International Journal of Geo-Information

MDPI

Article

Spatial Pattern and Formation Mechanism of Rural Tourism Resources in China: Evidence from 1470 National Leisure Villages

Yuchen Xie [1], Xiangzhuang Meng [1], Jeremy Cenci [2] and Jiazhen Zhang [2,*]

[1] Faculty of Landscape Architecture, Northeast Forestry University, Hexing Road, 26, Harbin 150040, China
[2] Faculty of Architecture and Urban Planning, University of Mons, Rue d'Havre, 88, 7000 Mons, Belgium
* Correspondence: jiazhen.zhang@umons.ac.be

Abstract: Rural tourism development has been an essential driving force behind China's promotion of integrated urban–rural development, sustainable rural development and rural revitalization in the new era. This study included 1470 villages on the national list of beautiful leisure villages in China (BLVCs) from 2010 to 2021. We explored the distribution characteristics and influencing factors based on mathematical statistics and spatial analysis in ArcGIS to provide a theoretical reference for promoting the development of leisure village agriculture and rural tourism. The results show that the distribution of BLVC presents a clustered state, showing a distribution pattern of a dual core, seven centers and multiple scattered points. BLVCs are mainly distributed in areas with flat terrain and sufficient water resources, which are conducive to agricultural production and life. Having convenient transportation and rich tourism resources aids the promotion of rural tourism development. The resulting gap in regional development is balanced to some extent by government support. The research results provide a reference value for future rural spatial optimization and sustainable development. This paper summarizes the law of rural development and clarifies the factors influencing the development of rural tourism, and it provides the Chinese experience as a model for a rural renaissance empowered by rural tourism.

Keywords: ArcGIS; beautiful leisure villages in China; influencing factors; rural development; rural revitalization; rural tourism; spatial analysis; spatial distribution

Citation: Xie, Y.; Meng, X.; Cenci, J.; Zhang, J. Spatial Pattern and Formation Mechanism of Rural Tourism Resources in China: Evidence from 1470 National Leisure Villages. *ISPRS Int. J. Geo-Inf.* **2022**, *11*, 455. https://doi.org/10.3390/ijgi11080455

Academic Editors: Wolfgang Kainz and Godwin Yeboah

Received: 29 June 2022
Accepted: 17 August 2022
Published: 20 August 2022

1. Introduction

The beautiful leisure village is a rural development model that closely combines rural leisure tourism and rural ecological construction. It is one of the fundamental ways to boost rural revitalization and development in China. Since the Industrial Revolution, with the continuous advancement of the urbanization process, the imbalance between urban and rural development has been a common problem faced by human settlement environments around the world [1,2]. It directly affects national economies and people's livelihoods, resulting in declining rural areas and agriculture, along with urban environmental problems [3,4]. For this reason, developed countries abroad such as Germany, Japan, South Korea and the United States have carried out a long-term and localized exploration of rural rejuvenation [5–7]. China is one of the most populous countries globally and has experienced rapid urbanization, with around 690,000 administrative villages and the rural population accounting for about 36.1% of the country's total population [8–10]. Approximately 6.7% of the population worldwide lives in China's rural areas, and this vast number cannot be ignored. Since the 21st century, China has successively implemented macro strategies such as coordinating urban and rural development, new rural construction, urban–rural integration and new urbanization [11,12]. In the 2013 national policy document, the goal of building beautiful villages was proposed for the first time [13]. The construction of the leisure village can be seen as a further exploration of and primary

breakthrough in leisure tourism [14]. The Ministry of Agriculture and Rural Affairs of China carried out a nationwide identification. The brand construction of beautiful leisure villages in China (BLVCs) has great significance and an important role in promoting the integration of rural primary, secondary and tertiary industries and enabling rural economic development [15,16]. Against the background of China's development in the new era, the rural revitalization strategy proposal at the 19th National Congress of the Communist Party of China 2017 (the highest level of meetings of the Chinese Communist Government) also brought new aid and opportunities to the construction of beautiful leisure villages [17]. Since the end of 2019, the global coronavirus disease 2019 (COVID-19) outbreak has changed people's inherent way of life, with more attention being paid to health and the environment [18,19]. Compared with the crowded urban environment and complex inhabitants, the relatively stable rural living population, broad spaces and self-sufficient sustainable food guarantee a healthy rural life [20]. This global epidemic has objectively promoted a population return and tourism boom in rural areas [21].

Therefore, as an important engine to promote rural revitalization, industrial prosperity and farmers' income, leisure agriculture and rural tourism have become the new research topics [22,23]. Previous studies have mainly tended to focus on the sustainable development of rural tourism, rural land use and resource evaluation, the exploration of the tourism development mode, etc. The research methods have mainly been a combination of qualitative and quantitative [24–27]. International scholars have conducted many studies on the development mode and impact effect of rural tourism, and they all agree that the development of rural tourism has a positive impact on rural economies. Scholars have also carried out early research in the field of tourism spatial structures. The research methods have ranged from the early application of location theory to theoretical basic research and then to empirical research on tourism destinations [28,29]. Research on the factors influencing rural settlements has gradually developed from natural factors to comprehensive factors such as nature, the economy and society [30]. With the development of rural areas in developed countries, increasingly more research is being focused on the social and humanistic fields and the impact of human beings. There is still a lack of quantitative research on the influencing factors. In light of the practical problems caused by unreasonable planning, excessive development and homogenization in domestic rapid rural construction, scholars have also carried out research and analysis of the spatial distribution characteristics and influencing factors and combined it with ArcGIS technology to provide spatial analysis, data processing and other analysis support [31–33]. Most research has focused on traditional villages, rural settlement spaces and key rural tourism villages in provinces, cities, counties and specific areas [34–36]. There are fewer macroscopic analyses at the national level. Meanwhile, most of the existing studies have taken the National Key Villages for Rural Tourism list as the research object, a list that was only proposed three years ago. The number of selected villages varies each year greatly [37,38]. Therefore, this list relatively lacks maturity of the selection criteria. A limited number of scholars has taken the whole of BLVCs as the research object. However, the research time period is earlier, there is a lack of recent list updates, the amount of data is small, and the analysis of the factors affecting the distribution of rural leisure points also needs to be more in depth.

In China, provincial and municipal organizations have published many similar rural development lists [39,40]. As the most authoritative government agency currently coordinating China's rural revitalization strategy, the list released by the Ministry of Agriculture and Rural Affairs of China is a direct implementation of the central government document's spirit [41]. Based on this situation, this study obtained the BLVC list from 2010 to 2021 and carried out data cleaning on it. A total of 1470 villages listed within 12 years were studied and analyzed quantitatively, using ArcGIS software as the research tool. From the national perspective, this study analyzed 12 batches of beautiful leisure villages nationwide. We updated and revealed the spatial distribution characteristics of BLVCs, combining quantitative and qualitative analysis of the influencing factors. This paper summarizes the law of rural development and provides scientific methods for further integrating development

elements and optimizing spatial patterns in rural areas. Furthermore, through the practical application of rural tourism development, we show the clear advantages and positive role that it has. This study provides a reference and quantitative scientific basis for the overall future development and planning of leisure villages. It is expected to inject a new impetus into rural revitalization in China and provide the Chinese experience as an example for rural revitalization in other countries.

2. Materials and Methods

2.1. Material Sources

The raw data used in this study were obtained from the 1470 administrative villages designated in the BLVC list from 2010 to 2021. The geospatial data were derived through the Google Maps coordinate picker and imported into the ArcGIS 10.2 platform to establish a database for analysis. Other statistical data for this study were gathered from the National and Local Government Report and Statistical Yearbook of 2021.

The list of BLVCs is released by the Ministry of Agriculture and Rural Affairs of China (http://english.moa.gov.cn/, accessed on 20 April 2022), which primarily recommends administrative villages with a strong demonstration of and a driving role in rural leisure tourism and tourism [42]. The selection list was proposed in 2010, with 1472 sample points in the 12 batches selected in 2021 (Figure 1). In the spatial layout of China's villages, the village committee is generally located in the center of the village, which is the most suitable point to represent the village's geographical location. Villages that did not identify a village committee selected central buildings or squares with similar characteristics and used the Google Maps coordinate picker to obtain detailed coordinate data.

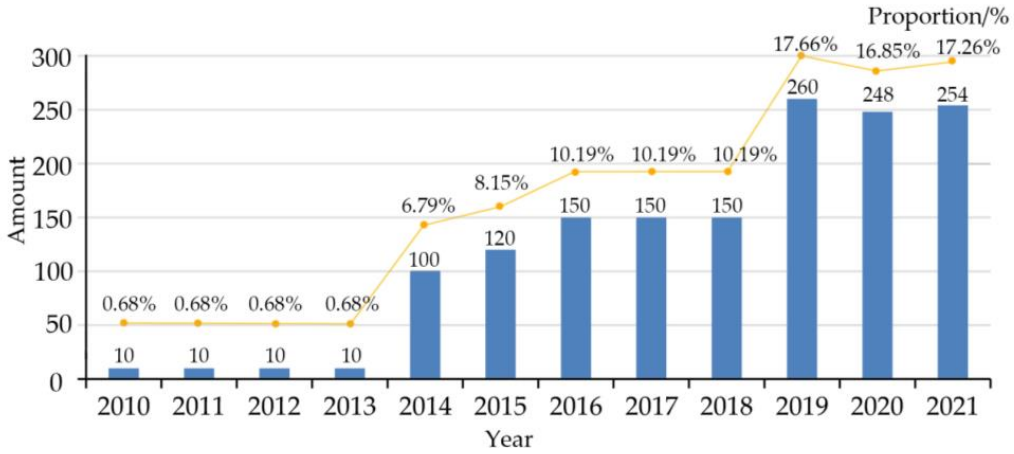

Figure 1. The development process of the list of beautiful leisure villages in China.

After the accurate positioning and sorting of the original data of the sample points (eliminating two coincident samples), the effective 1470 study samples were input into ArcGIS10.2 software (Redlands, United States), developed by the Environmental Systems Research Institute (ESRI) in the United States, to coordinate the registration and projection transformation and to establish the spatial information database. Furthermore, the point elements were visually expressed on a map of China to generate a geographical distribution map of BLVCs (Figure 2). The map of China was derived from the Ministry of Natural Resources Map Technical Review Center's (https://www.zrzyst.cn/, accessed on 20 April 2022) standard map, and social and economic primary data were sourced from China's provincial and prefecture-level government work report and statistical yearbook in 2021.

