sustainability

MDPI

Article

The Role of Tourism in Promoting the Urbanization of Ethnic Border Areas: A Case Study of Xishuangbanna

Jiao Yu [1,2], Jianxin Yang [1], Jiangfeng Li [1,*], Ling Lin [3,*] and Yingjian Ren [1]

[1] School of Public Administration, China University of Geosciences, No. 388 Lumo Road, Wuhan 430074, China; yjinyunnan@163.com (J.Y.); yangjianxin@cug.edu.cn (J.Y.); ryj1421@cug.edu.cn (Y.R.)
[2] School of Jewelry and Art, Baoshan University, Baoshan 678000, China
[3] School of History, Culture and Tourism, Guangxi Normal University, Guilin 541001, China
* Correspondence: jfli0524@163.com (J.L.); linling010@126.com (L.L.)

Abstract: Taking Xishuangbanna Dai Autonomous Prefecture, a typical ethnic border area with rapid tourism development, as an example, this study uses a coupling coordination degree model to quantitatively analyze tourism and urbanization, two subsystems in Xishuangbanna, and measure the level of coordinated development between tourism and urbanization in Xishuangbanna. This study provides a theoretical basis for building famous tourist cities and for improving the urbanization efficiency and level in areas such as Xishuangbanna with abundant tourism resources but insufficient urbanization. The following results were obtained: (1) Xishuangbanna's tourism plays a strong role in promoting urbanization, and its tourism urbanization response coefficient, tourism industry location entropy, and tourism urbanization level indicator all show clear upward trends; tourism has become a local advantage industry and has a significant positive correlation with urbanization. (2) In the evaluation system for tourism urbanization quality, the weights are ranked in the order of social indicators > economic indicators > population indicators > spatial indicators > eco-environmental indicators; over time, social indicators and economic indicators show clear fluctuating upward trends, population indicators fluctuate greatly, and spatial indicators and eco-environmental indicators fluctuate little. (3) The top five indicators influencing tourism urbanization are the number of the incoming individuals, the number of travel agencies, the number of corporate enterprises in the catering industry, the forest coverage rate, and the number of ethnic minority villages. (4) In the evaluation of the coupling coordination degree, the comprehensive evaluation indicator is low, resulting in an overall low coupling coordination degree of tourism urbanization quality in Xishuangbanna, and three types of coupling coordinated development (i.e., severe, moderate, and mild imbalances) are observed.

Keywords: coupling coordination; response coefficient; tourism urbanization; Xishuangbanna

Citation: Yu, J.; Yang, J.; Li, J.; Lin, L.; Ren, Y. The Role of Tourism in Promoting the Urbanization of Ethnic Border Areas: A Case Study of Xishuangbanna. *Sustainability* **2023**, *15*, 15119. https://doi.org/10.3390/su152015119

Academic Editor: Kyle Maurice Woosnam

Received: 23 August 2023
Revised: 11 October 2023
Accepted: 16 October 2023
Published: 21 October 2023

1. Introduction

The population of ethnic minorities in China accounts for 8.89% of the total population (2020), mainly concentrated in western border provinces such as Xinjiang, Guangxi, and Yunnan. Compared with the developed areas in the east, ethnic minority areas are mostly "marginal zones" for economic construction, with relatively lagging urbanization. As frontier regions open to both the inland and the outside world, border areas are crucial to national governance and development. Therefore, accelerating economic development and promoting urbanization in ethnic border areas is not only a general trend but also an intrinsic requirement for China's urbanization to advance from east to west.

The relationship between urbanization and tourism has been extensively investigated in the past. Before the 1970s, research on tourism conducted outside of China was primarily regarded as a component of urban system studies. It was not until the mid-1970s that cities became the backbone of modern tourism and tourism began to "urbanize", leading to the

