



# A Study on Residents' Perception of Ecotourism Impact in Wangshan Community of Suzhou

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**Abstract.** Based on residents' perceptions, this paper uses questionnaires and interviews to obtain data, and analyses the differences in the perceptions of residents of Wang Shan of the positive and negative economic, environmental and socio-cultural impacts of ecotourism through independent sample t-tests and one-way analysis of variance (ANOVA). The conclusion is that the positive impacts of ecotourism are perceived to be stronger than the negative impacts, but there are significant differences among different groups, and some suggestions are put forward to promote the sustainable and healthy development of ecotourism in Wangshan.

**Keywords:** Ecotourism impact · community residents · perception · Suzhou Wang Shan

## 1 Introduction

Ecotourism has become a new form of tourism with rapid development and important status. Yongde [1] argues that the main aim of ecotourism development is to pursue a balance between economic, socio-cultural and environmental aspects, however, in the process of its development, apart from the positive effects, it can also lead to an unfair distribution of economic benefits [2], the assimilation or vulgarisation of local unique cultures by foreign cultures [3], and the destruction of the local ecological environment by excessive development has caused damage to the local ecological environment [4], and other negative impacts. Residents' perceptions and attitudes are important influences on the sustainability of local ecotourism [5], and if residents' perceptions of tourism impacts are mostly positive, then they are usually more supportive of tourism development, otherwise vice versa [6]. Therefore it is necessary to understand residents' perceptions in order to propose more targeted development strategies, and to provide practical lessons for achieving a win-win situation for both ecotourism and local residents in Suzhou's Wang Shan Village.

## 2 Study Design

Wang Shan is located 8 km southwest of Suzhou city, with a total scenic area of 12 km<sup>2</sup>, with 8 natural villages, 540 households and a population of 2562. In 2006, Wang Shan Village began to renovate its farm houses and develop rural eco-tourism in a village surrounded by mountains on three sides, with scarce arable land and poor transport links, becoming a leisure and tourism destination. In 2013, it joined with Taihu Lake East Mountain and Dome Mountain to form the Wuzhong Taihu Tourism Zone, which was successfully created as a national 5A-level tourist attraction. In 2020, the annual tourism income of Wang Shan is 19 million yuan; more than 700 jobs have been provided, solving the employment of more than 500 villagers, and the villagers' per capita annual income from tourism is 32,000, accounting for 66.67% of the total per capita annual income.

This study uses questionnaires and interviews to obtain primary data. The questionnaire consists of three main parts: basic information about the residents of Wang Shan village, residents' perceptions of the impact of ecotourism in Wang Shan, and residents' opinions and suggestions. The residents' perception survey is in the form of a Likert five-measure scale with 26 descriptive items. It mainly deals with a series of positive and negative impacts on economy, social culture and environment brought by the development of Wangshan ecotourism.

The questionnaire survey was conducted from 18 January to 21 January 2022. Interviews were conducted mainly with staff of the Wang Shan Village Committee, residents of various villages (Wang Shan Village, Zhangqiao Village, Xuejiawan, etc.), operators and employees of agritainments, B&Bs, Huanxiu Xiaozhu Resort, Wang Shan Meets Louvre, and the *souvenir shop*. To ensure the quality and return rate of the questionnaire, it was filled in by the respondents themselves and on their behalf. A total of 280 questionnaires were distributed and 254 were returned, with a return rate of 91%, of which 236 were valid, with an effective rate of 84%. To ensure the quality and return rate of the questionnaire, both self-administered and self-completed questionnaires were used. A total of 280 questionnaires were distributed and 254 were returned, with a return rate of 91%. Among them, 236 were effective and the effective rate was 84%.

## 3 Analysis of the Survey Results

### 3.1 Basic Characteristics of Community Residents

By reviewing the previous literature and combining it with the needs of the actual survey, the basic information options of the interviewed residents were compiled. The gender distribution of the interviewed residents is even, the age is mainly concentrated in the two ranges of 18 to 28 and 40 to 49, the education level is mainly undergraduate and junior high school, the interviewed residents are mostly self-employed, followed by students, most of the residents are engaged in jobs not related to tourism, the income is mostly above RMB 4000, the local-born residents account for 53% of the interviewed residents, and more than half of the residents consider the distance between their residence and the nearest tourist attraction to be medium. The details of the survey are shown in Table 1.

