



联合国世界旅游组织  
旅游可持续发展  
观测点管理与监测中心

Monitoring Centre for UNWTO Sustainable Tourism Observatories

# **Monitoring Report on the Sustainable Tourism Development of Yangshuo**

**Yangshuo, Guilin**

**Guilin Municipal Bureau of Culture, Radio, Television, and Tourism**

**People's Government of Yangshuo County**

**Monitoring Centre for UNWTO Sustainable Tourism in China**

2022.12

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In 2004, a cooperation agreement between Guilin and the United Nations World Tourism Organisation proposed the inclusion of Yangshuo's tourism data in *Indicators of Sustainable Development for Tourism Destinations: A Guidebook* (UNWTO, Madrid, 2012). On 26 July 2005, the first tourism sustainable development observatory was officially established in Yangshuo and inaugurated in October 2009, marking the official launch of long-term sustainable development monitoring in Yangshuo.

- ❑ In September 2010, the United Nations World Tourism Organisation (UNWTO) and Sun Yat-sen University signed a cooperation agreement to establish the UNWTO Monitoring Centre for the Sustainable Tourism Observatories (UNWTO MCSTO). The Monitoring Centre is responsible for managing and monitoring sustainable tourism development observatories in China and the Asia-Pacific region in the future, ensuring the monitoring work is carried out in a sustainable, comprehensive, and effective way.
- ❑ Since August 2006, the Centre for Tourism Planning and Research at Sun Yat-sen University has successfully completed the monitoring of sustainable tourism development in Yangshuo from 2006 to 2021 based on the indicators and methods of the UNWTO GOST project, focusing on indicators of the impact of tourism development on Yangshuo's natural resources, ecological environment, and social and cultural aspects. The monitoring has also analysed and assessed the state of tourism development, identified problems in the tourism development of Yangshuo and introduced corrective and remedial measures.
- ❑ The project has received full recognition from the UNWTO and has promoted the sustainable development of Yangshuo's tourism.

## ❑ Time Span and Monitoring Team

- 2022.07.01-09 (9 days)
- 16 members from School of Tourism Management of SYSU (1 professor, 2 doctors, 6 masters, 7 undergraduates)

## ❑ The Monitoring Content

- Topic-based research: tourism and community, tourist satisfaction  
Tourism and recovery in the pandemic, health and safety,  
tourism planning and control, tourism and environmental protection

## ❑ The Monitoring Object

- Domestic tourists, government department,  
Community residents, owners of small and medium-sized business
- Local and non-local employees

## ❑ The Monitoring Coverage

- Important tourist attractions (Yulong River, Xingping Ancient Town,  
Yangshuo West Street, Yulong Village...)

## ❑ The Monitoring Methods

- Questionnaire, focus group, interviews, video-shooting and photo-taking



Monitoring Team

# Methodology and Process

## ❑ Questionnaire

- Using simple random sampling and convenient; Questionnaires and interviews were conducted among local residents, tourists, tourism employees and employers. 291 questionnaires were collected from residents, 388 questionnaires from tourists, 48 questionnaires from tourism employees, and 114 questionnaires from employers.

## ❑ Field research and interview

- Paying field visits to typical tourist communities (Jiwodu Village, Yulonghe Village, Xingping Ancient Town, etc.) and tourist attractions (Yangshuo West Street, Shili Gallery, Xanadu, etc.)

## ❑ Seminar

- A forum with members of various departments of the county government and representatives of various township governments, tourism enterprises, hotels and lodging operators, and online celebrities to communicate the current situation and pain points of the tourism in Yangshuo under risk.

## ❑ Video-taking and photo-shooting

- Documenting the shopping space in the surrounding blocks of Yangshuo West Street, Yangshuo ancient buildings and living space, natural environment, tourist attractions to develop comprehensive and systematic visual data and information

## ❑ “Three questions per day” team discussion

- Summarizing gains and challenges based on the daily monitoring situation; Each person proposes three research questions to explore various aspects of sustainable tourism development in Yangshuo.



## □ Glimpse of monitoring



Professor Sun discusses with team members



Handing out questionnaires



Seminar “the recovery of tourism under risk”



In-depth dialogue with business owners



Principal Li of Omeida Language College communicates with team members



Interviewing members of Village Committee



Interview at Yulong Homestay

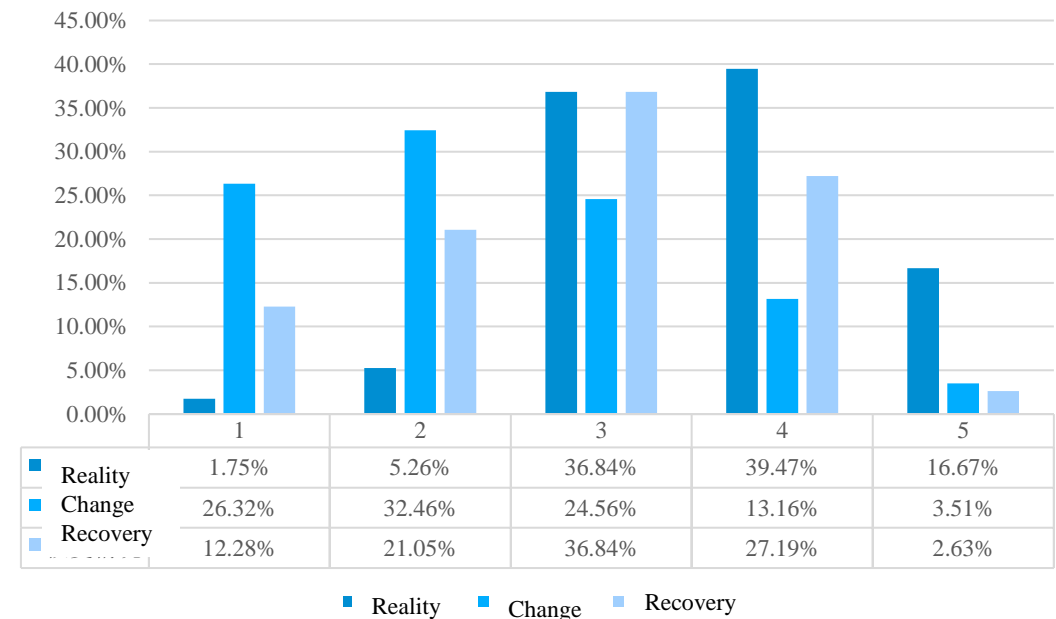
## Business development

In terms of horizontal comparison, employees' satisfaction with job pay is generally lower than their satisfaction with the company. This indicates that employees have a relatively positive view of the company, but are slightly dissatisfied with their salary. On the other hand, it indicates that the management of the company is reasonable, but the level of payment needs to be improved. In terms of longitudinal comparison, except for the basic satisfaction of the reward mechanism, all levels are lower than in 2019, indicating that the impact of the pandemic on enterprises has affected employee satisfaction.

Dimension	Indicator	2022 (2019)	Average Satisfaction
Treatment	Salary	3.17	(3.43)
	Reward	3.40	(3.37)
	Vacation	3.51	(3.61)
	Promotion	3.23	(3.75)
	Department role	3.67	(3.88)
Enterprise Self-postion	Operation	3.60	(3.74)
	Development goal	3.48	(3.60)
	Shor-term goal	3.46	(-)

Figure 3-3-2 Average satisfaction of minor factors in employees satisfaction with job

In response to the pandemic, the income and job opportunities of employees decrease, while their mobility and flexibility increase.



Note: "1" means slight influence, prominent decrease, prominent deterioration, "5" means big impact, prominent increase, prominent improvement

Figure 3-3-14 The impact of pandemic on employment and reemployment

# Tourism development and recovery in the pandemic

- ❑ Tourism, the pillar industry of Yangshuo, is damaged by the pandemic. The monitoring aims to explore tourism development and recovery in the pandemic through questionnaire and interview.
- ❑ It mainly examines a total of 14 indicators in six aspects, including Yangshuo's tourism revenue, GDP and finance, industrial structure, investment environment, social employment, and business development. It deeply analyzes the performance of Yangshuo's tourism industry in the pandemic and its future recovery and development.

Affected by the pandemic, the tourism has suffered serious impact, with a precipitous decline in the number of tourists and tourism income. In 2020, under the strong leadership of the Party and people's governments at all levels, the domestic situation was effectively controlled, and the tourism was prepared for recovery.

However, up to now, the pandemic has not yet ended, and local outbreaks in China have been occasionally reported. In the first half of 2022, major tourist sources in Yangshuo, including the Pearl River Delta and the Yangtze River Delta, experienced large-scale outbreaks, which also hindered the recovery of tourism.

However, from the perspectives of country, destination, tourists, and residents, Yangshuo's tourism still has considerable resilience.

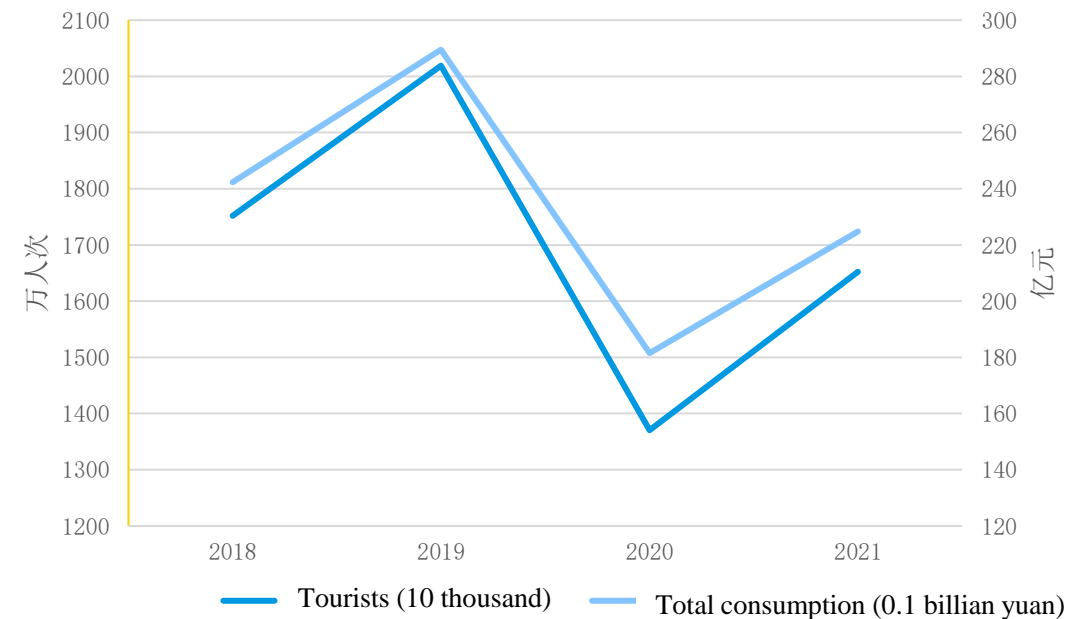


Figure 3-3-1 Tourist Reception and Total Consumption in Yangshuo



# Tourism development and recovery in the pandemic

## Industry structure

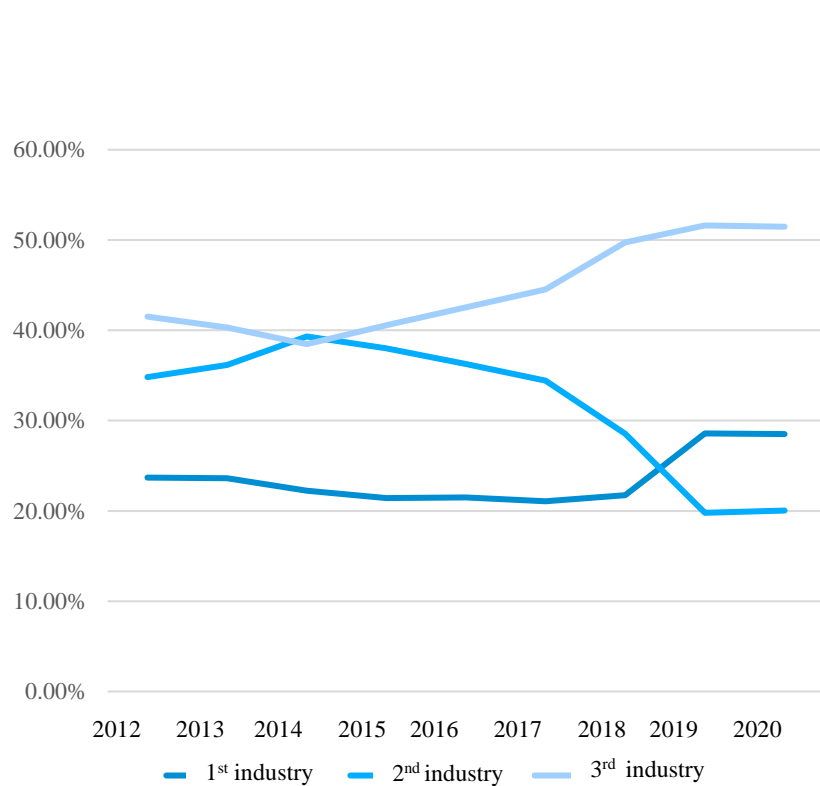


Figure 3-3-2 Industry structure of Yangshuo

The secondary industry has clearly made way for the tertiary industry, and there has been no significant change in the industrial structure in the pandemic.