gradual emergence of independent research. In 1991, Mullins proposed the concept of tourism urbanization [1]. Subsequently, Gladstone [2] analyzed the characteristics of local tourism urbanization using examples of American leisure cities (with beaches, sunshine, and oceans) and metropolises (with large capital-intensive tourist destinations), arguing that tourist metropolises are cities with gambling centers or large entertainment centers and that leisure cities cater more to retirees and the unemployed. Truly [3] analyzed the agglomeration effect of tourism development on urban populations, pointing out that tourism activities caused the movement of tourists and the migration of labor toward tourist destinations. Luchiari and Serrano [4] posited that regions where tourism serves as a pillar industry differ from industrial cities in the development model, as the urbanization of these regions revolves around the development of tourism and the goals of the two continuously merge during the development process. Diedrich and Aswani [5] studied the influence of tourism development on the social culture, ecological environment, livelihood patterns, and community cohesion of the indigenous population in the Solomon Islands and proposed that scientific planning is essential to ensure that tourism development, along with other aspects, generates the expected positive impacts on economic development. Many countries see the tourism-oriented development of urban areas as an effective means to prevent agricultural decline and increase urban income [6], and research has been conducted on the driving mechanism for the development of tourism urbanization [7], urban interventions, and the influence of resident participation on the development of urban tourism [8,9]. In recent years, many studies have focused on the empirical analysis of typical tourism development models, the analysis of coupling effects between systems [10–12], and evaluations of development quality [11,13–15], as well as the application of regression analysis, panel data analysis, and structural equation analysis to explore the synergistic development mechanisms between tourism and urbanization. The results generally indicate that urbanization is the main theme of socioeconomic development and that the development of tourism is one of the best options for promoting urban development [15–17]. Since the reform and opening-up, tourism development has played an important role in promoting China's urbanization process, especially in the central and eastern regions [18].

Currently, Chinese scholars' research on tourism urbanization in ethnic areas mainly focuses on aspects such as analyses of typical cases, the identification of development models, and evaluations of development levels. In terms of development model research, He [19] constructed a development model of tourism urbanization in China's western ethnic regions from the perspective of synergetics. Lai et al. [20] constructed a development model for tourism urbanization in ethnic rural areas of western China based on the actual development of urbanization in these areas. In the exploration of the development path of urbanization in ethnic border areas, Wu et al. [21] proposed that government-led supply plays a key role. Yang [22] argued that abundant tourism resources provide a new path for urbanization development, that is, tourism urbanization. To better study the effectiveness of tourism in promoting urbanization development, some scholars have constructed an evaluation indicator system for the level of tourism urbanization and quantitatively analyzed the relationship between tourism and urbanization [23,24]. The process and phenomenon of tourism development driving urbanization development is widely present worldwide, especially in ethnic minority areas [25–29]. Many ethnic border areas have abundant tourism resources and possess the basic conditions for "tourism urbanization".

In provinces with a high proportion of ethnic minority populations, tourism revenue has played an increasingly important role in local economic development. For example, in Tibet, Yunnan, and Guangxi, the proportion of tourism revenue to GDP was 32.97%, 47.51%, and 48.22%, respectively, in 2019. Tourism has clearly become the leading industry that drives the rapid economic development of ethnic border areas, playing a key role in the process of urbanization. At present, research on tourism urbanization in ethnic areas mainly focuses on large regions with mature tourism development, with little research on county-level ethnic areas in boarder regions. Most ethnic border areas are far from

political and economic centers, and their social and economic development lags, resulting in the following unique characteristics of their tourism and urban development. First, the geographical environment is unique. Ethnic border areas in China have a good natural ecology, but there is often a lack of awareness of ecological protection in the process of addressing slow economic development, leading to an increase in ecological damage in the process of tourism development and urban construction. Second, the cultural and social environment is unique. Border areas are inhabited by multiple ethnic groups, characterized by the coexistence of multiple religions, languages, and cultures. The harmonious development of various ethnic groups is closely related to social stability. Third, the geopolitics are unique. Border areas are geographically and socially marginal areas of the country, serving as contact zones between different social systems. This special location determines the uniqueness and importance of the development of ethnic border areas. The regional nature of border areas also determines that, in addition to having their own distinct development characteristics, they possess the attributes of "public goods" (public goods, also known as "public commodities" and "public products", refer to products or services that can be consumed or enjoyed by the majority of people. Examples include assets and services related to national defense, public security, and justice, as well as compulsory education and public welfare services. In this study, it mainly refers to border defense). Therefore, urbanization in ethnic border areas has always been different from that in other regions [21]. The urbanization of ethnic border areas should consider not only the development of urban areas but also strategic barrier roles in defending the border.

The development of Xishuangbanna, as a twin bordering city, plays a positive role. In the process of integration and metropolitan evolution, dual cities have prompted loosely connected urban clusters to become more integrated in terms of function, culture, and institutions, thereby enhancing the effectiveness of urbanization [30,31]. The development of Xishuangbanna as such a twin border city will also inevitably drive the integrated development of surrounding border cities and solidly promote high-quality development with strong borders and stable frontiers while enriching the lives of border residents. Currently, most scholars' research focuses on inland cities, with relatively few studies conducted on bilateral ethnic cities. Xishuangbanna is a city with prominent characteristics in terms of being both bilateral and ethnic. By using it as a research subject, it will provide valuable reference for more similarly attributed twin bordering cities in an active manner.

