

Article

Intangible Cultural Heritage in the Yangtze River Basin: Its Spatial Distribution Characteristics and Influencing Factors

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Abstract: The intangible cultural heritage in the Yangtze River Basin is rich and complete, therefore revealing its spatial distribution characteristics and influencing factors can provide a scientific basis for the diversified cultural protection and inheritance in the Yangtze River Basin and the high-quality sustainable development of the region. This study sets a total of 1250 national intangible cultural heritage from the first batch to the fifth batch in 11 provinces, municipalities, and autonomous regions which the main stream of the Yangtze River flows through as the research object. The results are visually expressed using ArcGIS spatial analysis technology in combination with the geographic concentration index, nearest neighbor index, kernel density analysis, geographical detector, and the like, which are as follows: (1) The Yangtze River Basin is a highly concentrated area for all categories of intangible cultural heritage in China. There is little difference in the overall distribution of intangible cultural heritage in the eastern, central, and western parts, but it differs a lot between different provincial areas. (2) The overall and different types of intangible cultural heritage in the Yangtze River Basin shows differentiated agglomeration characteristics, with the overall distribution structure of the “six cores and one belt”; from the perspective of types, intangible cultural heritages of traditional craftsmanship, traditional drama, folklore, folk literature, and traditional dance have obvious agglomeration; intangible cultural heritages of traditional medicine and traditional fine arts have little agglomeration; intangible cultural heritages of traditional sports, entertainment, and acrobatics are sparsely distributed, and have the least agglomeration. (3) Human and social factors are the primary factors that affect the spatial and temporal distribution of intangible cultural heritage in the Yangtze River Basin, followed by natural geographical factors, and the policy environment.

Keywords: intangible cultural heritage; Yangtze River Basin; spatial–temporal distribution; influencing factors



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1. Introduction

Intangible cultural heritage (ICH) carries a special cultural memory of a country. It mainly refers to various practices, performances, expressive forms, knowledge systems, and skills, as well as related tools, objects, crafts, and cultural sites, which various communities, groups, and sometimes individuals perceive as their cultural heritage [1]. ICH is conducive to improving cultural soft power and enhancing people’s cultural identity and national cultural confidence. In addition to historical and cultural value, it is also distinctive for its social and economic value. The high value of ICH has made the various ICH-led economic activities an effective contribution to the transformation and sustainability of the regional economic development structure [2–9]. However, with the continuous economic development and the rising rate of urbanization, ICH faces serious predicaments of inheritance and development, and problems such as improper protection, inheritance teams, and blind

development. In September 2015, the United Nations General Assembly (UNGA) adopted the “Transforming our world: the 2030 Agenda for Sustainable Development”, which for the first time included culture in the international process of sustainable development. ICH can effectively contribute to sustainable development in three dimensions: economy, society, and development. In June 2016, the “Convention for the Safeguarding of the Intangible Cultural Heritage” recognized the importance of intangible cultural heritage as not only a melting pot of diverse cultures but also as a guarantee of sustainable development.

Since the 20th century, research on ICH has received widespread academic attention. Overseas research work in this field started early. American scholar Sol believes that intangible cultural elements can tell the differences between the cultural essence of different regions [10], and Prus, after studying the development of villages and intangible cultural heritage, believes that they have a cultural background and are influenced by various elements such as geography, history, physics and socio-economics [11]. Other scholars have achieved fruitful research results in the fields of the concept, typology, conservation, and exploitation of ICH [12,13], with further research focusing on the exploitation of ICH tourism and ICH tourism experiences [14–16], while some scholars have further suggested that the regeneration and sustainable development of ICH should be considered and they shouldn't be over-commercialized [3]. In recent years, the relationship between the protection of ICH and the cultural rights of the masses has been mostly analyzed from the perspective of the history of ICH and social identity, and the role of inheritance education in the protection of ICH has been emphasized to explore deeper research [17,18].

Compared to foreign countries, China is a late starter in the research on ICH but has made remarkable achievements in recent years. The domestic research is mainly from the perspectives of tourism, history, folklore, humanities, education, and other disciplines and focuses on the concept, types, conservation, and characteristics of ICH [19–23]. With further emphasis on ICH work, theoretical research, especially on tourism experience, tourism development, value potential assessment, heritage conservation, and inheritance and utilization, has gradually deepened [24–28]. In recent years, some scholars have also focused on the spatial distribution characteristics and formation mechanisms of ICH from the perspective of geography to provide a reference for work related to ICH protection and inheritance. However, in terms of regions, the current studies are mainly focused on national and provincial administrative regions [29–35], with fewer cross-regional studies [36–39]; and the mostly-adopted research method is qualitative descriptions and to summarize the influence of the physical geography and humanistic environment of ICH gathering areas on ICH. In general, there are fewer quantitative studies based on regional scales (especially watershed scales) and influencing factors. Therefore, based on existing research, this paper visualizes the spatial distribution pattern of ICH in the Yangtze River Basin and analyses the formation mechanism of its distribution pattern using Detector software, aiming to further raise people's understanding, awareness and recognition of ICH in the Basin and strengthen cultural awareness and cultural confidence.