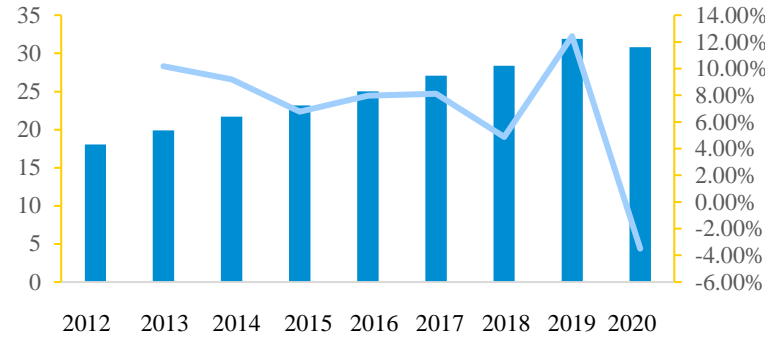


Figure 3-3-3 Added value of Yangshuo's agriculture

Modern agriculture achieved quality development, and the pace of industrial transformation increased

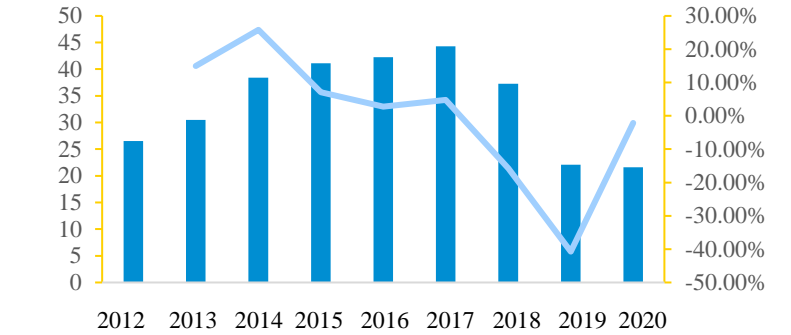
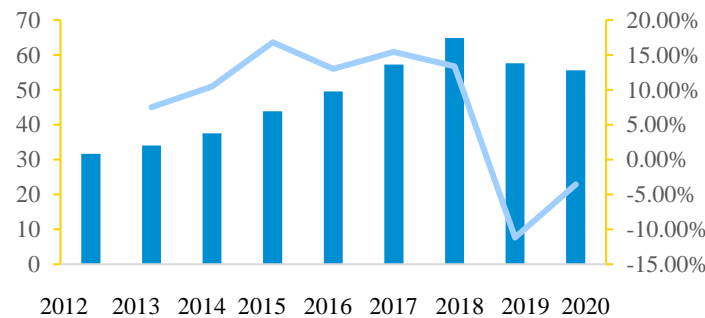


Figure 3-3-4 Added value of Yangshuo's industry

Tourism has become increasingly unstable and vulnerable, and has been affected by increased downward pressure on the economy, natural disasters, and public health events.

Figure 3-3-5 Added value of Yangshuo's tertiary industry

- ❑ In terms of **investment environment**, the number of projects and investment is lower than before the pandemic. There are many public utility projects and real estate projects under construction and newly contracted, resulting in a **chill in decline of tourism investment**.
- ✓ Government plays a vital role in attracting investment for enterprises, improving relevant service and infrastructure
- ✓ Tourism witnesses its supply exceeds the demand in the pandemic. Some business owners are incapable to invest to expand production. Many sectors in tourism are in predicament.
- ✓ The confidence of small business owners in tourism market keeps declining, but they still expect the situation to get better in 2023

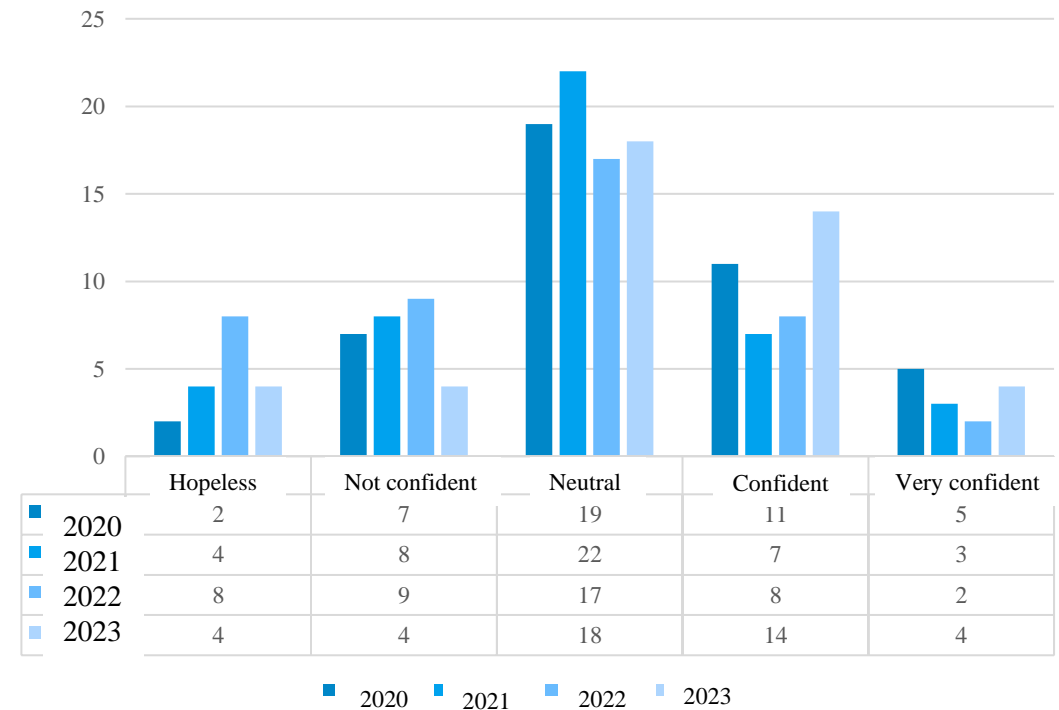


Figure 3-3-6 The confidence in tourism market of small business owners in Yangshuo

## □ The effect of tourism on employment

With regard to English learning, many employees keep it as a habit, but what they learn can not be well applied in practice. Most worker at the entry level do not receive quality education, and the reduction of international tourists affects their motivation of learning English.

90.4% of residents agree that tourism development brings them more job opportunities, surpassing the percentage in 2019 (85.6%). It has become a consensus that tourism boosts employment; when tourism faces adversity, residents will better understand it.

71.7% of Employees surveyed are local residents, quite close the percentage in 2019(71.7%) . Among non-local residents, only 10.9% come from Guilin; employees of Yangshuo tourism are mainly local people, which can reduce the impact of pandemic.

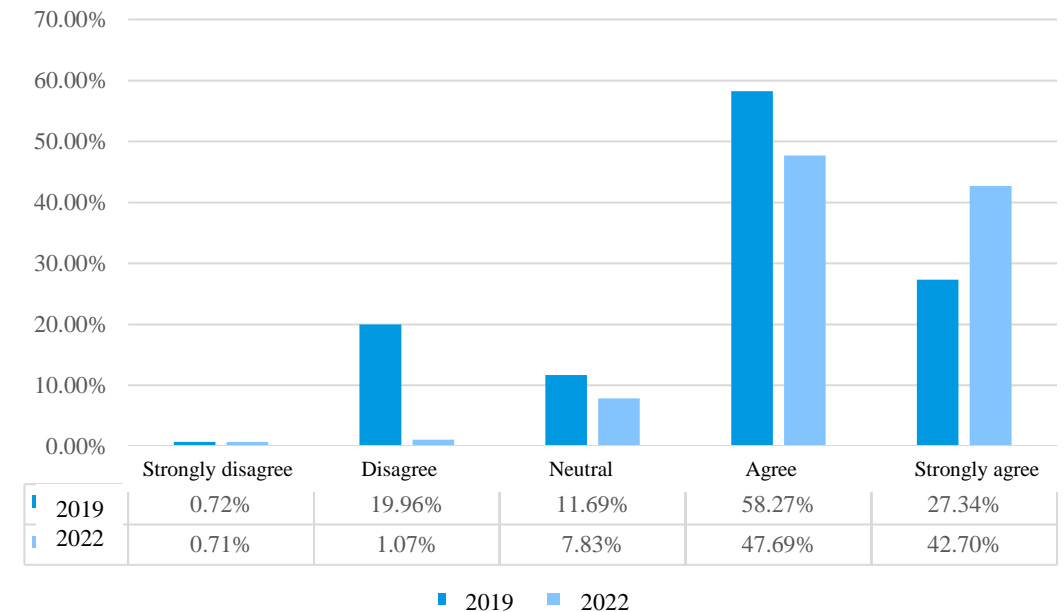


Figure 3-3-7 The attitudes of residents towards “Tourism brings more job opportunities”

## Business development

Types of shop	Number in 2019	Percentage in 2019	Number in 2021	Percentage in 2021
Hotels A	298	12.8%	181	16.3%
Restaurants B	515	22.3%	296	26.7%
Bars C	60	2.5%	41	3.7%
Souvenirs D	167	7.2%	129	11.6%
Tourism service E	84	3.6%	29	2.6%
Chinese health care F	72	3.1%	34	3.0%
Foreign language school G	3	0.1%	1	0.1%
Public service H1	65	2.8%	31	2.8%
Household article H2	224	9.6%	133	12%
Clothing H3	228	9.8%	127	11.5%
Others H4	549	23.7%	79	7.1%
Empty shop I	57	2.5%	27	2.4%
<b>Total</b>	<b>2322</b>	<b>100%</b>	<b>1108</b>	<b>100%</b>

Figure 3-3-1 Categories of shops in Yangshuo in 2019, 2021

The old urban area of Yangshuo can be divided into three parts. Part 1 contains many public institutions, including the Yangshuo County Government, which is the political center of Yangshuo and also performs commercial and residential functions; Part 2 contains the famous West Street, which is the commercial center and important tourist attraction of Yangshuo; Area 3 contains Yangshuo Park and its nearby residential areas, as shown in the following figure.

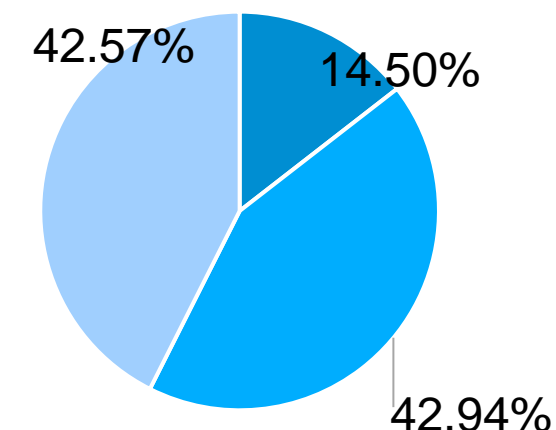


Figure 3-3-8 Target customers of shops

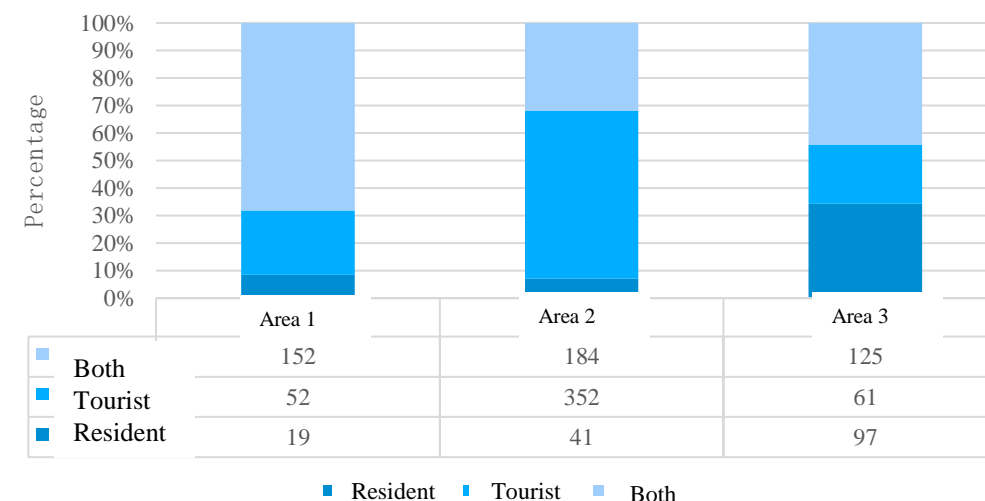


Figure 3-3-9 Structural difference of shops

## Business development

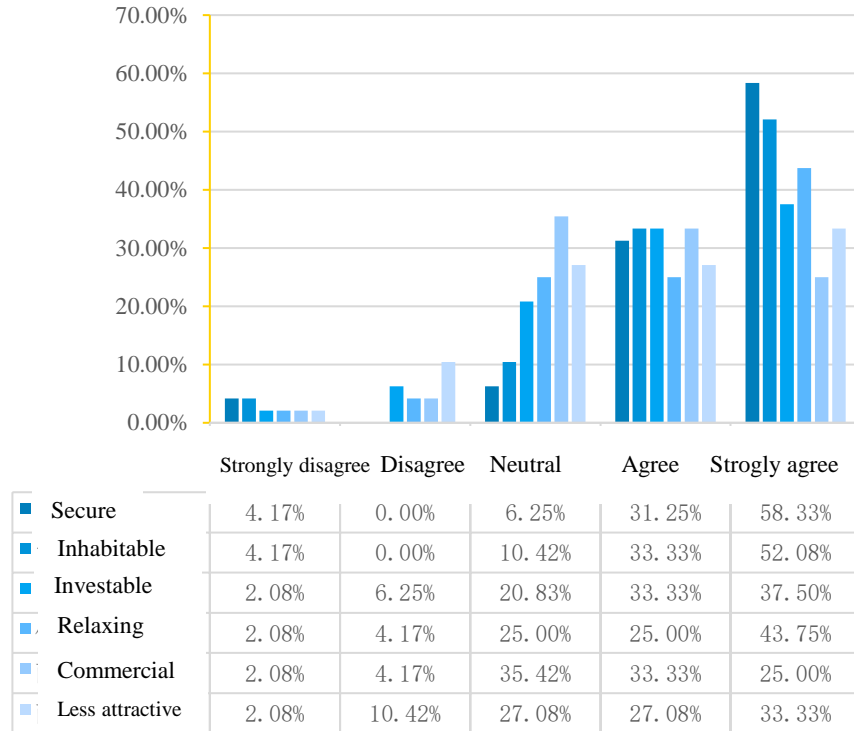


Figure 3-3-10 Small business owners' perception of local environment

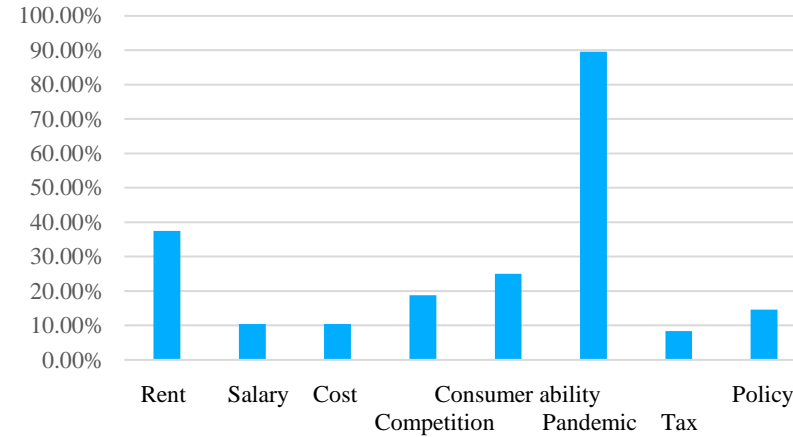
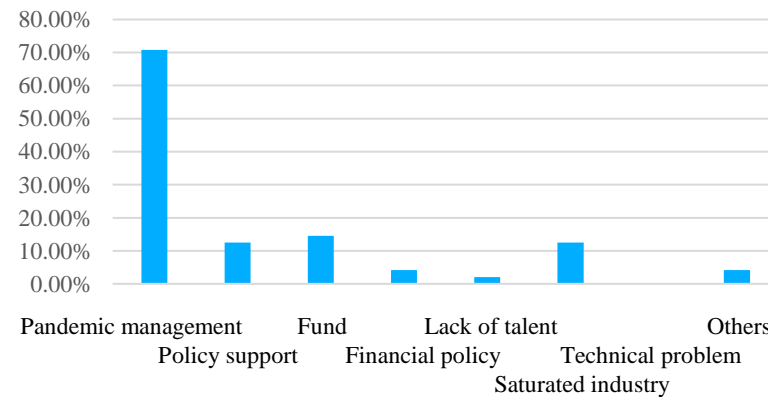
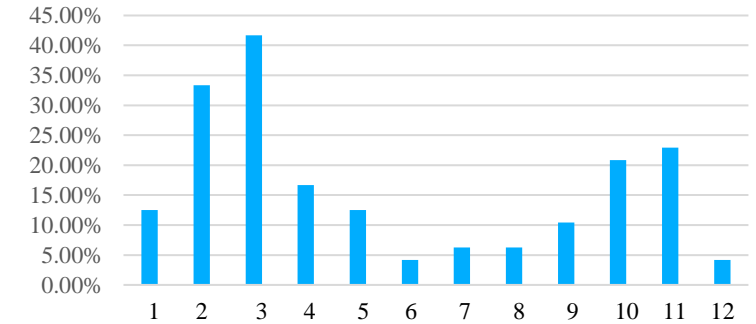


