

Article

Giving Voice to Tourists: Improving the Governance of Protected Areas through Tourists' Perceptions and Expectations

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Abstract: Although numerous studies have explored the role of government, conservation managers and local residents in the governance of protected areas, little attention has been paid to the role of tourists. Based on a field survey and a network-based content analysis of tourists' perceptions and expectations of Wuyishan National Park, this research sought to promote the governance of national parks by strengthening the tourists' influence. The results showed that: (1) tourists had a changing, but still narrow understanding of the national park's functions, (2) tourists' expectations of tourism and recreational functions are growing more diversified, and (3) lack of information restrained them from making an effective contribution to conservation. The results suggest that tourists can be effective in conservation governance with the aid of better publicity and closer interactions with other stakeholders. This study has theoretical and managerial implications for understanding the role of tourists in the governance of national parks.

Keywords: protected areas (PAs); conservation; nature-based tourism; governance; tourist's perceptions; Wuyishan National Park



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1. Introduction

Protected areas (PAs) are a key component of the conservation strategy. Conservation managers around the world have to balance the demands of all stakeholders and work actively with other sectors to establish a more effective protected-area system [1]. One demand is tourism and recreation, which have been inextricably linked to many national parks since their inception, providing an invaluable and unique way to catalyze the connection between tourists and the values of PAs, turning tourists into both beneficiaries and supporters of conservation [2]. Tourists can fulfill their spiritual and material aspirations as well as have their conservation awareness nurtured through different forms of tourism and recreation [3]. Additionally, tourism is widely considered to be an effective contributor to poverty reduction of local communities in and around PAs [4].

Despite the many benefits of tourism in PAs, successful tourism management requires the use of remarkable skills to control the negative effects. Numerous conservation managers struggle to achieve multiple and sometimes conflicting objectives. For example, many national parks serve a dual mission of offering access to reap the benefit of conservation for the public and preserving the original and intact ecosystems [5,6]. Heavily visited PAs are also increasingly expected to generate jobs and boost the local economy by attracting more tourists [7]. This brings significant technical and political challenges for conservation agencies and managers to provide a high-quality experience to a wide range of tourists and benefit local communities while minimizing the negative impacts on the environment and ecosystem health [8,9]. Achieving many objectives not only requires conservation managers, but also other stakeholders to achieve a balance of interests. Thus, listening

to multi-stakeholder voices with an inclusive approach is essential for the management of PAs.

Over the past half-century, nature-based tourism has grown rapidly, and this is coupled with a diversification of the management objectives for PAs [10]. The related research has shown two trends. On the one hand, previous studies on tourists in PAs mainly paid attention to tourist attitudes and behaviors for tourism management purposes alone. A large number of studies have focused on exploring how to derive information from tourist perceptions to develop sustainable tourism, green tourism and ecotourism to promote compatibility between tourism and nature conservation [11–14]. On the other hand, a broader governance perspective that goes beyond treating PAs only as tourist destinations has focused mostly on direct actors such as communities, governments and NGOs [15,16], rarely mentioning the tourists' role in decision-making for the direct or indirect impact on the functioning of PAs. This is understandable partly because of their limited visiting times and short stays in PAs. Nevertheless, numerous studies have demonstrated that the decisions and behaviors of tourists, including responsible tourism, destination loyalty, locality attachment, etc., can also influence the structure and effectiveness of the governance of protected areas [17–19]. Thus, the good governance of PAs needs the inclusion of the tourists' participation.

After years of design and experimentation, in late 2015, China released a new national park pilot system, which was generally compatible with the internationally-recognized standards (Category II of the IUCN Protected Area Categories System). Accordingly, China's national parks are also treated as resources in space where the resource requirements of different stakeholders are negotiated and regulated under the influence of changing social, economic, and environmental changes, instead of focusing on the benefits that they have for a limited number of social elites throughout history [20]. However, although tourism was developed alongside PA management for over 40 years, China's PA management has also been criticized for the inefficient use of public resources which has resulted in a limited concern for local well-being and inefficiency in tourist management. For instance, in the Xingkai Lake National Nature Reserve, a booming tourist economy has not fed into most local communities, but for only a small number of residents [21]. In the Kanas Nature Reserve, the tourism industry still heavily depends on entrance fees without the stakeholders having much concern about tourist management [22]. In the Wolong Nature Reserve, environmental education was too inadequate to provide a desirable recreational experience for tourists [23]. These issues illustrate the decoupling of active and effective participation in nature conservation and the sustainable tourism management of the relevant actors and stakeholders. With the growing public interest in nature-based tourism, the number of tourists has increased greatly in various PAs. This trend has led to an increasing tendency for conservation managers to meet the tourism demand without sacrificing other management objectives [24–26].

As one of the first five national parks to be officially established in 2021, Wuyishan National Park (WNP) has experienced rapid social-ecological changes in the past four decades. Tourism has always been an important, non-destructive way to attract investment and increase the tax revenue for the local government since the restriction of timber production under the ongoing conservation policies and measures that were established from the late 1970s onwards. However, the tourism development in Wuyishan has not been smooth and it has somewhat echoed the abovementioned dilemmas of profiting from public resources while conserving them. Thus, as an internationally renowned tourist destination, the establishment of the Wuyishan National Park is an opportunity to re-examine the delicate trade-offs and synergies between tourism development and other management objectives for public welfare when utilizing this public resource.

This research aims to form a new tourism paradigm for national parks in theory and to put forward suggestions for better governance practices based on a two-staged, mixed method, which involves incorporating a quantitative questionnaire survey and network-based content analysis of the tourists' understanding of a national park's functions. WNP

was integrated with many different protected areas (including the national nature reserve, the national scenic area, the world heritage site, and the national forest park) and the previous national scenic area was chosen to be the focus of this research because it attracts a mass of tourists. Therefore, we can observe how tourists understand a national park's functions in this "past to present" context, and how they link themselves to the park management through their understanding of the park's functions. The respondents were free to express their perceptions and expectations, that is, the most important functions of a national park and the services that should be improved or developed. Then we explored the possible recreation and tourism management mode based on the tourists' expectations of national parks in the context of multiple management objectives. By understanding the meaning that national parks have for tourists, we can also propose the orientation of good governance in protected areas and narrow the gap with mature national park management worldwide.

Therefore, the study objectives are threefold: (1) identifying the tourists' perceptions and expectations of national parks' functions at the macro-level, (2) assessing the relationship between their perceptions, expectations and the multi-management objectives of the national park, and (3) enhancing the influence of tourists in national park governance, as well as promoting better synergy between the tourism management and the national park management objectives. Based on this, we explore how to better integrate tourism and recreation into the conservation practices of national parks.

