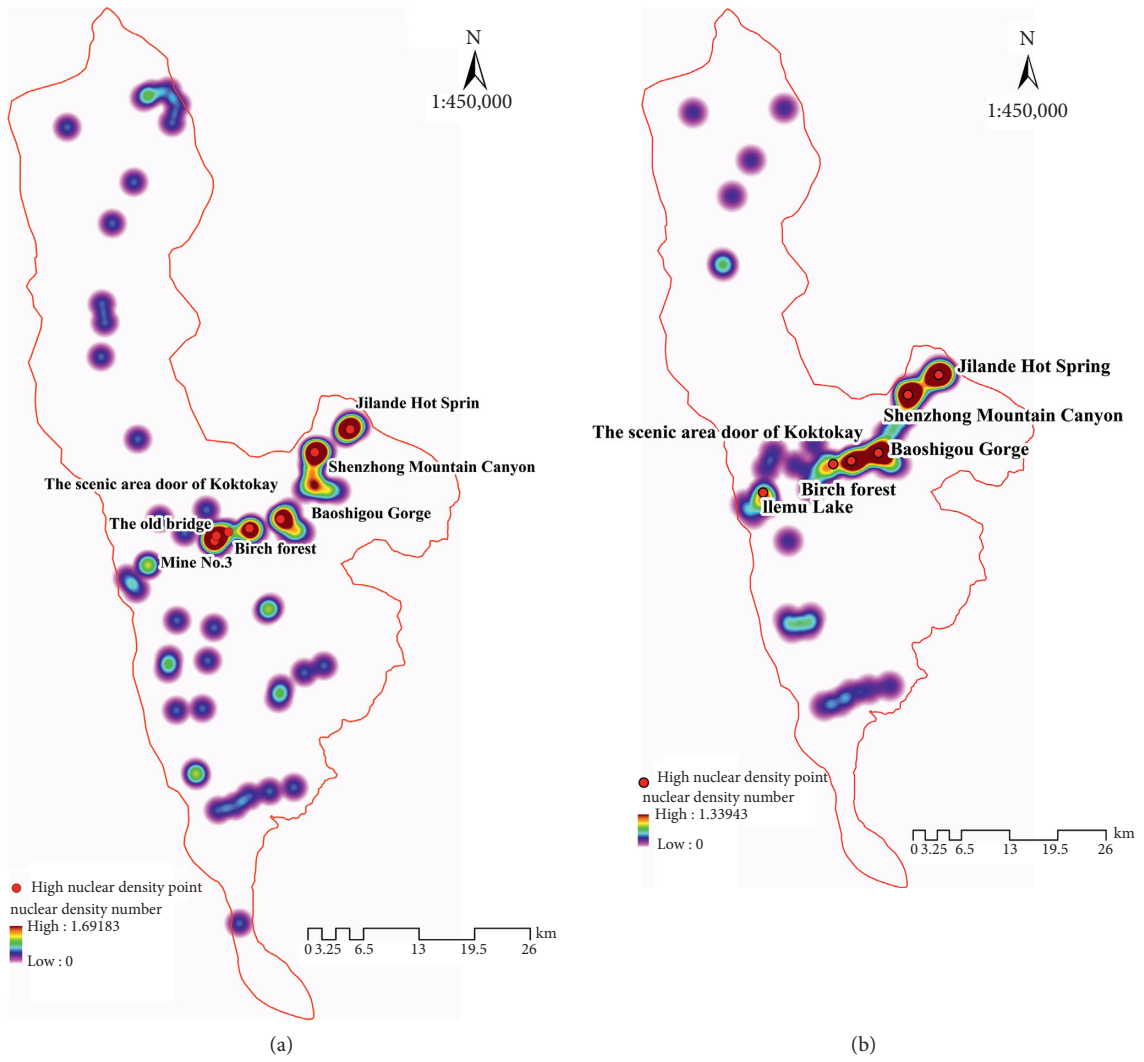


FIGURE 8: Continued.