The Yangtze River is the great mother river of China, which has witnessed China's glorious history of 5000 years and has rich cultural deposits and regional characteristics. The 11 provinces, and municipalities (autonomous regions) in the Yangtze River Basin have 34.6% of China's total number of national ICH items, fully reflecting the cultural diversity of the Yangtze River Basin. In the context of China's vigorous promotion of the construction of the Yangtze River National Cultural Park, attaching importance to the distribution characteristics of ICH in the Yangtze River Basin plays a crucial role in promoting the scientific protection of overall culture and rational tourism development, which has research value. This paper focuses on the geographical distribution of ICH in the Yangtze River Basin, uses ArcGIS spatial analysis technology to visually represent the spatial distribution characteristics and type structure characteristics of ICH in the Yangtze River Basin at both the overall and sub-category levels and resorts to GeoDetector to explore the figurative factors of its spatial distribution characteristics. The aim is to better understand the spatial distribution characteristics and formation mechanisms of

ICH in the Yangtze River Basin, to formulate an efficient and feasible conservation and development strategy, and provide a scientific basis and constructive reference for the conservation, inheritance, and development of overall intangible heritage resources in the Yangtze River Basin in China. This will enhance the contribution of ICH in promoting high-quality sustainable development in various dimensions such as inclusive economic development, inclusive social development, and environmental sustainability in the Basin, as well as peace and security.

2. Research Materials and Methods

2.1. Research Data Sources

The data of national ICH items in this paper are mainly derived from the China Intangible Cultural Heritage Network and are divided into ten categories according to the national intangible cultural heritage list. The Ministry of Culture and Tourism of the People's Republic of China has successively published five batches of national ICH lists with a total of 1557 items, including 3610 sub-items (data obtained after splitting ICH items distributed in multiple places according to distribution areas). A sample of 1250 ICH items (including extended items) was obtained after statistics based on administrative divisions in the Yangtze River Basin. The official website was searched to determine the time and place of origin of each ICH, and the research used the geographical location of the ICH application unit in the place of origin as the coordinate point of the sample (mainly consisting of cultural centers and ICH protection centers at district and county levels). The geographic coordinate information of ICH is obtained using the Baidu Map Coordinate Picking Tool; DEM digital elevation data is derived from geospatial data clouds; Vector data such as administrative divisions, river basin boundaries, and river systems are derived from standard map services, and the resource and environmental data cloud platform of the Chinese Academy of Sciences. Humanities data, economic data, and policy information are derived from the statistical yearbooks, government work reports, and official websites of various provinces and municipalities (see Figure 1).

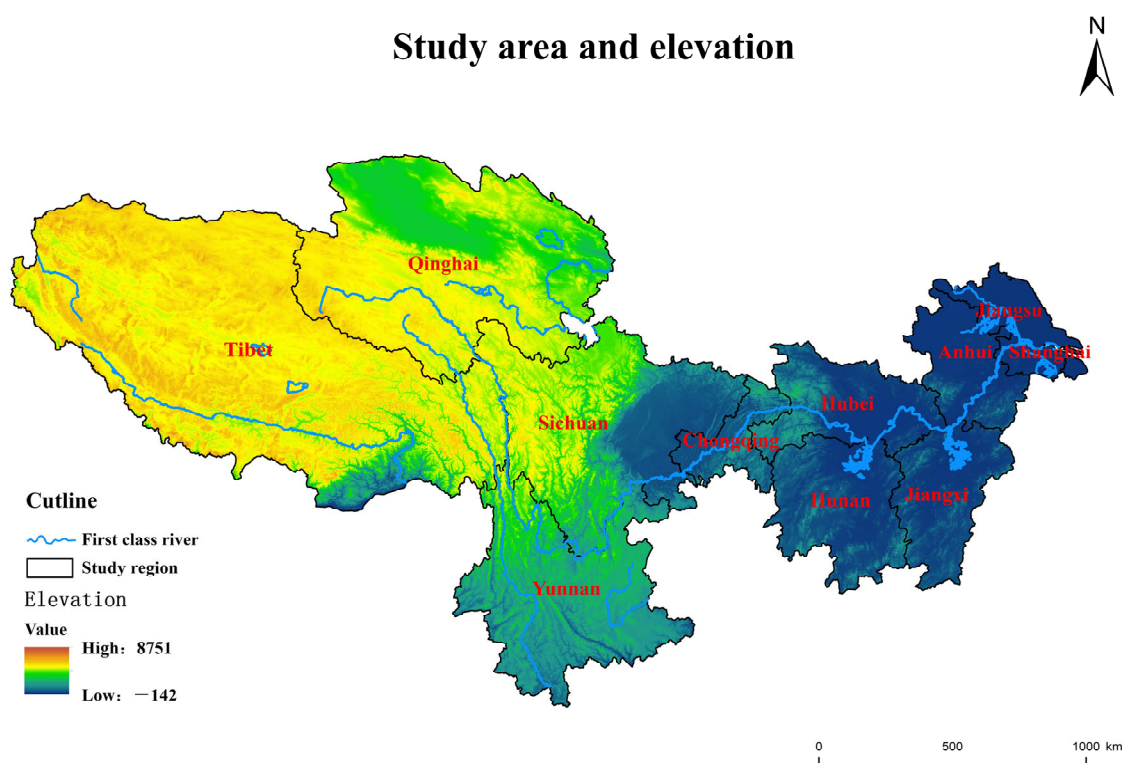


Figure 1. Study area.

2.2. Research Area

As one of the mother rivers in China, the Yangtze River originates from the southwest side of the Geladandong Peak, the main peak of the Tanggula Mountains in the Qinghai–Tibet Plateau. With a total length of 6397 km, it is the longest river in Asia and the third longest river in the world. Its main streams flow through 11 administrative regions, such as Qinghai Province, Tibet Autonomous Region, Yunnan Province, Chongqing City, Hubei Province, Hunan Province, Jiangxi Province, Anhui Province, Jiangsu Province, and Shanghai City. The warm climate, abundant rainfall, and rich natural resources of the Yangtze River Basin attract generations to live and reproduce here, creating unique watershed culture. With the migration, production, and life of people in the basin and the integration of cultures in different regions, a myriad of fascinating ICH items were created, forming a long-established and rich civilized system, and one of the core carriers of the Yangtze River culture.