Figure 3-3-11 Percentage of recognition of each factor



Factors that affect enterprise recovery



1 Decreased salary 2 Lay-off 3 Stop operation 4 Online operation 5 Improve management 6 Staff training 7 Turn for the government's help 8 Cooperate with others 9 Innovate products and services 10 Wechat business 11 Cooperate with other platforms 12 Cooperate with industry association

Figure 3-3-12 Small business owners' response to the pandemic

Psychological condition and social behavior of small business owners: Poor business condition; the pandemic becomes the most biggest influencer; high satisfaction with life investment; excessive commercialization is problematic; owners are tired of pandemic prevention and control but still retain confidence

Figure 3-3-13 The problems that affect the recovery of enterprises according to small business owners

- ❑ Communities and residents are important participants in tourism development, and this monitoring explores residents' attitudes towards the impact of tourism on communities by questionnaire and interview.
- ❑ It mainly examines residents' overall perception of tourism development, economy, culture, environment, and other aspects of Yangshuo. The interview mainly covers residents' understanding of sustainable tourism development, community participation, wealth gap, cultural exchange, health care, pollution, and other aspects.
- ❑ Public opinion about the effects of tourism development

Residents' overall satisfaction with tourism development in Yangshuo has improved. Most residents hold a supportive attitude and affirm many positive impacts of developing tourism, including increasing job opportunities and involvement in the tourism development process.

However, residents have also mentioned some problems, such as pollution and the pandemic. Most believe that good environment is the foundation of tourism, and that tourism has a significant impact on environment that cannot be ignored. In addition, some residents said that natural disasters and the COVID-19 had a negative impact on tourism.

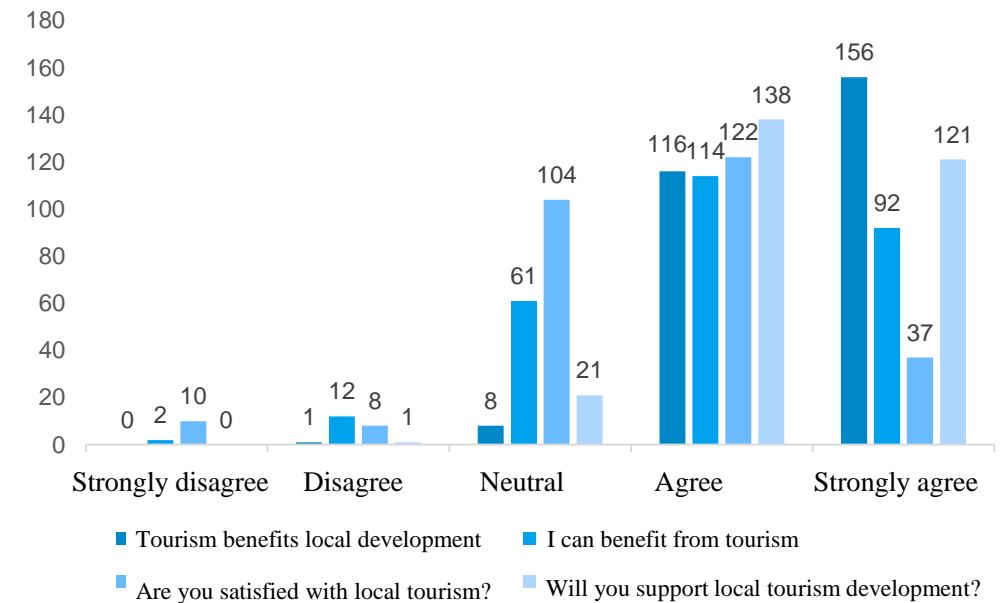


Figure 3-1-1 Yangshuo Residents' overall perception of tourism development

Most residents recognize the positive role of tourism in improving social culture and do not quite feel the negative impact in this regard. Community residents' awareness of participation in tourism has improved but their opportunities are limited.

Figure 3-1-6 Positive feedback of residents on cultural impact of tourism

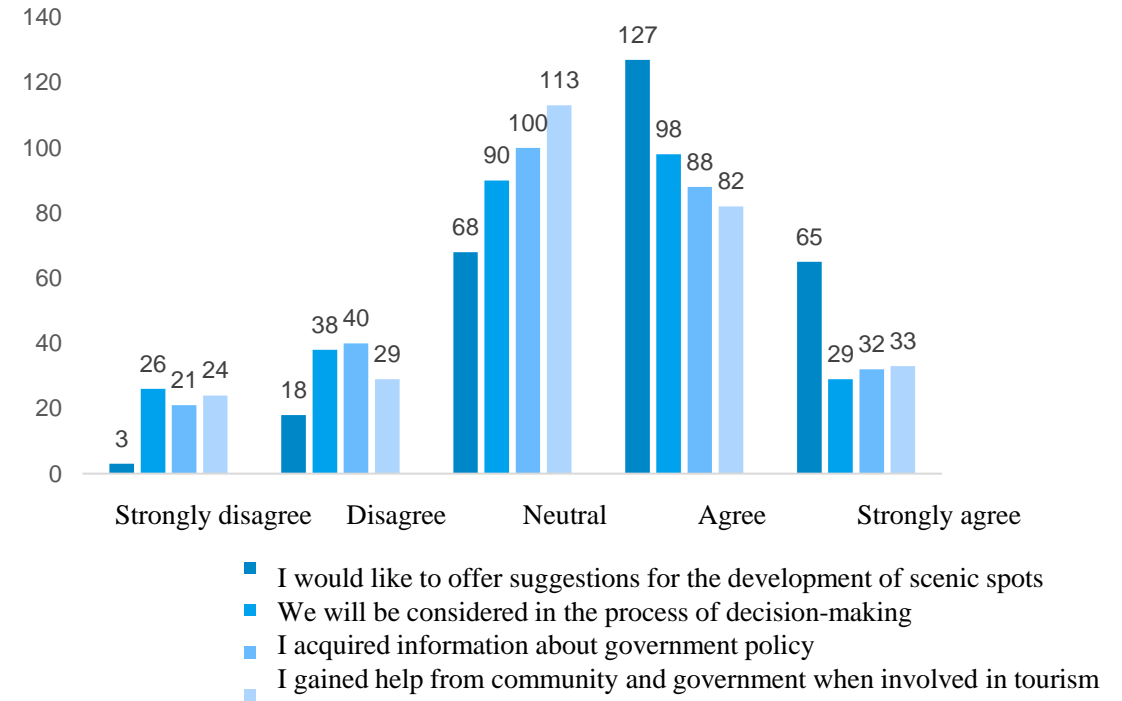
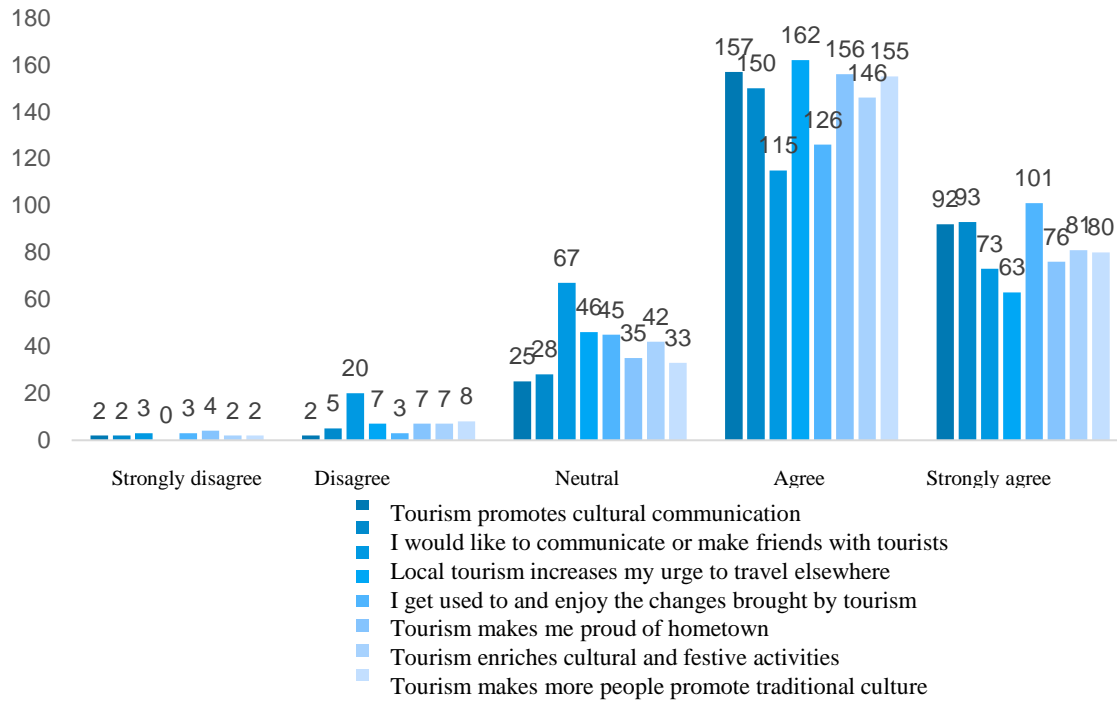


Figure 3-1-7 Community residents participation in tourism

□ **Less than half of residents hold that tourism creates severe air, water and noise pollution. The most prominent problem is traffic congestion, but it is less serious than last year.**

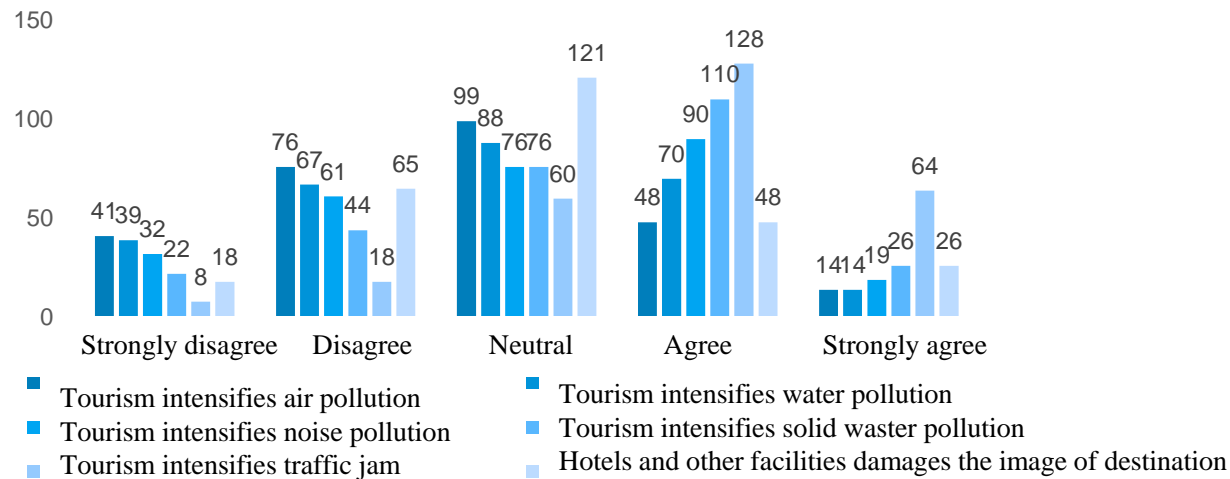


Figure 3-1-4 Negative feedback of tourists on environmental impact of tourism

**Most residents support the active role of tourism in improving environmental quality. They believe the pollution problem is getting more attention. Tourism development and enhancing measure will increase public awareness.**

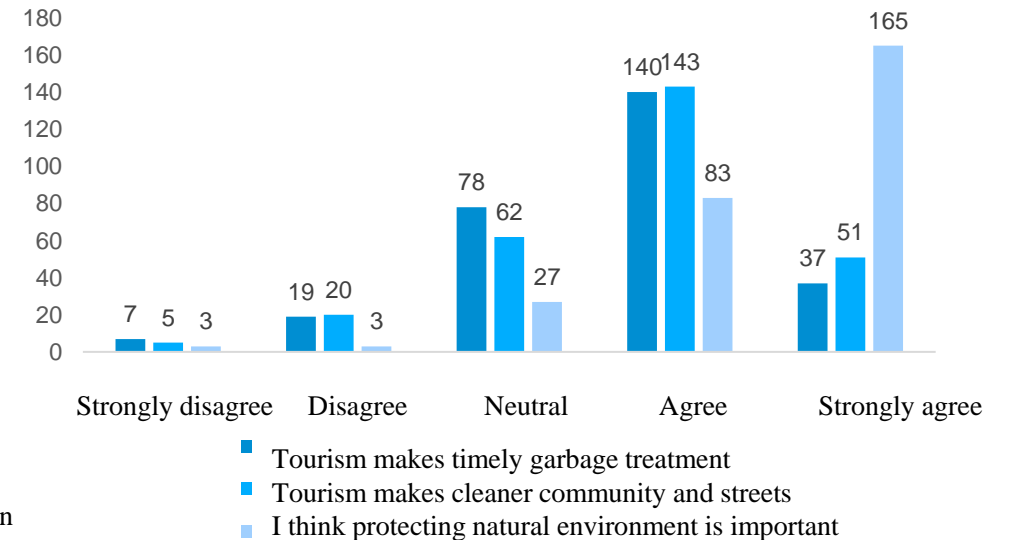


Figure 3-1-5 Positive feedback



Residents have widely recognized the positive role of the tourism industry in driving local employment. Furthermore, they have a tangible sense of contributing to employment in the tourism sector, particularly during economic downturns in tourism.