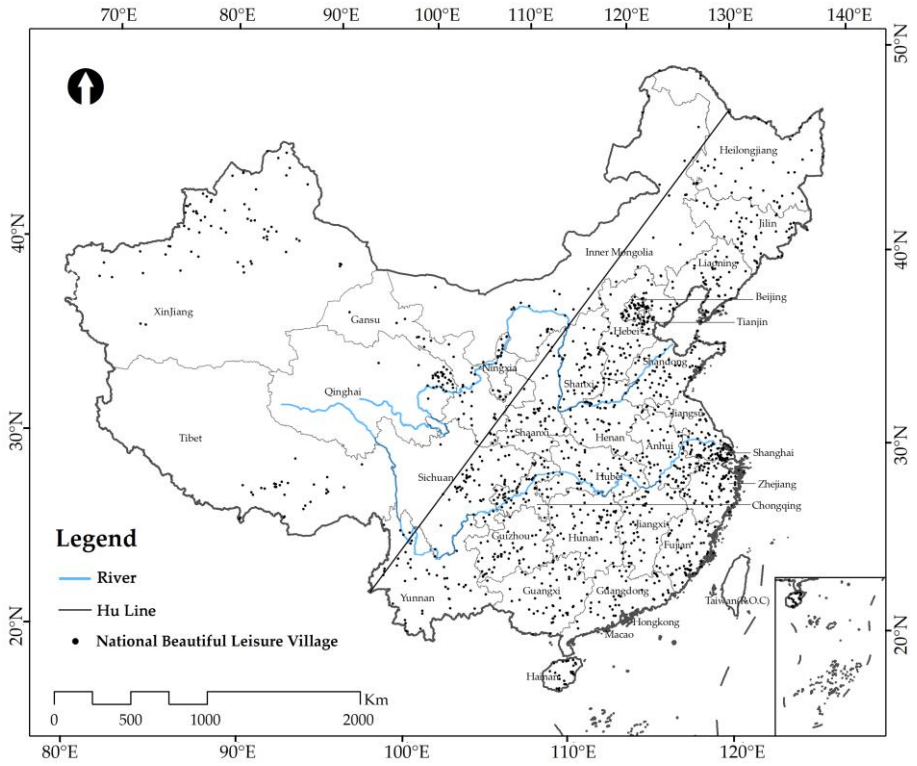

Figure 2. Geographical distribution of beautiful leisure villages in China.

2.2. Study Methods

This study was based on geospatial and mathematical-statistical analysis, using ArcGIS 10.2 to provide robust data processing tools and information analysis. We adopted the kernel density method to intuitively reflect the aggregation characteristics and distance decay effect of spatial points and combined the nearest neighbor index, imbalance index and Gini coefficient to quantify the statistical evaluation further. We studied the spatial distribution characteristics and overall pattern of BLVCs from the four dimensions of the spatial distribution pattern, distribution density, distribution discrepancies and distribution cluster. In addition, this study selected the influencing factors, such as nature and humanity, related to rural distribution characteristics for qualitative and quantitative analysis. Using the SPSS 26.0 tool, Pearson correlation analysis was performed to derive more significant influencing factors and to compensate for the lack of quantitative analysis of the influencing factors. This study achieved a comprehensive and deep spatial structure analysis and obtained the influencing factors (Figure 3).

2.2.1. Nearest Neighbor Analysis

In the geographical and spatial distribution of BLVCs, the mutual proximity degree of the point elements is described through the nearest proximity index to understand the aggregation degree and distribution type of BLVCs from the macro perspective [43]. The formula is as follows:

$$\overline{r_E} = \frac{1}{2\sqrt{n/A}} = \frac{1}{2\sqrt{D}}, \quad (1)$$

$$R = \frac{\overline{r_i}}{\overline{r_E}} \quad (2)$$

In Equation (1), $\overline{r_E}$ is the theoretical nearest distance, A denotes the total area of China, n represents the number of BLVCs and D stands for the point density. The nearest point index R of the BLVCs is the ratio of the average nearest distance $\overline{r_i}$ and the theoretical nearest distance $\overline{r_E}$, such as in Equation (2). When $R > 1$, the dot elements tend to be

distributed evenly. When $R = 1$, the dot elements are distributed randomly. When $R < 1$, the dot elements tend to condense the distribution.

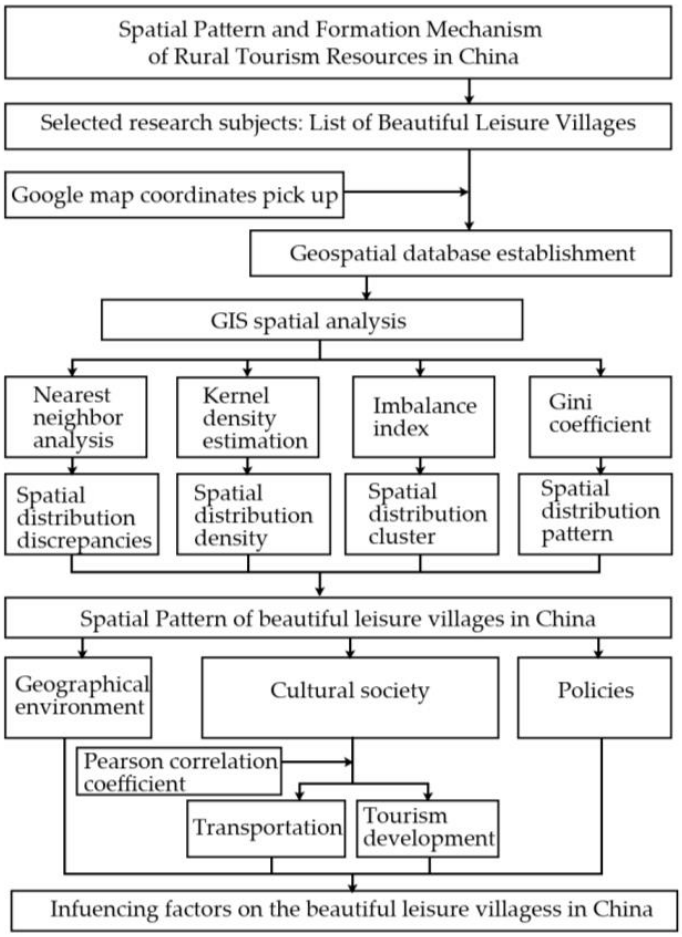

Figure 3. Flow diagram of research ideas.

2.2.2. Kernel Density Estimation

Kernel density estimation is a nonparametric method for estimating the probability density function. It was used to study the morphology and change in the spatial distribution density of point elements in the region, reflecting the dispersion and aggregation characteristics of the BLVCs in this study [44]. Its formula is as follows:

$$f_n(x) = \frac{1}{nh} \sum_{i=1}^{n} k\left(\frac{x - X_i}{h}\right) \tag{3}$$

where $f_n(x)$ represents the kernel density estimate of the BLVCs, n is the number of BLVCs, $k\left(\frac{x-X_i}{h}\right)$ denotes the kernel function, $x - X_i$ stands for the distance between the estimated point x and the sample X_i, and h represents the bandwidth. The more significant kernel density estimates indicate a denser distribution of points.

2.2.3. Imbalance Index

The imbalance index reflects the distribution of BLVCs in different areas. To show the difference in their spatial distribution, the Lorentz curve was applied to further analyze the equilibrium degree of the BLVCs [45,46] with the following formula:

$$S = \frac{\sum_{i=1}^{n} Y_i - 50(n+1)}{100 \times n - 50(n+1)} \tag{4}$$

where S represents the imbalance index, n is the number of administrative areas and Y_i denotes the cumulative percentage of the ith region in the total amount in descending order. Given that $0 \leq S \leq 1$: $S = 0$ indicates that the BLVCs are evenly distributed in all areas, $S = 1$ implies that the BLVCs are concentrated in one of the regions, and $0 < S < 1$ indicates an unbalanced distribution in each region.

2.2.4. Gini Coefficient

This study used the Gini coefficient to analyze the spatial structure layout of BLVCs in the discrete partition in order to judge the distribution balance degree in the geographical national partition [47]. Its formula is

$$G = \frac{-\sum_{i=1}^{n} P_i ln P_i}{lnN} \tag{5}$$

$$C = 1 - G \tag{6}$$

In Equation (5), G is the Gini coefficient, n represents the number of samples in the partition, P_i stands for the proportion of BLVCs in the ith geographical division to the national total and N indicates the number of partitions. In Equation (6), C represents the distribution uniformity. Theoretically, the Gini coefficient is between 0 and 1, and the larger the Gini coefficient, the higher the concentration.

2.2.5. Pearson's Correlation Coefficient

The influencing factors influence the spatial distribution of BLVCs. To explore the influence degree of various factors, this study used the correlation analysis method to reflect the interrelationship between the spatial distribution and the influencing factors of BLVCs [48], and its formula is

$$r = \frac{\sum_{i=1}^{n}(x_i - \overline{x})(y_i - \overline{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \overline{x})^2}\sqrt{\sum_{i=1}^{n}(y_i - \overline{y})^2}} \tag{7}$$

where x represents the number of BLVCs in various administrative regions, y is the influencing factor of the spatial distribution and r denotes the correlation coefficient. Given that $-1 \leq r \leq 1$, $r > 0$ implies that the spatial distribution is positively correlated with the influencing factors, and the larger the correlation coefficient, the stronger the correlation. When $r < 0$, this implies that the spatial distribution is negatively correlated with the influencing factors.

3. Results

3.1. Overview of the Study Subjects

The list of BLVCs was released by the Ministry of Agriculture and Rural Affairs in 2010 and was initially named China's Most Charming Leisure Villages [49]. In the yearly continuation and adjustment of the standards, the BLVC selection system has become more complete, covering more diverse villages. The list is updated every year. By 2021, a total of 1470 projects had been released in 12 batches, forming a nationwide brand network of BLVCs representing the rural tourism destinations that people yearn for [50]. After sorting and conducting a statistical analysis of the list, it was found that these villages are scattered and centrally distributed in 31 administrative regions (Table 1), which account for 91.18% of the administrative regions. Zhejiang province has a total of 72 BLVCs, the most significant number (accounting for 4.90% of the national total), while the smallest number is in the Ningxia region, with a total of 22 villages accounting for 1.50% of the national total. Overall, the distribution in most provinces is relatively balanced with a large quantity gap in some parts.

Table 1. Regional distribution statistics of beautiful leisure villages in China.

No	Administrative Region	Amount	Proportion (%)	Cumulative Proportion (%)
1	Zhejiang	72	4.90%	4.90%
2	Xinjiang	68	4.63%	9.53%
3	Shandong	64	4.35%	13.88%
4	Jiangsu	62	4.22%	18.10%
5	Fujian	62	4.22%	22.31%
6	Sichuan	57	3.88%	26.19%
7	Anhui	55	3.74%	29.93%
8	Hubei	54	3.67%	33.61%
9	Hunan	54	3.67%	37.28%
10	Chongqing	54	3.67%	40.95%
11	Jiangxi	53	3.61%	44.56%
12	Liaoning	52	3.54%	48.10%
13	Guangxi	51	3.47%	51.57%
14	Henan	50	3.40%	54.97%
15	Shaanxi	50	3.40%	58.37%
16	Hebei	48	3.27%	61.63%
17	Shanxi	48	3.27%	64.90%
18	Jilin	47	3.20%	68.10%
19	Guizhou	47	3.20%	71.29%
20	Yunnan	47	3.20%	74.49%
21	Guangdong	43	2.93%	77.42%
22	Beijing	42	2.86%	80.27%
23	Inner Mongolia	42	2.86%	83.13%
24	Heilongjiang	41	2.79%	85.92%
25	Gansu	37	2.52%	88.44%
26	Shanghai	35	2.38%	90.82%
27	Qinghai	32	2.18%	93.00%
28	Tibet	28	1.90%	94.90%
29	Tianjin	27	1.84%	96.74%
30	Hainan	26	1.77%	98.51%
31	Ningxia	22	1.50%	100.00%
32	Hongkong	0	0.00%	100.00%
33	Macao	0	0.00%	100.00%
34	Taiwan (the Republic of China)	0	0.00%	100.00%
	Total	1470	100.00%	100.00%

In the past 12 years and 12 batches, the annual number of BLVCs has gradually increased. According to the selection number and definition criteria changes, there have been three development stages:

(1) From 2010 to 2013, in the early stage of development, 10 villages were selected every year, and the number of areas and villages involved in the list remained unchanged. Within 4 years, the selection involved 22 provinces and administrative regions. The initial criteria definition was less dimensional, mainly focusing on external conditions such as complete management and facilities. In 2007, the 17th National Congress of the Communist Party of China proposed to "*coordinate urban and rural development and promote the construction of a new socialist countryside*" [51]. In 2008, Anji County in Zhejiang province formally proposed the "*Chinese Beautiful Village*" plan, which promoted the development of rural construction in various areas [52].