2.3. Research Methods

This paper uses the ArcGIS10.8 analysis tool and geographic detector to explore the spatial distribution characteristics and influencing factors of national-level ICH in the Yangtze River Basin with the help of the following indexes and research methods.

2.3.1. Lorenz Curve

The Lorenz curve was originally used to represent the concentration index of industrialization. This study uses the Lorenz curve to show the centralization degree and structural characteristics of various ICH items in the Yangtze River Basin. The common formula for the concentration index is as follows:

$$I = \frac{C - K}{M - K}. \quad (1)$$

In the formula, C is the sum of the cumulative percentage of ICH types; M is the sum of the cumulative percentage when fully concentrated; K is the sum of the percentage of a complete average distribution.

2.3.2. The Nearest Neighbor Index

The location markers of ICH are abstractly expressed as spatial point elements, and the spatial distribution of point elements is judged by the nearest neighbor index [11]. Its formula is as follows [31]:

$$R = \bar{r}/\bar{r}_i \bar{r}_i = \frac{1}{2\sqrt{n/A}} = \frac{1}{2\sqrt{D}} \quad (2)$$

where \bar{r}_i and r_i represent the actual average nearest distance value and the theoretical nearest distance value, n is the number of ICH, A is the regional area, and D is the point density. When $R > 1$, it indicates that ICH sites tend to be evenly distributed; When $R = 1$, ICH sites tend to be randomly distributed. When $R < 1$, it indicates that ICH sites tend to be aggregated.

2.3.3. Kernel Density Estimation Method

The Kernel Density Estimation method is used to measure the concentration degree and main concentration places of ICH in various provinces and municipalities in the Yangtze River Basin, and its formula is as follows [32]:

$$P_n(X_i) = \frac{1}{n * h_n} \sum_{j=1}^n K \left\{ \frac{x_i - x_j}{h_n} \right\}. \quad (3)$$

where $K\left(\frac{x_i - x_j}{h_n}\right)$ is the kernel function, n is the total number of ICH samples, h is the bandwidth ($h > 0$), and $x_i - x_j$ is the distance from the estimation point to x_j , the ICH sample point [12].

2.3.4. GeoDetector

GeoDetector was first proposed by Wang Jinfeng, which is a new statistical method used to detect spatial heterogeneity and reveal the driving factors behind research objects, q -statistics is used to measure spatial heterogeneity, detect explanatory factors, and analyze the interrelationship between variables. It has been applied to many fields in natural and social sciences [40]. The formula is as follows:

$$q = \frac{\left(N\sigma - \sum_{h=1}^L N_h \sigma_h^2\right)}{N\sigma^2}. \quad (4)$$

where N and σ^2 represent the quantity and variance of ICH, respectively; and N_h and σ_h^2 are the sample size and variance of the influencing factors of category H ; L is the number of influencing factors in category h ; the value range of q is $[0,1]$, and the higher the value, the stronger the ability to interpret the spatial distribution of ICH.

3. Results

From the perspective of the overall scope of the Yangtze River Basin, the number of ICH in each batch is large and complete, showing a pattern of “agglomeration in the middle and lower reaches and sparse distribution in the upper reaches”. According to the classification criteria of national geographic regions, the Yangtze River Basin is divided into three different geographical regions: upstream, midstream, and downstream [14].

3.1. Differences in the Quantity of ICH in the Yangtze River Basin

The analysis found that: (1) in terms of the quantitative distribution of ICH in the upper, middle and lower reaches of the Yangtze River Basin (Table 1), the quantity of ICH items in the upper reaches is the largest, up to 544 items (43.52%); The number of ICH items in the middle reaches is 469 (37.52%); In the downstream area, only 237 (18.96%) are located. (2) From the perspective of the distribution in each province, overall the number of ICH in Jiangsu Province, Sichuan Province, Yunnan Province, Hubei Province, and Hunan Province is relatively large, with 161, 153, 145, 145 and 137 items respectively, and more than 100 items are located in Tibet Autonomous Region; The number of ICH in Qinghai province, Anhui province, Shanghai city, and Jiangxi province is between 50 and 100; Chongqing city has the minimum number of ICH, 53 items only. (3) According to Table 1, the ICH items in the Basin differ to a considerable extent not only in terms of geographical units but also in terms of different categories. By processing the number of ICH items in each province and municipality, the Lorenz curve was obtained, in which the degree of upward convexity is related to the types of ICH: the greater the number of ICH items, the more pronounced the degree of upward convexity and the greater the degree of concentration (see Figure 2). In general, the Lorenz curve visually expresses the uneven distribution of the ICH items in the Basin, with the ten major types of ICH showing a multi-gradient distribution: (1) The number of ICH in traditional arts is the largest, with 230 items; (2) the ICH categories with a quantity over 100 items also include traditional drama (171), traditional music (162), traditional dance (155), traditional fine arts (151), and folk customs (138); (3) the number of ICH items in relation to folk literature and folk vocal art forms is relatively few, only 90 and 61 respectively; (4) the number of ICH in traditional sports, entertainment and competitive sports is the smallest, only 31.

Table 1. Types of ICH in the Provinces and Cities—Geographical Quantity Distribution.