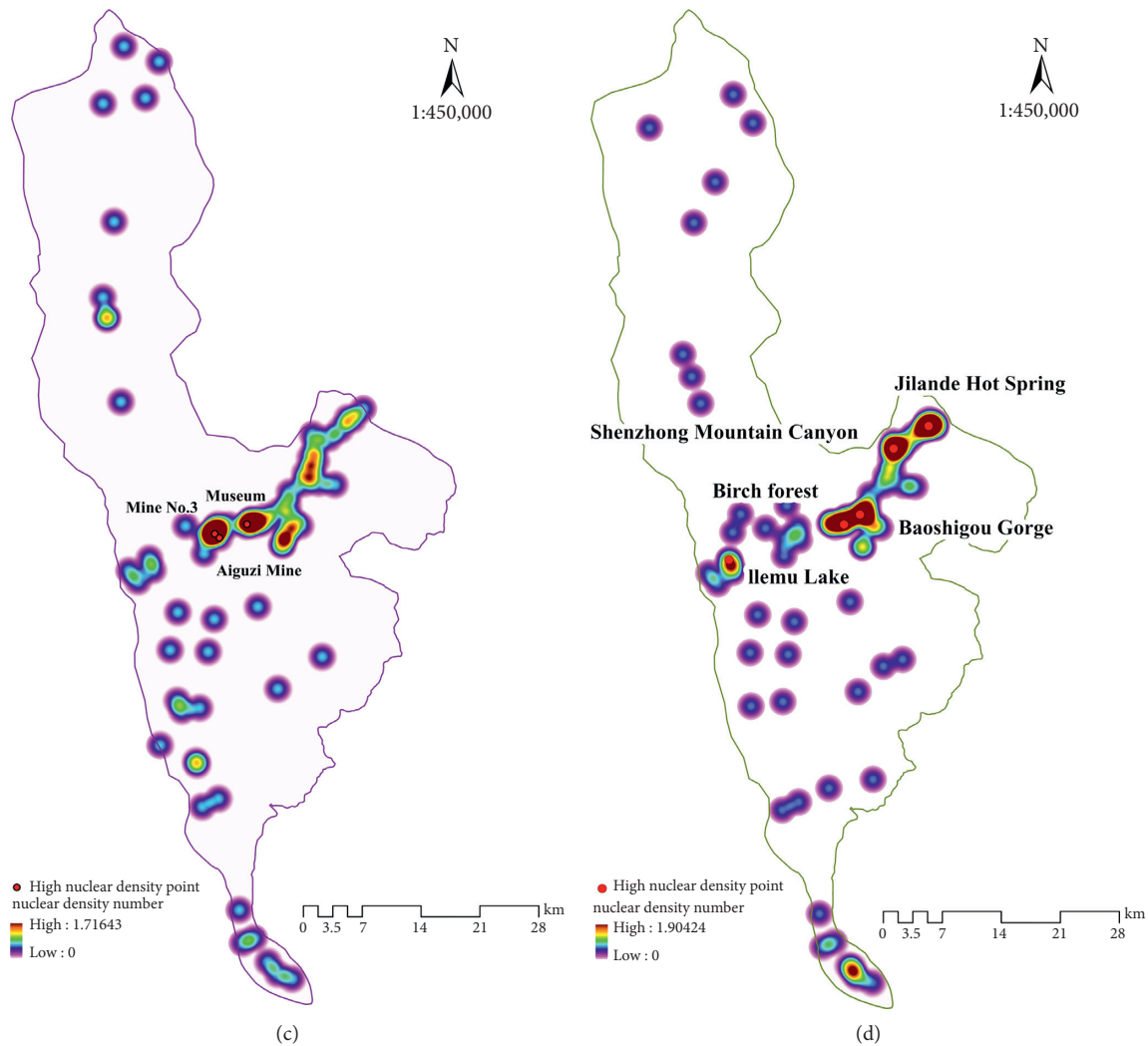


FIGURE 8: Four hot spots of social service value of ecosystem based on expert survey: (a) aesthetic value; (b) entertainment value; (c) value of popular science education; (d) health care value.