(2) In 2014–2018, the number of defined villages increased in uniform growth in the middle of development. In 2013, national policy documents first proposed the goal of the new rural construction of "*beautiful villages*", promoting protection of the rural ecological environment and the village's appearance and gradually enriching the types of BLVCs [53]. After 2014, the defined number of BLVCs increased significantly compared with the initial stage and then gradually stabilized at 150 villages every

year. In 2018, the 19th National Congress of the Communist Party of China proposed the rural revitalization strategy, which became the guide for rural development in the new era [54].

(3) From 2019 to 2021, the development of BLVCs also entered a new growth stage. Compared with 2018, the defined number increased by 110, nearly three times the growth rate of the second stage. The definition standard tended to improve, and more attention was paid to displaying the villages' advantages and characteristics.

Since 2014, the connotation and type of BLVC have been gradually extended, and the list has been divided into four categories: characteristic residential villages, ancient villages, characteristic folk villages and modern new villages. This reflects the redefinition of BLVCs by the Ministry of Agriculture and Rural Affairs. Beauty and leisure can include characteristic architecture, rich culture and unique folk customs, as well as new villages and their atmosphere, covering a wide range conducive to the development of village characteristics [55].

However, this classification does not cover all batches of the list, so the continuation of the classification and list definition standards resulted in the list of BLVCs being divided into four categories. There are differences in category distributions from regional distribution due to different geographical climates, economic development and population distribution (Figure 4). The villages featuring folk culture and local dwellings are predominant in terms of quantity. Village characteristics and lifestyles, unlike those of cities, have become the main attraction of rural leisure tourism [56]. Nevertheless, due to various reasons, such as development, natural disasters, backward economic development and lifestyle changes, the retention of ancient villages has proven to be quite difficult. Urbanization and the erosion of the village has led to most of the historically ancient villages being far from the economically developed urban centers, such as Guangxi, Yunnan, Fujian and Guizhou. However, modern new villages combine the overall needs of urban and rural people, are closer to developed cities such as Chongqing, Sichuan, Shanghai and Hebei and have relatively diversified forms and facilities. The modern new villages also encourage construction in a few remote and poor areas, such as Xinjiang, to balance the gap between urban and rural communities.

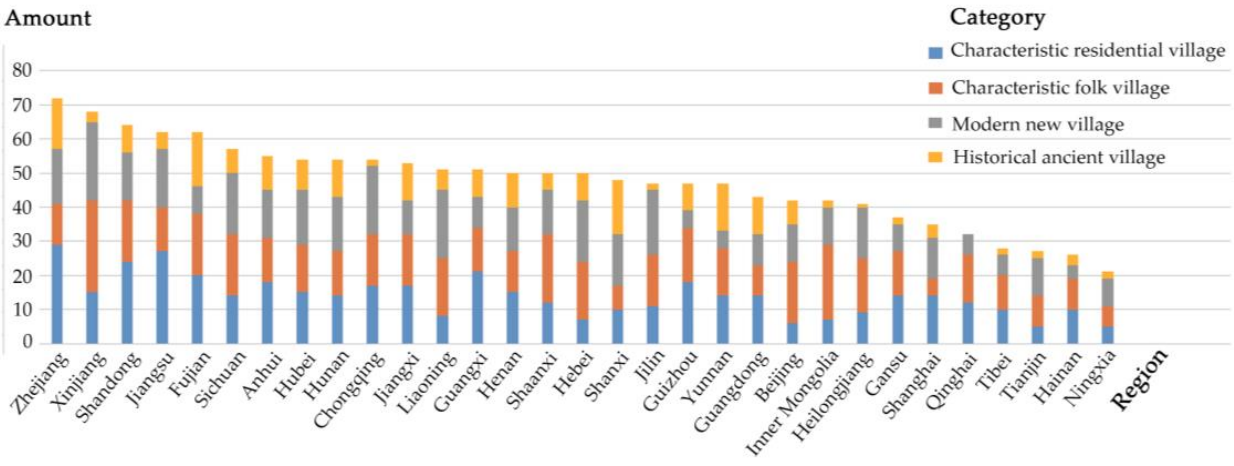

Figure 4. Regional distribution of the classification of beautiful leisure villages in China.

3.2. Spatial Distribution Characteristics

3.2.1. Spatial Distribution Pattern

Usually, point elements are concentrated, random and uniform in the regional space, and their spatial distribution form can be quantitatively analyzed using the nearest neighbor index method. We used the ArcGIS 10.2 Average Nearest Neighbor tool to perform a nearest neighbor analysis of 1470 BLVCs. The average actual nearest distance was 28.514 km, and the theoretical nearest distance was 40.319 km (where A = 9,552,570 km^2, excluding Hong

Kong and Macao), and hence the nearest neighbor index was $R = 0.707211$. As $\overline{r_i} < \overline{r_E}$, the two ratios were less than one, indicating that the spatial distribution of BLVCs is concentrated.

3.2.2. Spatial Distribution Density

The overall distribution of BLVCs is a gathering trend. Through the kernel density estimation value, the spatial distribution density of BLVCs can be further defined in the region. It can be even more intuitively displayed on a map. The kernel density was estimated using the Density tool in ArcGIS 10.2. The calculated density values were divided into four categories using the natural breakpoint method: kernel density, high density, medium density and low density (Table 2). Finally, the spatial kernel density distribution map of BLVCs was generated (Figure 5). The spatial distribution density varied significantly in different regions. Compared with the northwest, the southeast has apparent aggregation. On the whole, a distribution pattern of "dual core, seven centers and multiple scattered points" appeared.

Table 2. Kernel density analysis of beautiful leisure villages in China.

Density Classification	Administrative Region	Amount	Kernel Density Zone
Core density	* Beijing	42	10.09–17.98
	* Tianjin	27	10.09–17.98
	Hebei	48	5.36–10.09
	* Shanghai	35	10.09–17.98
	* Zhejiang	72	10.09–17.98
	* Jiangsu	62	10.09–17.98
	Anhui	55	5.36–10.09
	* Chongqing	54	5.36–10.09
	Sichuan	57	5.36–10.09
	* Henan	50	5.36–10.09
	Shanxi	48	5.36–10.09
	* Hunan	54	5.36–10.09
High density	Jiangxi	53	2.89–5.36
	Hubei	54	2.89–5.36
	* Qinghai	32	5.36–10.09
	Gansu	37	1.06–2.89
	* Fujian	62	5.36–10.09
	Guangdong	43	2.89–5.36
	* Liaoning	52	2.89–5.36
	* Hainan	26	5.36–10.09
Medium density	Shandong	64	2.89–5.36
	Shaanxi	50	2.89–5.36
	Jilin	47	2.89–5.36
	Heilongjiang	41	1.06–2.89
	Guizhou	47	2.89–5.36
	Yunnan	47	1.06–2.89
	Guangxi	51	2.89–5.36
	Ningxia	22	2.89–5.36
	Xinjiang	68	2.89–5.37
Low density	Inner Mongolia	42	1.06–2.89
	Tibet	28	1.06–2.89

* Represents the core of the zone.

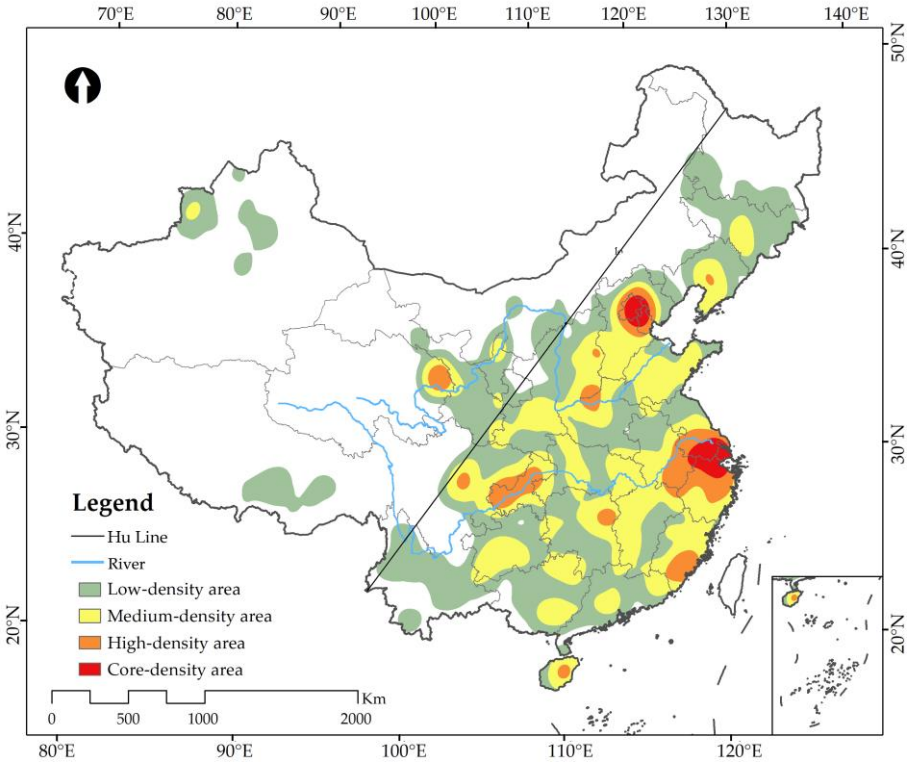

Figure 5. Spatial kernel density distribution of beautiful leisure villages in China.

(1) "Dual core" refers to two core density areas: the Yangtze River Delta region bordering Shanghai (35), Zhejiang (72) and Jiangsu (62) as the core, radiating to Anhui (55), and Beijing (42) and Tianjin (27) as the core, which then radiates to Hebei (48). The kernel density index of the core density was between 5.36 and 17.98.

(2) "Seven centers" refers to seven high-density core regions: Chongqing (54) as the center radiating to Sichuan (57), Henan (50) as the center radiating to Shanxi (48), Hunan (54) as the center radiating to Jiangxi (53) and Hubei (54), Qinghai (54) as the center radiating to Gansu (53) and Fujian (63) as the center radiating to Guangdong (43), with the remaining locations of Liaoning (52) and Hainan (26) being two single-center areas. The kernel density index in the high-density region was between 1.06 and 10.09.

(3) "Multiple scattered points" refers to the 11 scattered points distributed in other parts of China, including Shandong (64), Shaanxi (50), Jilin (47), Heilongjiang (41), Guangxi (51), Ningxia (22), Xinjiang (68), Inner Mongolia (42) and Tibet (28). The kernel density indexes of the medium and low densities were between 1.06 and 5.36.