2. Materials and Methods

2.1. Study Area

Wuyishan National Park (27°31'20"-27°55'49" N, 117°24'-117°59' E) is located in the northwest Fujian Province in China, including mainly the Wuyishan National Scenic Area (NSA), the Wuyishan National Nature Reserve (NNR) and the Upstream Ecological Protection Area of the Nine Bend River (NEPA), with a total area of 1001.41 km² (Figure 1). Wuyishan National Park prioritizes conserving an integrated and typical subtropical forest ecosystem and biodiversity. Also, Mt. Wuyi has been listed as a mixed World Heritage Site by UNESCO in 1999, and its unique culture and landscape values have been attracting tourists from all over the world. Meanwhile, the Wuyishan National Scenic Area was established nearly 40 years, and it has enjoyed high popularity and mature management, so it is still an important open area for the public in the national park zoning. Because WNP re-integrates the ecologically fragmented spaces of the original protected areas and is now managed with a unified agency, this "past to present" process of systematic reform provides a valuable opportunity to identify the failures of past multi-headed management of PAs and to make improvements in the future governance of national parks.

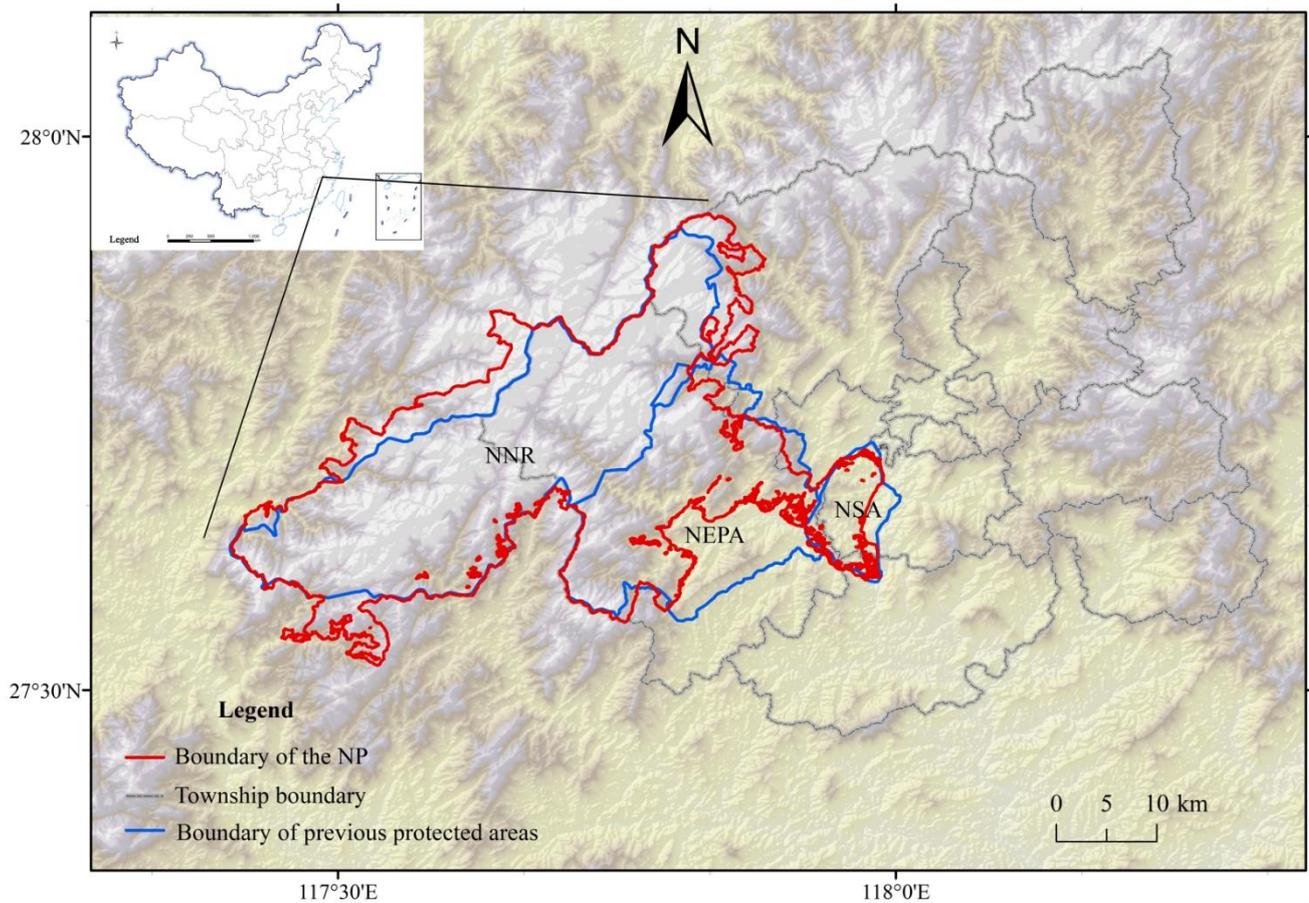


Figure 1. Location and composition of the Wuyishan National Park, the Wuyishan National Scenic Area (NSA), the Wuyishan National Nature Reserve (NNR), and the Upstream Ecological Protection Area of the Nine Bend River (NEPA).

2.2. Methodology

A two-staged, mixed method of a quantitative questionnaire survey and a network-based content analysis has been developed (Figure 2). The quantitative questionnaire survey has been widely used to engage with tourists to observe and discover their understanding of the organizational functions, policies and governance related to tourism [27]. However, the data that were obtained from the structured questionnaires were only available to view once or a few times, making it difficult to observe progressive changes over long periods. Content analysis is widely used to deal with unstructured data (e.g., text documents, emails and newspaper articles), where we can discover new knowledge or pattern frameworks from large quantities of textual data [28]. Combining content analysis with network text can be an effective method to gain insight into the visual network between words and the temporal distribution of word frequencies. Therefore, we put forward that this mixed method can complement the strengths of the field research and web data, revealing, more intuitively, the detailed changes in tourists' perceptions over time and providing a new method with retrospective and comparative for tourist research.

In this research, the two-staged, mixed method of quantitative questionnaire survey and content analysis has been used to reflect the tourists' perception of WNP at the inception of the piloting period and the potential change of their perceptions during the period of the official establishment of WNP. Firstly, the quantitative questionnaire survey was used to engage with tourists to observe and discover how they understood the functions and governance of the national park through structured data. The research team consulted with conservation managers and government officials from functional sectors to understand tourism's development history and current status in the Wuyishan region. Based

on the research purpose and the pre-survey, the final questionnaire was divided into five parts: (1) demographic information of respondents, including gender, age, education level, annual individual income, tourism-generating region and occupation; (2) two factors of the awareness of conservation, one was whether the respondent had participated voluntarily in conservation activities and the other was whether they had heard of or been to a national park; (3) the respondents' recognition of the national park's functions, including biodiversity and ecosystem conservation, environmental education, scientific research, increasing opportunities in tourism and recreation, increasing the income of locals, promoting regional economic development, and promoting regional social development; (4) the respondents' expectations of tourism and recreational services, including strengthening services in visitor centers, increasing opportunities to connect with nature, enhancing scientific interpretation and exhibition, increasing volunteering opportunities, providing camping grounds, planning hiking routes, improving souvenirs with regional characteristics and enhancing tourist safety; (5) the respondents' willingness to support conservation and the ways that they can contribute. The interviewees were first asked whether or not they supported the conservation of the Wuyishan area and then three options of contribution were provided, including donation, ecological products purchase, and volunteering.