**In a survey of employees in small tourism businesses, 71.7% of those surveyed were local residents, which is quite consistent with the 71.3% prior to the 2019 pandemic. Among non-local residents, 10.9% were from the urban areas of Guilin, 46.9% were from other counties in Guilin, 26.6% were from areas outside Guangxi but within China, and 15.6% came from regions outside China. This indicates that the majority of tourism workers in Yangshuo are still locals, and they were less affected by the pandemic.**

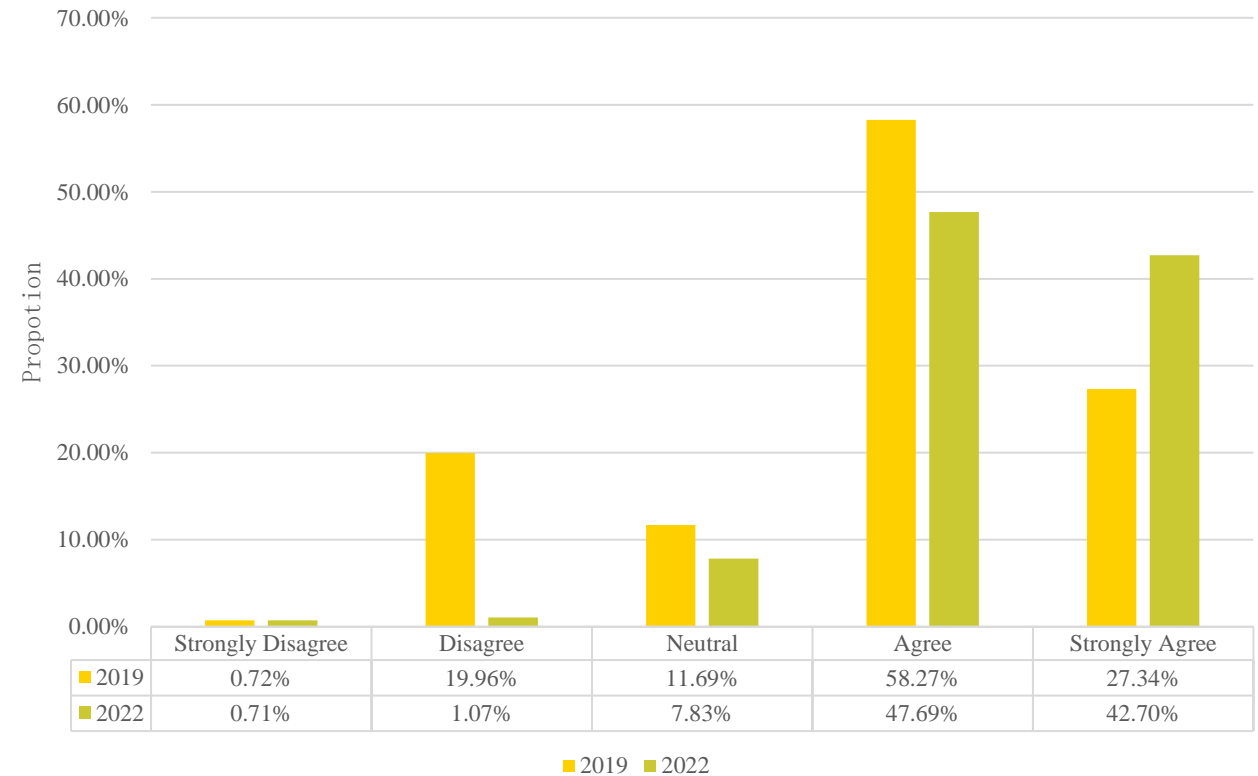


Figure 4-10 Yangshuo residents' attitude towards "tourism leads to more employment opportunities" in 2019 and 2022

□ Residents are sensitive to economic impact of tourism, and their perception are of two sides

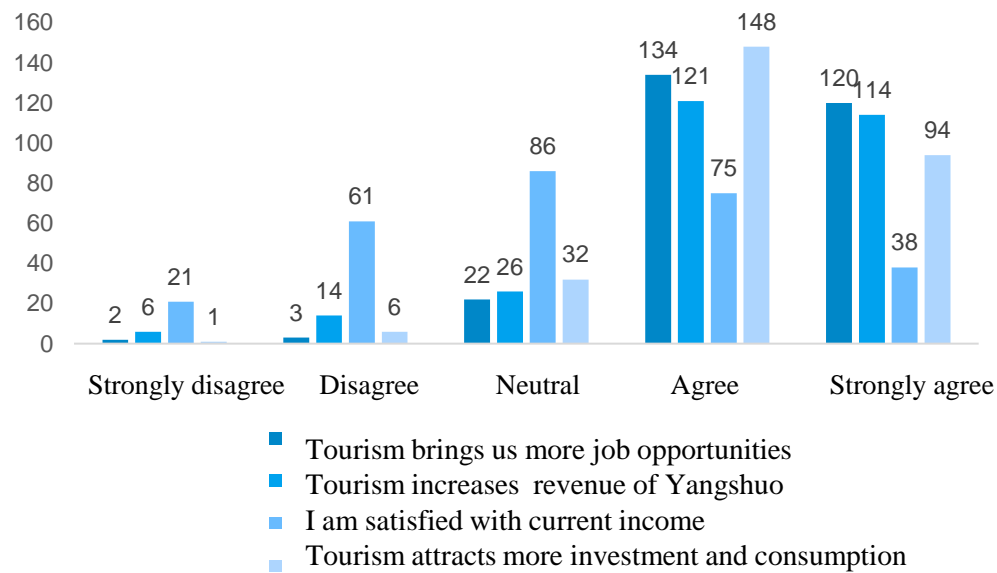


Figure 3-1-2 Positive feedback of tourists on economic impact of tourism

**Residents affirm the positive role of tourism in economic growth, but they are less satisfied about income level than before**

**Rising prices and uneven distribution of profits negatively impact individuals**

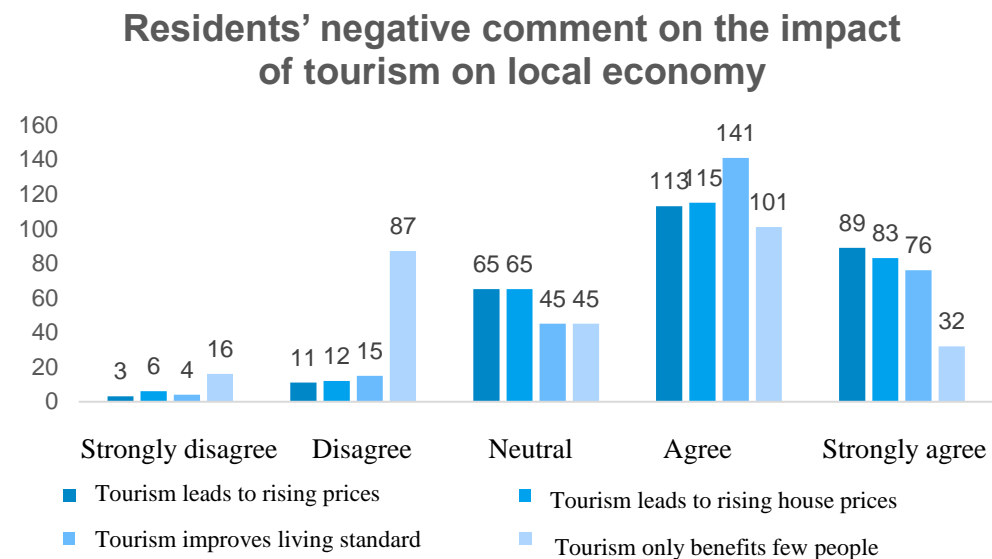


Figure 3-1-3 Negative feedback

## Tourism and environmental protection

### □ Noise pollution affects the image of destination

#### ➤ Noise disturbs the normal life and rest of people

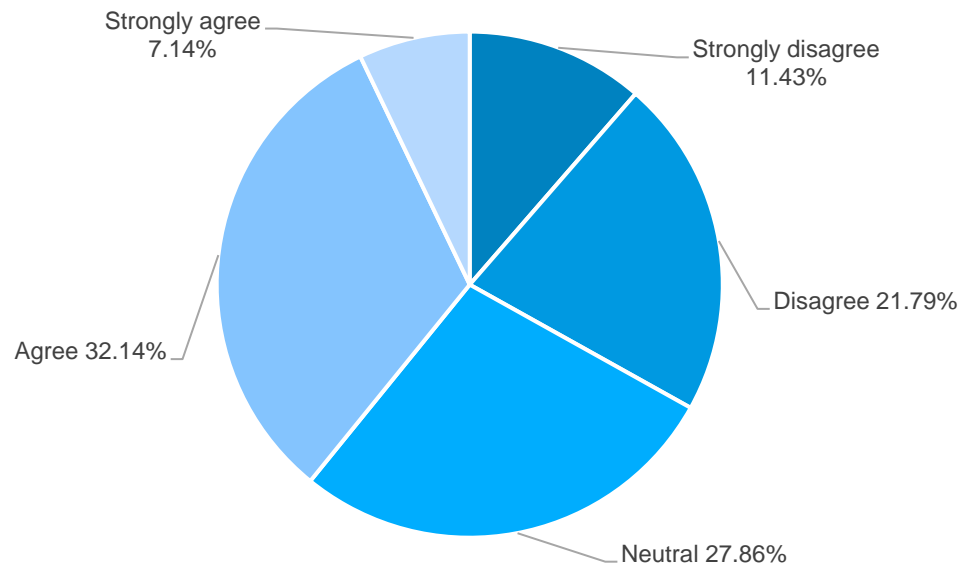


Figure 3-6-2 Resident attitudes towards “tourism intensifies noise pollution”

#### ➤ Monitoring data: quality decline of sound environment

- In the regional sound environment section, the average daytime equivalent sound level of regional environmental noise in Yangshuo is 55.6 decibels, evaluated as average (Level 3), down one level from last year.

#### ➤ Dissatisfaction of residents with tourism noise decreases

- Residents' tolerance of noise has increased. It may be related to the change of business pattern and management of commercial district in Yangshuo.
- Along with the shift of business types, stores are dispersed to the Li River bank; the noise in the commercial street is also controlled by the management committee, resulting in a reduction of noise decibels. At the same time, the residents' long-term expectation for the recovery of tourism may also influence their subjective evaluation.

## Tourism and environmental protection

### □ The treatment of solid wastes is effective

Yangshuo has been promoting the collection and removal of garbage in the whole area of villages, and has been deeply implementing the classification of domestic garbage and the comprehensive utilization of solid waste. The coverage rate of domestic waste collection, transfer and disposal system in administrative villages reached 100%. Yangshuo Ecological Park with a total investment of RMB 643 million was put into operation in 2021.

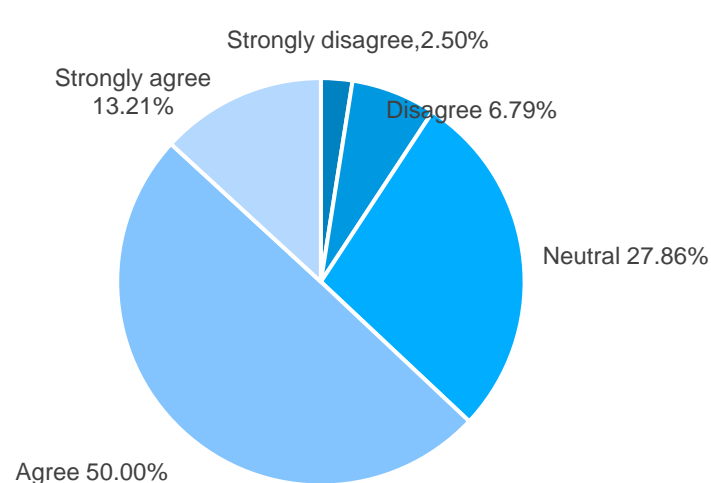


Figure 3-6-3 Tourist attitudes towards “waste treatment is effective”

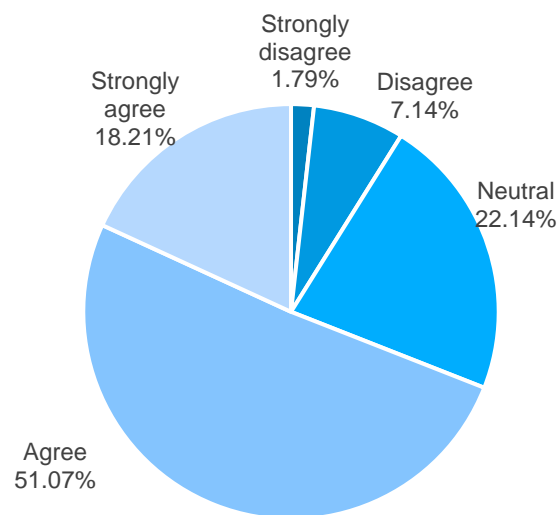


Figure 3-6-4 Tourist attitudes towards “tourism makes the community and streets cleaner”