3.2.3. Spatial Distribution Discrepancies

In 1935, Hu proposed the population-dividing line of China, namely the Tengchong-Heihe line [57]. With the Hu line as the boundary, most BLVCs are distributed to the southeast of the line, and there are noticeable distribution differences on both sides of the Hu line. According to Equation (4), through the calculation and analysis of the data in Table 1, the imbalance index $S = 0.226552$ and $0 < S < 1$, so the distribution of each region is unbalanced. However, the imbalance index is relatively low, indicating that a certain number of BLVCs is distributed in each administrative region. The Lorentz curve (Figure 6) was drawn according to the cumulative proportion of BLVCs in different administrative regions, and it shows an upward convex trend [46]. The sum of beautiful leisure villages in the Zhejiang, Xinjiang, Shandong, Shandong, Jiangsu, Fujian, Sichuan, Anhui, Hubei, Hunan, Chongqing, Jiangxi, Liaoning, Guangxi and Guangxi provinces alone reached 51.57% of the total, which further shows that the spatial distribution of BLVCs is imbalanced.

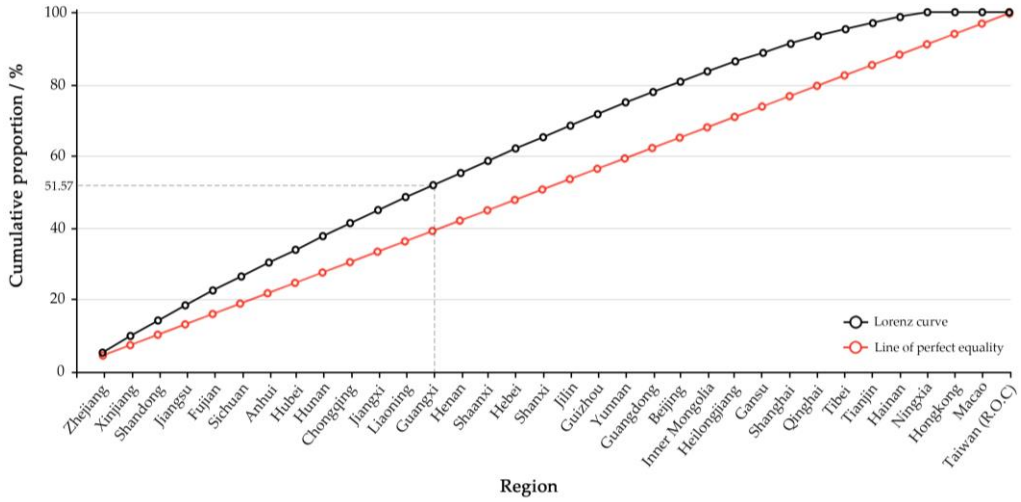

Figure 6. The Lorentz curve of beautiful leisure villages in China.

3.2.4. Spatial Distribution Cluster

In this study, taking physical geography as a primary, integrating cultural, economic and political consideration, the 34 administrative regions of China were generally divided into 7 geographical divisions—east, southwest, north, northeast, central, northwest and south—and the number of distributions was counted (Table 3) [58]. According to the statistical analysis, the distribution of BLVCs varies considerably among the 7 geographical divisions, with the largest distribution proportion of the eastern villages accounting for 27.41% of the total. The southern region has the smallest proportion at only 8.16%. The distribution imbalance is clear, and the distribution proportion of the eastern and southwest regions alone reaches 43.27%.

Table 3. Statistics of the distribution of beautiful leisure villages in seven geographical divisions in China.

No	Administrative Division	Amount	Proportion (%)	Cumulative Proportion (%)
1	East (Shanghai, Jiangsu, Zhejiang, Anhui, Jiangxi, Shandong, Fujian, Taiwan (R.O.C.))	403	27.41%	27.41%
2	Southwest (Chongqing, Sichuan, Guizhou, Yunnan, Tibet)	233	15.85%	43.27%
3	Northwest (Shaanxi, Gansu, Qinghai, Ningxia, Xinjiang)	209	14.22%	57.48%
4	North (Beijing, Tianjin, Shanxi, Hebei, Inner Mongolia)	207	14.08%	71.56%
5	Central (Henan, Hubei, Hunan)	158	10.75%	82.31%
6	Northeast (Heilongjiang, Jilin, Liaoning)	140	9.52%	91.84%
7	South (Guangdong, Guangxi, Hainan, Hong Kong, Macao)	120	8.16%	100.00%
	Total	1470	100.00%	100.00%

Based on calculating the distribution proportion of BLVCs in seven geographical divisions, Gini coefficient analysis was conducted to measure the degree of distribution uniformity at the geographical division level. Using Equations (5) and (6), Gini coefficient G = 0.960127, and the distribution uniformity C = 0.039873. The results show that the distribution of BLVCs has a high clustering degree and very low uniformity in the seven geographical divisions.

4. Influence Factors

Rural areas are gradually formed in the human transformation of nature, life and reproduction, development and production [59]. Their formation and distribution need to involve comprehensive consideration of the driving forces and influence of the geographical environment, cultural society, policies and other aspects [60]. Based on the current relevant research results, representative of the indicators and availability of data, the cultural and social aspects that cover a wide range and that change with the development of productivity were further divided into six factors: social economy, agricultural level, transportation, cultural resources, tourism development and customer source market. The study selected multiple indicators, used the Pearson coefficient for correlation analysis to compare the degree of the influencing factors (Table 4) and selected the factors with a strong correlation. Finally, the four influencing factors of geographical environment, transportation, tourism development and policy deeply explored the category distributional changes and spatial distribution of BLVCs.

Table 4. Correlation analysis of the factors influencing the spatial distribution of beautiful leisure villages in China.

Factor	Metric	Coefficient	The Number of Rural Villages	Characteristic Residential Village	Characteristic Folk Custom Village	Modern New Village	Historical Ancient Village
Community economy	Per capita disposable income of the residents	Pearson correlation	0.03	0.132	−0.045	−0.147	0.18
		Sig. (2-tailed)	0.871	0.477	0.812	0.43	0.332
	GDP per capita	Pearson correlation	0.077	0.171	−0.026	−0.179	0.206
		Sig. (2-tailed)	0.681	0.357	0.891	0.337	0.267
	Third industry value	Pearson correlation	0.461 **	0.388 *	−0.076	0.024	0.302
		Sig. (2-tailed)	0.009	0.031	0.684	0.898	0.098
Agricultural level	Agricultural output value	Pearson correlation	0.563 **	0.365 *	0.05	0.439 *	0.078
		Sig. (2-tailed)	0.001	0.043	0.791	0.013	0.677
	Farmland area	Pearson correlation	0.214	0.029	0.125	0.466 **	−0.287
		Sig. (2-tailed)	0.248	0.876	0.502	0.008	0.117
Transportation	Passenger volume	Pearson correlation	0.541 **	0.27	−0.146	0.164	0.322
		Sig. (2-tailed)	0.002	0.143	0.433	0.378	0.077
	Highway mileage	Pearson correlation	0.552 **	0.319	0.06	0.452*	−0.046
		Sig. (2-tailed)	0.001	0.08	0.748	0.011	0.807

Table 4. *Cont.*

Factor	Metric	Coefficient	The Number of Rural Villages	Characteristic Residential Village	Characteristic Folk Custom Village	Modern New Village	Historical Ancient Village
Cultural resources	Number of intangible cultural heritage resources	Pearson correlation	0.664 **	0.607 **	0.14	0.04	0.472 **
		Sig. (2-tailed)	0	0	0.452	0.829	0.007
	Ethnic minority population	Pearson correlation	0.17	0.119	0.360 *	−0.121	−0.024
		Sig. (2-tailed)	0.361	0.525	0.047	0.516	0.899
Tourism development	Number of domestic tourists	Pearson correlation	0.669 **	0.483 **	−0.153	0.234	0.469 **
		Sig. (2-tailed)	0	0.006	0.411	0.204	0.008
	Number of A-level scenic spots	Pearson correlation	0.769 **	0.663 **	0.124	0.271	0.264
		Sig. (2-tailed)	0	0	0.506	0.141	0.151
Customer source market	Urban population	Pearson correlation	0.429 *	0.293	−0.101	0.163	0.214
		Sig. (2-tailed)	0.016	0.109	0.59	0.381	0.247
	Proportion of urban population at the end of the year	Pearson correlation	−0.016	−0.01	−0.079	0.103	0.046
		Sig. (2-tailed)	0.931	0.956	0.672	0.583	0.805

* $p < 0.05$. ** $p < 0.01$.

4.1. Geographical and Environmental Factors

China has a vast territory and a wide span of north and south latitudes, with diverse landforms and climatic conditions. The geographical environment provides the required material conditions and natural resources for rural production and life, and it affects the villages' distribution and development [61]. This study overlaid the BLVCs with the national digital elevation data, dividing them into five elevation intervals according to the natural intermittent point method (Figure 7). On the whole, the villages are mainly distributed in the low-terrain plain and hilly areas. Furthermore, this was overlapped with the main river network (rivers above level 3) (Figure 7), with buffer analysis and statistical analysis conducted on vector data of the level 5 water system in China (Table 5). It was found that 75.50% of BLVCs are distributed around rivers, and the adjacent water distribution characteristics are apparent.

According to the seven geographical divisions, further research found that the eastern region in the middle and lower reaches of the Yangtze River has the largest number of villages. The comfortable and livable climate, fertile land and abundant rainfall mean superior irrigation conditions conducive to agricultural production [62]. Meanwhile, abundant lakes and rivers also provide a natural landscape, along with the remarkable leisure characteristics of water towns. Although the southwest region has a high altitude and is dominated by mountain plateaus, its leisure villages still account for a large proportion of the total. Most of the villages in this region are concentrated in the relatively flat Sichuan province, relying on the Yangtze River and its tributaries, the Minjiang and Jialing Rivers, with large annual runoff and rich vegetation types. Its forest stock accounts for approximately 29% of the country's total, forming the characteristic rural living environment form: the Linpan in the Chengdu Plain. However, the Qinghai–Tibet Plateau has a high altitude, a cold climate, inconvenient transportation and a weak agricultural foundation, which are not conducive to production and life [63]. Villages are only distributed in the Yarlung Zangbo River valley to the south of the plateau. The northwest region, which is also deeply inland and blocked by the plateau, has a typically arid continental climate with large areas of landscape desertification, which is not conducive to residential and economic development. In Xinjiang, although the region is vast, the villages are concentrated near the Tianshan

Mountains. The mountains block the high-altitude moist airflow for forming glaciers, and oasis agriculture is formed at the foot of the mountain due to the nourishment from melting alpine snow. Planting industries with distinctive local characteristics have been developed, such as grapes and cantaloupes, thus promoting rural development [64].