Geographic Area	Province (Municipality/Autonomous Region)	Folk Literature	Traditional Music	Traditional Dance	Traditional Drama	Folk Vocal Art Forms	Traditional Sports, Competitive Sports, and Acrobatics	Traditional Fine Arts	Traditional Crafts-manship	Traditional Medicine	Folk Customs	Total/Proportion (%)
Upstream	Qinghai	9	15	9	3	4	3	11	11	6	17	88/7.04%
	Tibet	3	6	33	9	1	2	12	18	9	12	105/8.40%
	Sichuan	7	23	20	11	6	4	25	38	3	16	153/12.24%
	Yunnan	19	14	30	17	2	2	6	24	6	25	145/11.60%
	Chongqing	3	14	4	3	6	1	7	7	4	4	53/4.24%
Midstream	Hubei	21	28	12	25	13	4	14	10	6	12	145/11.60%
	Hunan	9	16	13	32	6	4	15	19	6	17	137/10.96%
	Anhui	5	9	10	25	2	4	9	25	3	7	99/7.92%
	Jiangxi	1	7	11	17	6	1	11	21	1	12	88/7.04%
Downstream	Jiangsu	11	21	9	22	10	2	31	38	6	11	161/12.88%
	Shanghai	2	9	4	7	5	4	10	19	11	5	76/6.08%
	Total	90	162	155	171	61	31	151	230	61	138	1250/100%

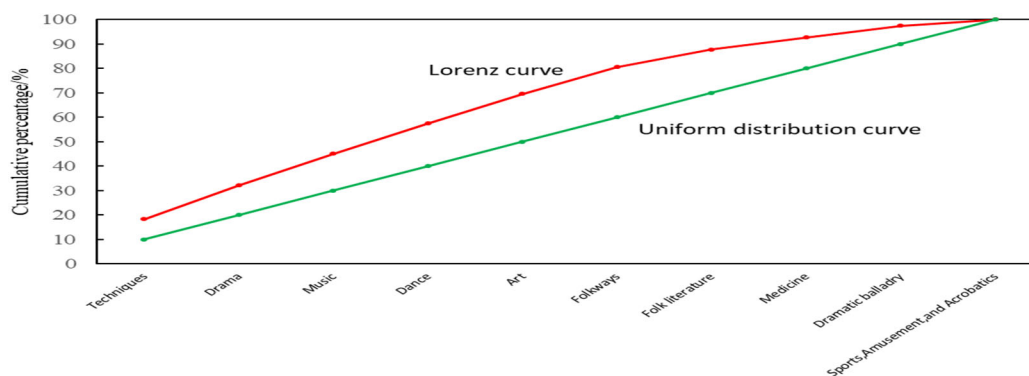


Figure 2. Lorenz Curve of ICH.

3.2. Spatial Distribution of ICH in the Yangtze River Basin

With the help of the Average Nearest Neighbor tool in ArcGIS10.8 software, the overall ICH in the Yangtze River Basin was processed to obtain the overall average nearest neighbor index of ICH in the Yangtze River Basin, $R = 0.265$, $R < 1$, and $Z = -49.699$, $P = 0$; thus, it is determined that the spatial distribution of ICH in the Yangtze River Basin is an aggregated distribution (see Table 2).

Table 2. The Nearest Neighbor Index of Overall ICH and Each Type of ICH.

Type	Overall	Traditional Crafts-manship	Traditional Fine Arts	Traditional Sports, Entertainment, and Acrobatics	Traditional Dance	Traditional Drama	Traditional Medicine	Traditional Music	Folk Literature	Folk Customs	Folk Vocal Art Forms
R	0.34	0.57	0.75	0.79	1.21	0.95	0.73	0.94	1.01	0.89	0.73
P	0	0	0	0	0.356	0.01	0	0	0.08	0	0

3.3. Spatial Distribution Characteristics of ICH in the Yangtze River Basin

3.3.1. Overall Distribution Characteristics of ICH

Based on the geographic coordinate data of national-level ICH items in the Yangtze River Basin and the kernel density analysis by the spatial analysis tool in the ArcGIS 10.8 platform, the kernel density processing map of the overall ICH in the Yangtze River Basin was established by the natural breaks classification method (Figure 1). (1) The distribution of ICH in the Yangtze River Basin has an obvious agglomeration trend, with the spatial distribution showing a pattern of “downstream agglomeration, midstream

clustering, and two hot spots upstream”, and an obvious structural situation of “six cores and one belt”. (2) “Six cores” include 1 high-density core area and 5 sub-density core areas. Among them, the high-density core area is formed with Shanghai city and southern Jiangsu province as the core, and radiates to the eastern and southern Anhui province and central Jiangsu province to form the first sub-density core area; the second sub-density core area extending from the center of Hubei province to eastern and western Hunan province and western Jiangxi province, which has the largest area of coverage; the third sub-density core area is centered on Chengdu city; the southeast part of Tibet Autonomous Region is centered on Lhasa city and the eastern part of Qinghai province is centered on Xining city, forming the remaining two sub-density core areas. “One belt” refers to the weak density belt covering seven provinces and two cities of Shanghai city, Jiangsu Province, Anhui Province, Hubei Province, Hunan Province, Jiangxi Province, Chongqing City, Sichuan Province and Yunnan Province. They have small kernel density values, but all of them have ICH distribution. (3) The core cluster area of ICH on the whole in the Yangtze River Basin is mainly located in developed provinces and cities and ethnic minority agglomeration areas, reflecting that the level of urban economic development and folk customs have a significant impact on the spatial distribution of ICH (see Figure 3).