On this basis, this study uses panel data of county-level units in China from 2010 to 2019 and takes Xishuangbanna Dai Autonomous Prefecture as a research case to construct a tourism urbanization measurement model from five dimensions: population, economy, society, space, and ecological environment. In addition, it introduces a coupling coordination degree model to analyze the coordination relationship between tourism and urbanization development in Xishuangbanna from 2010 to 2019 and to examine the development patterns, limiting factors, and changes in coupling coordination degree of tourism urbanization in Xishuangbanna. The study aims to reveal the development laws, restrictive factors, and changes in coupling tourism urbanization in Xishuangbanna. Assuming that the research results are highly representative, its findings can not only clearly demonstrate the dimensions and depth of Xishuangbanna as a bilateral border ethnic tourism urbanization area but also provide reference and inspiration for the development of twin border cities with similar conditions.

2. The Synergistic Feedback Mechanism between Tourism and Urbanization Development in Ethnic Areas

Synergy refers to the state and trend of maintaining cooperation and integrity among things, systems, or elements. The interdependence of synergy and competition jointly drives the evolution of systems. From the perspective of synergistic development, tourism and urbanization in ethnic areas are two cooperative subsystems that mutually influence, cooperate with, and promote each other. The evolution processes of the two exhibit similar patterns and have certain correlations. Urbanization is a necessary way for cities to mod-

ernize, and the development mode for urbanization has transitioned from "material urbanization" to "human-centered urbanization". The quality of urbanization reflects the level of urbanization. Population agglomeration is the foundation of urbanization development, and industrial development is the basis for population agglomeration. As a comprehensive industry, tourism can drive the development of many related industries, form a complete industrial system, and provide industrial support for urbanization development.

As shown in Figure 1, Xishuangbanna is an area where ethnic minority populations gather, and it possesses distinctive regional ethnic cultural characteristics in terms of its ecological environment, architectural forms, clothing and food, festivals and celebrations, religious beliefs, and customs related to weddings and funerals. Local advantageous resources are leveraged to develop ethnic tourism and create a series of featured products such as ethnic village sightseeing, specialty catering, folk customs experiences, festival performances, and scientific and educational activities and research, so as to promote employment in ethnic areas and for ethnic minority populations, increase villagers' income, and contribute to the prosperity and development of ethnic areas. The development of tourism not only stimulates the local economy but also protects and passes on ethnic culture, protects and enhances the ecological environment of rural areas, and brings together factors such as populations, industries, resources, services, and land, ultimately forming small tourist towns where consumption is concentrated. Ethnic tourism mainly relies on the folk customs and activities of a region as its primary resources. It combines nature and society, culture and life, observation and experience, and tradition and modernity, thus possessing rich cultural heritage and a colorful living experience. It involves connotative elements such as folk customs experiences, leisure sightseeing, and agricultural tourism. It is essentially an integrated tourism industry that helps to enrich and improve the tourism product system, promote the transformation and upgrading of the tourism industry structure, and thereby contribute to the optimization of the industrial structure in ethnic areas.

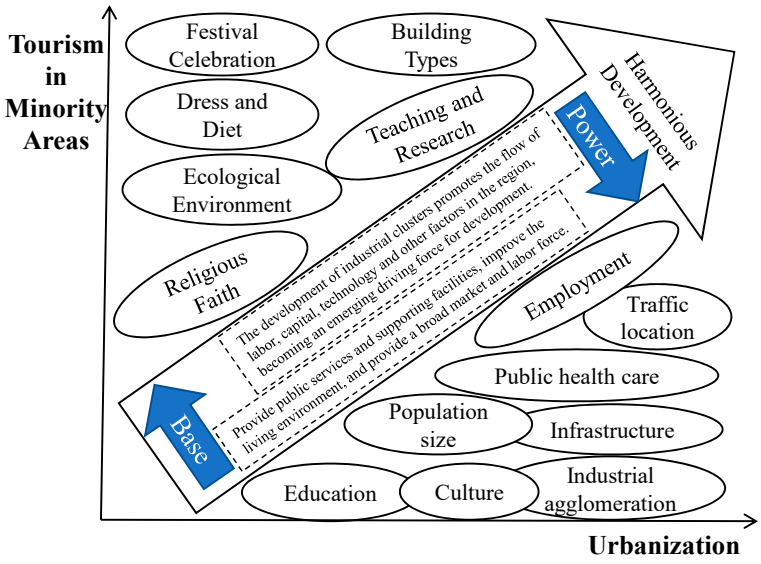

Figure 1. The mechanism for the synergistic development of tourism and urbanization in ethnic areas. Source: Combine other people's research with your own redrawing [19,32–35].

