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Sustainable Tourism Development in Protected Areas of Rivers and Water Sources: A Case Study of Jiuqu Stream in China

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Abstract: This paper discusses the status quo of tourism and policy development regarding the Jiuqu Stream in China from different stakeholder perspectives. By combining field investigations, questionnaires, and statistical examinations of collected data, 812 samples were analyzed using multivariate analysis. The results indicate that increased visibility, employment opportunities, and real estate values in the scenic areas along the river will attract residents to return for future development, while public safety and conservation policies, featured architecture and tourism signage planning, increased cost of living, and waste and pollution will cause disincentives. Visitors will be attracted by the natural and ecological features, transportation planning, unique local culture, and events. Recreational facilities and architectural planning, merchandise lacking characteristics, tourist consumer expenditure, smoke and pollution from motor vehicles, and how it feels to interact with residents will influence the desire to visit the place. Development of an area should consider the different needs of every stakeholder in terms of recreational facilities, local infrastructure, expenditure and income, public safety and health, waste disposal, ecology and environmental conservation, tourism, and the quality of life.

Keywords: Jiuqu stream; tourism impact; impact perception; stakeholders

1. Introduction

The Jiuqu Stream is located among peaks and valleys on Mount Wuyi in the Fujian Province, China, and it is 60 km long. The crisscrossing surrounding peaks and boulders shaped the stream into the nine bends from which its name is derived (*Jiuqu* means "nine bends" in Chinese), as shown in Figure 1. Rich in natural resources, history, and culture, the Jiuqu Stream is a World Heritage site [1]. In addition to the booming local tea industry, enterprises are encouraged to invest in setting up hotels. Taking advantage of the Jiuqu River's water resources, bamboo rafting experiences can be set up from Seongchon Township to explore the surrounding natural ecological resources. In addition, tourism can be promoted by combining the ancient features of Taoist monuments, such as the Wuyi Temple, with the art and cultural performances (Impression Dahongpao). According to 2018 statistics, the stream attracted 15,146,900 tourists and created approximately 43.5 billion USD in business opportunities [2], demonstrating the enthusiastic development of local tourism.

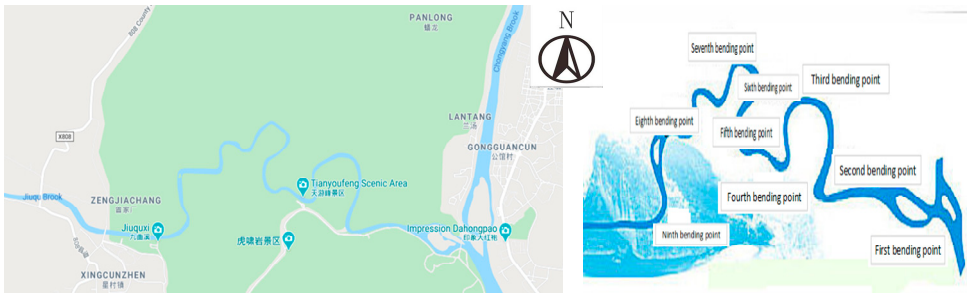

Figure 1. Location and characteristics of the Jiuqu Stream in China.

Decision-making affects the direction and efficacy of tourism development [3]. Local development can promote economic improvement that increases living standards for residents and the health of the surrounding environment, but it can have negative outcomes [4]. These changes can be explored from economic, social, and environmental perspectives [5].

Exploring changes from the economic perspective involves examining cost of living, industrial construction, and village development [6] to understand concerns regarding employment, wages, consumerism, construction, industries, facilities, prices, premiums, health, culture and creativity, recreation, community feedback, and strategy coordination [6–8].

Social investigations involve tourism facilities, community development, living atmosphere, and cultural public safety [6] to understand community recognition, service and activity quality, political participation, tourism organizational planning, cultural and architectural traits, public safety enforcement, community facilities, and public interactions [9–13].

The environmental perspective involves tourism and recreational facilities and natural ecology to understand concerns of public transportation, parking and recreational areas, tourists' environmental literacy, waste volume, forest lands and ecological habitats, automotive exhaust, water supply, and air quality.

Decision-making—in terms of the economy, society, and environment—can be investigated jointly by using policy announcements, public sentiment, economic development, online marketing, medical facilities, industry distribution, public safety, maintenance of historical sites, community assistance and development, tourism resource chains, public facility management, environmental campaigns, industrial traits, ecological conservation, environmental education, personnel training, travel planning, development monitoring, and traffic management [6,14].