Total density analysis of intangible cultural heritage

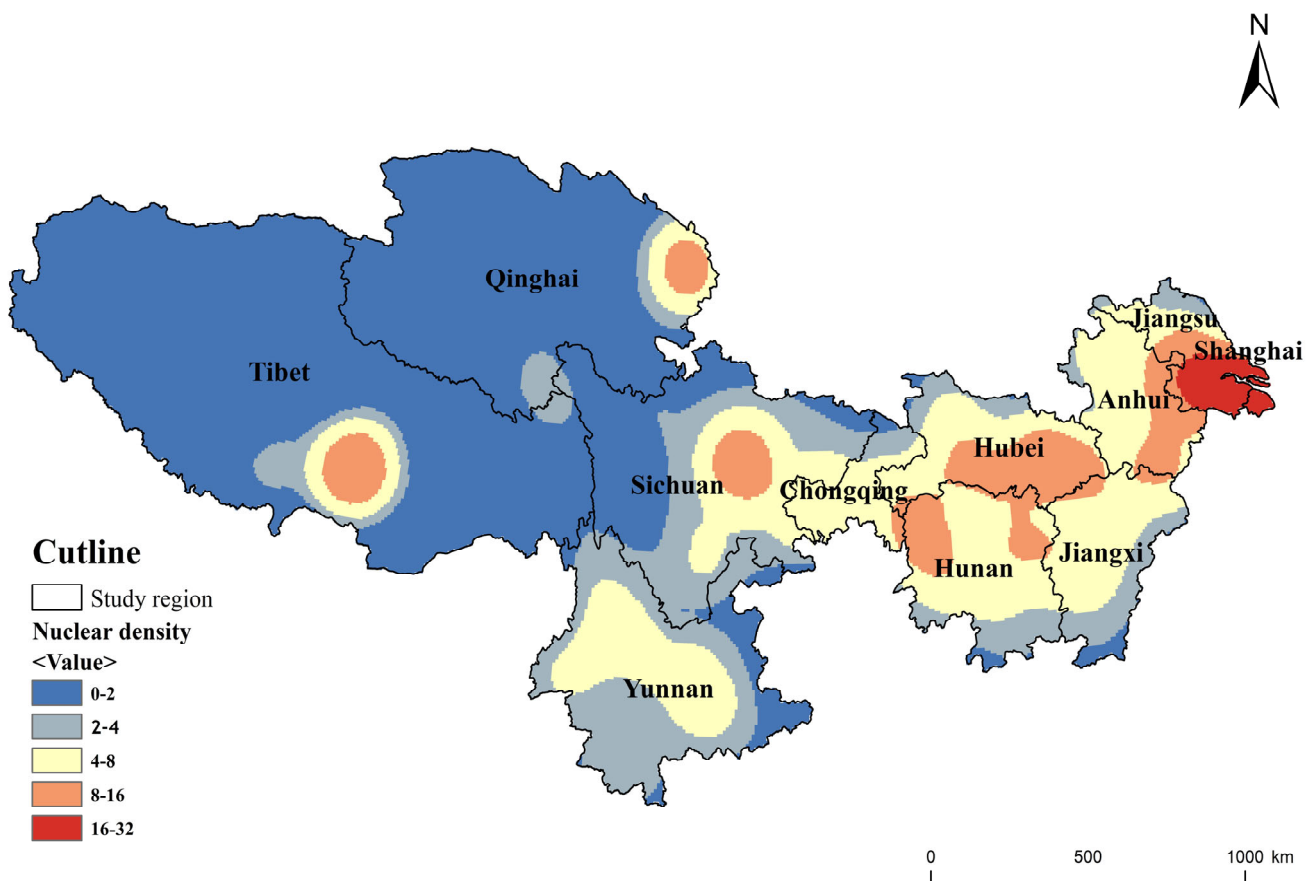


Figure 3. Analysis of the Core Density of ICH in the Yangtze River Basin.

3.3.2. Distribution Characteristics of Each Category of ICH

The kernel density of different types of ICH was further processed to establish a kernel density treatment group map of ICH sub-types in the Yangtze River Basin, and it was found that different types of ICH in the Yangtze River Basin had different aggregation areas and were quite different (Figure 4).