Urbanization construction in ethnic areas also needs to focus on and make breakthroughs in tourism development so that urban areas prosper through tourism. Urban areas often function as spaces for transportation, economy, culture, and commerce and as information centers, and the agglomeration of industries is conducive to guiding consumption and promoting economic prosperity. As the population gradually expands, public services and supporting facilities are improving, creating a beautiful living environment and showcasing unique ethnic customs and folk culture. Tourism products are rich in meaning, innovation, and competition, forming an inherent and stable image of tourist

destinations and enhancing visibility, reputation, and influence, thereby greatly increasing the attraction to tourists and promoting the rural construction and tourism development around urban areas. Urbanization is an effective carrier for the sustainable development of the tourism industry. Therefore, tourism and urbanization in ethnic areas are inseparable, interdependent, and mutually reinforcing. Only through the synergistic development of the two and the full integration of rural, cultural, ecological, and other elements can the optimal effects of both be ensured and the ultimate goals of tourism urbanization, urban–rural integration, and industrial integration be achieved.

3. Research Method and Design

3.1. Study Area and Data Source

The study area is Xishuangbanna Dai Autonomous Prefecture, a border city in Yunnan Province, China (Figure 2). Located at the southern tip of Yunnan, Xishuangbanna is home to 13 long-dwelling ethnic minority groups, including the Dai, Hani, and Jinuo, which account for 74% of the prefecture's population. Xishuangbanna has developed its tourism industry since the early 1980s and is one of the earliest ethnic areas in China to do so. As of 2019, the output value ratio of the three major industries in Xishuangbanna was 21.95%:23.58%:54.47%, and tourism has become the dominant industry driving social and economic development in the area.

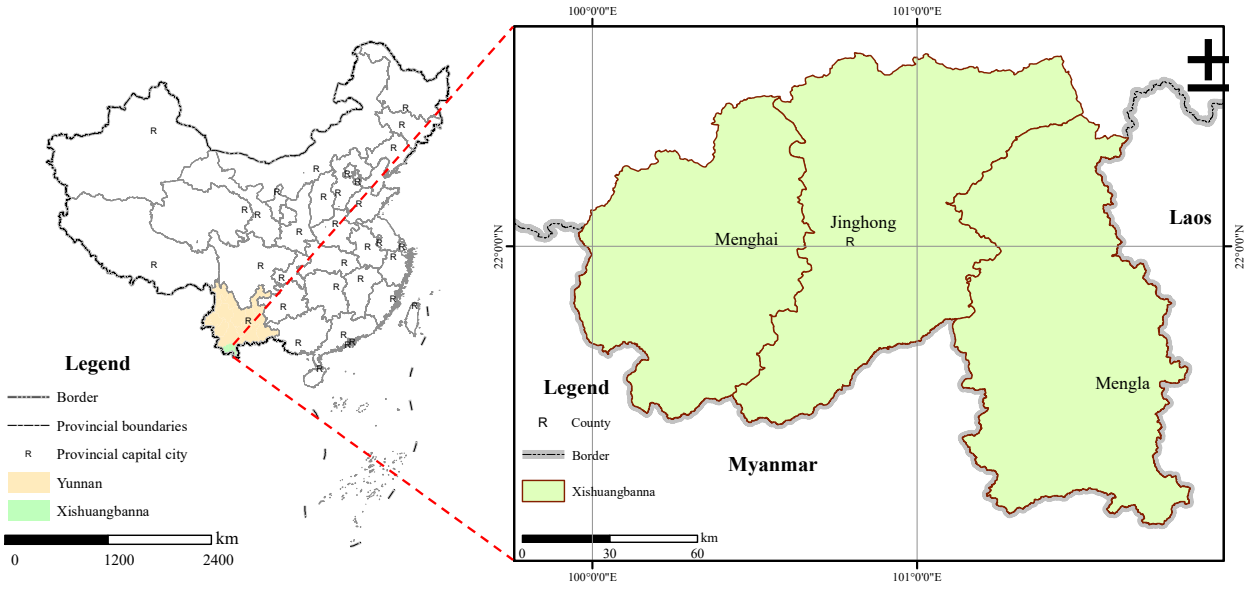

Figure 2. Location map of Xishuangbanna. Source: Self–drawn.