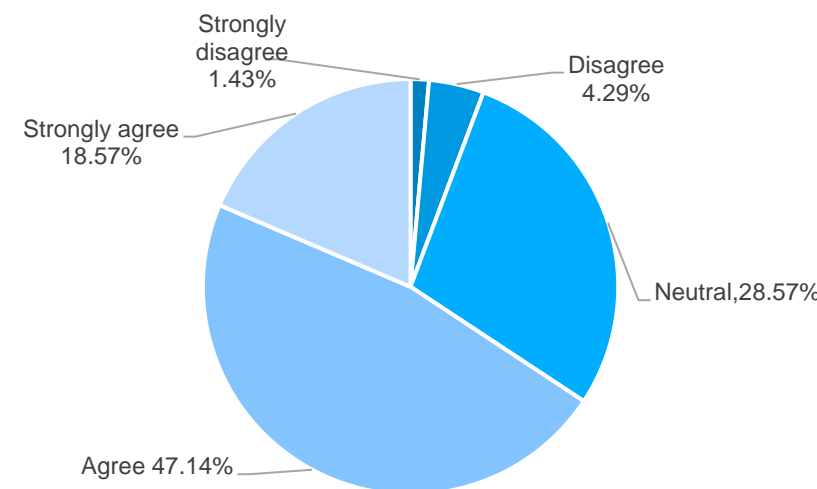


Figure 3-6-5 Tourist perception of the hygiene condition of scenic spots

## Tourism and environmental protection

### □ Cultural landscape needs to be improved

#### ➤ The prominent growth of public awareness of environmental protection

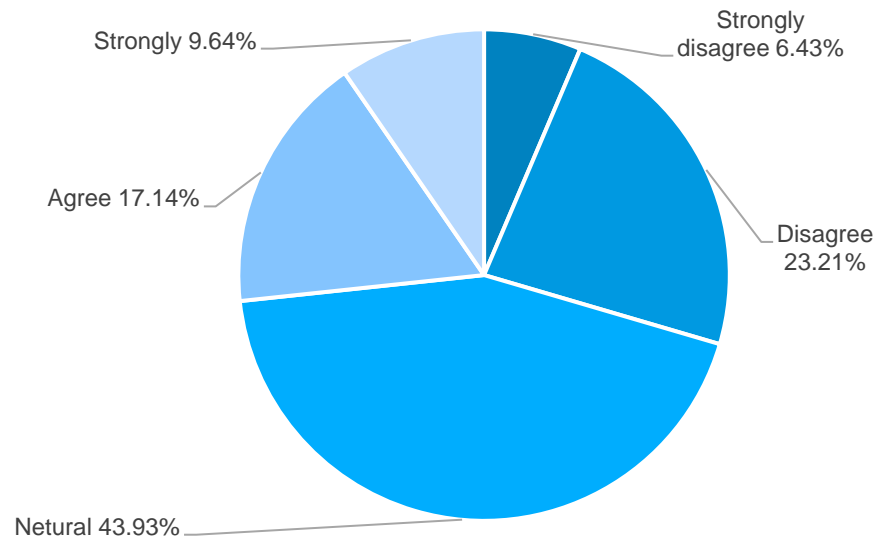


Figure 3-6-6 Residents attitude towards “environment should be protected”

#### ➤ Insufficient exploration of local cultural resources

- At present, most of B&Bs, farmhouses and tourist villages in Yangshuo still operate in isolation. Many tourist attractions and stores use saturated colors and large font sizes in their designs to attract attention, and some of advertising slogans are vulgar, damaging the harmony of landscape and the image of Yangshuo as a destination.

#### ➤ Resource development needs to cater to new needs and seek innovation

- Yangshuo’s current tourism products are not different from those developed since last century. In August 2022, visitors on Ctrip.com have been scolding the Qiangu scenic spot for its “multiple ticket prices”, superficial performances, and homogenized landscapes.

- ❑ **The channels and levels of participation of the interviewed residents in tourism are not varied, and the phenomenon of homogenization is serious**
  - Vicious competition exists. The tourism has suffered large losses due to the pandemic and natural disasters. Local tourism workers faced many difficulties, including decreasing incomes and rising prices. and the deterioration of income levels and employment of and rising prices are increasingly pressing issues.
- ❑ **Natural disasters frequently disturbed tourism, which is under great pressure**
  - The core tourist attractions in Yangshuo are all located mainly along the rivers, with a concentration of services and facilities. The frequent floods make local tourist activities prone to stagnation, causing losses to fixed assets, production materials, etc., negatively affecting the image of local tourism.
  - The current rebound in arrivals of inbound tourists is not obvious; tourists' purchasing power and travel time are on the decline; the market oversupply trend is prominent; the development of local tourism is facing operational difficulties, capital shortage, lack of resources, staff shortage and other challenges.



Xingping ancient town after flood



Flood invades major scenic spots



Scenic spots need to be maintained

The survey aims to predict tourist behaviors. Tourist satisfaction is the source of competitiveness of destination.

## Behavioral features of tourists

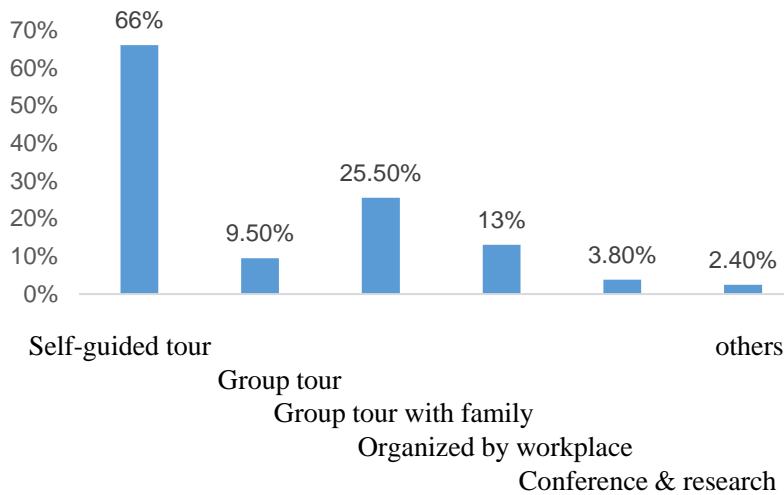


Figure 3-2-1 Travel styles of domestic tourists

The proportion of independent tours and group tours with friends or family has increased, while the proportion of individual group tours has decreased significantly

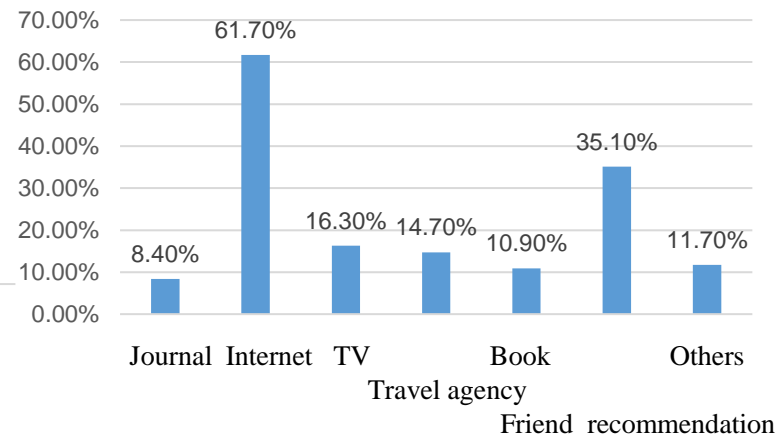


Figure 3-2.2 Access to travel information of domestic tourists

Internet and recommendation from friends and family are chief sources of information

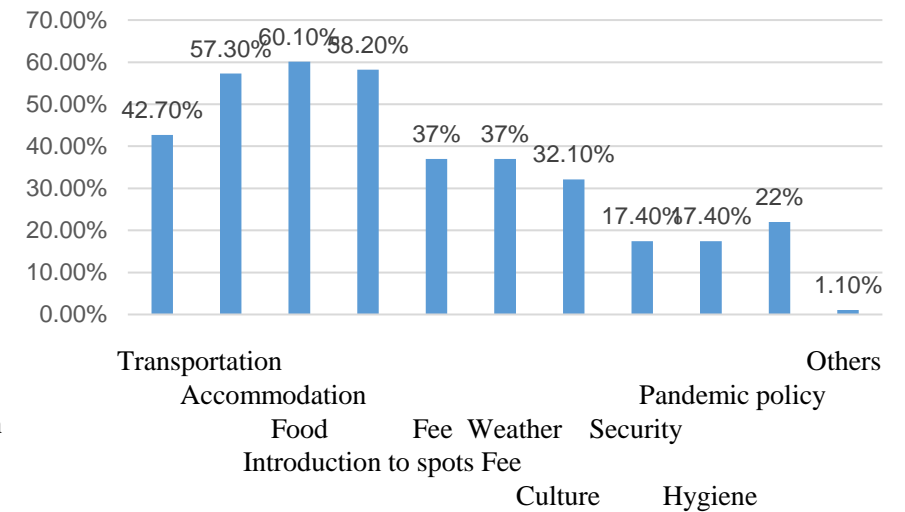


Figure 3-2-3 The most desirable information

Traffic, accommodation, dining and introductory information are most desirable. In 2022, the attention to public health and pandemic policy increased.

Figure 3-2-11 Tourists' feedback on environment

Item	Indicator	Average value	Variance	Degree of agreement
Scenic environment	Cleanness	3.77	0.721	55.7%
	Not crowded	3.78	0.682	68.4%
Environment	Friendly residents	3.85	0.747	72.0%
Cultural environment	Secure community	3.84	0.698	70.8%
	Too commercial	3.95	0.639	75.1%
Easy to communicate with tourists from other places		3.61	0.684	55.8%

Regarding the environment of scenic spots, tourists believe that it has become more pleasant and less crowded. In addition, tourists are generally satisfied with the cultural environment of Yangshuo. Surprisingly, compared to the data of the past four years, tourists' perception of the commercial atmosphere in Yangshuo shows a fluctuating downward trend.

Figure 3-2-10 Tourist' feedback on local culture and custom

Item	Indicator	Average value	Variance	Degree of agreement
	Good religious activity	3.46	0.833	47.2%
	Good wedding activity	3.39	0.853	43.1%
Folk culture	Good festive activity	3.44	0.832	47.4%
	Unique houses	3.51	0.789	52.2%
	Unique food	3.53	0.841	52.1%

Tourists' satisfaction with local culture is low, and the overall level is the same as in 2021. It is important to consider how to tell the good stories of Yangshuo in an impressive way by activating its cultural resources and creating cultural tourism products in the future.



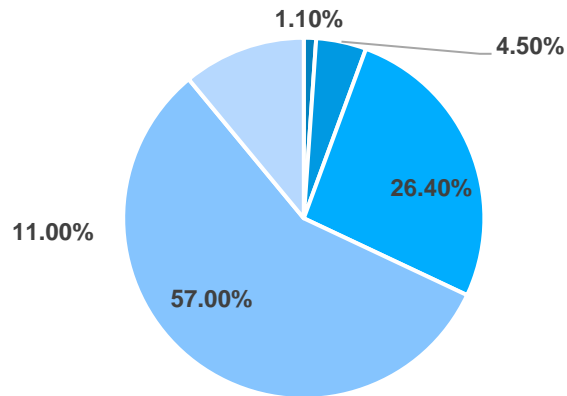


Figure 3-2-12 Overall satisfaction with travel experience in Yangshuo

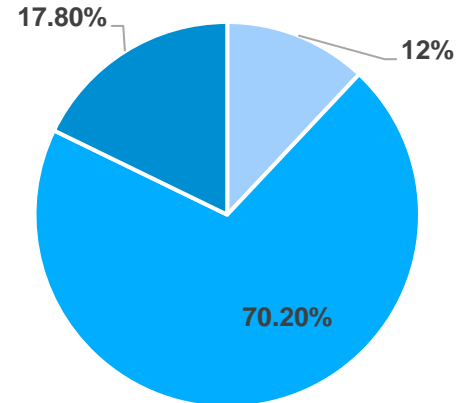


Figure 3-2-13 Expectation of domestic tourists

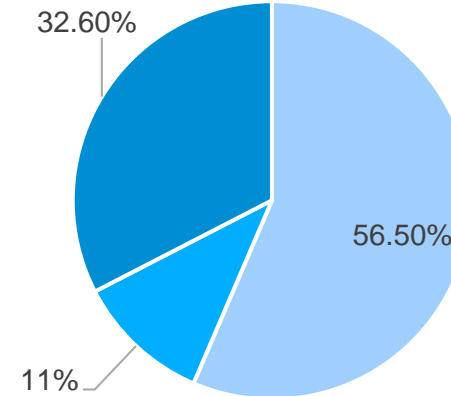


Figure 3-2-14 Tourists' willingness to revisit

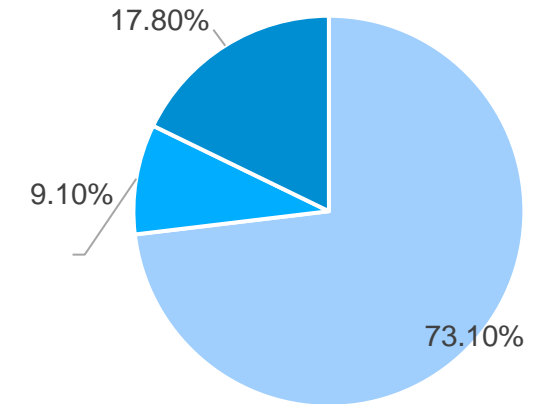


Figure 3-2-15 Tourists' willingness to recommend

- **Satisfaction and expectation:** Tourists are generally satisfied with Yangshuo, but the overall trend is downward
- **Willingness to revisit and recommend:** Tourists' willingness to revisit and recommend in 2022 is stronger than in 2019 (pre-covid), but since the outbreak of pandemic, there has been a downward trend. It might have something to do with the uncertainty caused by pandemic and the shortcomings of supply condition of Yangshuo
- Against the backdrop of fierce competition in national tourism industry, Yangshuo needs to improve its tourism products and services, continue to promote high-quality tourism development, and further optimize its image as a destination through marketing and branding activities to enhance tourists' willingness to recommend it

# Tourist satisfaction

Figure3-2-1 Motivations of domestic tourists who travel to Yangshuo

Item	Indicator	Average value	Variance	Degree of agreement
Travel motive	Travel is my hobby	4.05	0.724	78.2%
	Work/ Business trip	2.65	1.709	28.2%
	Incentive trip of workplace	2.72	1.716	31.1%
	Visit family and friends	3.39	1.644	54.9%
	Enjoy natural scenery	4.23	0.808	84.7%
	Enjoy local culture and food	4.16	0.835	78.1%
	Take photos	4.04	0.920	75%
	Release stress	4.12	0.806	80.1%
	Make new friends	3.42	1.425	49.1%
	Change the pace of life	3.78	1.090	64.8
	Visit famous spots	3.86	0.921	68.9%
	Experience outdoor activity	3.81	0.873	66.2%
	Visit rarely-visited places or places that all want to visit	3.88	1.039	70.5%
	Post-covid discounts	3.04	1.419	34.8%
	Less tourists after the pandemic	3.54	1.213	51.7%
	I hope to improve tourism by travelling after the pandemic	3.50	1.148	47.5%
	I hope to recover economy by travelling after the pandemic	3.53	1.161	50.2%

Dominant motivations are to enjoy natural landscape, local culture and cuisine, take photos and release pressure

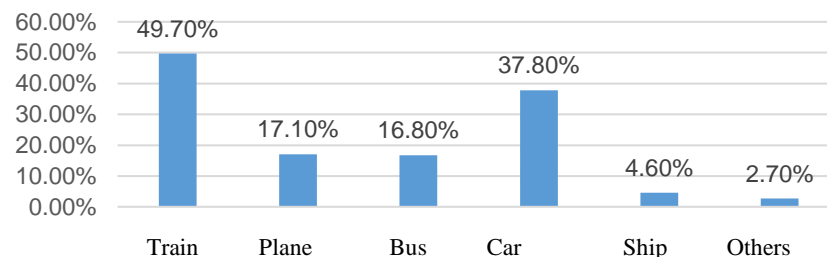


Figure3-2-4 Means of transportation of domestic tourists

Domestic tourists travel mainly by train, and the proportion of self-driving tour continues to increase significantly. The proportion of tours by electromobile in the county is the highest, and the main transportation means for tourists are electromobile, self-driving, taxis, and walking.