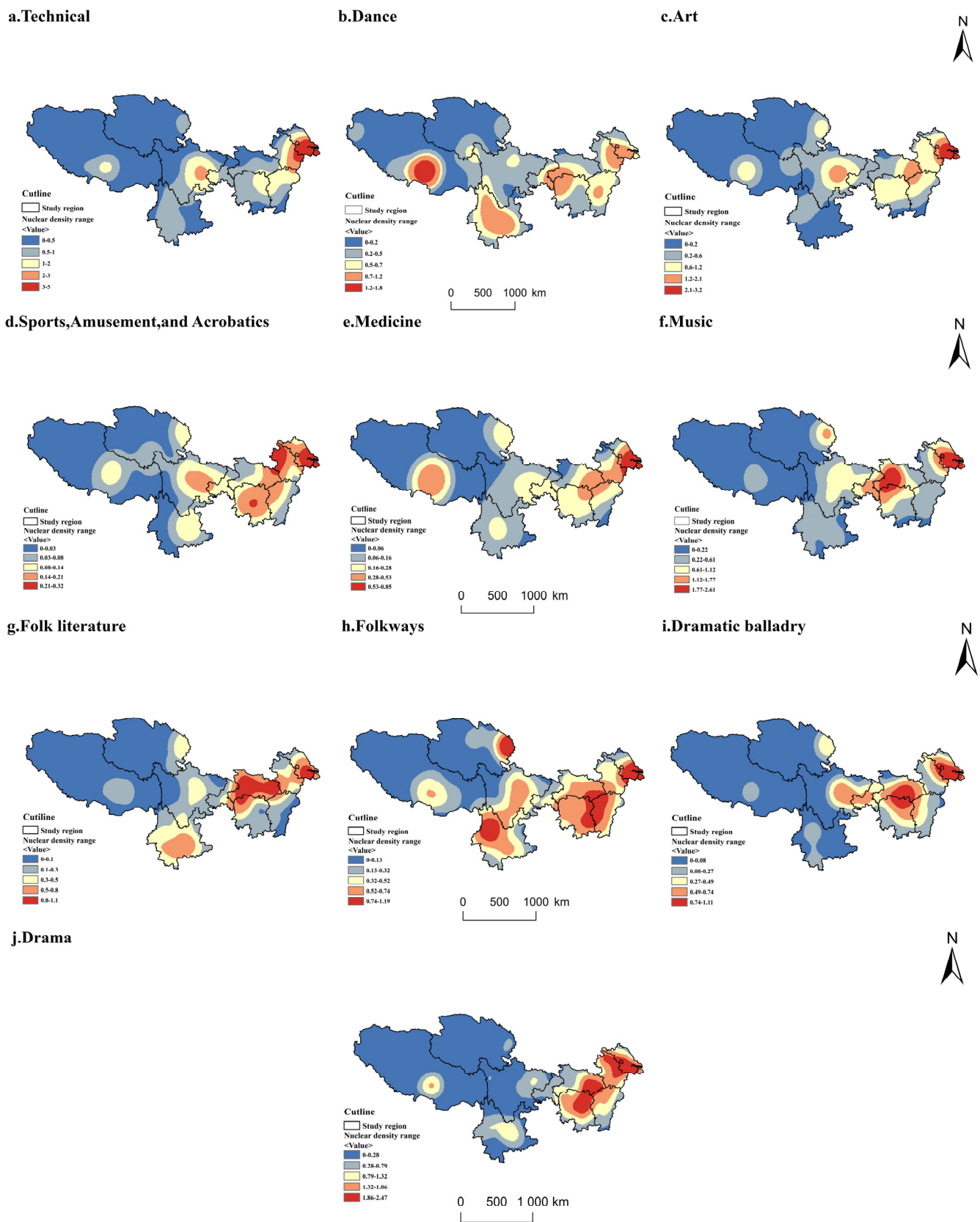


Figure 4. Density Analysis of Various Types of ICH.

The ICH items of folk literature, traditional craftsmanship, and traditional medicine are most densely distributed in Shanghai City, Jiangsu Province and Anhui Province in the

Yangtze River Delta region, followed by ICH items of folk literature in Chongqing–Hubei–Hunan–Anhui and Shanghai–Jiangsu, showing a belt-like distribution in high density; the ICH items of traditional craftsmanship are distributed in a belt pattern in southeast Hubei–northeast Hunan–northwest Jiangxi, while those of traditional medicines are distributed in a sheet-like pattern in Sichuan–Chongqing–Hunan–Hubei–Jiangxi. The ICH items of folklore have core distribution areas in the upstream, midstream, and downstream areas, while the ICH items of traditional dance are concentrated in Tibet Autonomous Region and have three sub-density distribution areas in the downstream Shanghai–Jiangsu–Anhui, Hubei–Chongqing–Hunan, and Yunnan regions. The ICH items of traditional fine arts are centered on Shanghai and southern Jiangsu, with a sheet-like distribution in the middle and lower reaches of the Basin. The ICH items of traditional drama are also concentrated in the middle and lower reaches of the Basin, with two high-density core areas formed in the Hunan–Hubei–Jiangxi and Shanghai–Jiangsu–Anhui regions. The ICH items of traditional music and folk vocal art forms also have a high degree of concentration, with the former concentrated at the junction of Chongqing–Hubei–Hunan in the middle reaches of the Yangtze River and the Yangtze River Delta region, and the latter forming a high-density core area in the Yangtze River Delta and the Chongqing–Hubei–Hunan region, rarely distributed in the upstream area. From the above analysis, it can be seen that Shanghai–Jiangsu–Anhui in the Yangtze River Delta region is an absolute high-density core area of all categories of ICH items except traditional dance, and ICH items in the middle reaches are more concentrated than those in the upstream areas, and ICH related to folk customs and traditional dances is densely distributed in the upstream areas, reflecting that the intensity of ICH is directly proportional to the degree of regional economic development and the agglomeration degree of ethnic minority culture. Besides, this differentiated distribution pattern is conducive to deepening the integration of various ICH resources and realizing stepwise development in the process of building an ICH tourism corridor in the Yangtze River Basin.

3.4. Analysis of Influencing Factors

The formation and development of ICH are the joint result of many elements. By referring to relevant literature, combining with the actual situation of the Yangtze River Basin, and drawing on the research ideas of experts in this field such as Li Jiangmin [38], Zhang Han [41], Tian Lei [42], Pan Jinghu [43], and starting from 10 evaluation indicators in 3 dimensions: natural geographical factors, human and social factors, and policy environment factors, the influencing factors of the temporal and spatial distribution of ICH in the Yangtze River Basin were explored. GeoDetector software was used to reveal the influence and intensity of each evaluation index on the spatial and temporal distribution pattern of ICH in the Yangtze River Basin so as to strengthen the argument (see Table 3).

Table 3. Influencing Factors and their Determinant Values.