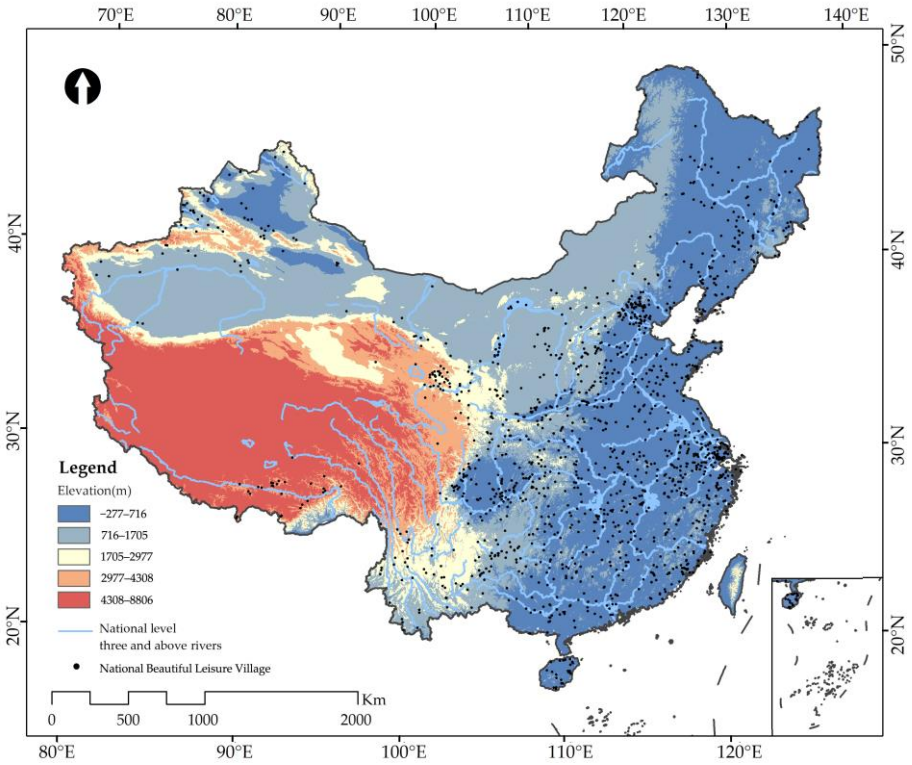

Figure 7. Distribution map of beautiful leisure villages and geographical environment overlap in China.

Table 5. Analysis of the river buffer zones of all BLVC.

River Level	Buffer (km)	Amount	Proportion (%)
Level 3 and above	20 km	444	30.20%
Level 4	10 km	237	16.12%
Level 5	10 km	429	29.18%
Total		1110	75.50%

The above analysis shows that the water source, climate, topography and landform affect a village's living environment. China is a typically agricultural country, and agriculture is the foundation of rural development. Therefore, a natural environment with rich water resources and abundant vegetation is the basis of agricultural production and life, also providing superior landscape resources for leisure tourism [65,66].

Hongxing village is located in Lishui City in Zhejiang province, with mountains on one side and lakes on three sides (Figure 8) [67]. The village has beautiful scenery and a pleasant climate. The special geographical landform is a natural tourism resource, and the Xianxia Lake in the upper reaches of the third largest reservoir in Zhejiang province has created tourism development in Hongxing village. The village relies on the lake for the development of water leisure activities, such as fishing, shrimping, boating and other fishing experiences. Relying on the unique hot spring resources in the Yangtze River Delta region, combined with the construction of village homestays, Hongxing village has been built into a village featuring hot springs for recuperation and vacation. Thus, Hongxing

village has realized the perfect transformation from a remote and backward village with a weak economy to a well-known rural tourism village.

Figure 8. Aerial view of Hongxing village in Zhejiang province.

4.2. Transportation Factors

As the primary condition of inter-regional communication, transportation affects the construction and long-term development of BLVCs. With the impact of the pandemic, short trips to villages that rely on private cars are favored [68]. Rural settlement distribution may be more affected by road traffic [69]. Therefore, this study selected passenger volume and highway mileage indicators that reflect the traffic accessibility and transportation capacity for correlation analysis. Thus, the correlation coefficient r = 0.541, 0.552 shows that the distribution of BLVCs is positively correlated with transportation factors. This study analyzed the vertical distance between the villages and the nearest roads (including national roads, provincial roads and county roads) (Table 6). Approximately 45.85% of the villages are within 1000 m of the nearest roads, which shows that nearly half of the BLVCs have convenient road transportation. Approximately 72.86% of the villages are within 3000 m of the nearest roads, indicating that BLV distribution along roads is obvious.

Table 6. Analysis of road proximity.

The Nearest Road Distance (m)	Amount	Proportion (%)
<1000	674	45.85%
1000–2000	245	16.67%
2000–3000	152	10.34%
>3000	399	27.14%

This study overlaid BLVC data and the national highway line onto a map for intuitive visual expression (Figure 9). Further exploration found that the road network density in the central and eastern areas is high, and the corresponding rural distribution is also dense. However, in the northeast alpine areas and the northwest plateau desert areas, such as Heilongjiang, Qinghai and Tibet, the transportation facilities are affected by landforms and climate construction difficulties, and the low traffic density of the roads has largely restrained the development of rural areas and the attraction of leisure tourism. From the correlation analysis of rural types, the distribution of historical ancient villages is negatively correlated with highway mileage [70]. The protection of ancient villages does not rely on transportation or transportation development, meaning the villages have a greater chance of being undisturbed by the urban culture and lifestyle [71]. New modern villages with characteristic buildings, folk villages and attractive historical villages are more dependent

on the city and perfect facilities, and the convenience of transportation provides advantages for their development [72].

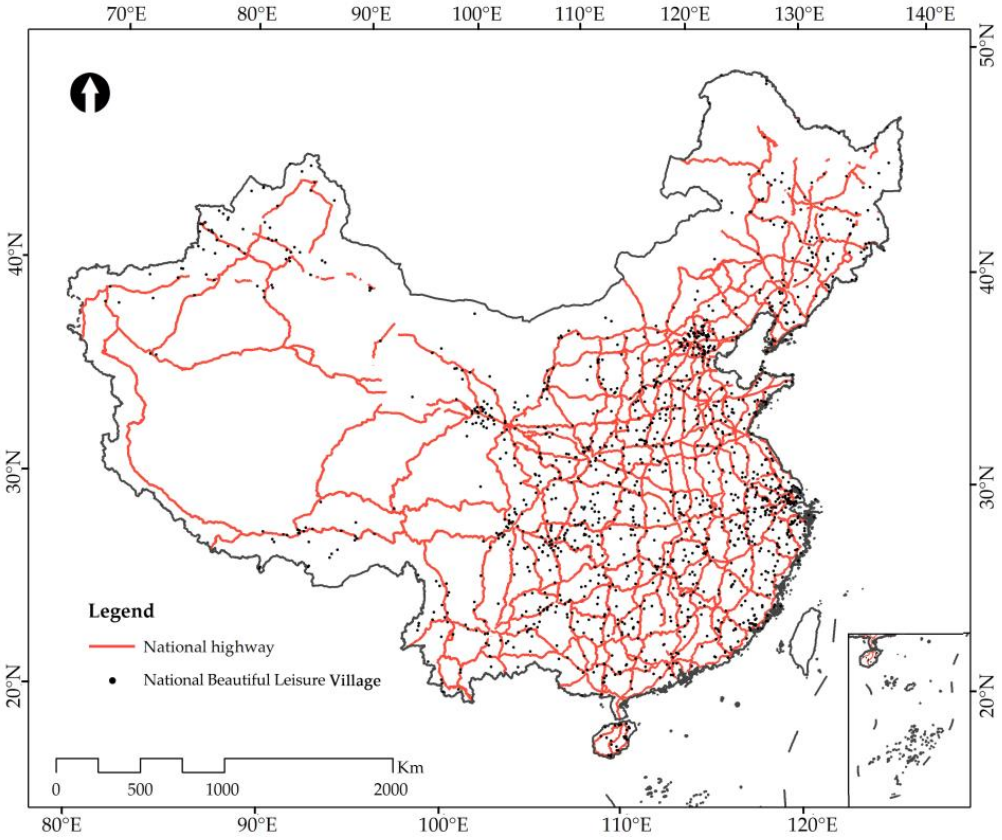

Figure 9. Distribution map overlapping beautiful leisure villages and traffic in China.

Therefore, the accessibility and convenience of transportation are important factors affecting the spatial distribution of BLVCs, as they improve the attraction of rural leisure tourism. Furthermore, convenient commodity trade and transportation also jointly promote the development of rural areas.

Beishuang village is located in the middle of Chongming Island (Figure 10) [73], an alluvial island located at the estuary of Shanghai. Beishuang village relies on the developing transportation network of the metropolis. Compared with other villages, the direct highway has facilitated its rapid tourism development. In the 1990s, people in cities mainly relied on ships to reach the island. Chongming Island is nearly 50 km away from the city center in a straight line. This inconvenient transportation meant that Chongming Island's rural life, dominated by agriculture, was incompatible with the prosperous Shanghai. Chenhai Road on Chongming Island was opened in 2003, and the Shanghai Yangtze River Tunnel Bridge, which spans the three islands of Chongming, was officially opened to traffic in 2009 [74]. Today, Chongming's transportation network is fully connected, which continuously improves the urban and rural living environments. Combined with network information publicity, Beishuang village, which is characterized by agriculture, attracts tourists from all over China. Against the background of modern technological development and the health needs of urban residents, the Agricultural Industrial Park in Beishuang village, connected via an e-commerce platform and relying on convenient transportation, delivers high-quality agricultural products to thousands of households [75]. The development of Beishuang was made possible by the construction of the transportation system.

Figure 10. Aerial view of Beishuang village in Shanghai.

4.3. Tourism Development Factors

Tourism development is the comprehensive embodiment of tourism resources, facilities and the investment level, and it is also the primary core element for tourists to consider when choosing a tourist destination [76]. Different levels of tourist attractions are the main brand representatives to measure China's regional tourism development. Therefore, this study selected the number of domestic tourists and the number of A-level scenic spots reflecting tourism development for correlation analysis. Thus, the correlation coefficient r = 0.669, 0.769 shows that the distribution of BLVCs had a significant positive correlation with regional tourism development.

This study overlaid the number of A-level scenic spots in each province with the distribution of BLVCs to generate a distribution map (Figure 11). Further inspection found that the eastern region, such as the Zhejiang, Anhui, Jiangsu and Shandong provinces, has a large number of A-level scenic spots, and its rural distribution is relatively dense. The spatial distribution of BLVCs is largely based on the local scenic radiation for achieving complementary resources and customer sharing. From the correlation analysis results of the types of BLVCs, the distribution of characteristic residential and historical ancient villages is significantly and positively related to tourism development. Most historical ancient villages are high-quality tourist attractions, with rich tourism resources such as historical culture attractions and traditional architecture. However, in the characteristic residential villages, the investment in and construction of rural homestays with residential features satisfies the sense of experience for many leisure tourists and promotes rural development. According to statistics from a 2021 report on China's tourism scenic spot development, the integration of scenic spots and homestays in rural tourism is becoming increasingly prominent, driving rural leisure tourism development.

Therefore, regional tourism development is one of the critical factors affecting whether rural leisure tourism can achieve high-quality and sustainable development. Rich tourism resources, perfect tourism facilities, construction and tourism service system development around scenic spots provide customer source markets for developing beautiful local leisure rural tourism [77,78].

Baishuidong village is located in Shaoyang City in Hunan province (Figure 12) [79]. It is close to the Baishuidong national 4A-level tourist scenic spot. The development of Baishuidong village stands out in Hunan province due to the scenic spot's landscape resources, supporting facilities, tourist market and other tourism resources. Relying on the advantages of scenic resources, the village has invested in a large number of rural tourism projects, such as leisure agriculture, homestays and restaurants, which are operated by tourism management companies. Baishuidong village has also introduced a study tourism project and invested in building a Comprehensive Practical Education Base, providing

students with multi-functional experiences such as learning, practice, sightseeing, catering, entertainment and accommodation. In general, Baishuidong village relies on the tourism resources and tourist source guarantee of the scenic spot, carrying out industrial complementarity and driving the employment of more than 1000 people in the village and in rural economic development. In 2020, the village received 2.26 million tourists. The annual disposable income of the village's collective economy reached CNY 5 million, and the annual per capita disposable income of farmers was CNY 15,000, of which leisure agriculture accounted for more than half [80].