After activities conclude [4,15,16], the resulting changes from impacts and effects can be collected from resident and tourist experiences [6–14]. Residents' perspectives offer insight into changes in the area [6–10], whereas tourists' perspectives can reveal shortcomings in development [11–13]; simultaneous investigations of both residents' and tourists' perspectives can generate detailed understanding of shortcomings [6,12–14]. These investigations can help decision-makers resolve challenges and achieve balanced sustainable development. Therefore, the researchers collected and analyzed the perceptions of residents and tourists on development near Jiuqu Stream and identified shortcomings in the developmental status quo.

The Earth's ecological environment provides an abundance of natural resources, sufficient to fulfill the needs of all life on the planet [13]. To meet their needs for survival, human beings exploit natural resources to varying degrees in order to acquire them [17]. Although the goals and expectations are different for different individuals, for human beings, acquiring natural, ecological, social, humanistic, and economic resources to improve individual living standards is a universal goal [18]. This is also the case with tourism behavior and development.

The phenomenon of tourism is a result of the development of human technology and civilization, which has increased the efficiency of work and transportation, generating leisure time. The local tourism resources are used as an appeal to attract tourists to visit and spend money in the hope of gaining relaxation and satisfying their psychological needs [7,17,19–23]. The residents expect tourism

development to stimulate local economic development, increase job opportunities, and improve the quality of life [4,24–26]. With tourism development as the main axis, they both interact with each other in the same region, in different positions, at different times, in different spaces, and with different resources, expecting to improve the psychological needs and status of individuals [27,28]. Although differences in needs and perceptions exist between the two stances [17,27], there have been many research reports on the effectiveness of tourism development from the perspective of residents [21–23]. However, there are quite a few researchers who investigate the defects of development through tourists [26,27]. However, not many researchers have explored the issue from the perspectives of both residents and tourists, and there is also a lack of studies on the development of river or stream tourism. Therefore, the investigators believe that sequentially understanding the feelings of residents and tourists towards the current situation of the development area and then analyzing the differences between them in terms of the local development, in order to obtain common or different viewpoints, can help to obtain more appropriate improvement suggestions [13,28]. Suggestions are then proposed based on this study's findings to provide a reference for relevant agencies and to improve the sustainable development goals for Jiuqu Stream.

In order to properly address this study, the following research questions have been raised:

Research Objective 1: What impact do residents feel on the current economic, social, and environmental development?
Research Objective 2: What impact do tourists feel on the current economic, social, and environmental development?
Research Objective 3: What impact did the two groups have on the current economic, social, and environmental development?

2. Methods and Instruments

2.1. Study Framework and Hypotheses

This study aimed to understand and compare the perceptions of residents and tourists on tourism strategies and developmental effects on Jiuqu Stream. Future developmental trends and suggestions for Jiuqu Stream are also proposed.

The perceptions of residents, tourists, and both groups on tourism and strategic development for Jiuqu Stream were collected. Resident and tourist opinions were obtained from the data to address developmental challenges and enable facilities to meet residents' and tourists' expectations. This study was developed [16] using questionnaire tools referenced from relevant literature [3–15], case studies, the researchers' experiences, common understandings between residents and tourists [6,22,24,26,27], multiple research methods, data collection [29], and data comparison and testing by performing induction, organization, and analysis [30]. Collecting accurate and reasonable information can enable the revision of strategic and development planning for the Jiuqu Stream. Figure 2 presents the research framework based on the study goal and theoretical review.

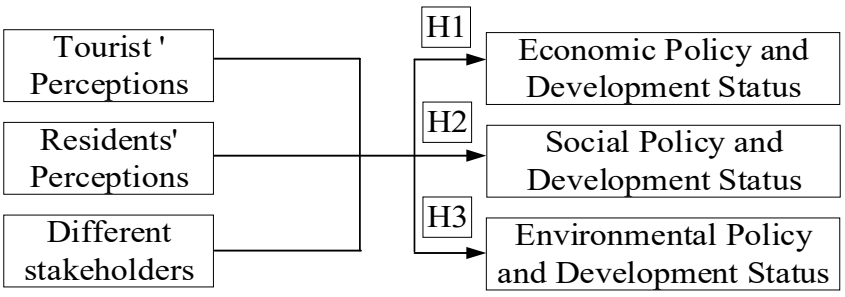

Figure 2. Study framework.

On the basis of this research framework, this study developed the following three hypotheses: (1) Residents have a Tourism and Policy Development Status of consistent awareness; (2) tourists have a Policy Development Status of consistent awareness; (3) different stakeholders have the same correct understanding of the status of cognitive tourism development.