Dimension	Index	Concrete Evaluation Index	q-Value	p-Value
Natural geography	Landform	Elevation	0.42	0
	River system	Length of the river system	0.66	0
Human and society	Economic development level	GDP	0.77	0
	Population	Total population	0.42	0
	Traffic	Highway mileage, railway mileage	0.49	0
	Tertiary industry development level	The proportion of tertiary industry	0.38	0
	Tourism industry	Gross tourism income	0.58	0
	Culture	Museums, traditional villages, public libraries, performing arts troupe	0.37	0
	Ethnicity	Ethnic minorities	0.09	0
Policy environment	ICH support policy	ICH-related regulations implementation rules, opinions, and measures	0.28	0

3.4.1. Natural Geographic Factors

Regional cultural patterns are inextricably linked to the natural geographical environment of a region, and the impact of the natural geographical environment and natural resources on the formation and development of ICH is fundamental, showing a high positive correlation. In this paper, two evaluation indexes, elevation, and length of the water system, were selected and hierarchically detected, and the influence coefficients of topography and river were $q = 0.42$ and $q = 0.66$, respectively.

Topography is one of the determinants of the formation of unique regional landscapes, which also plays a driving role in the emergence and development of ICH by influencing human production and life [17]. The terrain of the Yangtze River Basin is high in the west, and low in the east, running through the three major economic zones in the eastern, central, and western parts of China, spanning three major steps. There are many types of landforms in the Basin and the topography varies widely, of which the mountainous and hilly area accounts for 67.2% of the total area, the flat area accounts for 28.1%, and the water surface accounts for 4.1%. The topographic DEM digital elevation layer and the administrative division layer in the Basin were visually expressed through extraction by mask using the ArcGIS10.8 software. As can be seen from Figure 1, the average altitude of the upstream headwaters is relatively high, especially in the Tibet Autonomous Region, where the average altitude of the whole region exceeds 5000 m. Among them, the northern plateau and the southern Himalayas are characterized by many mountain ranges and harsh natural climatic conditions. The enclosed terrain prevents population movement and cultural exchange, so the ICH items are sparsely distributed. However, it is also because of this that the authenticity of ICH is better preserved from the impact of foreign cultures. In contrast, the middle and lower reaches are mostly hills, mountains, plains, basins, and other low-altitude terrain, with superior geographical location, pleasant natural climate, and convenient transportation, which promotes the flow and gathering of people between regions and is conducive to the production, development, and spread of culture. Therefore, most of the ICH in the Basin is clustered here [44]. From the perspective of river systems, the principle of living near water has been followed by our ancestors since ancient times. And the density of inland river networks, abundant water resources, and rainfall in the Basin have laid a solid foundation for the life and reproduction of early human beings and the diffusion, communication, integration, and dissemination of various cultures. Using the buffer analysis of ArcGIS 10.8, a 30 km buffer zone of the Yangtze River Basin was established. It can be found that the buffer zone covers almost all ICH items. Therefore, the spatial distribution of ICH in the Yangtze River Basin is closely linked to and better coupled with the river system [38].

3.4.2. Human and Social Factors

ICH is the crystallization of human civilization and wisdom. As an important part of the culture, it changes with changing socio-economic conditions. Through detection, it can be found that human factors have a significant positive correlation with the spatial and temporal distribution of ICH, among which the influence coefficients of economic development level, population, transportation conditions, the proportion of tertiary industries, tourism, culture, and ethnicity are $q = 0.77$, $q = 0.42$, $q = 0.49$, $q = 0.63$, $q = 0.58$, $q = 0.37$ and $q = 0.09$, respectively. It can be seen that among the human and social factors, the level of economic development has the greatest impact on the spatial and temporal distribution of ICH in the Yangtze River Basin, and economically developed areas are prone to form dense ICH agglomeration areas, such as Shanghai city, Jiangsu province and Anhui province in the Yangtze River Delta region. The Yangtze River Basin is the most developed tourism area in China, where the impact of tourism on ICH is second only to the level of economic development. The development of ICH is integrated with tourism, and high-quality development is at the forefront of the construction of cultural tourism in the Yangtze River Basin. The proportion of tertiary industry and population also have some influence on the spatial and temporal distribution of ICH, with influence coefficients

at 0.38 and 0.37 respectively; According to the 30 km buffer zone of railways and highways (map omitted) and the detection results of geographical detectors, it is revealed that traffic condition is one of the important basic conditions for the exchange and dissemination of ICH. Convenient transportation and location advantages can facilitate the integration and prosperity of culture, and also provide more opportunities for the public to understand, learn and experience ICH. The influence of the ethnic minority population on ICH is the least, with an influence coefficient of only 0.09.

3.4.3. Policy Environment Factors

The q value of the policy environment factor is 0.28, indicating that the policy environment had a certain influence on the spatial and temporal distribution of ICH in the Yangtze River Basin, but the degree of influence was weak. In the past thirty years, China has initially established a more comprehensive legal protection system for intangible cultural heritage. In recent years, on the basis of The Law of the People's Republic of China on Intangible Cultural Heritage, relevant policy guidance has been continuously introduced from the state level to the local government level to promote the protection, inheritance, active utilization, and innovative development of ICH. As of 2022, data from the China Intangible Cultural Heritage Network show that there are significantly more ICH support policies in the middle and lower reaches of the Yangtze River Basin than in the upper reaches where the distribution of ICH is more dispersed, indicating that ICH policies and regulations are positively correlated with the distribution of ICH. Secondly, affected by different levels of urbanization and economic development, there are also many connections between the financial investment in ICH and the extent to which multiple parties implement the policies in each region [32].