**Table 1.** Statistics on the basic characteristics of the residents interviewed (N = 236)

Item		Frequency	Valid percent (%)
Gender	Male	109	46.2
	Female	127	53.8
Age	18–28years	97	41.1
	29–39years	25	10.6
	40–49years	91	38.6
	50–59years	18	7.6
	60 years and over	5	2.1
Level of education	Primary school and below	9	3.8
	Junior Secondary Education	66	28.0
	High school/technical secondary schooleducation	31	13.1
	Tertiary qualifications	40	16.9
	Undergraduate degree	81	34.3
	Postgraduate degree	9	3.8
Occupation	Government officials	5	2.1
	Managers of enterprises and institutions	14	5.9
	Employees of enterprises and institutions	36	15.3
	Technicians/teachers/doctors	12	5.1
	Self-employed	69	29.2
	Farmers	7	3.0
	Students	45	19.1
	Unemployed or retired	12	5.1
	Freelance	36	15.3
Whether working in a tourism-related job	Yes	64	27.1
	No	172	72.9
Distance between the accommodation and the nearest tourist attraction	Near	81	34.3
	Moderate	121	51.3
	Far	34	14.4

### 3.2 Reliability Analysis

In order to ensure the authenticity and reliability of questionnaire data, a reliability analysis was conducted on the survey scale of residents' perceptions and attitudes towards

the impact of ecotourism, Cronbach's alpha was used as the reliability evaluation criterion, and the Cronbach a value of the ecotourism perception scale was calculated by SPSS 23.0 to be 0.817. This indicates that the consistency of the results obtained in the scale is high, and the obtained data can be further analyzed.

### 3.3 Factor Analysis

The scale of residents' perception of ecotourism used in this paper is modified based on previous research results and combined with the actual situation in Wangshan, which can ensure that the scale has a certain content validity. Structural validity is usually assessed using factor analysis. The KMO measure of the scale is 0.935, which is above 0.9, the significance is 0.000, which is less than 0.05, indicating that there is a strong correlation between the variables, and the data obtained is suitable for factor analysis.

The two common factors were extracted by principal component analysis and the rotated component matrix was obtained by varimax orthogonal rotation (Table 2). The table can be used to determine the factor attribution of 26 items, among which factor 1 can replace X1-X14, which mainly explains the positive impact of ecotourism development, so factor F1 is named as positive impact perception. X15-x26 has a high load on factor 2, which mainly explains the negative impact of ecotourism development. Factor F2 is named as negative impact perception.

In summary, the exploratory factor analysis of the 26 items produced two factors with eigenvalues greater than 1.0, with a cumulative variance explained of 65.85%, which were named 'positive impact perception' and 'negative impact perception' respectively, and the factor loadings of the 26 items met the criteria, indicating that the structure of the scale is clear and the structural validity is acceptable.

### 3.4 Characteristic Analysis of the Differences in Perceived Ecotourism Impacts Among Different Types of Residents

The survey found that residents' perceptions of the positive impact factors were all stronger, while the perceptions of the negative impacts were mostly in a neutral opinion state. To further understand whether the different characteristics of residents have some influence on residents' perceptions, difference analysis was conducted by independent samples t-test and one-way ANOVA, and post-hoc comparisons of factors with significant differences were made by the least significant difference method.

As can be seen from the results in Table 3, differences in education, occupation and distance between the residence and the scenic spot can cause significant differences in residents' perceptions of ecotourism. Further post-hoc tests revealed that the positive economic, socio-cultural and environmental impacts of ecotourism development differed significantly by education level, with those with primary school education or less perceiving the positive impacts significantly lower than other residents, and those with the strongest perceptions of these positive impacts were mostly those with junior high, high school and tertiary education. In terms of occupation, government officials perceive the positive socio-cultural and environmental impacts most strongly, while self-employed and freelance workers are more positive about the economic benefits of ecotourism development than farmers and students, while self-employed workers

**Table 2.** Rotated component matrix

Item	Ingredient	
	1	2
X1 Promote local economic development	0.826	
X2 Increase employment opportunities for local people	0.816	
X3 Increase the income of local residents	0.854	
X4 Improve the quality of life of local people	0.809	
X5 Improve the quality of life of local people	0.810	
X6 Increase recreational areas and opportunities	0.880	
X7 Contribute to the preservation and development of local culture	0.821	
X8 Promote cultural exchange between local people and tourists	0.866	
X9 Increase the publicity and image of the local area	0.773	
X10 Increase the pride of local people	0.852	
X11 increase the openness of local people's mindset	0.820	
X12 increase environmental awareness among local people	0.759	
X13 improve the appearance of the township and its sanitary conditions	0.759	
X14 Increase the government's efforts to build local infrastructure	0.746	
X15 Tourism development benefits only a few		0.660
X16 Increase the gap between the rich and the poor		0.667
X17 Increase in local prices and cost of living		0.771
X18 Increase local property prices		0.720
X19 Destroying the peaceful atmosphere of the local community		0.791
X20 Decrease in law and order environment		0.756
X21 Increase in immoral behavior		0.796
X22 Impact on local traditional culture		0.779
X23 Increase in tourists and vehicles causing traffic jams		0.722
X24 Alienation of local residents from each other due to tourist snatching		0.713
X25 Increased local environmental pollution		0.780
X26 Establishment of tourist facilities destroying the local natural environment		0.796

are significantly less likely than other occupations to perceive negative impacts in all dimensions. There are significant differences in the socio-cultural impacts of ecotourism development according to the distance between the residence and the tourist attraction. Both positive and negative impacts are significantly lower for residents living far away than for those living close and medium distances away. This means that the further away from the tourist attraction, the weaker the perception of the socio-cultural aspects of the tourism development.