2.2. Study Procedure and Instruments

The research used mixed research methods. The survey outline was formulated by referring to research theory and literature [1–16]. Adopted the concepts of existing theories, explained the research results, and sought the opinions of experts and scholars. We compiled a questionnaire on the current situation of tourism development, which is divided into 40 questions: Economy (15), society (15), and environment (10), as shown in Table 1.

Table 1. Initial questionnaire issue preparation.

		Residents	**Tourists**
Economic	Cost of living	Increase job opportunities Increase income Increase the cost of living	Multiple job opportunities Consumption increase Increase consumption costs
	Industry construction	Increase sightseeing facilities Increased tourism industry Combination of industrial characteristics Increased leisure opportunities Have preferential measures	Increase sightseeing facilities Increased tourism industry Sufficient industrial specialty commodities Increased leisure opportunities Have preferential measures
	Village development	Increased public construction Enterprise feedback Land and price increases Medical and health improvement Government communication platform Tourism and conservation policy Development of creative products Increase job opportunities	Adequate public construction Industry Promotion Rent and price increases Adequate medical and health level Sufficient tourism complaint platform Adequate tourism and conservation policies Diversified creative products Multiple job opportunities
Social	Company building	Increase visibility Increase service quality Increase activity quality Increase community development and willingness to participate Tourism indicators increase Increase the choice of tourist facilities Youth's willingness to return home	Increased visibility Service quality improvement Event quality improvement Popular community development and willingness to participate Adequate tourism index Multiple choices of tourist facilities Youth return to employment increases
	Life	Educational vocational training opportunities Monuments and cultural preservation Community environment commercialization Tourist friendly Good interaction between tourists and residents	Diversified educational vocational training opportunities Monuments and cultural preservation Community environment commercialization Travellers' friendly spending attitude Good interaction between tourists and residents
	Cultural security	Increase the security staff Increase willingness to purchase Increase visibility	Adequate police staff Increase in willingness to travel again Increased visibility
Environmental	Tourist rest facilities	Water pollution River pollution Vegetation change Biological habitat change Steam locomotive, oil, and smoke pollution Noise and garbage pollution Alien species threat	Water pollution River pollution Vegetation is scarce Biomass changes Steam locomotive pollution Increased noise and garbage Increased alien species
	Natural ecosystems	Tourist transportation Parking space Tourism environment destruction Water pollution	Convenient transportation Ample parking The tourist environment is damaged Water pollution

The questionnaire was designed using a five-point Likert's scale, with 1 representing "strongly disagree" and 5 representing "strongly agree". Fifty questionnaires were distributed for pre-testing. When Kaiser-Meyer-Olkin (KMO)> 0.06 and the *p*-value in the Bartlett test is less than 0.01 ($p < 0.01$), this indicates that the scale is suitable for continued factor analysis [31]. Then, the coefficient α is greater than 0.60. Tests show that the questionnaire has good reliability [32].

Economy (15) had a KMO > 0.627, with a Bartlett approximate χ^2 value of 274.688, a degree of freedom (df) of 120, and a significance of 0.000 ($p < 0.001$), and was therefore suitable for factor analysis. The explainable variations of the scale were 10.339%, 3.418%, and 3.223%, and the total explainable variation was 16.98%. After factor analysis and considering the understanding of the actual current situation of economic development, all were retained. Three aspects were named: Cost of living (3), industrial construction (5), and village development (7). They contained a total of 15 questions, and the three scales were 0.603, 0.601, and 0.600, respectively.

Society (15) had a KMO > 0. 688, with a Bartlett approximate χ^2 value of 413.731, a df of 105, and a significance of 0.000 ($p < 0.001$) and was therefore suitable for factor analysis. The explainable variations of the scale were 15.559%, 4.050%, and 3.65%, and the total explainable variation was 23.259%. After factor analysis and considering the intention of understanding the actual current situation of economic development, all were retained. Three aspects were named: Community building (6), living atmosphere (5), and cultural public safety (4). They contained a total of 15 questions, and the three scales were 0.644, 0.656, and 0.707, respectively.

Environment (110) had a KMO > 0. 914, with a Bartlett approximate χ^2 value of 1280.57, a df of 55, and significance of 0.000 ($p < 0.001$), and was therefore suitable for factor analysis. The explainable variations of the scale were 47.496% and 7.834%, and the total explainable variation was 55.331%. After factor analysis, all were retained. Two aspects were named: Tourism and recreational facilities (4) and natural ecology (6). They contained a total of 10 questions, and the scales were 0.859 and 0.855.

Based on the results of the above analysis, it can be seen that the questions in the tourism and policy development awareness questionnaire designed by this study are all reliable. Afterwards, we analyzed the survey's reliability with statistical verification and analyzed the results with descriptive analyses and t-tests, as shown in Table 2.