4. Discussion

As living cultural heritage, the formation and development of intangible cultural heritage is an important part of the traditional cultural system, as it embodies the cultural genes, spiritual connotations, and values of the Chinese nation for thousands of years. The Yangtze River Basin has played a crucial role in the development of Chinese civilization. It is a symbol of the diversity and integration of Chinese civilization and incubated the Yangtze River culture, which is one of the most representative and influential main cultures of Chinese civilization. Understanding the spatial distribution characteristics and influencing factors of ICH in the Yangtze River Basin is an important way to promote the inheritance, revitalization, and rational innovation of ICH and further promotion of Yangtze River culture. Rational conservation and development of ICH can not only bring huge economic benefits while promoting cultural effects but also enable better protection of ICH resources in the Basin. Based on the above analysis, this paper makes the following suggestions for the conservation and development of ICH in the Yangtze River Basin from the perspective of sustainable development:

First of all, there are large differences in the distribution space and categories of ICH items in the Yangtze River Basin, and the topographical and geomorphological structures in the Basin are complex. Therefore, in the process of ICH protection, the existing cultural and ecological space of ICH is faced with the dilemma of continuously being separated. However, there are many traditional villages in the Basin, which are the cultural and ecological soil on which ICH depends for survival and development. Therefore, traditional villages can be used as the space of tangible cultural heritage to stimulate the emotions, memories, and spirit of the masses, thus stimulating the desire of the masses to actively participate in the protection and inheritance of ICH, allowing everyone to become the inheritors of ICH, shaping the regional cultural brand, building a high level of cultural identity and cultural confidence among the people, and promoting the ICH items in the Yangtze River Basin to "revitalize" and "go" out.

Secondly, the culturalization of the economy and the economization of culture are often considered to be two important features of post-modernization [45]. ICH has not

only historical and cultural value but also commercial and economic value, so promoting the integration of ICH culture and tourism is the key to giving play to the economic and cultural value of ICH [46]. At the same time, it is necessary to innovate the mode of ICH protection, strengthen the protection of property rights and pay more attention to their practicality. The UK experience shows that combining the protection of ICH with the pursuit of economic benefits can effectively promote the inheritance and prosperity of ICH, thus making it a famous brand that will endure. Therefore, in the protection of ICH, we should not only focus on the work itself, but also promote it through modern business models, especially by strengthening the development of ICH creative industries to create a new business model for ICH, and then we should further promote the legal protection system and property rights protection system for ICH on this basis, taking into account both economic benefits and practicality.

Finally, as the Yangtze River Basin is closely linked to the Yangtze River Economic Belt, it is suggested to make full use of the relevant national strategic support to deeply explore the value and deeper connotations of the ICH in the Basin, try to build an alliance of ICH tourism corridors in the Yangtze River Basin [47], adhere to market demand orientation, and comprehensively build an industrial platform of “ICH+” in the Yangtze River Basin. Efforts should also focus on the development of the Yangtze River culture and strengthening the cross-regional integration of resources to create a distinctive “ICH+” industrial brand image, especially for similar ICH items in different regions. It is advisable to hold regular ICH exhibitions to attract more people, and actively use digital technologies such as artificial intelligence, big data, and cloud computing to build an ICH environmental space and industrial platform to overcome ICH regional restrictions more efficiently, unify all aspects of the industry, and maximize industrial economic development and social benefits, which in turn can contribute to the protection and heritage of ICH.

5. Conclusions

With the help of ArcGIS analysis tools, this paper comprehensively uses a nearest neighbor index, kernel density analysis, and GeoDetector to explore the spatial distribution characteristics and influencing factors of 1250 national ICH items in the Yangtze River Basin, and obtains the following main conclusions:

First, the Yangtze River Basin has little difference as a whole, but there is a clear gap between provinces. The structure of ICH is unevenly distributed, with traditional drama, traditional music, and traditional dance as the dominant types, while traditional medicine, traditional sports, entertainment, and acrobatics are fewer in number. From the Yangtze River Basin as a whole, there is a significant spatial clustering of ICH items. The spatial layout is aggregated distribution, showing an obvious feature of “six cores and one belt”. To be specific, the spatial distribution consists of one high-density core area and five sub-density core areas.

Second, Shanghai City, Jiangsu Province and Anhui Province in the Yangtze River Delta region are high-density cluster areas for all types of ICH items except traditional dance, with complete distribution and a large number of ICH types. The ICH items of traditional dance are concentrated in the Tibet Autonomous Region, which profoundly reflects the emotions and ethnic beliefs of the people of all ethnic groups in the Tibet Autonomous Region in the historical period. The ICH items of traditional craftsmanship form a sub-density core area in the Sichuan-Chongqing area, which is distributed in clusters. The sub-density core areas of the ICH items of traditional fine arts are located in the Sichuan-Chongqing region and the southeast Hubei-northwest Jiangxi-northeast Hunan region. The ICH items of folk literature and traditional drama are concentrated in the central and eastern regions. The ICH items of folklore are widely distributed, forming a high-density core area in the Hubei-Jiangxi-Hunan, Sichuan-Yunnan, and Qinghai provinces. The ICH items of folk vocal art forms show a sheet-like distribution in Sichuan-Chongqing-Hubei-Hunan-Jiangxi region; the number of ICH items in relation to traditional sports, entertainment, and acrobatics is small and relatively scattered; The ICH items of traditional

medicine are concentrated in the developed regions of central and eastern China. The Chongqing-Hubei-Hunan region is another high-density core distribution area of the ICH items of traditional music.

Third, natural geographical factors, human and social factors, and policy environment factors all have more or fewer impacts on the distribution of ICH items, and there are significant differences in the impact intensity of specific evaluation indicators on ICH. Among them, the natural geographical environment has a great influence on the spatial distribution of ICH in the Yangtze River Basin. The flat terrain, abundant water sources, and suitable temperature are all basic factors to promote the formation and development of ICH. Among the human and social factors, the level of economic development, traffic conditions, and population have a strong influence; finally, the influence of policy environmental factors on the spatial distribution of ICH in the Yangtze River Basin is also nonnegligible.

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