This study used panel data of county-level units in China from 2010 to 2019. The relevant data sources include the China County Statistical Yearbook (2010–2019), the Yunnan Statistical Yearbook (2010–2019), and the Xishuangbanna Statistical Yearbook (2010–2019). The data collection methods mainly include organizing relevant yearbook data, sorting out online information, and conducting field investigations (Data acquisition advantage: As a local resident of the ethnic group in this area, the author has a certain understanding of local development.)

3.2. Construction of the Indicator System

Referencing previous research findings and the development characteristics of ethnic border areas, 47 indicators in five dimensions (population, economy, society, space, and ecological environment) were selected to construct an efficient evaluation system for tourism urbanization in the ethnic area of Xishuangbanna. The key influencing factors and major issues in the process of tourism urbanization in ethnic border areas were identified.

Among them, population factors are the core of the tourism industry and urbanization development. Towns as tourist destinations become tourist areas and areas with a concentration of labor, and urbanization places greater emphasis on people's needs and promotes balanced development between urban and rural areas. Economic development supports the development of the tourism industry and urbanization. Enhancing the level of economic development can increase local tourism investments, promote improvements in tourism infrastructure, drive technological progress and innovation, and drive further development of the tourism industry. Additionally, enhancing the economic development level can accelerate the construction of urban infrastructure, attract population migration to urban areas with better living conditions, bring a large labor force to urban areas, and promote urbanization construction. Social factors include all human activities such as sanitary conditions, the living environment, educational conditions, and living conditions. The development of the tourism industry requires the support of related facilities such as transportation, catering, accommodation, and medical services. In addition, the development of the tourism industry not only provides a solid material foundation for the production and livelihood of local residents but also offers high-quality living services, thereby promoting the development of local public service urbanization [36]. Spatial indicators are important driving forces for the balanced development of the tourism industry and urbanized regions. They mainly consist of land function and tourism spatial density, reflecting the spatial differences in urban development scale, resource spatial distribution, and infrastructure distribution. Eco-environmental indicators are important for measuring the quality of the tourism industry and new urbanization development [11,13,37]. These indicators comprise ecological construction and environmental protection factors, mainly reflecting various aspects such as the environment of the tourist destination, the social carrying capacity of the tourist destination, and the healthy/unhealthy development of the tourism industry.

In Table 1, the urban registered unemployment rate (C6), the urban Engel coefficient (C19), and the rural Engel coefficient (C20) are "negative indicators", and the rest are "positive indicators". A positive indicator means that the indicator value is positively correlated with the subsystem; that is, the higher the indicator value is, the higher the evaluation level of the subsystem. A negative indicator means that the indicator value is negatively correlated with the subsystem; that is, the lower the indicator value is, the higher the evaluation level of the subsystem.

Table 1. The evaluation indicator system for tourism urbanization quality in Xishuangbanna [11,13,38–40].

Criteria	Elements	Indicators	Units	Weights	Rank
A1 Population indicators 0.1566	B1 Population agglomeration 0.1075	C1 Proportion of the urban population	%	0.0169	26
		C2 Proportion of the ethnic minority population	%	0.0093	44
		C3 Size of the incoming population	Person	0.0638	1
		C4 Tourist growth rate	%	0.0175	25
	B2 Population employment 0.0491	C5 Annual increase in urban employment	10,000 people	0.0098	41
		C6 Urban registered unemployment rate	%	0.0322	6
		C7 Proportion of the employed population in the tertiary industry	%	0.0071	47
A2 Economic indicator 0.2848	B3 Economic and industrial structure 0.1685	C8 Proportion of tertiary industry	%	0.0247	17
		C9 Inbound tourism revenue	10,000 yuan	0.0267	13
		C10 Domestic tourism revenue	10,000 yuan	0.0163	27
		C11 Per capita tourism consumption of domestic tourists	Yuan	0.0269	11
		C12 Per capita tourism consumption of inbound tourists	Yuan	0.0151	31
		C13 Revenue from one-day tours via border entry	10,000 yuan	0.0319	7