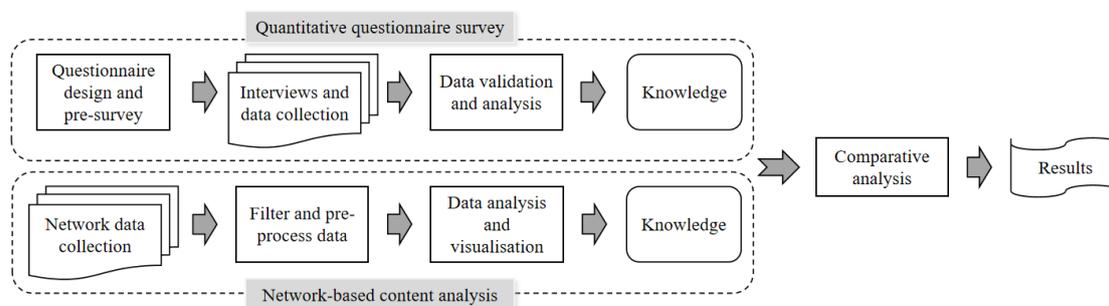


Figure 2. A two-staged, mixed research process.

Secondly, we used network-based content analysis to explore the changes in the perception of Wuyishan over the national park piloting period to reveal the interaction mechanism of the national park's construction and tourists. We have collected the non-commercial travel blogs (NTB) and online travel reviews (OTR) that are related to Wuyishan from three user-generated content (UGC) travel service websites in China, including "www.ctrip.com (accessed on 26 May 2022)" (携程), "www.mafengwo.com (accessed on 26 May 2022)" (马蜂窝) and "www.qunar.com (accessed on 26 May 2022)" (去哪儿). These UGC travel service websites are the leading independent travel service platforms in China, where tourists can find meaningful travel notes. Compared to the quantitative questionnaire survey, the content analysis covered a wider period and could better reflect the progressive change of the tourists' perceptions from "past to present" when the national park was introduced as a new conservation measure, especially based on the occurrence, frequency, clustering, and correlation of some keywords. Comparatively, the quantitative questionnaire survey concentrated directly on the core scientific questions of the study, i.e., the tourists' perceptions and expectations in terms of the multifunctionality and multiple management objectives of the national park. The network-based content analysis echoed and complemented the quantitative questionnaire survey in three ways, (i) it verified the tourists' perceptions and expectations of national parks' functions in the quantitative research; (ii) it reflected a dynamic change of the view of Wuyishan during the change of it as it was designated to different types of protected areas and (iii) it could uncover more tourists-NP interactions that may have been omitted from the questionnaire.

2.3. Data Collection and Analysis

Firstly, the quantitative questionnaire survey was conducted from 25 to 31 July 2016 in the main scenic spots of the Wuyishan National Scenic Area. Ten national park pilots

have been established in China since 2015. Among them, the Wuyishan National Park Pilot (WNPP) officially entered the piloting period in June 2016, and we conduct field research in July 2016 which was timely to grasp the tourists' perceptions of the WNPP in the early stages. In addition, this survey period was conducted at a peak time for tourism so the information that was collected was representative in terms of the tourists' demographic characteristics. The interviews were only conducted with the tourists who finished their tour. The interviewer did not judge the existing services or public awareness of conservation during the survey. In total, 398 questionnaires were released and collected, among which 394 were valid. Each interview was conducted face-to-face to ensure that the national park concept and the process of China's national park system were explained, if that was necessary, to help the respondents to understand the national park concept and the questions.

Descriptive statistics were used to analyze the collected data. The demographic information of all the respondents is shown in Table 1. There was a gender balance among all the interviewees. Many respondents were from the age groups covering 25–59 years (63.2%). Most of the respondents had finished at least high school (85.5%), and the proportion of respondents who had received university or higher education reached 63.96%. The majority of the respondents (82.3%) claimed an individual annual income of less than 100,000 yuan. Most respondents were from the eastern region (71.57%) with 38% coming from Fujian province where Wuyishan is located. The sample covered a wide range of occupations, with the largest proportion being composed of students (including tertiary institutions), and an overall, high proportion of professional and technical personnel (engineers/teachers/medical staff), and civil servants (34.01%).

The weighted scoring method (WSM) was used to calculate the total score of each function in question (3), according to the ranking and the number of respondents who defined the rank. The study adopted the Pearson Chi-Square test, the Kruskal-Wallis test and generalized linear models with binomial distribution to analyze the impact of the demographic factors on the ranking of the national park's functions and willingness to support conservation.

Secondly, to collect the network-based text data that were required for the content analysis, we search all of the non-commercial travel blogs (NTB) and online travel reviews (OTR) with the word "Wuyishan" on the abovementioned three UGC sites. The search date was set to cover the transition from the pilot period to the official establishment of the national park (ca. 1 January 2016 to 31 December 2021) to reflect the tourists' changing perceptions of the national park. It is important to note that there are significant differences between non-commercial travel blogs and online travel reviews. The non-commercial travel blogs mainly include tourists' views and expectations of the tourism destination, which are rich and detailed in content descriptions, mostly covering various natural and human attractions, tourism activities, facilities, and services. The online travel reviews are briefer and mainly focus on tourists' comprehensive reviews and the most important tourism-related content. Research on UGC information has found that user-generated messages with fewer than 1000 views or less than 5 comments were less valid, and their removal would not affect the results [29]; thus, content with less than 1000 views or less than 5 comments was excluded from the analysis data. Meanwhile, there was a time lag between some tourists' actual time of the visit and the posting time of their NTBs and OTRs on the travel service websites. As such situations were relatively rare, we have revised this partial information by adjusting the posted time to the tourists' actual time of the visit. Finally, there were 63 qualified travel blogs and 439 online travel reviews with a total of 113,357 words (in Chinese). On this basis, we employed ROST Content Mining (a Chinese natural language processing software) to analyze the text data. This software automatically extracted the common nouns from the Chinese text data, counted the frequency of different terms and visualized the relationship between the analysis results in the context [30]. We used this tool to compare the results of the network-based content

analysis with the quantitative questionnaire survey to explore the changes in tourists' perceptions and expectations of national park functions.

Table 1. Demographic characteristics of the respondents.

Variable	Group	Number	Percent (%)
Gender	Male	192	48.73
	Female	202	51.27
Age	<18	52	13.20
	18–24	80	20.30
	25–39	139	35.28
	40–59	110	27.92
	>60	13	3.30
Education	Primary	16	4.06
	Middle school	41	10.41
	High school	85	21.57
	College	219	55.58
	Graduate	33	8.38
Individual annual income (RMB)	<10,000	132	33.50
	10,000–50,000	112	28.43
	50,000–100,000	96	24.37
	>100,000	54	13.70
Region	Eastern	282	71.57
	Middle	59	14.97
	Western	46	11.68
	Other *	7	1.78
Occupation	Civil services	25	6.35
	Cooperate management	40	10.15
	Engineering/Education/Medical	94	23.86
	Services/sale	37	9.39
	Worker	11	2.79
	Farmer	5	1.27
	Student	105	26.65
	Soldier **	1	0.25
	Retired	12	3.05
	Self-employed	24	6.09
Other	40	10.15	

* Not included in statistical analysis including Hong Kong; 2; Taiwan; 4; Singapore; 1. ** Not included in statistical analysis.