Table 2. Constructs involved in the questionnaire on perceptions of the impact of residents and tourism on the Jiuqu Stream.

Construct	Subfacet	Issues of Perceptions about the Impact of Tourism	Cronbach's α
Economic	Cost of living	Employment opportunities, income, expenditures	0.60–0.62
	Industrial construction	Tourism facilities, tourism industries, Commodities combining local characteristics and products, leisure opportunities, tourism premiums	0.60–0.61
	Village development	Facility maintenance, development feedback, real-estate prices, medical care, community communications, political participation, cultural and creative products	0.59–0.63
Social	Community building	Recognition, quality of services and activities, community engagement, sufficient signage, travel and recreational alternatives, organizational capacity	0.63–0.66
	Living atmosphere	Young people returning, job-training opportunities, cultural preservation, architecture, tourist attitudes	0.63–0.71
	Cultural public safety	Public interaction, public safety enforcement, Re-tourism intentions or land purchase	0.58–0.65
Environmental	Tourism and recreational facilities	Waste disposal, transportation, parking and recreational areas, environmental damage by tourists	0.85–0.89
	Natural ecology	Water resources, lakes, flora, biological habitats, automotive exhaust, noise pollution, external ecological threats	0.85–0.86

Next, interviews were used to supplement the sample information. With the consent of the respondents, six participants were interviewed, including local tourism practitioners, residents, and scholars with travel experience with regard to the Jiugqu River using the semi-structured design and open interviews to obtain their opinions on the analysis results presented in the survey, as shown in Table 3.

Table 3. Background and interview topics.

Gender	Length of Stay/Seniority	Occupation	Gender	Length of Stay/Seniority	Occupation
male	30	Residents	male	12	prof
female	28	Residents	male	6	prof
male	25	Residents	female	15	tourist guide
interview topics Description					
1. What do you think is the impact of the tourism development of the Jiuquxi Scenic Area on the local economic development? Please explain the reasons in detail.					
2. How do you think the tourism development of the Jiuquxi Scenic affects the local social and cultural development? Please elaborate.					
3. What do you think is the impact of the tourism development of the Jiuquxi Scenic Area on the development of the local natural environment? Please explain the reasons in detail.					
4. What do you think is the impact of tourism development in the Jiuquxi Scenic Area on local tourism policies? Please explain in detail why.					

After the participants verified the accuracy of the recorded content, the researchers integrated the information of the questionnaire, analyzed the results, and completed the research paper through the processes of induction, organization, and analysis [10,29]. Finally, a multivariate validation analysis method was adopted to combine the information obtained from different research subjects, theories, and methods to validate multiple data from multiple perspectives and to compare the results of different studies [29,30] in order to acquire accurate knowledge and implications. Ultimately, we hope to explore the current state of the Jiuqu River's tourism development from the perspectives of both residents and visitors, and to offer suggestions for improvement based on the views of both.

2.3. Study Scope and Limitations

Jiuqu Stream is located between the peaks and valleys of Wuyi Mountain, Fujian Province, China, and is 60 kilometers long. The criss-crossing peaks and boulders shape the river into nine bends; the surrounding natural ecology is diverse, the mountain landscape is diverse, and it has become the main tourist area for major tourists. The surrounding Xing-cun Town and Gong-guan Village are the closest towns to the Jiuquxi Scenic Area. The area also takes Jiuqu Stream and surrounding tourist attractions as tourist destinations to improve local development.

The study sample was collected from October 2019 and completed in February 2020. Initially, questionnaires were collected on site. Due to cost, manpower, and material considerations, as well as restricted working hours of residents and visitors' willingness to be interviewed, the survey was conducted using random sampling. Interviews were conducted right after seeking the consent of the participants. However, due to the outbreak of COVID-19, the sampling was changed to an online questionnaire platform, and since it was not easy to confirm the respondents, snowball sampling was used instead. Summing up the above explanations, it is unlikely that more comprehensive information can be obtained due to the limitations of the sample background. If this results in any discrepancy in the study, it will be taken into consideration for the further study.

3. Analysis of Results

3.1. Descriptive Characteristics of the Sample

Based on the analysis of the 812 samples, the Jiuqu Stream is considered a well-known tourist area with rich natural ecology and numerous historic sites. The area is popular for light tourist activities (42.4%) and among women (57.6%). Average consumer expenditure per visit was 420–700 USD (36.5%). Most tourists (68%) arranged two trips to visit local scenery per year (35.5%), as shown in Table 4.

Table 4. Descriptive characteristics of the participants.