Table 1. *Cont.*

Criteria	Elements	Indicators	Units	Weights	Rank
		C14 Proportion of tourism revenue in GDP	%	0.0269	12
	B4 Economic development quality 0.0652	C15 GDP per capita	Yuan	0.0159	30
		C16 Growth rate of disposable income per capita of urban residents	%	0.0264	14
		C17 Tourism revenue growth rate	%	0.0229	18
	B5 Consumption level 0.0511	C18 Per capita retail sales of social consumer goods	Yuan	0.0278	9
		C19 Urban Engel coefficient	%	0.0102	38
		C20 Rural Engel coefficient	%	0.0131	36
A3 Social indicator 0.3157	B6 Basic residential living conditions 0.0861	C21 Per capita living space of urban residents	m^2	0.0147	32
		C22 Year-end mileage per capita	person·km^{-1}	0.0185	22
		C23 Number of public vehicles in operation	--	0.0224	19
		C24 Urban gas penetration rate	%	0.0094	42
		C25 Broadband internet users	10,000 households	0.0212	21
	B7 Education level 0.0509	C26 Number of schools per 10,000 students	Per 10,000 people	0.0276	10
		C27 Number of full-time teachers per 10,000 students	Per 10,000 people	0.0146	33
		C28 Number of ethnic minority students	10,000 people	0.0087	45
	B8 Medical level 0.0232	C29 Number of beds per 10,000 people	Per 10,000 people	0.0133	35
		C30 Number of health facilities per 10,000 people	Per 10,000 people	0.0099	40
	B9 Tourism support system 0.1555	C31 Number of travel agencies	--	0.0470	2
		C32 Number of A-level scenic spots	--	0.0093	43
		C33 Number of ethnic minority villages	--	0.0399	5
		C34 Number of corporate enterprises in the accommodation industry	--	0.0163	28
		C35 Number of corporate enterprises in the catering industry	--	0.0430	3
A4 Spatial indicators 0.1066	B10 Land function 0.0603	C36 Arable land area	khm^2	0.0318	8
		C37 Urban built-up area	km^2	0.0184	23
		C38 Urban road area per capita	m^2	0.0101	39
	B11 Tourism spatial density 0.0462	C39 Tourism spatial density	Number of people per m	0.0214	20
		C40 Tourist density index	--	0.0248	16
A5 Eco-environmental indicators 0.1363	B12 Ecological construction 0.0946	C41 Number of parks	--	0.0255	15
		C42 Forest coverage	%	0.0428	4
		C43 Park green space per capita	m^2	0.0184	24
		C44 Green coverage rate of urban built-up areas	%	0.0079	46
	B13 Environmental protection 0.0417	C45 Comprehensive utilization rate of industrial solid waste	%	0.0118	37
		C46 Urban domestic sewage treatment rate	%	0.0138	34
		C47 Proportion of days with good air quality	%	0.0162	29

Note: This study used panel data of county-level units in China from 2010 to 2019. The relevant data sources include the China County Statistical Yearbook (2010–2019), the Yunnan Statistical Yearbook (2010–2019), and the Xishuangbanna Statistical Yearbook (2010–2019).

3.3. Research Methods

This study first introduces the "tourism urbanization response coefficient" [41–43] and "tourism location entropy" to explore the driving role of tourism development in urbanization. Next, using econometric methods, tourism urbanization quality is evaluated based on the constructed indicator system to further analyze the influencing factors of tourism development in Xishuangbanna that drive the development of urbanization. Finally, drawing on the coefficient model of capacitive coupling in physics, the degree of coordination among the five major systems of tourism urbanization in Xishuangbanna is evaluated, and the degree of coordination between them is measured using a coupling coordinated development model.

The specific methods are as follows.

3.3.1. Tourism Urbanization Response Coefficient and Tourism Location Entropy

Tourism urbanization response refers to the adaptation and feedback effects on spatial integration, structural optimization, and industrial integration and development of the tourism industry in the process of urbanization, in addition to the growth of the urban economic aggregate, the increase in urban investment and development intensity, and improvements in urban structure and function. The indicator "urbanization response coefficient of industrial structure evolution" is introduced to measure the intensity of the tourism urbanization response. The model is expressed as follows:

$$R = (f/F)/(m/M) \quad (1)$$

where R is the regional tourism urbanization response coefficient; f is the regional tourism revenue; F is the total industrial output value; m is the non-agricultural population in the region; and M is the total population. m/M is the rate of tourism urbanization, and f/F is the rate of industrial tourism. The model represents the degree of urbanization in the development of the tourism industry through the ratio of the total revenue of the tourism industry as a share of the total value of the industry to the urbanization rate. The larger the ratio, the faster the development of industrial tourism compared to the process of tourism urbanization; in this case, the tourism industry develops rapidly, and the scale and intensification of tourism greatly promote the development of tourism urbanization. Conversely, a smaller ratio indicates a weakened effect, meaning that the development of industrial tourism is slower than the tourism urbanization process; in this case, the tourism industry develops slowly and may even hinder urbanization.