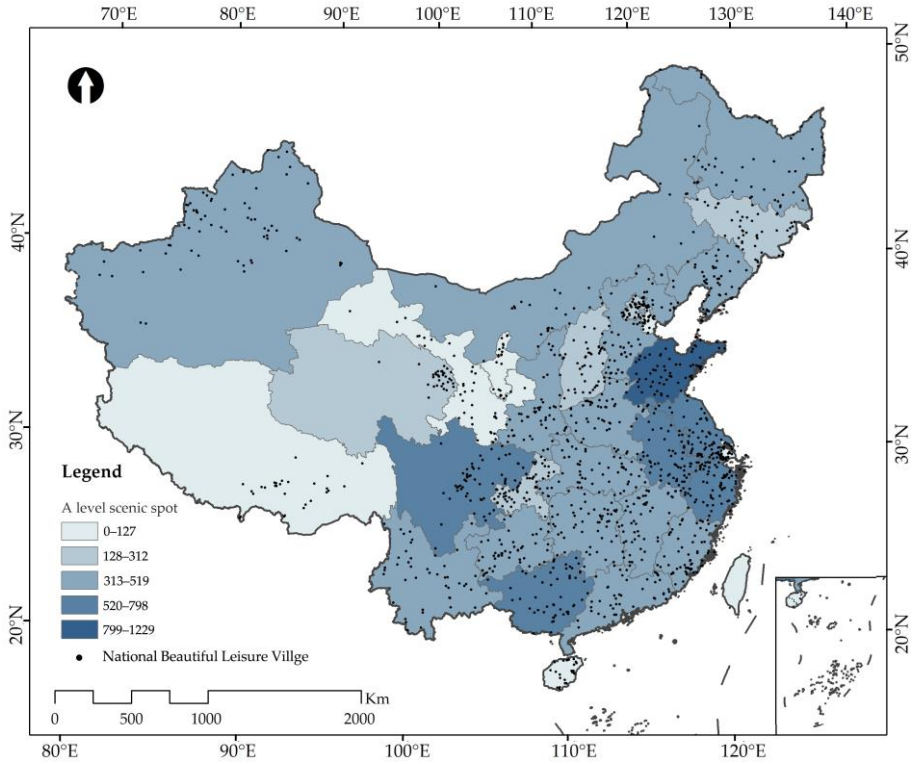

Figure 11. Distribution map overlapping beautiful leisure villages with A-level scenic spots in China.

Figure 12. Baishuidong village in Hunan province (4.4 policy factors).

With the implementation of a series of policies in China to promote rural revitalization, rural financial investment is increasing. Rural infrastructure, rural appearance and people's living standards are constantly being improved [81]. The facts have proven that the development and construction of BLVCs cannot be separated from the support of national policies. Although the spatial distribution of BLVCs is imbalanced, a certain number of villages is distributed in all provinces. To some extent, the intentional support of the government balances the regional development gap.

According to the statistics in Table 1, it can be found that the number of beautiful leisure villages in Xinjiang ranks second in China. However, Xinjiang is located in the remote northwest area, with insufficient environmental resources and economic underdevelopment [82]. Therefore, its rural development is inseparable from the policies and financial support of the central government and is achieved through the selection of BLVCs to promote the Xinjiang rural tourism brand. During the "13th Five-Year Plan" period, Xinjiang vigorously promoted the strategy of "revitalizing Xinjiang through tourism" [83]. In 2017, the Measures for Promoting Rural Tourism of Xinjiang Uygur Autonomous Region supported the rural tourism industry via capital, science and technology, taxation, finance and other aspects [84]. In 2019, the development of a rural tourism upgrade (2019–2020) was promoted to improve the infrastructure, living environment, service standards and innovation financing, increasing the support of five policy aspects to improve the quality of development. This series of measures effectively promotes tourism as a strategic pillar industry in Xinjiang and provides a beautiful leisure rural development policy guarantee and innovation environment [85]. Therefore, the policy guidance and financial support of national and local governments at all levels provide the impetus and material basis of the development of beautiful leisure rural attractions. Strong policy support and a good policy environment promote the sustainable development of rural areas.

Chagancao village is located in the Wuerhe district of Karamay City, Xinjiang (Figure 13) [86]. Due to government policy and financial support, this remote and poor village became a pilot development project, enabling it to be included in the BLVC list. Relying on the rich tourism resources and fully implementing the strategy of "*revitalizing Xinjiang through tourism*", the local tourism industry has been vigorously promoted in recent years [87]. The government of the Wuerhe district innovatively implemented the "*Western Wuzhen*" project; that is, it guided farmers to plan and develop idle homesteads in a unified way, vigorously developing tourism homestays, leisure agriculture and characteristic breeding. With the support of the government, Chagancao village has attracted social investment and has significantly improved its infrastructure and service capacity. Chagancao village has become a demonstration town with the characteristics for tourism development, illustrating a charming new vision of rural development.

Figure 13. Aerial view of Chagancao village in Xinjiang.

5. Discussion

This study took the list of BLVCs as the research object and analyzed the unbalanced distribution characteristics of BLVCs from the macro level. The number and types of villages in each geographical area are different and are related to the regional geographical environment, transportation, tourism development and policies (Figure 14). Compared with other research objects that are limited to a local or single batch list, this study conducted research on all batches of BLVC catalogs released to date, with larger amounts of data and more persuasive results. In terms of research methods, this study innovatively used Pearson's coefficient to quantitatively analyze and screen multiple factors, carrying out studies on specific cases for use as evidence. The quantitative analysis method combined with a qualitative summary means the research results are more scientific, with more exemplary significance for rural tourism development. The research is also relevant to current hotspots around the world and considers people's yearning for a healthy rural life and the advantages of low-density rural environments for living and traveling under the restrictions of COVID-19. The research direction follows this trend and has reference significance for exploring the development of rural spaces and realizing rural revitalization in the future. Relatively speaking, it also has certain experience reference significance for the wider world. In the study of rural development laws and tourism characteristics, China's experience can be used to better guide the sustainable development of rural areas.

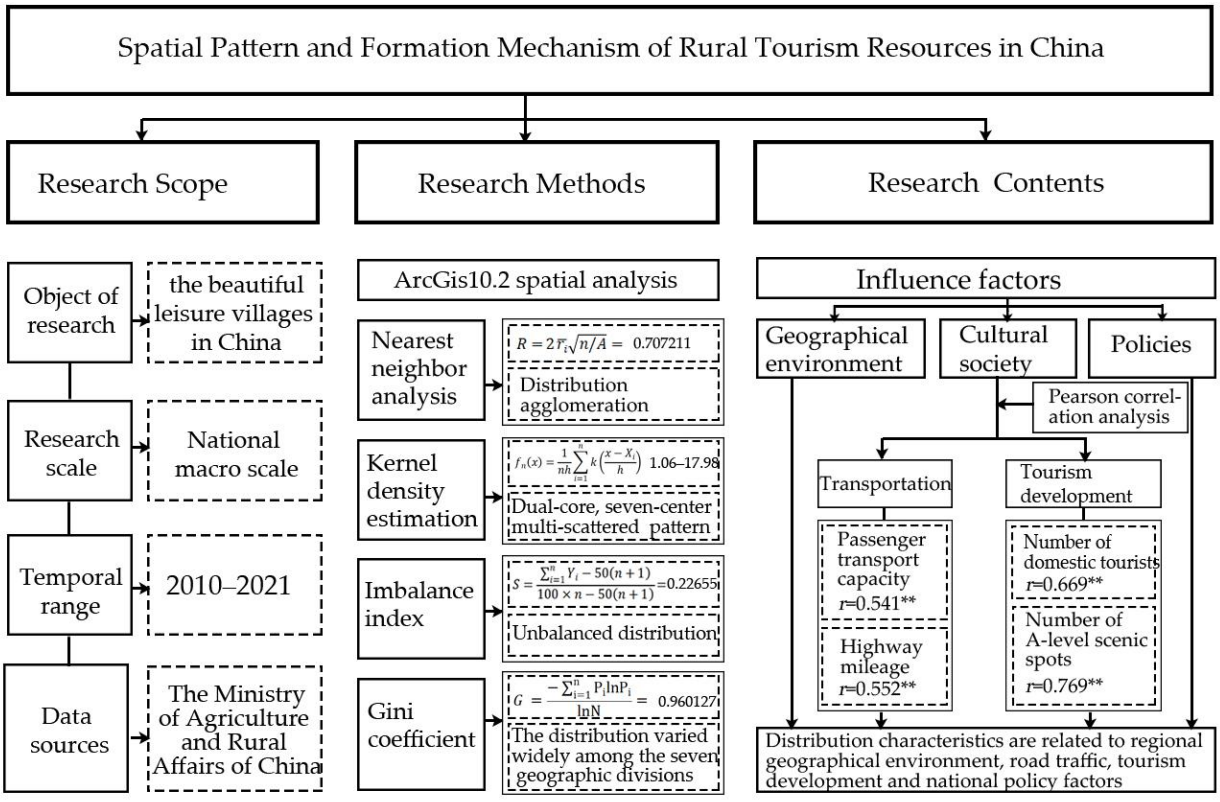

Figure 14. Research results framework.

There are still shortcomings in this study, and the research should be discussed with regard to the following aspects:

(1) This study microanalyzed the distribution characteristics of BLVCs at the national scale but lacked the relevant direct analysis at the provincial and regional scales.

(2) This study mainly adopted the basic research methods of spatial analysis in the distribution characteristics, limiting the selection of relevant calculation formulas and methods. An in-depth mining of the data and a strengthening of the research methods are the suggested directions for future research.

(3) The characteristics of the rural distribution factors are complex and diverse. Due to the availability of the data, this study only carried out correlation analysis on the social and cultural factors, and the factor selection was not comprehensive. The intersection of factors needs further improvement in later research.

In general, this study has a certain timeliness. The BLVC list is updated rapidly. With changes over time, the rural environments, economy and policies will change. In addition, the results also have some limitations. In the spatial distribution characteristics, the kernel density analysis resulted in obvious aggregation, and while the Lorentz curve did not show obvious convexity, the results were somewhat different. Furthermore, according to the statistical results of rural distribution in the southern region, this region accounts for the lowest proportion. However, the factors that have been discussed, such as the environment, traffic and tourism development, are favorable to its rural distribution, so this needs to be explored further.

Therefore, future research will need be long-term and in-depth. The research will also need to be further expanded from large-scale spatial analysis to regional-scale specific analysis and from a single influence to factor interaction. With the progress of science and technology, we can also mine comment data and carry out comprehensive research on the spatial layout and industrial development of BLVCs from multiple perspectives.

6. Conclusions

This study conducted a spatial and mathematical-statistical analysis of 1470 villages on the list of BLVCs from 12 batches and conducted quantitative analysis of 4 aspects: spatial distribution patterns, densities, discrepancies and clusters (Table 7). The characteristics and patterns of their spatial distribution were summarized, and the following results were obtained.

Table 7. Spatial index of beautiful leisure villages in China, calculated based on functions.

No	Function	Index
1	The nearest neighbor index	R = 0.707211
2	Kernel density estimation	1.06–17.98
3	Imbalance	S = 0.226552
4	Gini coefficient	G = 0.960127, C = 0.039873

(1) By 2021, 1470 BLVCs had been selected in the 31 administrative regions of China. The distribution in each region is uneven, presenting a state of aggregation.
(2) The distribution of BLVCs presents a double-core, seven-center, multiple scattered distribution pattern.
(3) Most BLVCs are located in the southeast, with a clear difference in distribution between the two sides of the Hu line.
(4) From the perspective of the seven geographical divisions, the distribution of BLVCs is the highest in the east and the lowest in the south, with a difference of 19.25%.