Identity			
Identity	**Percentage**	**Age**	**Percentage**
Residents	32%	Under 20	5.4%
Tourists	68%	21–30	33.5%
Gender	**Percentage**	31–40	17.2%
Male	42.4%	41–50	13.3%
Female	57.6%	51–60	11.3%
		Over 61	19.2%
Spending on Trips and Number of Tours			
Annual trips	Percentage	Travel Consumption (USD)	Percentage
1	19.2%	140下	8.9%
2	35.5%	140–420	30.5%
3	27.1%	420–700	36.5%
4	14.8%	700–1120	11.8%
5	3.4%	1120–1700	9.9%
		1700上	2.2%
Tourist purpose			
Tourism	42.4%	Administrative affairs	9.9%
Shopping consumption	14.8%	Fire safety	3.0%
Work	13.8%	Academic research	2.5%
Leisure and sport	13.8%		

3.2. Perceptions of Economic Strategies and Developmental Efficacy

Respondents responded based on the content of the questionnaire. Statistical verification analysis was used. A score of 1 indicates strong disagreement, and a score of 5 indicates a strong agreement. Because residents, tourists, and other stakeholders had inconsistent perceptions of economic strategies and development efficacy, Hypothesis 1 did not hold, as shown in Table 5.

Table 5. Residents' and tourists' perceptions of current economic development.

Facets		**Highest**	**M**	**Lowest**	**M**
Residents	Price of people	Job opportunity	4.26	Cost of expenditure	3.86
	Industry construction	Tourism industry	4.06	Sightseeing discount	3.96
	Village development	Land price	4.40	Protection policy	3.96
Tourist	Price of people	Income	3.94	Cost	3.88
	Industry construction	Leisure opportunities	3.78	Building	3.71
	Village development	Health and medical facilities	3.84	Feedback measures	3.63

The government uses the natural environment, cultural monuments, and agricultural products to develop tourism and corresponding industries that enhance real-estate value and create employment and business opportunities. However, tourist facilities and resources are primarily targeted towards tourists; residents are few and scattered, and transportation in mountainous areas is inconvenient.

Residents lacked access to transportation, resource pipelines, or tourism premiums, and protection policies could not be implemented. As a result, residents perceived improvements in employment opportunities, the tourism industry, and real-estate prices, but they believed that efficacy in expenditures and costs, tourism premiums, and protection policies were lacking.

Rich natural resources as well as rafting and performance activities expand travel options. In addition, improvements to medical care also increase tourists' willingness to visit a destination. However, remote locations, insufficient tourist facilities, and crude town facilities affect tourists' willingness to consume. Therefore, tourists perceived improvements in income, medical care, and leisure opportunities, but they felt that efficacy in expenditures, costs, and development feedback were lacking.

As a result, stakeholder perceptions of employment opportunities, salary income, tourist facilities, real-estate prices, and medical services differed, causing divergences ($p < 0.001$), as shown in Table 6.

Table 6. Recognition of economic development status by persons with different rights.

Issue		Resident		Passenger		T	*p*-Value
		M	SD	M	SD		
Price of people	Job	4.26	0.565	3.91	0.369	5.075	0.000 *
	Income	4.16	0.650	3.94	0.367	2.967	0.000 *
	Cost	3.86	0.535	3.88	0.443	−0.294	0.082
Industry construction	Building	3.98	0.553	3.71	0.561	3.012	0.002 *
	Business	4.06	0.620	3.72	0.531	3.778	0.371
	Spot color combination	4.04	0.699	3.75	0.544	3.090	0.467
	Fallow machine	4.00	0.535	3.78	0.490	2.723	0.050
	Grace	3.96	0.638	3.75	0.541	2.258	0.602
Village development	Installation protection	4.02	0.589	3.75	0.541	2.977	0.108
	Circulation	3.98	0.685	3.63	0.549	3.701	0.484
	Land and kitchen	4.40	0.639	3.83	0.535	6.221	0.002 *
	Hygiene	4.26	0.694	3.84	0.488	4.689	0.000 *
	Mizonori cooperation	4.16	0.584	3.77	0.506	4.533	0.649
	Policy	4.08	0.601	3.69	0.579	4.137	0.041
	Protective measures	3.96	0.638	3.77	0.519	2.105	0.986
	Creative products	4.14	0.606	3.75	0.517	4.416	0.772

* = $p < 0.001$.

Tourist and medical facilities were sufficient to meet tourist needs and increase their willingness to consume. These facilities indirectly provided employment opportunities to area residents. However, jobs in the tourism industry have long work hours and low pay, and residents live far from these workplaces, thereby increasing their cost of living. Figure 3 demonstrates the perceptions of social strategies and developmental efficacy.