To further analyze the position of the tourism industry in Xishuangbanna, tourism location entropy (TL) is introduced [44]. The larger the calculated entropy value, the better the agglomeration effect and the higher the industrial position. TL is calculated as follows:

$$TL = \left(e_{ij}/e_i\right)/(E_j/E) \quad (2)$$

where e_{ij} represents the output value of industry i in region j; e_i represents the output value of industry i in the entire region; E_j is the GDP of region j; and E is the GDP of the entire region. A higher TL indicates a higher level of agglomeration of the industry in the region. $TL \geq 1$ indicates a high agglomeration level of the tourism industry in the region, i.e., an advantageous industry; $TL < 1$ indicates that the tourism industry in this region is at a low agglomeration level and lacks competitive advantage compared with other dominant industries.

3.3.2. Evaluation of Tourism Urbanization Quality

The entropy weight method is used to evaluate tourism urbanization quality [13,45]. The specific calculation process is as follows:

1. The data are normalized using deviation standardization. To ensure the validity of values, an effective value A = 0.0001 is added to each value after non-dimensionalization.

$$\text{Positive indicators}: \ X'_{ij} = ((x_i - x_{min})/(x_{max} - x_{min})) + A \tag{3}$$

$$\text{Negative indicators}: \ X'_{ij} = ((x_{max} - x_i)/(x_{max} - x_{min})) + A \tag{4}$$

2. Determination of the indicator weight:

$$P_{ij} = b_{ij} / \sum_{i=1}^{n} b_{ij}, \tag{5}$$

3. Calculation of the entropy:

$$e_j = 1/\ln\ n \sum_{i=1}^{n} P_{ij}\ \ln\ P_{ij}, \tag{6}$$

4. Calculation of the coefficient of difference:

$$g_j = 1 - e_j, \tag{7}$$

5. Calculation of the indicator weight:

$$w_j = g_j / \sum_{i=1}^{n} g_j, \tag{8}$$

6. Calculation of the tourism urbanization level:

$$Z_{ij} = X_{ij} \times w_j, \tag{9}$$

3.3.3. Coupling Coordination Degree Evaluation Model

Coupling Degree Evaluation

This study draws on the coefficient model of capacitive coupling in physics and obtains a coupling degree evaluation model for the five major systems of tourism urbanization quality in Xishuangbanna [12,45–47]:

$$C = \left\{ (TP * EI * SI * ST * EE) / \lceil (TP + EI + SI + ST + EE)/5 \rceil^5 \right\}^{1/5} \tag{10}$$

where C represents the coupling degree of the population, economy, society, space, and eco-environment systems, with a value range of 0 to 1. A larger C value indicates a benign resonance coupling between the two; i.e., the system will develop in an orderly manner. In Equation (10), TP is the population indicator (target population), EI is the economic indicator, SI is the social indicator, ST is the spatial indicator (space target), and EE is the eco-environment indicator.

Evaluation of Coupling Coordinated Development

The coordination degree in the coordination degree model of the population, economy, society, space, and ecological environment of tourism urbanization quality in Xishuangbanna only reflects the dispersion and coupling degree of the five system indicators and thus fails to reflect their coordinated development. In other words, the degree of developmental coordination between them is not truly measured. Therefore, a coupling coordinated development model is introduced to analyze the coupling coordination degree D among various systems [12,48–50]:

$$D = \sqrt{T \times C}, \tag{11}$$

$$T = TP \times r_1 + EI \times r_2 + SI \times r_3 + ST \times r_4 + EE \times r_5 \tag{12}$$

where T is the comprehensive evaluation indicator of the coupling coordinated development level of the five major systems in Xishuangbanna, reflecting the overall development of the five systems; and r_1, r_2, r_3, r_4 and r_5 are the contribution coefficients of different systems, with $r_1 + r_2 + r_3 + r_4 + r_5 = 1$. Therefore, $r_1 = 0.1566$, $r_2 = 0.2848$, $r_3 = 0.3157$, $r_4 = 0.1066$ and $r_5 = 0.1363$.

The levels and division criteria for C and D were set referencing previous research results [22,51–53] (Table 2).

Table 2. Division criteria for coupling degree and coupling coordination degree levels.