3. Results

3.1. Perceptions of National Park Functions

Table 2 shows the ranking of various functions of Wuyishan National Park that were recognized by respondents. There was a relatively consistent understanding of the importance of each function. About 73% of the respondents ranked “biodiversity and ecosystem conservation” in the top two positions, and 50% put “increase the income of locals” as the last position. In addition, “increasing opportunities in recreation” and “environmental education” ranked in the second and third places, while another function of public welfare, “scientific research”, was only ranked sixth. In general, those functions which were conceptually strange and geographically remote for the respondents all ranked after fourth place with little difference in their scores.

Table 2. Ranking of various functions of Wuyishan National Park.

Function	Sorting Frequency							Score	Rank
	1	2	3	4	5	6	7		
Biodiversity and ecosystem conservation	0.51	0.22	0.10	0.07	0.05	0.04	0.02	5.90	1
Environmental education	0.10	0.21	0.19	0.13	0.16	0.14	0.06	4.28	3
Scientific research	0.03	0.11	0.16	0.15	0.15	0.15	0.24	3.29	6
Increasing opportunities in recreation	0.19	0.21	0.13	0.13	0.09	0.11	0.15	4.36	2
Increasing the income of locals	0.05	0.05	0.12	0.14	0.14	0.16	0.34	2.87	7
Promoting regional economic development	0.10	0.10	0.18	0.14	0.21	0.21	0.06	3.84	4
Promoting regional social development	0.03	0.10	0.12	0.24	0.19	0.20	0.13	3.44	5

We examined the relationship between demographics, conservation awareness, and functional choice by means of Pearson Chi-Squared tests and a Kruskal–Wallis test. According to the results of the Pearson Chi-Squared tests, there were significant effect relationships between gender ($\chi^2 = 14.081$, $p = 0.029 < 0.05$), age ($\chi^2 = 13.693$, $p = 0.008 < 0.05$), region ($\chi^2 = 24.62$, $p = 0.026 < 0.05$) and voluntary experience ($\chi^2 = 10.942$, $p = 0.004 < 0.05$), and the functional ranking. Based on this, we further examined the differences in functional ranking choices of the individual demographic groups under gender, age, region and volunteer experience by the Kruskal–Wallis test (Table 3).

Table 3. Differences in functional ranking choices of the individual demographic groups.

Function	Factors (χ^2/p -Value)	Gender	Age	Region	Voluntary Experience
Biodiversity and ecosystem conservation		4.009/0.045 **	1.963/0.743	6.716/0.034 **	1.805/0.179
Environmental education		0.082/0.775	3.592/0.464	2.773/0.250	5.002/0.025 **
Scientific research		0.075/0.784	9.886/0.042 **	2.286/0.319	1.149/0.284
Increasing opportunities in recreation		0.470/0.493	1.040/0.904	1.676/0.433	1.776/0.183
Increasing the income of locals		0.009/0.753	8.849/0.065	5.564/0.062	0.037/0.847
Promoting regional economic development		0.005/0.942	4.747/0.314	1.151/0.927	0.018/0.892
Promoting regional social development		0.200/0.655	8.526/0.074	1.539/0.463	2.009/0.156

Note: ** $p < 0.05$.

Specifically, more than half of the female respondents ranked “biodiversity and ecosystem conservation” in the first place ($\chi^2 = 4.009$, $p = 0.045 < 0.05$), while this proportion for males was fewer than half. Juveniles that were under 18 years old ranked “scientific research” in fourth place ($\chi^2 = 9.886$, $p = 0.042 < 0.05$), which was the highest rank among all of the age groups, because 70% of this age group ranked it least fourth place, compared to an average of 40% for all of the other age groups. Among different tourist-generating regions, the proportion of respondents in western China who put “biodiversity and ecosystem conservation” in the first place (78.3%) was significantly larger than those in the central and eastern regions of China ($\chi^2 = 6.716$, $p = 0.034 < 0.05$). Whether or not they having voluntary experience significantly affected the perception of “environmental education” ($\chi^2 = 5.002$, $p = 0.025 < 0.05$). The respondents who had voluntary experience were more likely to put “environmental education” in the first place and the proportional difference was about 1.77 times.

3.2. Expectations of Tourism and Recreational Services

Table 4 shows the expectations of tourism and recreational services of the Wuyishan National Park according to the respondents. There were significant differences among the options regarding the responses that were provided. Through a binomial test ($n = 394$, test proportion = 0.5), we found that the most selected expectation of tourism and recreational services was B ($p = 0.00 < 0.05$), and the least was G ($p = 0.00 < 0.05$), while the numbers of selections between A ($p = 0.65 > 0.05$), C ($p = 0.29 > 0.05$), F ($p = 0.23 > 0.05$), and H ($p = 0.247 > 0.05$) were not significantly different.

Table 4. The expectation of recreational services of Wuyishan National Park.

Services	Response		Case Proportion (%)
	Quantity	Proportion (%)	
A Strengthen services in visitor centers	202	14.5	51.4
B Increase opportunities to connect with nature	301	21.7	76.6
C Enhance scientificity in interpretation and exhibition	186	13.4	47.3
D Increase volunteering opportunities	150	10.8	38.2
E Provide camping grounds	133	9.6	33.8
F Plan hiking routes	174	12.5	44.3
G Improve souvenirs with regional characteristics	59	4.2	15.0
H Enhance tourist safety	185	13.3	47.1
Total	1390	100	353.7

Combining the validation of the Chi-Square tests and the False Discovery Rate (FDR) confirmed that age ($p_{adj} = 0.045 < 0.05$), occupation ($p_{adj} = 0.04 < 0.05$), and income levels ($p_{adj} = 0.03 < 0.05$) all had significant impacts on the choices that were made. Based on these results, we further examined the differences and relevance in the expected choices of the individual demographic groups by a Kruskal–Wallis test and a Spearman correlation analysis.

We found that there were a significantly higher proportions of selections of option G ($\chi^2 = 8.548, p = 0.036 < 0.05$) for the age groups that were under 18 and above 60, and there was a significantly low proportion of selections of options E ($\chi^2 = 8.872, p = 0.031 < 0.05$) and F ($\chi^2 = 9.759, p = 0.021 < 0.05$) for the latter group of elderly people. In addition, there was a significant positive relationship between age and the selection of both options A ($r_s = 0.264, p = 0.047 < 0.05$) and C ($r_s = 0.288, p = 0.044 < 0.05$), and the proportion almost doubled between the youngest and the oldest group.