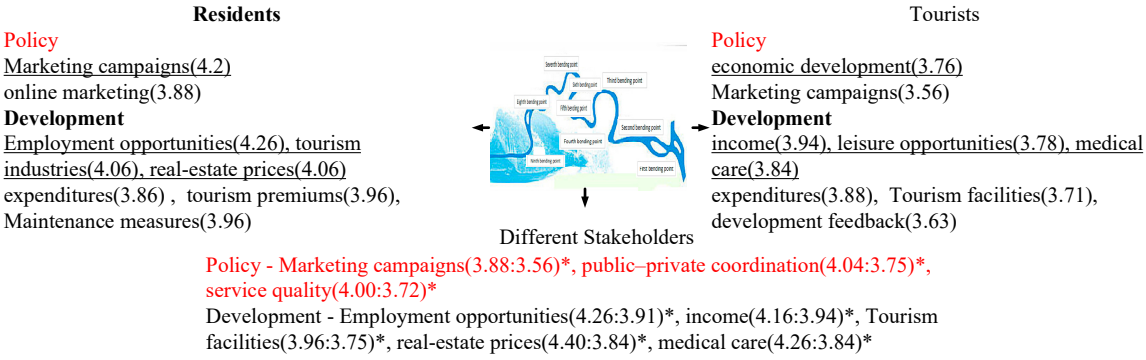

Figure 3. Perceptions of economic strategies and developmental efficacy. *: $p < 0.01$ (Residents: Tourists); attractive, repulsive force.

3.3. Perceptions of Social Strategies and Developmental Efficacy

Respondents responded based on the content of the questionnaire. Statistical verification analysis was used. A score of 1 indicates strong disagreement, and a score of 5 indicates strong agreement.

Because residents, tourists, and other stakeholders had inconsistent perceptions of social strategies and developmental efficacy, Hypothesis 2 did not hold, as shown in Table 7.

Table 7. Residents' and tourists' perceptions of social development.

Figure		Highest	M	Lowest	M
Residents	Company building	Popularity	4.28	Indicator satisfaction	3.94
	Life	Cultural preservation	4.48	Building style	1.96
	Cultural security	Replay	4.16	Public security management	3.82
Tourist	Company building	Activity quality	3.86	Community involvement	3.66
	Life	Vocational training opportunities	3.90	Building style	2.70
	Cultural security	Public interaction	3.75	Re-travel	2.51

Government relocation of residents can protect the environment by preserving culture, creating business opportunities by attracting tourists, and increasing residents' willingness to invest. However, the preservation of monuments and public safety is jeopardized in large and remote scenic areas, which have insufficient signage, buildings, and marketing traits and small and scattered residential populations, leading to shortages in staffing to maintain the scenic area. As a result, residents perceived increased recognition, cultural preservation, and willingness to revisit and acquire property, but they felt that efficacy in architecture, signages, and public safety enforcement were lacking.

The government's integration of local cultures and industries attracted corporate investments and created high-quality tourist environments. However, the small and scattered residential population caused staffing shortages for maintaining the large scenic area, and government control of decision-making has caused low public involvement in policy. As a result, tourists perceived increases activity quality, job-training opportunities, and public interaction, but they felt that efficacy in architecture, community participation, and willingness to revisit and acquire property were lacking.

As a result, stakeholders perceived signages and public safety planning, job-training opportunities, architecture, and revisiting and property acquisitions differently, leading to divergences ($p < 0.001$), as shown in Table 8.

Table 8. Recognition of social development status by different stakeholders.

Issue		Resident		Passenger		t	*p*-Value
		M	SD	M	SD		
Company building	Popularity	4.28	0.536	3.79	0.509	5.826	0.237
	Service quality	4.00	0.535	3.77	0.493	2.788	0.024
	Activity quality	4.00	0.639	3.86	0.505	1.632	0.434
	Community involvement	3.98	0.622	3.66	0.552	3.445	0.033
	Adequate indicators	3.94	0.818	3.82	0.488	1.220	0.000 *
	Recreational choices	4.04	0.570	3.73	0.529	3.582	0.053
	Increased organization	4.18	0.629	3.76	0.500	4.844	0.130
Life	Youth return home	4.42	0.538	3.82	0.527	6.911	0.027
	Vocational training opportunities	4.42	0.538	3.90	0.455	6.669	0.000 *
	Cultural preservation	4.48	0.544	3.80	0.574	7.321	0.185
	Building style	1.96	0.402	2.70	0.918	−0.516	0.000 *
	Tourist attitude	3.94	0.424	3.86	0.501	0.981	0.055
Cultural security	Public interaction	3.88	0.480	3.75	0.507	1.655	0.020
	Public security management	3.82	0.482	3.37	0.523	5.433	0.002 *
	Re-travel	4.16	0.738	2.51	0.954	11.182	0.006 *

*: $p < 0.01$.