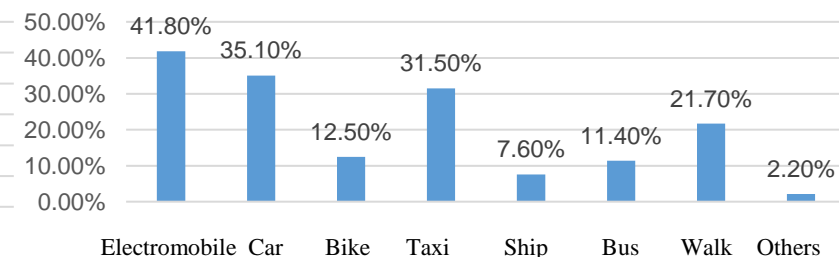


Figure3-2-5 Means of transportation that domestic tourists use in Yangshuo county

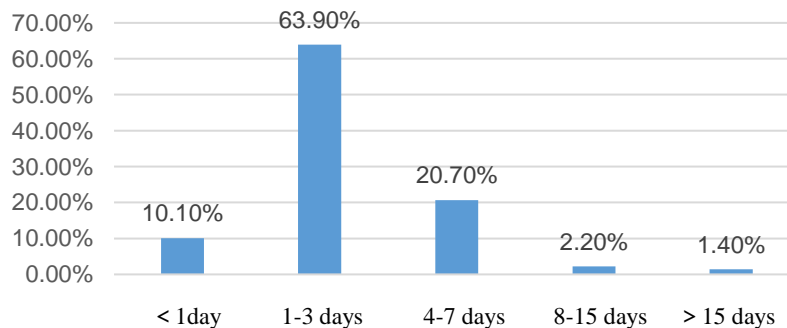


Figure3-2-6 Length of stay of domestic tourists

Affected by the normalization of pandemic prevention and control, the proportion of short-term tours has increased, which is the mainstream travel style of domestic tourists. The proportion of long-term tours has increased slightly.

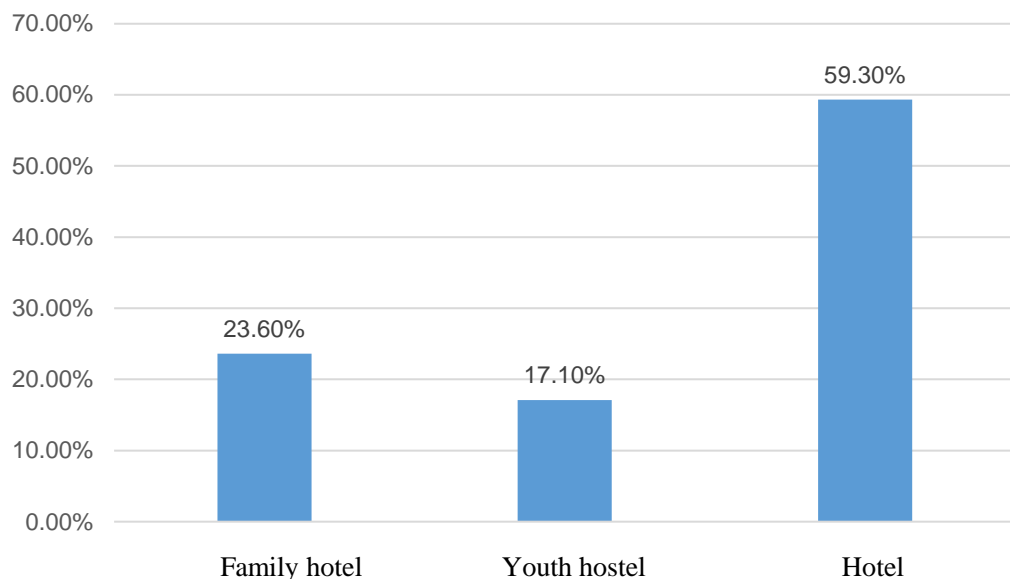


Figure 3-2-7 Accommodation of domestic tourists

The most preferred accommodation choices for domestic tourists are family hotels and star hotels. The proportion of youth hostels has slightly increased. From 2020 to 2022, the proportion of domestic tourists choosing family hotels has decreased significantly.

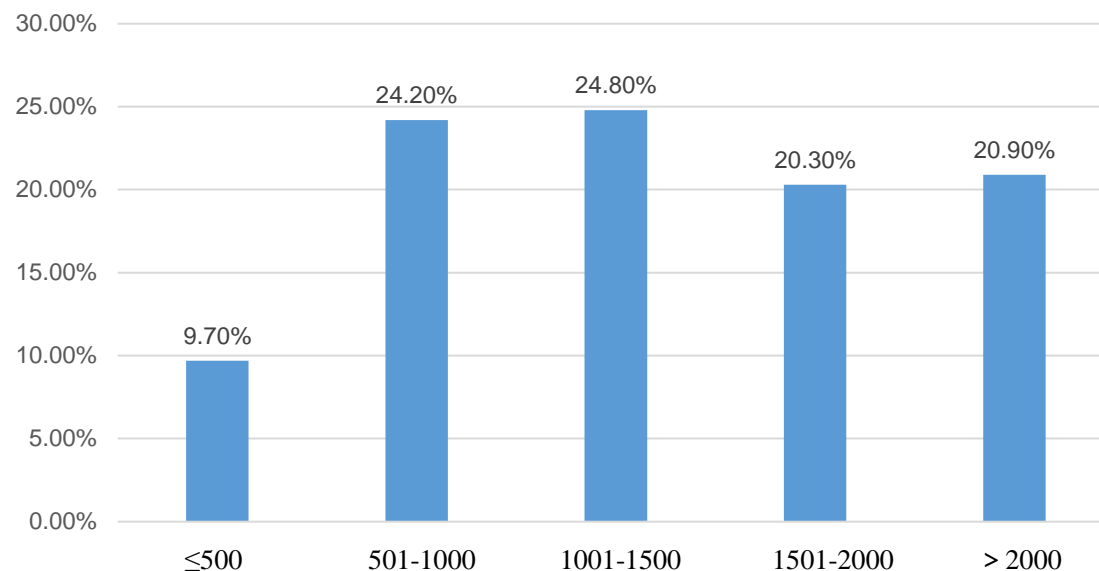


Figure 3-2-8 Expense of domestic tourists per person

Compared with the proportion of tourists with low consumption in 2019-2020, the number in 2022 has decreased, which is basically the same as in 2021. The proportion of tourists with medium to high consumption (1001-2000) has increased in 2022.

Figure3-2-9 Tourists' feedback on tourism resources

Item	Indicator	Average value	Variance	Degree of agreement
Tourism Resources	Rich natural resources and beautiful scenery	4.20	0.53	84.9%
	Good water quality of Li River	3.66	0.79	56.9%
	Nature Good water quality of Yulong River	4.14	0.80	59.7%
	Landscape of Yangshuo is the best of Guilin	3.81	0.83	65.7%
	Culture Cultural elements are special	3.94	0.72	71.9%

Natural landscapes and local customs are the most cherished tourism resources of Yangshuo. The water quality of the Lijiang River and the Yulong River greatly affects tourists' experience. Tourists are very pleased with Yulong River, but not with Lijiang River, whose water quality is not good. In the future, efforts should be strengthened to protect and promote folk art culture, highlighting and amplifying Yangshuo's own cultural characteristics.

Tourists are basically satisfied with the tourism service of Yangshuo. Following aspects should be given attention to:

- Transportation convenience has been improved, but management needs to be strengthened
- Tourists' satisfaction with facilities in scenic spots has increased, but the service needs to be improved
- Tourists satisfaction with catering is low, even lower than the pre-covid level, which deserves the attention of responsible sectors and departments
- Accommodation services has improved, but safety and hygiene condition need to be further enhanced
- Despite the declining satisfaction with entertainment and shopping services, the problem of commodity homogenization has been less prominent, indicating the high-quality development of Yangshuo tourism

### **Water Quality and Sanitation: Continuing large-scale environmental sanitation efforts, some rural drinking water projects have been partially completed.**

In its 2021 government work report, Yangshuo County emphasized its commitment to ecological and environmental protection, particularly regarding the protection and management of the Li River. The government invested nearly 60 million yuan in the ecological restoration and landscape improvement of the Li River, maintaining a 100% compliance rate for centralized drinking water sources in the county, the Yangshuo section of the Li River, and the Yulong River. Guided by the principle that “lucid waters and lush mountains are as invaluable assets”, comprehensive improvements have been made to the rural environment along the Lijiang River, including the removal of houseboats and fish cages.

For several years, activities such as reforestation and tree planting have been carried out, resulting in significant improvements to the ecological environment of the Li River, with forest coverage exceeding 80% and water quality in the main river consistently meeting Grade II standards. Additionally, the government has strengthened legal construction and the promotion of thematic activities to advance Li River management in a more diversified manner. In 2021, agricultural, forestry, and water expenditures accounted for 96.7% of the total budget, representing a year-on-year increase of 89.73%. This demonstrates Yangshuo County’s determination and investment in environmental protection.

Yangshuo County has undertaken a large-scale rural drinking water project with an investment of approximately 22 million yuan, benefiting around 6,300 people. Strict water quality monitoring has been implemented to ensure the safety of drinking water, with an 80% compliance rate for water quality. Moreover, all swimming facilities have passed rechecks for water quality, ensuring a favorable tourism environment.

- The rural piped water coverage rate in Yangshuo County has reached 76.18%. The government has allocated 19.21 million yuan to complete 11 domestic sewage treatment projects.
- Through the implementation of the rural revitalization grant for water supply projects supported by central and regional financial cooperation, Yangshuo County has completed 9 basic projects, benefiting around 6,300 people.
- Yangshuo County maintains stringent monitoring of drinking water quality to ensure its safety. The county government has formulated a water quality monitoring plan for urban and rural drinking water and conducted extensive water quality testing.
- Regarding water quality inspections at swimming facilities in Yangshuo County, out of 13 facilities, 9 initially did not meet the requirements. However, after retesting in early September, all swimming facilities have passed the water quality checks.

# Solid waste management

## Solid waste disposal management: Increase investment in solid waste treatment and make up for shortcomings

By 2021, the comprehensive utilization rate of general industrial solid waste in Guilin will reach 93%, and the treatment rate of domestic waste and medical waste will reach 100%. And through project construction and licensing, strengthen the supervision of hazardous waste, improve the treatment capacity. Yangshuo County promoted the collection and transportation of rural garbage in the whole area, implemented the classification of domestic garbage and the reduction of solid waste, resources, and harmless comprehensive utilization. And under the operation of Yangshuo Ecological Environmental Protection Science and Technology Park, the Nanbu County of Guilin managed to attain harmless treatment of solid waste or recycle it.

## Residents and tourists perception: Yangshuo's Sanitation environment continues to improve

While tourism leads to an increase in solid waste, it also contributes to improvements in local health services and infrastructure, improving the efficiency of waste disposal and street cleaning. The sanitation in Yangshuo County has been widely recognized by tourists, demonstrating the effectiveness of the government's ongoing solid waste management measures. However, frequent floods have highlighted the problem of garbage accumulation in river channels, for which government should make improvement in daily river maintenance and post-disaster clean-up.