the impact of road distance on its value. Among the four value service types, the fitness between the value of popular science education and DTW is not good, and the VI value also appears far away from roads and water bodies, indicating that in some places far away or water bodies, the landscape of popular science education also appears. In addition to the Shenzhong Mountains, which is close to the water source, there are a large number of granite landforms, earthquake relics, and mine relics in the park, which are not close to the water source and road. The interviewees are experts in the local area, they know more about geological sites than tourists do, and they can mark more sites of popular science value in water and roads. Therefore, distance from roads and water bodies is not an essential environmental element for the value of science education. With the increase of distance from roads and water bodies, the aesthetic value and entertainment value index tend to decrease. The change of health care value does not fit well within the range of 250 m from roads, but has a negative correlation outside the range of 250 m. Therefore, aesthetics and healthcare value are positively correlated with DTW in the

range of 200–250 m away from the water body, and negatively correlated outside the range of 250 m.

4.4. Hot Spots of Social Service Value Points of the Ecosystem.

According to the expert survey results, areas with high aesthetic value are concentrated around the No. 3 Mine Pit, the Old Bridge, as well as the birch forest, Baoshigou Gorge, Shenzhong Gorge, and Jiland Hot Spring. Areas with higher entertainment value are mainly concentrated in the Eremu Lake, the vicinity of the white birch forest, the Kazakh yurt, the vicinity of the Shenzhong Canyon and the Jiland Hot Spring. The areas with high value of science popularization are concentrated in the ruins of earthquake fault zones, Aiguzi Mine, No. 3 Mine, and Museum. The areas with high value of health preservation are mainly concentrated in the areas near Cocosuri, Eremu Lake, and Betula forest, Gem Valley, Shenzhen Bell Canyon, and Gerande hot springs.

Based on the analysis results of the above four value hotspots, it can be judged that the birch forest, Shenzhong Canyon, and Jilande Hot Spring are the hotspots with high

social service value of the ecosystem of Koktokay Global Geopark. Mine No.3, Baoshigou Gorge, and Iremu Lake are next (see Figure 8).

5. Conclusion and Discussion

Among the four social values of the Koktokay Global Geopark, the aesthetic value index is the largest and the entertainment value index is the smallest. The value index of the four social values in order from high to low is aesthetic value, popular science education, health care value, and entertainment value. Among them, the aesthetic value and entertainment value decrease with the distance from roads and water bodies. The value of science education still fluctuates slightly away from roads and water bodies. The value index of healthcare value fluctuates within a certain range at a certain distance from the road, and gradually decreases with the increase of the distance from the water body. The birch forest, Shenzhong Mountain Canyon, and Jilande Hot Spring are hot spots with high social value of ecosystem service in Koktokay Global Geopark. Mine No.3, Baoshigou Gorge, and around Iremu Lake are the second. This model can provide decision-makers with information on the quality of the park's landscape, and provide important information for the formulation of sustainable development strategies for protected areas and the formulation of tourist management strategies. In view of the current evaluation status, the services of the Koktokay Global Geopark should be promoted and transformed by improving environmental factors such as roads and water. Priority should be given to investing in areas with high social value, focusing on hot spots, and driving the development of surrounding areas. The SolVES model can be used to further evaluate the social value of visiting areas with high awareness. Provides support for more environmental safety assessments and environmental decision-making in areas with similar environments.

Although the results are useful for the management of World Geological Park resources, the study investigated 94 resource points, some of which are distributed in undeveloped areas, so 15 experts familiar with park resources were invited to conduct tests. There are certain limitations. First of all, the surveyed experts' perception of the social value of park ecosystem services is closely related to their personal field experience, and they are highly professional. Second, the surveyed experts' evaluation of the social value of park ecosystem services tends to be more aesthetic, which may affect the embodiment of the recreation function of the park. In the future, a wider audience can be considered according to the specific situation, which will be more conducive to the development from the perspective of tourism development. On the basis of protecting the integrity of the ecosystem, basic tourism facilities can be improved, and tourists' recreation experience and policy-making can be improved.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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