Abundant natural resources and historic buildings primarily attract tourists and create business opportunities. However, signage and facilities were for shuttle services and tourist centers because tourists are unfamiliar with the geography of the scenic area, thereby increasing the risk to visitor safety because of the area's size. Figure 4 demonstrates the perceptions of social strategies and developmental efficacy.

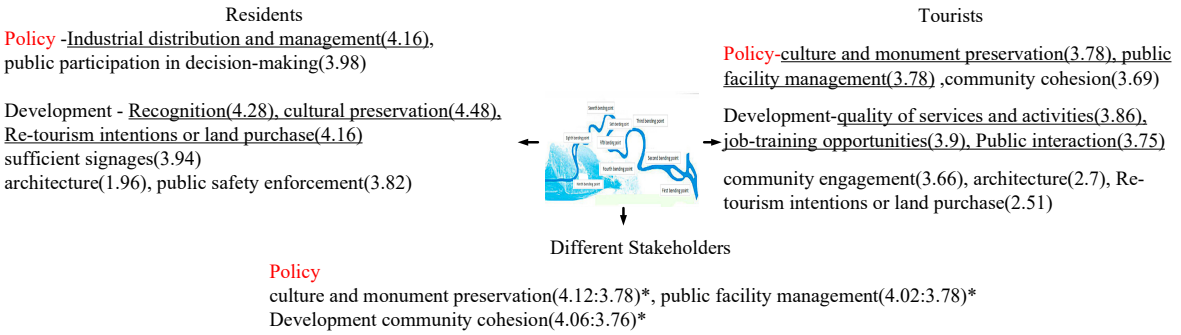

Figure 4. Perceptions of social strategies and developmental efficacy. *: $p < 0.01$; residents; tourists; attractive, repulsive forces.

3.4. Perceptions of Environmental Strategies and Developmental Efficacy

Respondents responded based on the content of the questionnaire. Statistical verification analysis was used. A score of 1 indicates strong disagreement, and a score of 5 indicates strong agreement.

Residents, tourists, and different stakeholders had inconsistent perceptions of environmental strategies and developmental efficacy; therefore, Hypothesis 3 did not hold, as shown in Table 9.

Table 9. Residents' and tourists' perceptions of the current situation of environmental development.

Facets		Highest	M	Lowest	M
Residents	Tourist rest facilities	Tourist transportation	4.36	Garbage placement	1.88
	Natural ecosystems	Steam locomotive fume	2.30	Alien species threat	1.94
Tourists	Tourist rest facilities	Tourist transportation	3.75	Garbage placement	2.46
	Natural ecosystems	Steam locomotive fume	2.60	Biological habitat	2.34

Comprehensive bus services in the scenic area help residents commute. However, large numbers of tourists rapidly increase automotive transportation and human-made waste, and the small local population has insufficient cleaning personnel, thereby increasing the amount of waste in the scenic area. As a result, residents perceived adequate ecological and tourist transportation planning, but they felt apprehension regarding waste disposal and automotive exhaust problems.

Comprehensive ecological management and transportation planning can protect the environment and reduce transportation time, thereby increasing willingness to travel. However, because of the scenic area's large size, transportation time increased, and the few residents and staff cannot easily maintain facilities and the environment or manage waste. As a result, tourists perceived comprehensive ecological protections and tourism transportation planning as well as problems of waste disposal and automotive exhaust.

As a result, different stakeholders had divergent views on waste disposal, water sources, lakes, flora, biological habitats, noise pollution, and external ecological threats ($p < 0.001$), as shown in Table 10.

Table 10. Recognition of environmental development status by different stakeholders.

Issue		Resident		Tourist		t	*p*-Value
		M	SD	M	SD		
Tourist rest facilities	Water source	2.28	0.536	2.53	0.866	1.917	0.000 *
	River	2.06	0.240	2.42	0.809	3.141	0.000 *
	vegetation	2.00	0.202	2.37	0.784	3.260	0.000 *
	Biological habitat	1.96	0.198	2.34	0.736	3.602	0.000 *
	Steam locomotive fumes	2.30	0.678	2.60	0.781	2.443	0.021
	Noise pollution	2.00	0.350	2.52	0.795	4.502	0.000 *
	Alien species threat	1.94	0.373	2.57	0.923	4.685	0.000 *
Natural ecosystems	Garbage placement	1.88	0.521	2.46	0.770	5.001	0.000 *
	Tourist transportation	4.36	0.631	3.75	0.553	6.513	0.037
	Parking space	3.80	0.700	3.54	0.550	2.746	0.190
	Tourist environmental destruction	3.40	1.030	3.15	1.018	1.501	0.672

*: $p < 0.01$.