**Table 3.** Analysis of differences in perceived ecotourism impacts

		Positive economic impact	Socio-cultural positive impact	Positive environmental impact	Negative economic impact	Negative socio-cultural impact	Negative environmental impact
Gender	t	0.82	-0.59	0.60	-0.73	0.53	0.81
	Sig	0.42	0.55	0.55	0.46	0.60	0.42
Age	F	1.26	1.33	1.13	2.41	1.93	1.99
	Sig	0.29	0.26	0.34	0.05	0.11	0.10
Level of education	F	2.82	2.88	4.51	1.01	1.38	1.22
	Sig	0.02	0.02	0.00	0.41	0.23	0.30
Occupation	F	2.13	2.70	2.78	2.02	2.88	2.86
	Sig	0.03	0.01	0.00	0.05	0.01	0.01
Whether working in a tourism-related job	t	1.86	-0.18	0.72	-1.21	-0.57	-1.32
	Sig	0.06	0.86	0.47	0.22	0.57	0.1
Distance between the accommodation and the nearest tourist attraction	F	1.33	3.67	2.61	0.39	3.76	2.76
	Sig	0.27	0.03	0.08	0.68	0.03	0.07

## 4 Recommendations

### 4.1 Actively Listen to PEOPle's Voices and Develop Reasonable Countermeasures

The survey shows that there are still some residents who perceive the negative impacts of ecotourism strongly. To make a difference requires actively listening to the people's voices, establishing a service hotline, understanding and respecting the views of local residents, accurately grasping their perceptions at different stages of ecotourism development, and formulating appropriate countermeasures to enhance the positive impacts created by ecotourism development.

### 4.2 Improving Management Models to Address Traffic Congestion

According to the survey, many local residents believe that the increase in outsiders and traffic has caused congestion. A reasonable traffic management model will help to alleviate congestion and improve residential amenity for residents. The provision of public transport within and outside the scenic area should be enhanced to improve the experience of public transport, while additional parking spaces should be provided and managed by dedicated staff to improve the vehicular environment, reduce interference between people and vehicles and improve the efficiency of the road network.

### 4.3 Promoting Industrial Integration and Encouraging Residents to Participate

The study found that residents who work in tourism-related jobs have a stronger positive perception of the impact of ecotourism in Wangshan. The current tourism development in Wangshan integrates the catering and accommodation industry very successfully, and more industries such as farming, agricultural and sideline products processing, arts and crafts can be actively integrated to match more local residents, fully expand the forms of participation, increase employment opportunities and improve residents' participation in the development and thus satisfaction. For example, many of the older, less educated residents of Wang Shan Village have not really benefited from the development of tourism in the area and are therefore less satisfied. Encourage increased participation in tourism by the rural workforce and provide skills training so that they can truly benefit from it.

### 4.4 Attracting Young Talent and Building a Talent Pool

Through on-site interviews, it was found that many of the more educated and younger residents have an accommodating and supportive attitude towards tourism development in Wangshan, yet few of such residents stay in Wangshan. If we want local talent resources to come back, stay and work well, we need to firstly improve the talent mechanism and provide quality services in terms of scientific and technological innovation, financial incentives, housing security, schooling for children, medical care and so on; secondly, we need to expand the range of talents and attract talents in various fields such as management and planning, agriculture, architecture, art, folklore and so on, to establish a pool of industrial talents; in addition to this, we need to carry out training for talents, popularise the knowledge of culture and tourism industry, improve the comprehensive quality of practice and focus on the training of professional ecotourism management talents.

## 5 Conclusions

The development of ecotourism in Wang Shan has contributed to the development and economic prosperity of the area, but has also had a negative impact on the lives of local residents, and the perceptions of community residents are crucial to the development of ecotourism in the area. Using the community residents' perspective, the data from the survey was analyzed and combined with the interview results to show that the residents of Wangshan perceive the positive economic, socio-cultural and environmental impacts of ecotourism development to be stronger than the negative impacts, and that different groups have different perceptions of the impacts of tourism. The three dimensions of education, occupation and distance between the residence and the scenic spot significantly differ on the different dimensions of impact. The positive impacts are less perceived by the less educated, the positive economic impacts are more perceived by the self-employed and freelancers, and the socio-cultural changes brought about by ecotourism do not affect the more distant residents. In response to the findings of the survey, four resident-focused suggestions for improvement were made in the hope of establishing a harmonious relationship between local ecotourism development and community residents, and thus promoting the sustainable and healthy development of local ecotourism.

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