The proportion of selections of option A ($\chi^2 = 6.272, p = 0.043 < 0.05$) in workers, farmers, retirees, and self-employed tourists was much higher than those of other occupational groups, while the proportion of the former two groups choosing option B ($\chi^2 = 6.662, p = 0.035 < 0.05$) was significantly low. The proportion of civil servants and retirees choosing options E ($\chi^2 = 8.08, p = 0.018 < 0.05$) and F was significantly low. Business managers, civil servants, engineers, and other professional and technical personnel had a significantly low interest in option G ($\chi^2 = 8.432, p = 0.015 < 0.05$). Overall, there was a significant positive relationship between the individual annual income and the choice of option F ($r_s = 0.542, p = 0.031 < 0.05$), but a negative one concerning option G ($r_s = -0.722, p = 0.018 < 0.05$). Meanwhile, there was a significantly higher proportion of people choosing option H by the two lower-income groups than by the two higher-income groups.

At the same time, there was a significant positive relationship between educational level and the choice of options C ($r_s = 0.508, p = 0.034 < 0.05$) and F ($r_s = 0.430, p = 0.04 < 0.05$), with the proportion choosing these options almost doubling and tripling between the lowest and highest education groups, respectively. On the contrary, a significant negative relationship existed between educational level and the choice of the options G ($r_s = -0.102, p = 0.046 < 0.05$) and H ($r_s = -1.118, p = 0.034 < 0.05$), with the proportion decreasing to 1/6 and it almost being halved between the two end groups.

3.3. Attitudes toward the Conservation of the Wuyishan National Park

The respondents' willingness to engage in the nature conservation of Wuyishan National Park and how they can contribute are summarised in Table 5.

Table 5. Conservation willingness and forms based on demographic characteristics.

Factors	Group	Willingness to Conservation		The Ratio of Choice * (%)		
		In-Group Proportion (%)	χ^2/p -Value	A	B	C
Gender	Male	90.6	0.861/0.353	9.4	42.9	47.6
	Female	87.1		8.5	40.7	50.8
Age	<18	86.5	9.149/0.056	9.3	23.3	67.4
	18~24	83.8		13.0	39.0	48.1
	25~39	92.1		6.8	45.6	47.6
	40~59	90.9		8.7	45.2	46.2
	>60	69.2		11.1	55.6	33.3
Education	Primary school and below	75.0	12.311/0.017	18.2	36.4	45.5
	Junior high school	75.6		13.3	23.3	63.3
	High school	88.2		5.2	41.6	53.3
	University	91.3		9.3	42.7	48.0
	Graduate and above	93.9		8.1	54.1	37.8
Region	East	87.9	5.677/0.053	7.9	42.7	49.4
	Central	83.5		16.1	32.1	51.8
	West	97.8		6.1	44.9	49.0
Occupation	Government staff	88.0	13.202/0.068	11.1	37.0	51.9
	Enterprise management	97.5		6.5	45.7	47.8
	Engineer/Teacher/Medical staff	89.4		11.1	44.4	44.4
	Service, Sales staff	89.2		11.8	26.5	61.8
	Worker	63.6		14.3	42.9	42.9
	Farmer	80.0		0.0	0.0	100.0
	Student	88.6		10.1	34.3	55.6
	Retiree	75.0		0.0	87.5	12.5
	Self-employed businessman	95.8		11.5	42.3	46.2
Other	87.5	0.0	61.5	38.5		
Individual annual income (RMB)	<10,000	86.4	8.827/0.032	10.2	36.4	53.4
	10,000~50,000	83.9		9.8	38.2	52.0
	60,000~10,000	91.7		4.4	44.4	51.1
	>10,0000	98.1		11.4	52.9	35.7
Voluntary experience	Yes	90.3	0.834/0.361	12.1	33.3	54.6
	No	87.3		6.3	49.0	44.7
NP experience	Yes	88.9	1.502/0.220	10.4	41.1	48.5
	No	85.7		5.5	43.6	50.9
Total		88.6		8.9	41.8	49.2

* A: Cash and in-kind donation; B: Ecological products purchase; C: Volunteers.

Overall, 88.6% of the respondents expressed their willingness to aid in conserving the nature of Wuyishan. Educational level and income level had a significant positive impact on this factor ($p < 0.05$). Age, tourist-generating region, and occupation also had a certain degree of influence on it ($p < 0.1$). For the age group that was over 25, the proportion of people who were willing to participate in nature conservation decreased as their age increased. The respondents from the western regions of China were more willing to conserve nature than those from the central and eastern parts. As for occupational groups, a significantly high proportion of positive willingness occurred among business managers and self-employed, and a low proportion was found among workers, farmers, and retirees.

Concerning the ways of contributing to nature conservation, donation was the least accepted among all respondents, and being a volunteer was the most frequently mentioned one. Income level ($p < 0.05$) and occupation ($p < 0.1$) had a significant impact on the choices that were made. Tourists were more willing to purchase ecological products (B) with an increase in their income. The proportion of the highest income group choosing B was

1.5 times that of the lowest income group, and it was also the only group in which B was more frequently chosen than C. There were no retired tourists who would choose A, but instead, these people concentrated on B. Due possibly to aging, they tended not to choose C, either. Another interesting result was that for the service/sales staff group; the proportion of them choosing B was much lower than it was in the other groups.

In addition, people in the age groups that ranged from 25 to 39 and from 40 to 59 showed a similarity in their selections. If these two groups were combined, the difference among the age groups became significant ($p < 0.05$), in that, with the increase in age, the proportion of choosing B increased, while the proportion of choosing C declined.

3.4. Dynamics of the Tourists' Perception of Wuyishan

Figure 3a shows a semantic network diagram of the content analysis based on the collected information from the non-commercial travel blogs and online travel reviews. In addition, Figure 3b shows the temporal and frequency relationships of the semantic network keywords. As can be seen from the figures, we found aspects that echoed the results of the quantitative questionnaire survey, but also noted some changes in the tourists' perceptions and expectations of national park functions.

Firstly, in terms of the frequency and occurrence of keywords, *natural and human landscapes* accounted for the majority of the keywords, and *tourism facilities, services and products* were also a key concern for tourists. This phenomenon is a direct indication that tourism and recreational functions were the priority for tourists. In particular, tourists had a high demand for facility and interpretation services, which also echoed the expectation of the quantitative questionnaire survey. Furthermore, *hiking* and *parent-child tours* emerged later than the popular activities of *bamboo rafting* did, as novel demands in the expressions of the different tourist groups. However, services such as *camping, tourist souvenirs* and *tourist safety* were barely mentioned.

Secondly, from the perspective of *value foundation*, tourists may have had an understanding of biodiversity and ecosystem services because they showed a keen interest in the *forest, water, air, species, landforms* and *indigenous culture* factors during their visits. Although tourists were aware of these natural and cultural values at an early stage of the WNP's designation, such awareness did not go beyond the use value of the resources. For example, tourists' awareness of *wild monkeys* and *birds* was more frequent and they emerged in the data earlier in regard to elements of tourist attractions. In comparison, the awareness of *wildlife* as a whole has only gradually emerged amidst the other factors since 2018, along with it having less frequent mentions, and this focus shift indicates a growing awareness of the overall conservation function of wildlife in national parks.