To explore the factors affecting the spatial distribution, this study screened the influencing factors through Pearson's coefficients on the basis of previous studies. Finally, the following aspects were analyzed:

(1) From the perspective of the geographical environment, BLVCs are mainly concentrated in areas with flat terrain, a suitable climate and sufficient water resources, such as the eastern region.
(2) From the perspective of road traffic, approximately half of the BLVCs are close to convenient road transportation. Accessibility affects the impact of rural development and the attraction of leisure tourism.
(3) From the perspective of tourism development, the development of rich tourism resources and the construction of facilities and service systems have promoted the distribution and development of BLVCs.

(4) From the perspective of policy, to achieve a balanced development of BLVCs in all regions, the national and local governments have strengthened policy guidance and financial support, especially in the northwest inland areas with slow development, such as Xinjiang.

This study analyzed the uneven spatial pattern of BLVCs and their categories, and it deeply discussed the formation mechanism under the influence of four factors: geographical environment, transportation, tourism development and policy. This study provides a systematic research framework and methods for developing an understanding of rural development from the macro law to specific implementation, which is conducive to the more reasonable use of the resources and regional advantages of rural areas, and the research results are universal. The specific study of characteristic rural tourism has created a new impetus for rural revitalization to further guide village leisure agriculture and the sustainable development of rural tourism and even to promote rural revitalization. This study proposes the following suggestions:

(1) Make full use of local ecological characteristics and resource advantages, and adjust the measures to the local conditions. Pay attention to improving rural ecological quality, maintaining rural scenery and respecting the natural patterns.
(2) Build a tourism transportation network, comprehensively improve the integrity and diversity of tourism transportation facilities, and further enhance the attraction of tourism destinations.
(3) The various regions should improve the facilities supporting rural tourism and comprehensively improve the service capacity and level of rural tourism. Each region should rely on their own cultural and tourism resources to develop the tourism industry creatively, integrating advantageous regional resources and enhancing the effect of industrial agglomeration.
(4) The government should further improve rural policies and increase financial support for rural tourism. Local governments should confront the differences and gaps in regional development, strengthen coordinated development with the surrounding areas and form a win-win strategy of regional linkage and cooperation to optimize the spatial layout.

Author Contributions: Jiazhen Zhang developed the research topic. Yuchen Xie prepared the writing (original draft). Jeremy Cenci and Xiangzhuang Meng were responsible for the writing (review and editing). The project administration was undertaken by Jeremy Cenci. All the authors contributed to writing the paper. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the University of Mons, grant project CoMod, Compacité urbaine sous l'angle de la modélisation mathématique (théorie des graphes et des jeux) of the Faculty of Architecture and Urban Planning and the Faculty of Sciences.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The authors do not have the right to share the data. However, they will be made available to the reader upon reasonable request.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Zhang, J.; Cenci, J.; Becue, V. A Preliminary Study on Industrial Landscape Planning and Spatial Layout in Belgium. *Heritage* **2021**, *4*, 1375–1387. [CrossRef]
2. Yang, J.; Yang, R.; Chen, M.-H.; Su, C.-H.J.; Zhi, Y.; Xi, J. Effects of rural revitalization on rural tourism. *J. Hosp. Tour. Manag.* **2021**, *47*, 35–45. [CrossRef]
3. Long, H.; Liu, Y.; Li, X.; Chen, Y. Building new countryside in China: A geographical perspective. *Land Use Policy* **2010**, *27*, 457–470. [CrossRef]
4. Lopes, H.D.S.; Remoaldo, P.; Ribeiro, V. Residents' perceptions of tourism activity in a rural North-Eastern Portuguese community: A cluster analysis. *Bull. Geography. Socio-Econ. Ser.* **2019**, *46*, 119–135. [CrossRef]

5. Chigbu, U.E. Village renewal as an instrument of rural development: Evidence from Weyarn, Germany. *Community Dev.* **2012**, *43*, 209–224. [CrossRef]
6. Onitsuka, K.; Hoshino, S. Inter-community networks of rural leaders and key people: Case study on a rural revitalization program in Kyoto Prefecture, Japan. *J. Rural. Stud.* **2018**, *61*, 123–136. [CrossRef]
7. Kang, H.-M.; Choi, S.-I.; Jeon, S.-H.; Lee, C.-K.; Kim, H. Revitalization plans for mountain ecological villages in South Korea. *Environ. Dev. Sustain.* **2021**, *23*, 17060–17076. [CrossRef]
8. Yang, X.J. China's rapid urbanization. *Science* **2013**, *342*, 310. [CrossRef]
9. Liu, Z.; Liu, S.; Jin, H.; Qi, W. Rural population change in China: Spatial differences, driving forces and policy implications. *J. Rural. Stud.* **2017**, *51*, 189–197. [CrossRef]
10. Song, W.; Liu, M. Assessment of decoupling between rural settlement area and rural population in China. *Land Use Policy* **2014**, *39*, 331–341. [CrossRef]
11. Deng, X.; Liang, L.; Wu, F.; Wang, Z.; He, S. A review of the balance of regional development in China from the perspective of development geography. *J. Geogr. Sci.* **2022**, *32*, 3–22. [CrossRef]
12. Zhang, Q.; Lu, L.; Huang, J.; Zhang, X. Uneven development and tourism gentrification in the metropolitan fringe: A case study of Wuzhen Xizha in Zhejiang Province, China. *Cities* **2022**, *121*, 103476. [CrossRef]
13. Gao, X.; Wang, F.; Liu, C.; Luo, T.; Zhang, Y.; Nuti, C. A Review of the Chinese Government Support and Sustainability Assessment for Ecovillage Development with a Global Perspective. *Int. Rev. Spat. Plan. Sustain. Dev.* **2022**, *10*, 43–73. [CrossRef]
14. Hu, X.; Wu, Q.; Xu, W.; Li, Y. Specialty towns in China: Towards a typological policy approach. *Land Use Policy* **2022**, *114*, 105933. [CrossRef]
15. Zhou, Y.; Li, Y.; Xu, C. Land consolidation and rural revitalization in China: Mechanisms and paths. *Land Use Policy* **2020**, *91*, 104379. [CrossRef]
16. Liu, Y.; Lu, S.; Chen, Y. Spatio-temporal change of urban–rural equalized development patterns in China and its driving factors. *J. Rural. Stud.* **2013**, *32*, 320–330. [CrossRef]
17. Gao, J.; Liu, Y.; Chen, J. China's initiatives towards rural land system reform. *Land Use Policy* **2020**, *94*, 104567. [CrossRef]
18. Choi, E.P.H.; Hui, B.P.H.; Wan, E.Y.F. Depression and anxiety in Hong Kong during COVID-19. *Int. J. Environ. Res. Public Health* **2020**, *17*, 3740. [CrossRef]
19. McNeely, J.A. Nature and COVID-19: The pandemic, the environment, and the way ahead. *Ambio* **2021**, *50*, 767–781. [CrossRef]
20. Jia, Z.; Xu, S.; Zhang, Z.; Cheng, Z.; Han, H.; Xu, H.; Wang, M.; Zhang, H.; Zhou, Y.; Zhou, Z. Association between mental health and community support in lockdown communities during the COVID-19 pandemic: Evidence from rural China. *J. Rural. Stud.* **2021**, *82*, 87–97. [CrossRef]
21. Zhang, T.; Oin, X. The Impact of the Covid-19 on China's Rural Revitalization. *Basic Clin. Pharmacol. Toxicol.* **2020**, *127*, 110–113.
22. Li, J.; Gong, Y. Spatial location differentiation and development decision optimization of characteristic villages and towns in China. *Geogr. Sustain.* **2022**, *3*, 21–31. [CrossRef]
23. Jaszczak, A.; Kristianova, K.; Pochodyła, E.; Kazak, J.K.; Młynarczyk, K. Revitalization of public spaces in Cittaslow towns: Recent urban redevelopment in Central Europe. *Sustainability* **2021**, *13*, 2564. [CrossRef]
24. Mwesiumo, D.; Halfdanarson, J.; Shlopak, M. Navigating the early stages of a large sustainability-oriented rural tourism development project: Lessons from Træna, Norway. *Tour. Manag.* **2022**, *89*, 104456. [CrossRef]
25. Munton, R. Rural land ownership in the United Kingdom: Changing patterns and future possibilities for land use. *Land Use Policy* **2009**, *26*, S54–S61. [CrossRef]
26. Ma, D.; Li, F.; Li, A. An exploration on the "non original tourism experience" mode based on science and technology. *IOP Conf. Ser. Mater. Sci. Eng.* **2018**, *394*, 52036. [CrossRef]
27. Sun, Y.; Timothy, D.J.; Wang, Y.; Min, Q.; Su, Y. Reflections on agricultural heritage systems and tourism in China. *J. China Tour. Res.* **2019**, *15*, 359–378. [CrossRef]
28. Yehong, S.; Cancan, Y.; Yuexin, C.; Yuxin, S.; Ying, W. Ecological Theory and Practice in Tourism Research in the New Era. *J. Resour. Ecol.* **2022**, *13*, 142–160. [CrossRef]
29. Li, Y.; Zhang, H.; Zhang, D.; Abrahams, R. Mediating urban transition through rural tourism. *Ann. Tour. Res.* **2019**, *75*, 152–164. [CrossRef]
30. Chen, Z.; Liu, Y.; Feng, W.; Li, Y.; Li, L. Study on spatial tropism distribution of rural settlements in the Loess Hilly and Gully Region based on natural factors and traffic accessibility. *J. Rural. Stud.* **2019**, *93*, 441–448. [CrossRef]
31. Gibson, J.; Deng, X.; Boe-Gibson, G.; Rozelle, S.; Huang, J. Which households are most distant from health centers in rural China? Evidence from a GIS network analysis. *GeoJournal* **2011**, *76*, 245–255. [CrossRef]
32. Zhang, A.; Yang, Y.; Chen, T.; Liu, J.; Hu, Y. Exploration of spatial differentiation patterns and related influencing factors for National Key Villages for rural tourism in China in the context of a rural revitalization strategy, using GIS-based overlay analysis. *Arab. J. Geosci.* **2021**, *14*, 1–15. [CrossRef]
33. Zhou, Q.; Chen, J.; van den Bosch, C.C.K.; Zhang, W.; Zhu, L.; Vera, Y.M.R.; Dong, J. Constructing an Aims-Indicators-Methods framework for Green Space System Planning in China. *Urban For. Urban Green.* **2022**, *67*, 127437. [CrossRef]
34. Chen, C.; She, Y.; Chen, Q.; Liu, S. Study on ecological adaptability of traditional village construction in Hainan volcanic areas. *J. Asian Archit. Build. Eng.* **2022**, *1*, 1–19. [CrossRef]