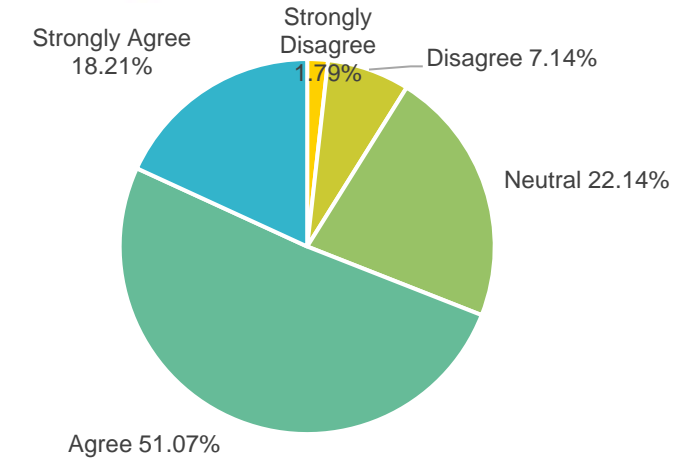


Figure 1 Residents' Perception of the Cleanness of Street and Community

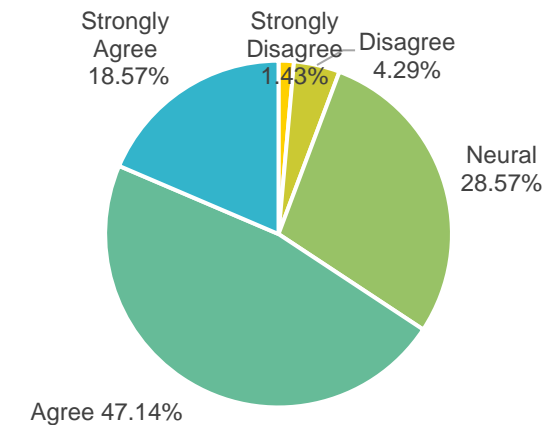


Figure 2 Tourists' Perception of the Sanitation of the Scenic Area

## Tourism planning and control

### □ Transportation: infrastructure is improved and tourists feel satisfied

#### Improved convenience

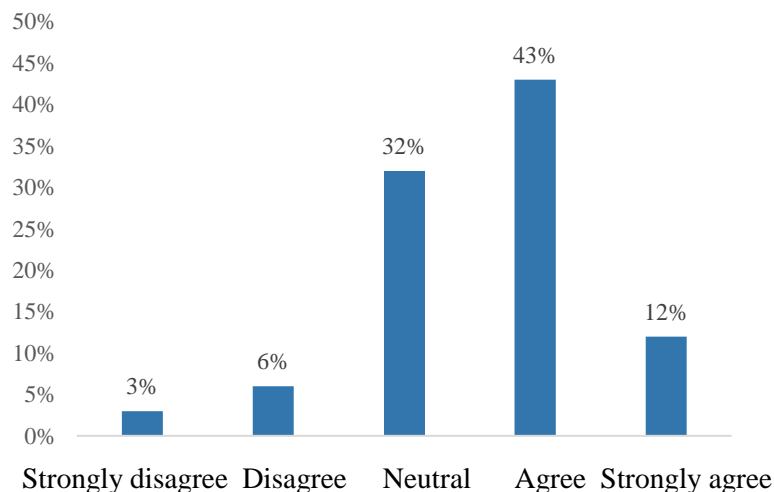


Figure 3-5-1 Tourists perception of transportation convenience

#### Improved sign system

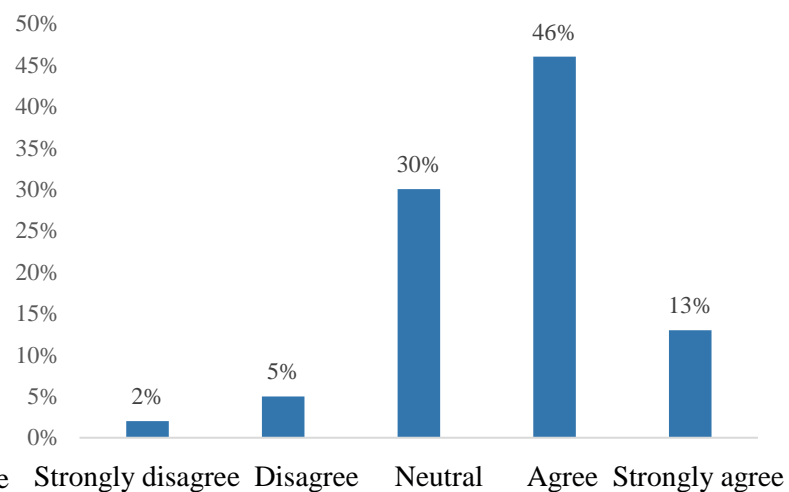


Figure 3-5-2 Tourist satisfaction with sign system of transportation

#### Decreasing satisfaction with price

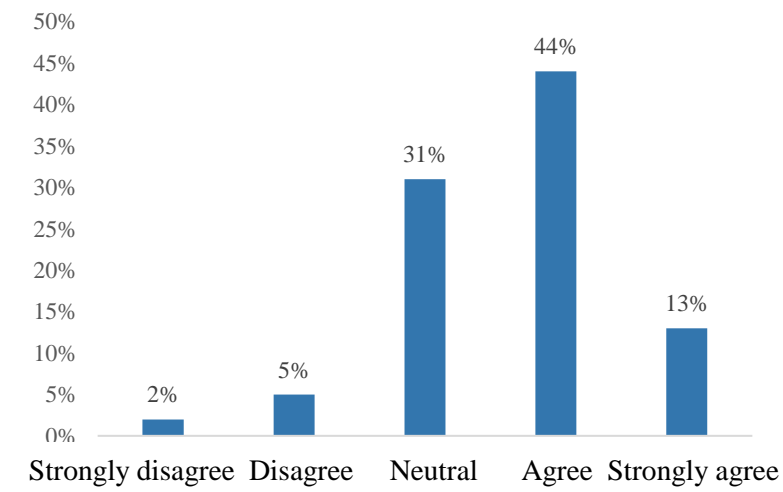


Figure 3-5-3 Tourist perception of transportation price

Tourists are basically satisfied with the transportation in Yangshuo, indicating that transportation of Yangshuo is well managed. The proportion of tourists who think transportation is convenient and sign system is functional has increased compared to 2021, but the proportion of those who think transportation is reasonably priced has decreased slightly.



## Tourism planning and control

### □ Transportation and tourist flow management: infrastructure is improved and tourists feel satisfied

The last kilometer of rural tour

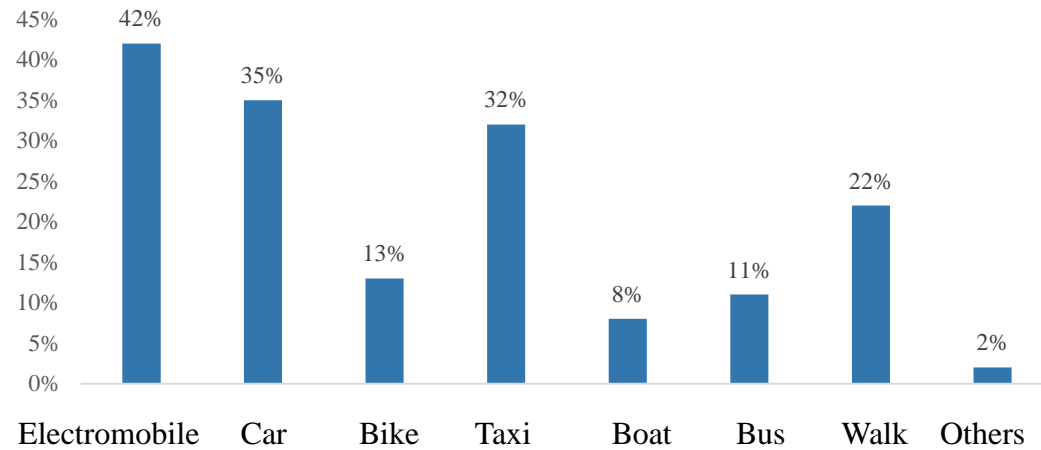
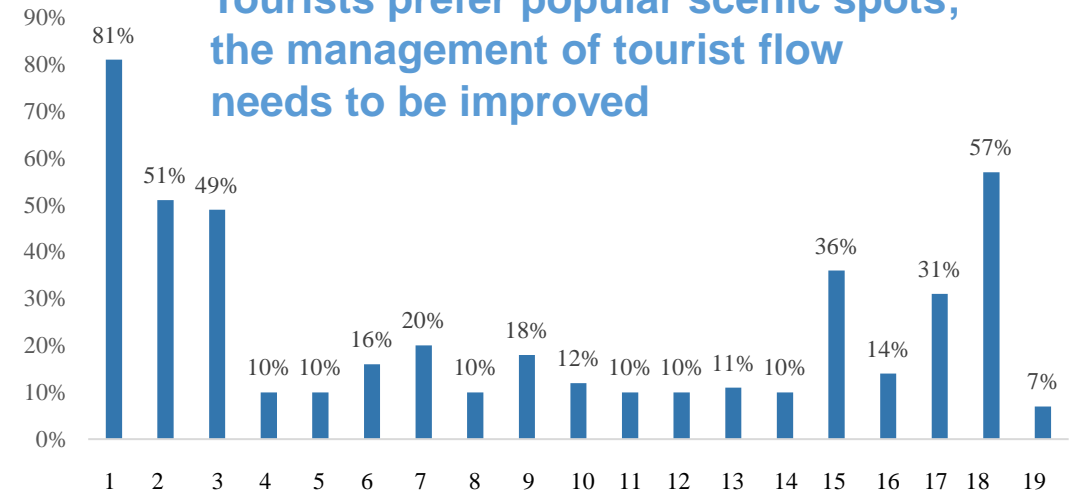


Figure 3-5-4 Transportation choice of tourists in Yangshuo

Electromobile has become the dominant option for tourists in Yangshuo. Due to the flawed road system and insufficient transportation facilities in scenic spots and hotel clusters, parking lots are scarce and expensive, making it impossible to meet the transportation needs of tourists.

Tourists prefer popular scenic spots; the management of tourist flow needs to be improved



1 Yangshuo West Street 2 Li River Rafting 3 Twenty yuan 4 Luotuoguojiang 5 Mud Bath 6 Yueliangshan 7 Darongshu 8 Sanqianli 9 Qiangqing 10 Jiumahuashan 11 Former residence of Xu Beihong 12 Longjing River Rafting 13 Ruyifeng Ropeway 14 Yangshuo Theatre 15 Shilihuanglang 16 Xianggong Mount 17 Xingping ancient town 18 Yulong River 19 Others

Figure 3-5-5 Scenic spots visited by tourists

The distribution of tourists in space is uneven. People prefer to visit popular spots, the management of tourist flow management needs to be improved

## Tourism planning and control

### ➤ “One core Two pieces Three belts” tourism spatial layout

The spatial layout of regional tourism in Yangshuo County includes "one core" - Yangshuo County as the center, "two pieces" - Putao area and Xingping area, "three belts" - Li River basin, Yulong River basin, Jinbao River basin development belt. They form the overall skeleton of tourism in Yangshuo.

Figure 3-5-2 Tourism land use in major tourism towns in Yangshuo County (2006-2020) (unit: hectare)

Types of land use	Yangshuo Town	Baisha Town	Fuli Town	Xingping Town	Gaotian Town	Yangdi Town
<b>Total land area</b>	7528.95	15383.14	23285.21	31376.89	15492.93	10263.55
<b>Forests</b>	1831.07	4667.48	6344.59	10028.94	7984.56	5632.98
<b>Urban construction</b>	860.1	121.27	116.23	49	50.06	0
	11.42%	0.79%	0.5%	0.16%	0.32%	0
<b>Mining and Independent Construction</b>	71.15	160.07	110.98	133.4	134.88	30.56
	0.95%	1.04%	0.48%	0.43%	0.87%	0.3%
<b>Rural residence</b>	139	402.99	498.75	375.94	392.92	125.35
	1.85%	2.62%	2.14%	1.2%	2.54%	1.22%
<b>Scenic spots and natural and cultural attractions</b>	1940.64	2168.54	3899.89	12143.08	876.71	2397.79
	25.78%	14.1%	16.75%	41.89%	6.3%	23.36%
<b>Others</b>	411.84	811.73	4584.22	1179.71	545.08	496.98
	5.47%	5.28%	19.69%	3.76%	3.52%	4.74%

❑ **The problem of tourism land planning: the prominent land use is for tourism; the conflicts of land use are intense**

### ➤ The challenge of land use

The rapid development of tourism has occupied more and more land. However, if too much land is used for tourism, it may damage local ecology, cause insufficient reserve resources of arable land and increase pressure on the protection of arable land and permanent basic farmland.

### ➤ Major tourism towns has different priorities in land use

The proportion of urban construction land in Yangshuo town, which is the “one core”, is significantly higher than that of other tourism towns (11.42%); Xingping town, which is located in the Xingping area of the “two pieces”, is dominated by functions such as sightseeing with local experience, so the proportion of scenic spots and natural and cultural attractions is significantly higher than that of other towns (41.89%).

## □ Summary

- **Enhance scientific planning and promote the sustainable development of tourism in Yangshuo**
  - Draw a scientific plan of multi-level tourism development including county, town and village areas; Integrate advantageous tourism resources, highlighting characteristics, creating quality products and promote the innovative development of tourism in the county.
  - At present, the development of Yangshuo tourism is still centered on its unique natural resources, and it needs to follow the strategy of sustainable development and adopt protective development measures to avoid the destruction and over-exploitation of natural resources.
  - To increase the attractiveness of the cultural experience tour, it is necessary to dig deeper into the folk culture of Yangshuo to develop cultural and creative products that are unique to the regional characteristics of northern Guizhou; in terms of community residents, to improve their hospitality to tourists is important.
- **Improve the transportation in Yangshuo County and public awareness of transportation safety**
  - Electromobile has become the first choice for travel within the county, followed by traffic chaos and disorder in vehicle rental industry, which negatively affects Yangshuo's cityscape, tourists' travel experience, and traffic safety.
  - It is suggested that the government should: improve the traffic network in the county and the management system of the vehicle rental industry; strengthen the construction of non-motorized lanes and greenways in the core scenic spots and on the roads between adjacent scenic spots; inform tourists and residents of traffic safety; improve the standardization of driving in order to protect personal safety.

## □ Food safety

- **Food safety and quality:** steady improvement in food safety and hygiene condition
- **Catering Hygiene:** Efforts in supervision increase and catering hygiene significantly improves. In 366 questionnaires for tourists, the average value of the food safety related item “Food and beverage hygiene and safety here” reached 3.37 (1-strongly disagree, 5-strongly agree), The overall perception of food hygiene and safety is positive, with most tourists’ satisfaction being neutral or above.

## □ Hygiene of public space

- **Water quality:** Government continues the major environmental sanitation control and partially completes the rural drinking water project. Nearly 60 million yuan has been invested in ecological restoration and landscape improvement of the Li River. The protection, utilization, and management of the Li River scenic spots adhere to the principles of scientific planning, unified management, strict protection, and sustainable utilization.
- **Disease control:** The efficiency increases and medical service improves.
- **Pollution:** noise pollution has become less severe

Item	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Percentage	11.6%	39.5%	38.2%	8.6%	1.6%
Number of tourist	43	146	141	32	6

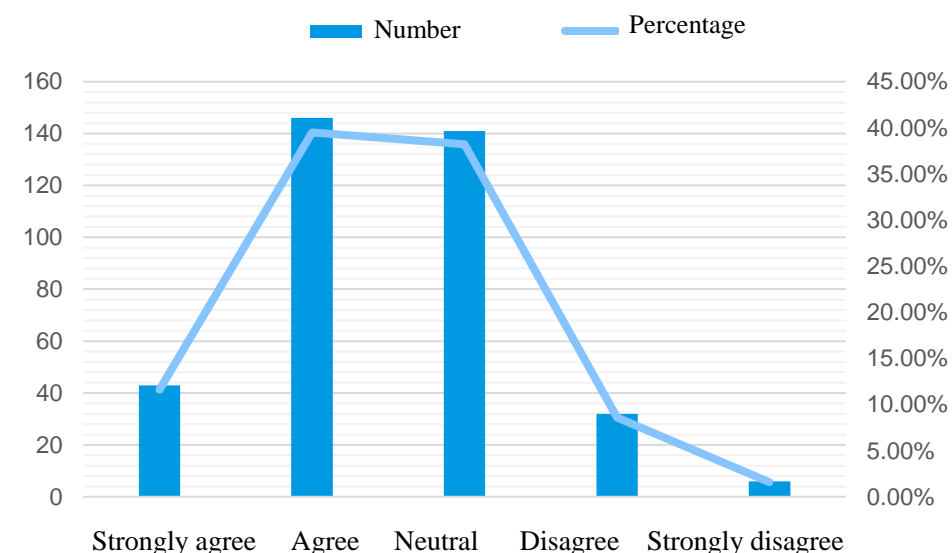


Figure 3-4-1 Tourists perception of food hygiene

## □ Hygiene of public space

**Hygiene of scenic spots:** the environment is clean but tourists are less satisfied than last year

## □ Emergency response in flood time

- The capacity of flood warning and control should be enhanced  
Compared to last year, Yangshuo was hit by a more devastating flood in June this year, and there was impeded information transmission. But during the flood and recovery period, people worked together to fight the flood and rebuilt their homes. In the future, more attention should be paid to flood control, clear responsibility chains, and timely warning.