Thirdly, tourists' perceptions of nature conservation have changed slightly during this study period. In terms of *protected area identification* and the extensions that it has to the other keywords, tourists tended to link these words and their connotation in the geographically defined Wuyishan more dominantly to a *scenic area*, than they did for *world heritage*. The perception of Wuyishan's role as a *nature reserve* was obviously unclear, and the perceptions of it as a *national park* have only gradually emerged since 2018, thus demonstrating that it was much less well known than the previous protected areas were. As for the *stakeholders in tourism development* in Wuyishan, tourists' perceptions of the stakeholders were limited to the provision of tourism services. However, this does not diminish the expectations of tourists for nature conservation and management. Tourists still have a passionate *conservation willingness*, and many tourists have expressed their *appeal for nature conservation*. Moreover, in late 2019, it also emerged that some tourists were beginning to show interest in *voluntary activities* and also actively took part in *suggesting ideas for tourism development*.

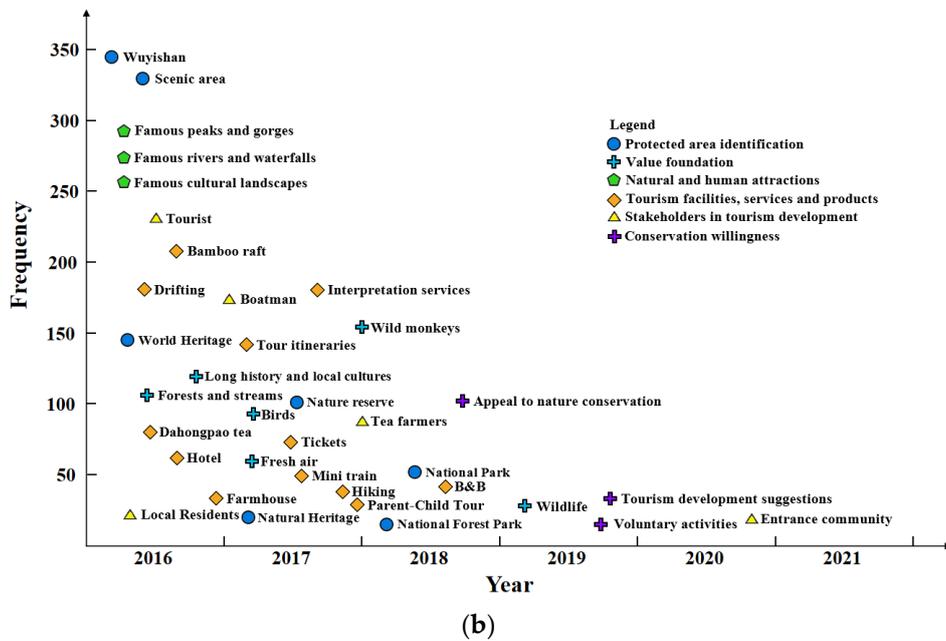
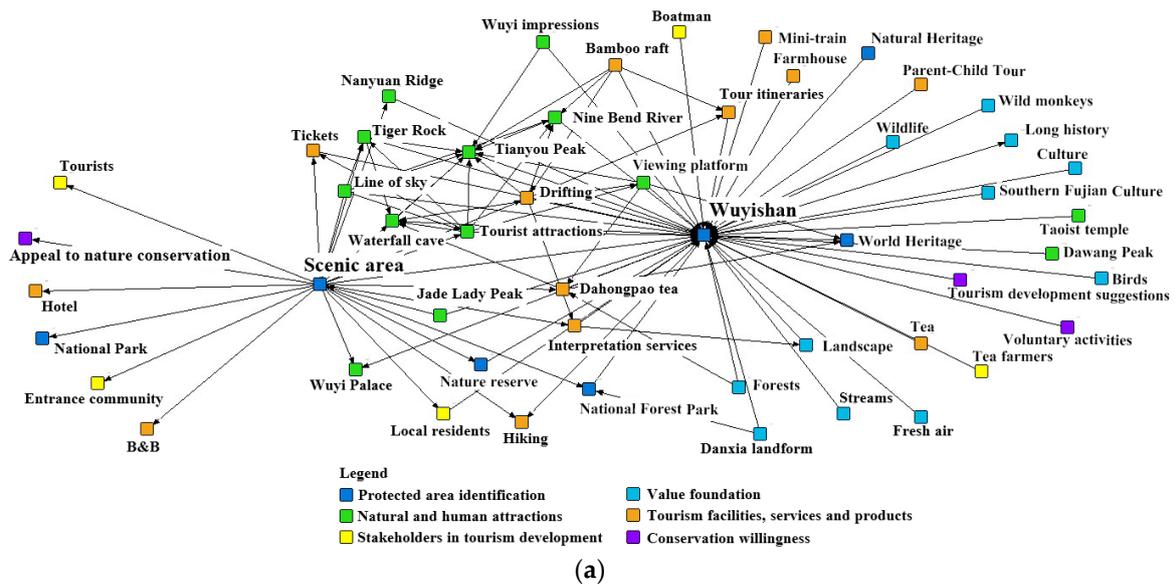


Figure 3. (a) Semantic network diagram of content analysis. (b) Temporal and frequency relationships of semantic network keywords. Note: The location of the keywords in the horizontal axis indicates their earliest occurrence in the specific year and frequency is the number of times the keyword appears in the text data. The green color represents natural and human landscapes which have been grouped into three categories that represent typical landscapes; the horizontal location indicates the earliest occurrence of the attraction in each group and the frequency relates to the attraction with the highest number of occurrences.

4. Discussion

Over the past century, national parks have become a means of biodiversity conservation while also promoting the livelihoods of neighboring communities and meeting the needs for human recreation [31,32]. Multiple management objectives emerged with the move to reconsider conservation as a social process for multiple stakeholders when the fortress approach gave way to more inclusive conservation approaches that rebuilt linkages among stakeholders [33,34]. The national park is a complex system of human–land interactions, and its sustainability depends on the responsible behaviors and activities of all stakeholders (e.g., residents, management organizations and tourists). As a response,

China is actively exploring an inclusive and participatory management paradigm for its protected areas, especially when they are setting up a new national park system with better conservation governance.

To follow the principle of “conservation first, national representativeness, and public welfare” when constructing China’s national parks system, policy makers use eco-tourism as an effective tool to balance the conservation and development goals and expect it to be the glue that bonds different stakeholders together [35]. However, this expectation is yet to be achieved in parks such as the Wuyishan National Park.