35. Shen, J.; Chou, R.-J. Rural revitalization of Xiamei: The development experiences of integrating tea tourism with ancient village preservation. *J. Rural. Stud.* **2022**, *90*, 42–52. [CrossRef]
36. Wang, W.; Watanabe, M.; Ono, K.; Zhou, D. Exploring Visualisation Methodology of Landscape Design on Rural Tourism in China. *Buildings* **2022**, *12*, 64. [CrossRef]
37. Gao, J.; Wu, B. Revitalizing traditional villages through rural tourism: A case study of Yuanjia Village, Shaanxi Province, China. *Tour. Manag.* **2017**, *63*, 223–233. [CrossRef]
38. Wang, L.-E.; Cheng, S.-K.; Zhong, L.-S.; Mu, S.-L.; Dhruba, B.G.; Ren, G.-Z. Rural tourism development in China: Principles, models and the future. *J. Mt. Sci.* **2013**, *10*, 116–129. [CrossRef]
39. Shen, L.; Jiang, S.; Yuan, H. Critical indicators for assessing the contribution of infrastructure projects to coordinated urban–rural development in China. *Habitat Int.* **2012**, *36*, 237–246. [CrossRef]
40. Shen, Y.; Li, S. Eliminating poverty through development: The dynamic evolution of multidimensional poverty in rural China. *Econ. Political Stud.* **2022**, *10*, 1–20. [CrossRef]
41. Houkai, W. China's Rural Development in the 14th Five-Year Plan Period. *China Econ.* **2022**, *17*, 2–11.
42. Su, B. Rural tourism in China. *Tour. Manag.* **2011**, *32*, 1438–1441. [CrossRef]
43. Zhang, J.; Cenci, J.; Becue, V.; Koutra, S. Research of the industrial heritage category and spatial density distribution in the Walloon region, Belgium, and Northeast China. In *Structural Studies, Repairs and Maintenance of Heritage Architecture XVII & Earthquake Resistant Engineering Structures XIII*; WIT Press: Chilworth, UK, 2021; p. 285.
44. Wang, X.; Zhang, J.; Cenci, J.; Becue, V. Spatial Distribution Characteristics and Influencing Factors of the World Architectural Heritage. *Heritage* **2021**, *4*, 2942–2959. [CrossRef]
45. Zhang, J.; Cenci, J.; Becue, V.; Koutra, S. Analysis of spatial structure and influencing factors of the distribution of national industrial heritage sites in China based on mathematical calculations. *Environ. Sci. Pollut. Res.* **2022**, *9*, 27124–27139. [CrossRef]
46. Zhan, Z.; Cenci, J.; Zhang, J. Frontier of Rural Revitalization in China: A Spatial Analysis of National Rural Tourist Towns. *Land* **2022**, *11*, 812. [CrossRef]
47. Jang, S.; An, Y.; Yi, C.; Lee, S. Assessing the spatial equity of Seoul's public transportation using the Gini coefficient based on its accessibility. *Int. J. Urban Sci.* **2017**, *21*, 91–107. [CrossRef]
48. Patton, C.; Sawicki, D.; Clark, J. *Basic Methods of Policy Analysis and Planning—Pearson eText*; Routledge: Oxfordshire, UK, 2015.
49. Chio, J.T. *A Landscape of Travel: The Work of Tourism in Rural Ethnic China*; University of Washington Press: Seattle, WA, USA, 2014.
50. Li, Z.; Zhang, X.; Yang, K.; Singer, R.; Cui, R. Urban and rural tourism under COVID-19 in China: Research on the recovery measures and tourism development. *Tour. Rev.* **2021**, *76*, 718–736. [CrossRef]
51. Looney, K.E. China's campaign to build a new socialist countryside: Village modernization, peasant councils, and the Ganzhou model of rural development. *China Q.* **2015**, *224*, 909–932. [CrossRef]
52. Lincoln, T.; Madgin, R. The inherent malleability of heritage: Creating China's beautiful villages. *Int. J. Herit. Stud.* **2018**, *24*, 938–953. [CrossRef]
53. Ye, C.; Ma, X.; Cai, Y.; Gao, F. The countryside under multiple high-tension lines: A perspective on the rural construction of Heping Village, Shanghai. *J. Rural. Stud.* **2018**, *62*, 53–61. [CrossRef]
54. Zhang, D.; Gao, W.; Lv, Y. The Triple Logic and Choice Strategy of Rural Revitalization in the 70 Years since the Founding of the People's Republic of China, Based on the Perspective of Historical Evolution. *Agriculture* **2020**, *10*, 125. [CrossRef]
55. Zan, Z.; Xijun, H. Urban river landscape design based on regional characteristics-A case study of Jinxi River in Hushan Town. *J. Landsc. Res.* **2014**, *6*, 13.
56. Zhuang, X.; Yao, Y.; Li, J.J. Sociocultural impacts of tourism on residents of world cultural heritage sites in China. *Sustainability* **2019**, *11*, 840. [CrossRef]
57. Kong, X.; Fu, M.; Zhao, X.; Wang, J.; Jiang, P. Ecological effects of land-use change on two sides of the Hu Huanyong Line in China. *Land Use Policy* **2022**, *113*, 105895. [CrossRef]
58. Anqi, D.; Cenci, J.; Zhang, J. Links between the pandemic and urban green spaces, a perspective on spatial indices of landscape garden cities in China. *Sustain. Cities Soc.* **2022**, *85*, 104046.
59. Zhou, G.; He, Y.; Tang, C.; Yu, T.; Xiao, G.; Zhong, T. Dynamic mechanism and present situation of rural settlement evolution in China. *J. Geogr. Sci.* **2013**, *23*, 513–524. [CrossRef]
60. Ma, W.; Tian, W.; Zhou, Q.; Miao, Q. Analysis on the Temporal and Spatial Heterogeneity of Factors Affecting Urbanization Development Based on the GTWR Model: Evidence from the Yangtze River Economic Belt. *Complexity* **2021**, *2021*, 1–11. [CrossRef]
61. Allen, A. Environmental planning and management of the peri-urban interface: Perspectives on an emerging field. *Environ. Urban.* **2003**, *15*, 135–148. [CrossRef]
62. Chen, W.; Zhu, K.; Wu, Q.; Cai, Y.; Lu, Y.; Wei, J. Adaptability evaluation of human settlements in Chengdu based on 3S technology. *Environ. Sci. Pollut. Res.* **2022**, *29*, 5988–5999. [CrossRef]
63. Li, Y.; Zhou, T.; Jiang, G.; Li, G.; Zhou, D.; Luo, Y. Spatial pattern and mechanisms of farmland abandonment in Agricultural and Pastoral Areas of Qingzang Plateau. *Geogr. Sustain.* **2021**, *2*, 139–150. [CrossRef]
64. Buell, P.D.; Anderson, E.; de Pablo Moya, M.; Oskenbay, M. The Eurasian Heartland: Overview of a Link between Worlds. In *Crossroads of Cuisine: The Eurasian Heartland, the Silk Roads and Food*; Brill: Leiden, The Netherlands, 2020; pp. 7–52.
65. Chen, J.; Yang, A. Intelligent agriculture and its key technologies based on internet of things architecture. *IEEE Access* **2019**, *7*, 77134–77141. [CrossRef]

66. Nyberg, A.; Rozelle, S. *Accelerating China's Rural Transformation*; World Bank Publications: Washington, VA, USA, 1999.
67. Suichang Promulgation. Available online: https://www.sohu.com/a/293069217_776242 (accessed on 10 June 2022).
68. Shakibaei, S.; De Jong, G.C.; Alpkökin, P.; Rashidi, T.H. Impact of the COVID-19 pandemic on travel behavior in Istanbul: A panel data analysis. *Sustain. Cities Soc.* **2021**, *65*, 102619. [CrossRef] [PubMed]
69. Yanbo, Q.; Guanghui, J.; Wenqiu, M.; Zitong, L. How does the rural settlement transition contribute to shaping sustainable rural development? Evidence from Shandong, China. *J. Rural. Stud.* **2021**, *82*, 279–293. [CrossRef]
70. Cao, M.; Xu, D.; Xie, F.; Liu, E.; Liu, S. The influence factors analysis of households' poverty vulnerability in southwest ethnic areas of China based on the hierarchical linear model: A case study of Liangshan Yi autonomous prefecture. *Appl. Geogr.* **2016**, *66*, 144–152. [CrossRef]
71. Tang, B.-S.; Wong, S.-W.; Lau, M.C.-H. Social impact assessment and public participation in China: A case study of land requisition in Guangzhou. *Environ. Impact Assess. Rev.* **2008**, *28*, 57–72. [CrossRef]
72. Zhao, Y.; Chen, X. Characteristic Town Environment Design Based on Brand Community—A Case Study of the Forest Hot Spring Township in Ninghai. *Asian Agric. Res.* **2018**, *10*, 96–100.
73. Beishuang Promulgation. Available online: https://www.sohu.com/a/383674131_720644 (accessed on 10 June 2022).
74. Fengqi, Z.; Jun, S. Deploying an intelligent transportation system in Chongming County, Shanghai. *J. Urban Technol.* **2010**, *17*, 39–51. [CrossRef]
75. Chen, W. The Transformation of Commercialized Rural Service System with Taking Agricultural Informatization as a Breakthrough. In *Challenges and Opportunities for Chinese Agriculture*; Springer: Berlin/Heidelberg, Germany, 2020; pp. 341–417.
76. McKercher, B. A chaos approach to tourism. *Tour. Manag.* **1999**, *20*, 425–434. [CrossRef]
77. Buckley, R. Surf tourism and sustainable development in Indo-Pacific Islands. I. The industry and the islands. *J. Sustain. Tour.* **2002**, *10*, 405–424. [CrossRef]
78. Dorobantu, M.R.; Nistoreanu, P. Rural tourism and ecotourism–the main priorities in sustainable development orientations of rural local communities in Romania. *Econ. Transdiscipl. Cogn.* **2012**, *XV*, 259–266.
79. Qingshanyijiu. Available online: https://www.meipian.cn/2yksi1u8 (accessed on 10 June 2022).
80. Shaoyang Promulgation. Available online: https://www.shaoyang.gov.cn/ (accessed on 10 June 2022).
81. Fan, S.; Chan-Kang, C. *Road Development, Economic Growth, and Poverty Reduction in China*; International Food Policy Research Institute: Washington, VA, USA, 2005; Volume 12.
82. Cao, H. Urban–rural income disparity and urbanization: What is the role of spatial distribution of ethnic groups? A case study of Xinjiang Uyghur Autonomous Region in western China. *Reg. Stud.* **2010**, *44*, 965–982. [CrossRef]
83. Szadziewski, H.; Mostafanezhad, M.; Murton, G. Territorialization on tour: The tourist gaze along the Silk Road Economic Belt in Kashgar, China. *Geoforum* **2022**, *128*, 135–147. [CrossRef]
84. Zhou, Y. Drawing on the Experience of Zhejiang Province to Promote the Development of Rural Tourism in Inner Mongolia. In Proceedings of the 3rd International Seminar on Education Innovation and Economic Management (SEIEM 2018), Penang, Malaysia, 29–31 December 2018; pp. 258–261.
85. Long, H.; Ma, L.; Zhang, Y.; Qu, L. Multifunctional rural development in China: Pattern, process and mechanism. *Habitat Int.* **2022**, *121*, 102530. [CrossRef]
86. Kelamayi Promulgation. Available online: https://www.sohu.com/a/502669954_121119059 (accessed on 10 June 2022).
87. Lv, P.; Zhang, Y.; Meng, X.-Z.; Xu, Y.-L.; Li, Z.-J.; Duan, W.; Zhai, X.-J. Research on the Reform Mode of Rural Power Grid Construction under the Background of Rural Revitalization. In Proceedings of the 2020 5th International Conference on Mechanical, Control and Computer Engineering (ICMCCE), Harbin, China, 25–27 December 2020; pp. 135–138.