## □ Public security

- **Accommodation:** tourists are satisfied
- **Security:** The public security situation in Yangshuo is always at the forefront of Guilin City, and the overall social situation is harmonious and stable. Most tourists believe that the public security situation in Yangshuo is good.
- **Crime rate and medical service:** steady improvement of medical service and crime rate decreases

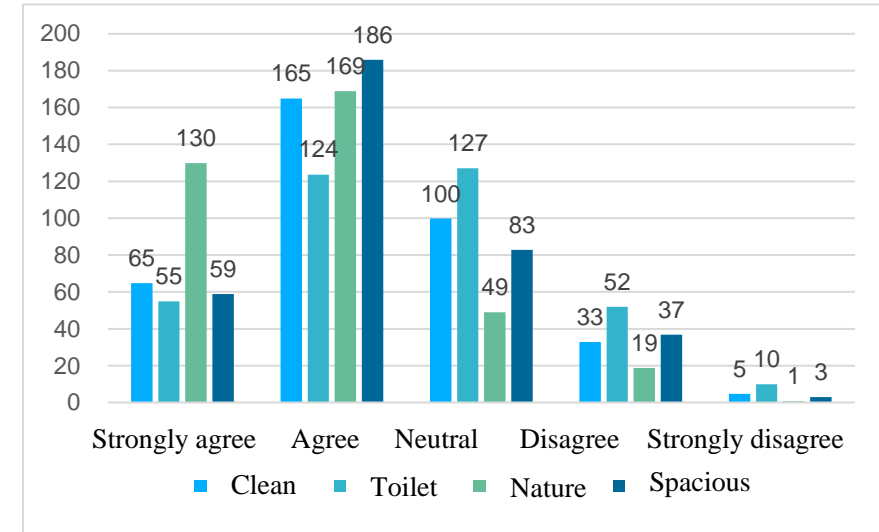


Figure 3-4-2 Tourist perception of the environment quality

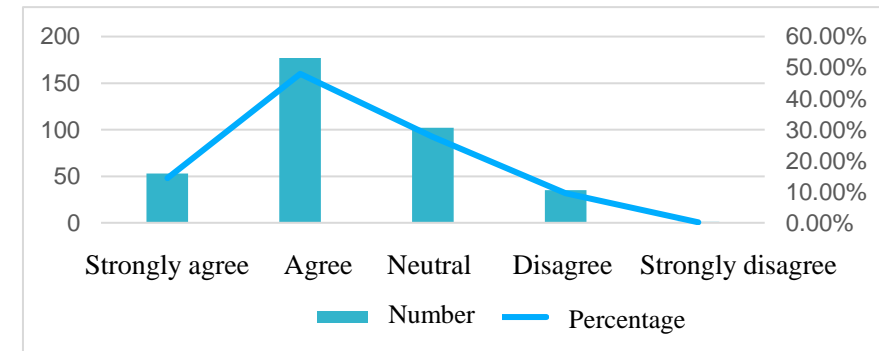


Figure 3-4-3 Tourist perception of accommodation safety

## □ Summary

- Thanks to the efforts of Yangshuo County government to actively promote food safety, environmental hygiene, disease control, social security and emergency management, the situation in Yangshuo is generally good, providing a safe living environment for residents, good travel experience for visitors, and sound recovery of local tourism after the pandemic.
  
- **Pandemic control and post-flood recovery are effective; normalized emergency management should be enhanced**
  - After each round of small-scale outbreaks in China, local screening was quickly conducted in Yangshuo. During that period, all efforts were efficiently made in Yangshuo, with no local or aggregated cases occurring and no medical personnel infected
  - In terms of flood prevention and control, the county government issued the "Yangshuo County 2021 Geological Disaster Prevention and Control Program". The 2022 flood caused great property damage in Yangshuo, so government should continue to strengthen regular emergency management in the future, and optimize the early warning mechanism to ensure the effective dissemination of information
  
- **Enhance public security; create a safe and satisfactory environment**
  - In general, the supervision of food hygiene and safety is strengthened and tourist satisfaction has improved compared to last year. In terms of security, nearly 10% of tourists disagree that Yangshuo has a secure environment, so there is still much to improve, especially in spots such as West Street, which are mainly visited at night. Tourists' perception of security and safety largely affect their consumption behavior in these places.
  - According to statistics, the security of accommodation and social management is basically good, which should be maintained in the future.

## ➤ Continue to deal with pollution; enhance the construction of smart city

- In terms of residents' perceptions, people are less satisfied with local environmental protection than security situation and medical services, which indicates that Yangshuo has good security management and tourism has played a role in promoting local medical service
- Pollution issue has become prominent, disturbing the normal life of residents. Efforts in preventing and controlling air and water pollution should be enhanced
- Expand the application and monitoring coverage of technologies in building a smart city

## ➤ Enhance the management of tourist flow in peak season in order to improve travel experience

- The majority of tourists are basically satisfied with food hygiene, environment quality, accommodation security and social management
- Tourists have higher demands on the scenic environment, especially the infrastructure such as toilets. They are less satisfied with toilets than accommodation social security. Toilets in some scenic spots such as West Street still have the problems of low quantity, unreasonable distribution, poor quality and lack of management, which negatively affects the destination image, so Yangshuo must pay due attention to it.
- During the peak season, the management of tourists flow is important. The planning and management of visiting routes should be enhanced in order to ensure tourists' satisfaction.

# The effects of climate change

## Tourism and environmental protection

- ❑ Natural disasters frequently happen under the context of climate change; the attention should be paid to the resilience of tourism
- All indicators can meet the secondary standards of ambient air quality

Figure 3-6-1 The air quality of Guilin City in 2021 compared with 2020

Substance	Item	Daily average concentration range	Annual average	Compare with 2019
SO <sub>2</sub>		4~71μg/m <sup>3</sup>	11μg/m <sup>3</sup>	10.0%↑
NO <sub>2</sub>		7~71μg/m <sup>3</sup>	20μg/m <sup>3</sup>	11.1%↑
PM10		6~158μg/m <sup>3</sup>	45μg/m <sup>3</sup>	4.7%↑
CO		0.4~1.6mg/m <sup>3</sup>	1.2mg/m <sup>3</sup>	The same
O <sub>3</sub>		7~167μg/m <sup>3</sup>	121μg/m <sup>3</sup>	2.4%↓
PM2.5		4~133μg/m <sup>3</sup>	29μg/m <sup>3</sup>	The same
PH value of precipitation		3.72~7.66	4.80	0.33↓

### ➤ Floods are getting more serious every year, threatening the recovery of tourism

According to the interviews, in recent years, summer flooding has become increasingly severe and affected economic operations. In 2020, Guilin witnessed nine rounds of heavy rainfall; flood rainfall was 50% more than previous years. Yangshuo, Yongfu and other places broke the historical record of rainfall. According to statistics, the city's floods affected 874,000 people, causing direct economic losses of 9.32 billion yuan.

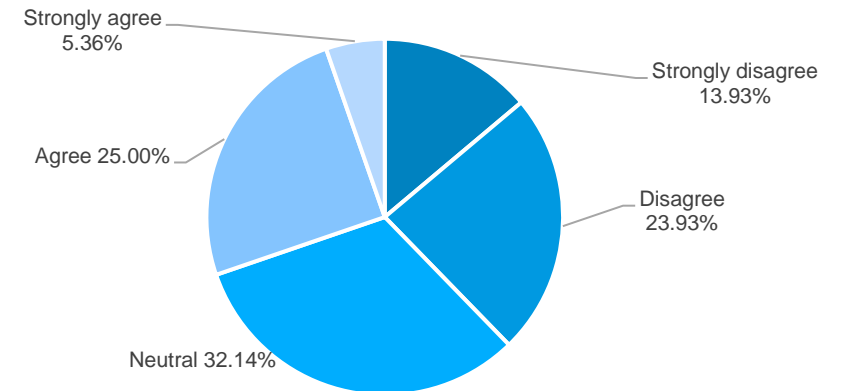


Figure 3-6-1 Resident attitude towards "tourism causes water pollution" 40



## □ The uniqueness of the consumer industry is weakened, and business chaos frequently occurs

Due to the pandemic, the decrease of international tourists has led to a significant structural shift in local consumer industry in Yangshuo. The influx of large amounts of domestic capital and consumer industries has to some extent weakened the spatial characteristics of cross-cultural consumption. A large number of homogenized tourism consumer industries have largely damaged the original supply of quality tourism products and services. The high concentration of consumption places, including beer fish and nightclubs in tourist attractions as long as cases of forced canvassing and forced consumption, have had a negative impact on the image of tourist destinations.



Wordle of comments on Shili Gallery and Xingping ancient town



Unpleasant color scheme of farmhouse hotel



Massive influx of vendors

## □ The coordination of destination spots needs to be improved

The results of the research show that in terms of ecological landscape renovation and restoration, flood disaster management, Yangshuo County has increased its efforts to rectify the situation within its jurisdiction, but a considerable number of low-end B&Bs, farmhouses, tourist villages still operate in isolation and even in vicious competition. The number of stacked, single-style signs and advertisements seriously affect the overall image of destination.



The disharmony between architecture and natural landscape



Low-quality concentration of B&Bs



Shabby signboard affects the destination image

## ❑ Improve the ability to provide public service and the supply level of tourism facility

- Effectively absorb external resources and social capital into local development, and mobilize all parties to participate in the development of tourism positively and inclusively
- With the opportunity of local tourism development, further optimize local infrastructure construction and enhance transportation

## ❑ Enhance the supervision of products and services; develop benign operation pattern

- Yangshuo has developed a special supply of consumer products and services in interaction with domestic and foreign tourists.
- While advancing the tourism industry steadily, social issues arising in the course should be given priority and positive response.
- Continuously optimize the overall market environment and business order in Yangshuo, cultivate and enhance the awareness of residents and tourism practitioners in environmental protection, tourism development, and business philosophy

## ❑ Upgrade tourist experience; explore potential types of consumption and sightseeing

- Promote real-time updating of tourism information systems and high-quality supply of service facilities in the region
- Encourage the development of sharing economy and enhance the quality and efficiency of the diversified forms of tourism such as self-guided tours, parent-child tours and customized tours
- Focus on consumption needs and preferences of specific tourism market, and deeply explore the night-time economic model and the natural and cultural landscape of Yangshuo in festivals
- Mitigate the harms of weather, natural disasters and other unforeseen conditions on tourism

## □ Enhance the anti-risk ability of industries; improve the recovery capacity of local tourism

- To deal with the impact of annual flood disasters in the region, it is necessary to both figure out the root cause and improve warning mechanism
- On the one hand, the local responsible entity should adhere to the construction of long-term early warning mechanism for natural disasters and improve the emergency warning mechanism and real-time monitoring system
- On the other hand, communication systems, SMS notification, network warning, information release and other diversified ways should be integrated, in order to achieve multi-channel full coverage. Early notification of information and active prevention of flood disasters should also be enhanced.

## □ Follow the latest policy and regulations of pandemic control; prepare for the recovery of tourism market

- Strengthen the training in tourism industry, improve the knowledge of personnel about the latest policies and management methods
- Seize the tourism dividend after the pandemic, innovate tourism publicity and production, expand tourism service supply
- Make good emergency plans, improve the quality of medical service, and provide effective treatment for tourists attacked by illnesses

## □ The goal of monitoring and goal attainment

- The monitoring period is 9 days; the overall research is completed on six major topics of Yangshuo tourism: “Tourism and Community”, “Tourist Satisfaction”, “Tourism Economy and Resilience in the Pandemic”, “Health and Safety”, “Tourism Planning and Control”, and “Tourism and Environmental Protection”; the annual monitoring report was finished. The report discovers that Yangshuo is able to maintain stable economic and social development against the backdrop of normalized pandemic prevention and control. The chaos in tourism has been gradually solved, with overall high support and satisfaction from residents and tourists. However, long-term pandemic prevention and control has caused great damage to tourism development, and difficulties, such as insufficient investment incentives and pressure on employment, need to be addressed.

## □ The methods and procedures of monitoring need to be improved

- This monitoring work was carried out after the flood attacked Yangshuo. On the one hand, some businesses have not resumed normal operation, so the flood had an impact on the efficiency and quality of research on small enterprises and tourism practitioners; On the other hand, the impact of continuous rainstorm also affected the monitoring of environment, water quality, air quality and other aspects during the flood period; Finally, given that the flood affected the operation of tourism enterprises and bamboo rafting along the Yulong River, the lack of relevant research may lead to incomplete monitoring results. In addition, due to the lasting entry control policy, although the number of foreign tourists increased slightly since 2011, it remains small in general. In the future, a more scientific plan of monitoring should be drawn.

### □ **The monitoring content can be improved according to the new situation of pandemic control**

- The monitoring in the past year was carried out chiefly based on the conventional practice. On the one hand, some new topics on sustainable development, such as the overflow of tourism market supply, corporate social responsibility, urban-rural differences, could be included in the future. On the other hand, with the change of policies, the impact of pandemic on Yangshuo's tourism should be entirely reviewed. In general, the monitoring team should restructure research, according to the new reality of pandemic control, in order to ensure the continuity, timeliness and scientific nature of the monitoring work of sustainable tourism development.