The national park is a complex system of human–land interactions, and its effectiveness depends on the responsible behaviors and activities of all stakeholders. However, although research on tourism management is abundant, few studies have considered the relationship between tourism and the overall management objectives of national parks from a bottom-up, tourist perspective. The narrow perspective of tourism research does not help in producing efficient conservation governance in protected areas where tourism and recreation depend on and affect other management objectives. Therefore, an inclusive approach that involves listening to tourists’ voices can provide new viewpoints to improve the conservation governance of protected areas. This research has explored tourists’ understanding of the national park concept, based on their previous experience, perceptions of the current situation, and expectations of the future management of the Wuyishan National Park. Our study found that under this “past to present” process of systematic reform, there are obvious deviations in the understanding of national park management objectives from the perspective of the wider public as they are proposed by the policy makers, who are concerned about the wider public’s welfare. This phenomenon has reflected some inefficiencies in tourism management during the old, multi-headed PA management period, and it has also shed light on the future governance of national parks.

By treating tourists as an actor in national park management, we have revealed a synergistic governance mechanism for the national park (Figure 4). We have highlighted that tourists were not isolated from national park management by only enjoying the natural and cultural values that they offer they can be effective in conservation governance through their interactions with other stakeholders.

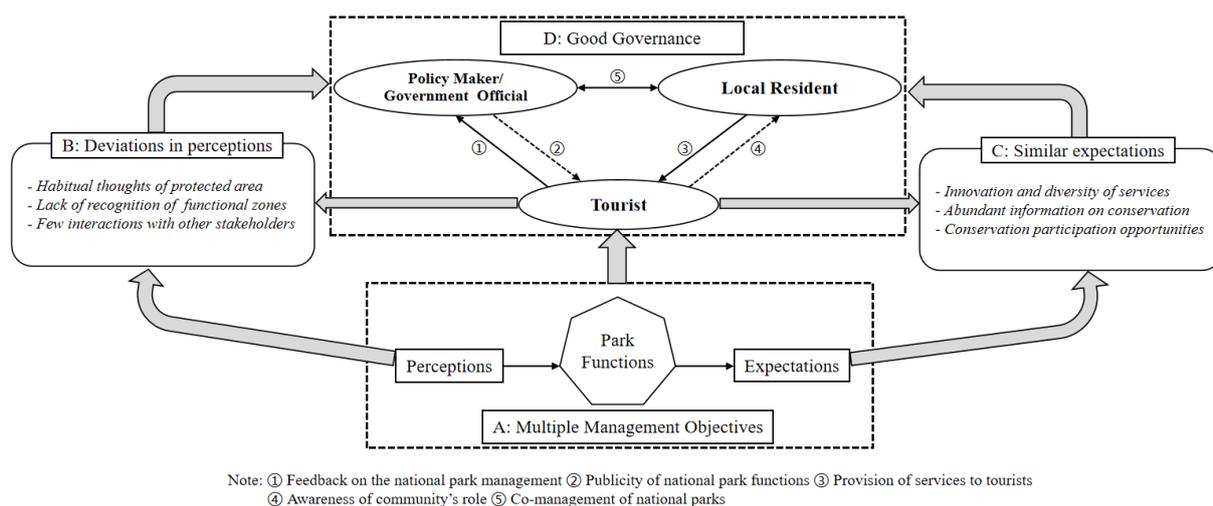


Figure 4. A synergistic governance mechanism of the national park extracted from tourists’ understanding.

We have demonstrated a recognition of the national park functions, as demonstrated by the tourists’ understanding of the national park management (Figure 4A). The priority of the functions both in the questionnaire and the content analysis revealed interesting deviations in their perceptions when they were compared to the official definitions, and these deviations are worth pondering (Figure 4B). Given the popularity of the Wuyishan as a world heritage and its status as a national scenic area, which it has held for decades, tourists

still thought highly of tourism and recreation in terms of famous sights, typical activities, and cultural experiences that are available in the national park area. However, these functions were only secured when the biodiversity conservation of the park succeeded. From our observation and communications during the survey, there was a separation between the claimed importance of nature conservation and the real understanding of it, with perhaps a slight change in recent years when the content analysis revealed that some tourists have linked conservation objects to certain spatial areas. For example, in the core conservation areas that were outside of the scenic area, tourists came to recognize the importance of national parks for wildlife conservation. Although more than half of the tourists ranked conservation in the first place in a list of importance, they did not know about the conservation objects, i.e., specific ecosystems, species and geological remains, etc., and how they were protected under the national park's management. We reckoned that recognizing nature conservation as the primary function of national parks was a value judgment and part of many *habitual thoughts*, but the idea was not specifically connected with a certain place, concentered types of ecosystems or biodiversity value. This lack of linkage between functions and locations was also reflected in the content analysis that Wuyishan, as an entity, was more seen as a scenic area than a nature reserve. In addition, tourists did not treat a national park as a spatial entity functioning in a specific geographic location or recognized its internal functional zoning for different stakeholders. To them, a national park was thought of as a "park" that should be developed for tourism and recreational activities, as perhaps a larger scenic area. This is similar to research findings around the world that the concept of "protected areas" is alien to many people's worldviews [36].

The habitual thoughts of Wuyishan as a tourist destination and a *lack of awareness of its spatial functional zoning* indicated tourists' actual focus on the tourism and recreational function. This isolation from the whole concept of national park management was further manifested by tourists' lack of understanding of the involvement of other stakeholders, i.e., much less importance was placed on public welfare such as scientific research and local livelihoods. From a function-oriented view of national parks, scientific research supports conservation that is used to identify the available time and space for recreation and tourism in the upstream management chain; tourism is a sustainable instrument for the development of local communities, downstream. It seems that the role of local communities, especially the tea farmers, was only recognized in terms of tea being a specialty in tourism such as the recognition of Da Hong Pao. The tourists' understanding of a national park was narrowed down to its provision of the direct benefits that it has for them, rather than the interactions that are performed between the stakeholders of the upstream and downstream areas to provide these benefits. This result of the *lack of interaction with different stakeholders* has echoed other research results of the misconceptions and one-sided perceptions of national park functions among tourists [37].

The tourists' deviations in the perception of national parks' functions can be explained. On the one hand, China is moving in a direction of more unified, standardized, and efficient governance of protected areas. This top-down approach aims to change the previous multi-headed management system. Meanwhile, the bottom-up community participation approach is encouraged in the daily management of specific national parks. However, the accessibility of management information depends not only on the capacity of national parks to publicize it, but also on the proximity of different stakeholders to national parks. Tourists are remote from national parks both geographically and in terms of information availability, which has led them to a lack of spatial recognition of the functions and zoning of national parks. On the other hand, the interaction between tourists and local residents was limited to the supply and consumption of basic tourism services (e.g., accommodation, catering and providing tourist souvenirs), and this has left tourists lacking awareness of the role of communities in conservation. In fact, tea was more than a souvenir because its production matters greatly to the natural environment and local livelihoods, as is the case in many national parks where socio-ecological systems exist rather than it being composed of the pristine wilderness [38,39]. There have been numerous examples in China and the

developing world that the effective participation of local people in nature conservation and the sustainability of local livelihoods can contribute to the achievement of the conservation objectives in PAs [40,41]. Thus, tea industries and related tourism development can reduce the social costs of protected area management through the interaction of the tourists and the residents. However, the perception of the benefits that flow from this interaction was not widely understood by tourists.