The local area is mountainous and has dense forests, clear water, and a beautiful natural environment. However, the large increase in tourists and vehicles coupled with tourists' boisterousness and environmental illiteracy have caused environmental destruction. Figure 5 demonstrates the perceptions of environmental strategies and developmental efficacy.

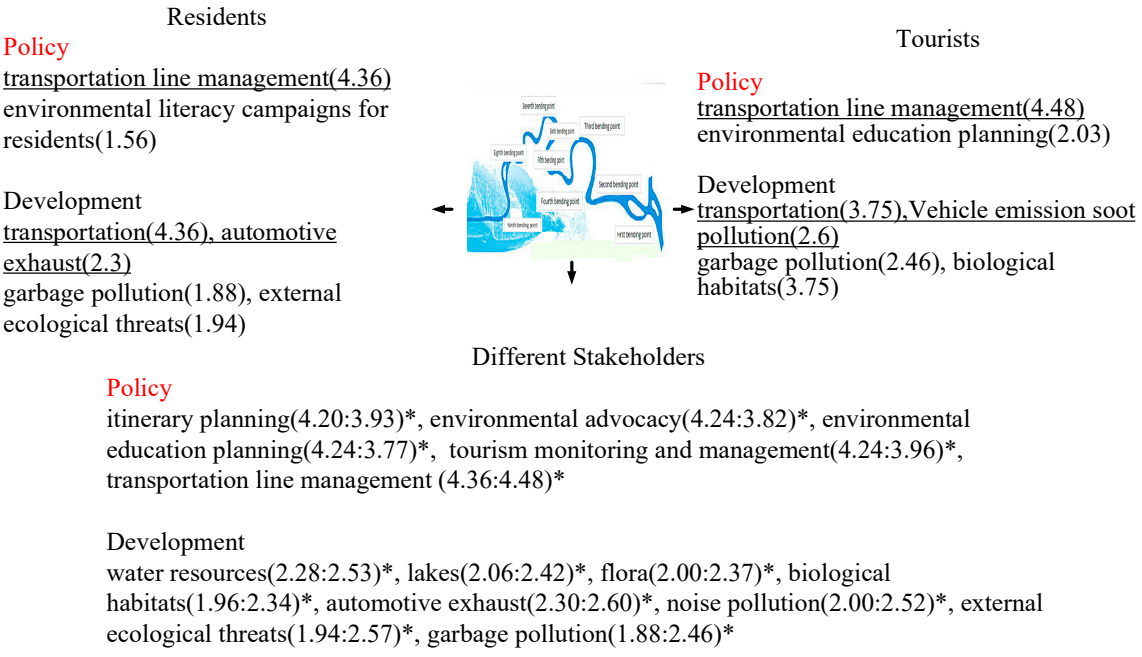

Figure 5. Perceptions of environmental strategies and developmental efficacy. *: $p < 0.01$; residents; tourists; attractive, repulsive forces.

4. Conclusions and Recommendations

4.1. Conclusions

Every stakeholder has different demands in terms of recreational facilities, local infrastructure, expenditure and income, public safety and health, waste disposal, and ecological and environmental conservation, as well as tourism and the quality of life. Residents' willingness to return to their

hometowns for development depends on the visibility, employment opportunities, and the growth of real estate. Public safety and protection policies, insurance expenses, construction, inadequate signage, increased cost of living, and waste and pollution are the deterrents to residents returning for future development. Tourists are attracted by the natural and ecological features, well-planned transportation, and unique local culture and events, but are usually deterred by poor recreational facilities and architectural planning, merchandise lacking characteristics, high tourist consumer expenditure, smoke and pollution from motor vehicles, and unpleasant encounters with locals.

4.2. Recommendations

1. Community development and local facilities should be improved while valuing public sentiment in mutually beneficial situations for the government and residents.
2. Environmental sanitation requires improvement by defining construction and cultural traits and resolving waste and pollution problems.
3. Tourism management, marketing, and service quality require improvement, and travel itineraries should be developed to enhance residents' employment skills; travel safety should be enhanced, and signage, waste, and noise pollution problems should be addressed. Water sources, lakes, and flora environments should be maintained to increase residents' and tourists' willingness to invest and travel in the area.
4. The development of ecotourism in other regions and countries warrants study from different perspectives.
5. Political, social, and industrial developments warrant investigation from different perspectives to collect comprehensive research data.

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