Admittedly, the expectations of tourism and recreation were similar to the management objectives of national parks which were aimed at realizing public welfare (Figure 4C). However, the demands became more diverse because of differences, mainly in age, occupation, income, and educational level, as in many studies of sustainable tourism in PAs [42]. Specifically, there were both high expectations of deeply enjoying nature and enriching their knowledge in a safe way (Table 4 B,C,H), and solid provision of basic services and information (Table 4 A). Thus, tourists are concerned about *the increase in the quantity and diversity of recreational opportunities*, as well as *the improvement in quality and innovation of approaches*, such as their emphasis on tourism facilities and products, and attention to interpretation services. At the same time, the content analysis also revealed a focus on emerging services and products such as hiking, parent-child tours and B&Bs, which tourists expect to diversify their tourism services.

Moreover, the results of the perceptions of national park functions and the expectations of services by tourists indicated that conservation, as a critical management objective of national parks, was still far from the field of view of tourists (Figure 4C). *The lack of transparent information on conservation objectives* made tourists confused about the function of donations or their effects, especially when there were gaps in the tourists' knowledge about the specifics of donations and the effectiveness of conservation. However, when this was combined with the results of the content analysis, we found that tourists were enthusiastic about nature conservation, voluntary activities and the improvement of tourism functions, and this high conservation willingness provided an opportunity to promote the governance of national parks by *absorbing tourists directly or indirectly to park management*, instead of them only enjoying sight-seeing. From the questionnaire, we found that tourists with a higher income and those of working age preferred purchasing tangible products over making donations; the younger tourists (mostly students) were more inclined to participate in voluntary activities. This indicated that well-regulated eco-products and volunteer activities would help to create a long-lasting and positive loop between tourists, local communities and national parks.

In brief, the principle of prioritizing conservation while also providing public welfare was not quite understood by tourists when WNP was officially launched. The establishment of the WNP existed in the backdrop of a long period of protected areas management activity, and tourists' perceptions of Wuyishan had inertia that reflected that tourists can only enjoy the landscape-based tourism attractions. It was a challenge for NP management, but it also provided orientation for better conservation governance through building and strengthening linkages between tourists and other stakeholders (Figure 4D). To remove the "alien" feeling, or roughly, by substituting the current *Wuyishan* with *Wuyishan National Park* in the semantic network (Figure 3A), there was a need to *publicize more information* about national parks such as their functional zones and the local communities. Specifically, national parks should establish an information platform to publicize suitable monitoring data and conservation outcomes. *Tourists' feedback* is important evidence to monitor and verify management effectiveness. By collecting information about tourists' perceptions and comparing it with the management objectives of the PAs, policy makers' decisions can be retraced and co-adapted, and this information can also be fed back to conservation managers to promote a more human-friendly management approach. This interaction between park managers and tourists was missing from the content analysis in which there was no mention of protected area management or hints of improvement of the tourism functions, as has been put forward in several studies [43,44]. Systematic interactions between tourists and other stakeholders are also likely to meet the higher expectations of

tourism and recreational opportunities. Such demands for natural and cultural values can be partly realized by *multiple services provided by local communities* such as community-based tourism [45–47], and the direct or indirect economic and social benefits that eventually feed back into community development and nature conservation. More attention should be paid to *online and offline activities to connect the public with local communities and conservation practitioners*, such as the national park branding system for eco-friendly products and services and citizen science programs. These programs can popularize scientific knowledge and arouse awareness of human–nature relationships to help to build mutual trust between the public and other stakeholders [48,49]. In sum, good governance needs the participation of tourists who no longer alienate them from conservation and other stakeholders.

5. Conclusions

Tourists' attitudes and behaviors were widely studied for better tourism management, but they were rarely explored for better conservation governance. This research is novel as it links tourism and recreation development to the nature conservation governance in protected areas by using the perspective of tourists' perceptions and expectations. Most research on tourists' attitudes and behaviors is aimed at better tourism management, but this is rarely explored from a broader governance perspective beyond treating PAs as tourist destinations. By re-examining the role of tourists in nature conservation, we can better address the conservation–development relationships that answer to both the interests of local communities and the public welfare of nature conservation. By examining tourists' perceptions and expectations of national park functions, their willingness to participate in nature conservation and their real experience in Wuyishan from a “past to present” perspective, we redefined tourists' role in PA management and conservation governance by strengthening their linkages with other stakeholders.

The findings revealed that the national park, as a new type of protected area, was poorly understood by tourists partly because of the previously dominated PAs and the lack of promotion of the multiple functions of WNP. Tourists were primarily concerned with the recreational and environmental education functions, which are of immediate benefit to them, but they were less concerned about other public welfare elements such as scientific research and local livelihoods. They prioritized biodiversity conservation without understanding its meanings and measures, e.g., the functional zoning of a national park and the interactions between stakeholders. This “alien” perception not only affects the tourists' participation in conservation activities such as donations, but it also isolated them from realizing the actions to improve public welfare by different stakeholders through national park management. We argue that there are two main reasons for the deviation of tourists' understanding from the officially proposed national park management, as they are stuck in the “past”. On the one hand, the tourists' recognitions of national park functions were more motivated by their own tourism and recreation needs to be nurtured during the period of visiting a scenic area and personal value judgments, therefore they lacked an understanding of the national park management objectives and spatial functional zoning; on the other hand, tourists lacked a clear understanding of the interactions and conservation roles between different stakeholders, especially the active contribution of local communities in the realization of national park functions.

The research also revealed that the diverse but specific demands of tourism and recreational services were expected from the national park in the “present” advocacy of nature-based tourism [50]. The difficulty in service provision is that both the basic and advanced services should be tailored to different tourists. Besides benefiting from the national park, tourists are very likely to participate in national park management directly or indirectly as they have a strong willingness to contribute to conservation, especially those well-educated young tourists and middle-aged groups with a middle to high income. Improvements being made to information asymmetry between tourists and other stakeholders are critical to broadening the scope of tourists as sole beneficiaries.

These findings can inform practitioners that are involved in the governance and nature-based tourism management in protected areas. Firstly, to achieve better governance, the park authority should think beyond the boundary of the national scenic area to evaluate the natural resource endowment of the whole ecosystem within the national park area. Accordingly, the spatial and temporal scope of tourists' activities can be optimized based on the conservation objectives. Within this optimized scope, policy makers could design and evaluate concrete projects of recreation, tourism, and environmental education from various dimensions including the intensity of the natural experience, the scientific value of the guide and the safety of operation. Secondly, publicity is necessary to make the public fully aware of the positioning of a national park in the region, functional zoning and related management rules. It is also necessary to popularise knowledge of the relationship between different functions and among stakeholders so that tourists can actively become the link between protection and development. Enhancing tourists' understanding of the protected areas through extensive and feasible publicity efforts is possible, thus making their needs more compatible with the nature conservation objectives. Third, it is necessary to establish linkages between the protected areas and the public, granting the public the right to supervise the conservation process and to know about the outcomes, and to promote products and information to the public beyond the boundary of the national park. Furthermore, more diversified motivation mechanisms are needed to promote the formation of the voluntary service system.

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