C (Coupling Degree)	Coupling Phase	D (Coupling Coordination Degree)	Coordination Level
C = 0	Disordered phase	0.00~0.20	Severe disorder
0.01~0.30	Low-level coupling phase	0.21~0.35	Moderate disorder
0.31~0.50	Antagonistic phase	0.36~0.50	Mild disorder
0.51~0.80	Run-in phase	0.51~0.65	Basic coordination
0.81~0.99	High-level coupling phase	0.66~0.80	Average coordination
C = 1	Ordered phase	0.80~1.00	Quality coordination

4. Analysis of the Results

4.1. Analysis of Tourism Urbanization Response and Tourism Location Entropy in Xishuangbanna

Equations (1) and (2) were used for time series analyses of the tourism urbanization response coefficient (R), urbanization rate (URB), and tourism location entropy (TL) in Xishuangbanna from 2010 to 2019 (Table 3). The corresponding evolutionary trends are plotted in Figure 3.

Table 3. R and TL for different counties in Xishuangbanna.

Region		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
f/F		0.4592	0.5122	0.6016	0.6609	0.7451	0.8535	0.9818	1.2550	1.5675	1.4507
m/M		0.2997	0.2986	0.3314	0.3742	0.3795	0.3963	0.3974	0.3963	0.3973	0.3991
R	XSBN	1.5323	1.7152	1.8152	1.7661	1.9635	2.1534	2.4707	3.1666	3.9456	3.6353
	JH	1.5012	1.8222	1.8741	2.0268	2.2462	2.8217	2.8370	3.5332	4.3272	4.1130
	MH	1.2306	1.1869	1.0173	0.9781	1.1956	0.9965	1.7946	2.3642	3.3143	2.7177
	ML	1.0023	0.9843	1.3643	0.9166	1.1680	1.1771	1.4782	2.1082	2.5337	2.2880
URB		0.3582	0.3665	0.3757	0.3854	0.3956	0.4064	0.4178	0.4299	0.4427	0.4562
TL		0.4990	0.5071	0.6016	0.6304	0.7451	0.8535	1.1482	1.2892	1.2148	1.4575

Note: For the R values in the table, XSBN = Xishuangbanna Dai Autonomous Prefecture, JH = Jinghong City, MH = Menghai County, and ML = Mengla County.

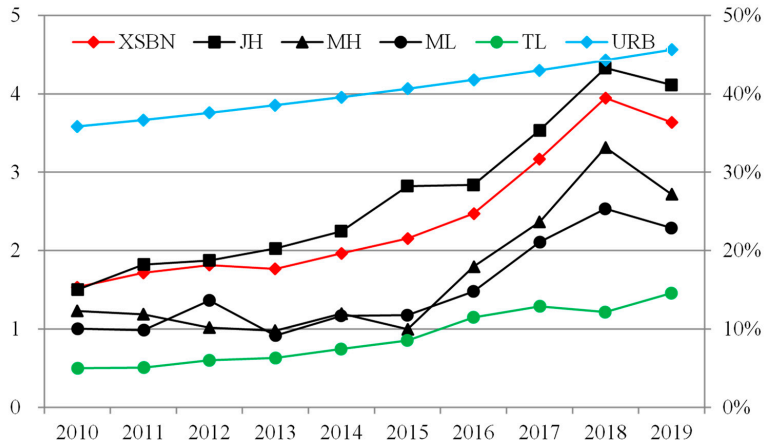

Figure 3. Tourism urbanization responses in various counties of Xishuangbanna. Source: Self–drawn.

Since 2010, URB and TL in Xishuangbanna have significantly improved, and R(XSBN) for the entire prefecture has shown an upward trend. Among them, R continues to increase, indicating that the development of industrial tourism is faster than the process of tourism urbanization. At this time, the tourism industry is developing rapidly, and the scale and intensification of tourism has greatly contributed to the development of tourism urbanization. In terms of trends, R increased from 1.5323 in 2010 to 3.6353 in 2019 (a decrease from 3.9456 in 2018 due to the impact of the epidemic), with the highest growth rate of 28.17% in 2017 and an average annual growth rate of 10.62%. At the county level, the ranking for R is as follows: Jinghong City (JH) > Menghai County (MH) > Mengla County (ML) (Figure 4). In addition, by calculating the changes in the tourism urbanization response coefficient during the time period, it is found that the development differences in 2010–2014 and 2015–2019 are 0.43 and 1.48, respectively, showing an increasing development rate. TL shows an increasing trend, and since 2016 (TL $\geq$ 1), the tourism industry has exhibited a relatively high level of agglomeration, developing into a regional advantageous industry. Using SPSS 27.0.1 software for the calculations, the Pearson correlation coefficients of URB and R with TL are 0.921 and 0.976, respectively, with *p*-values less than 0.01, indicating significant positive correlations.

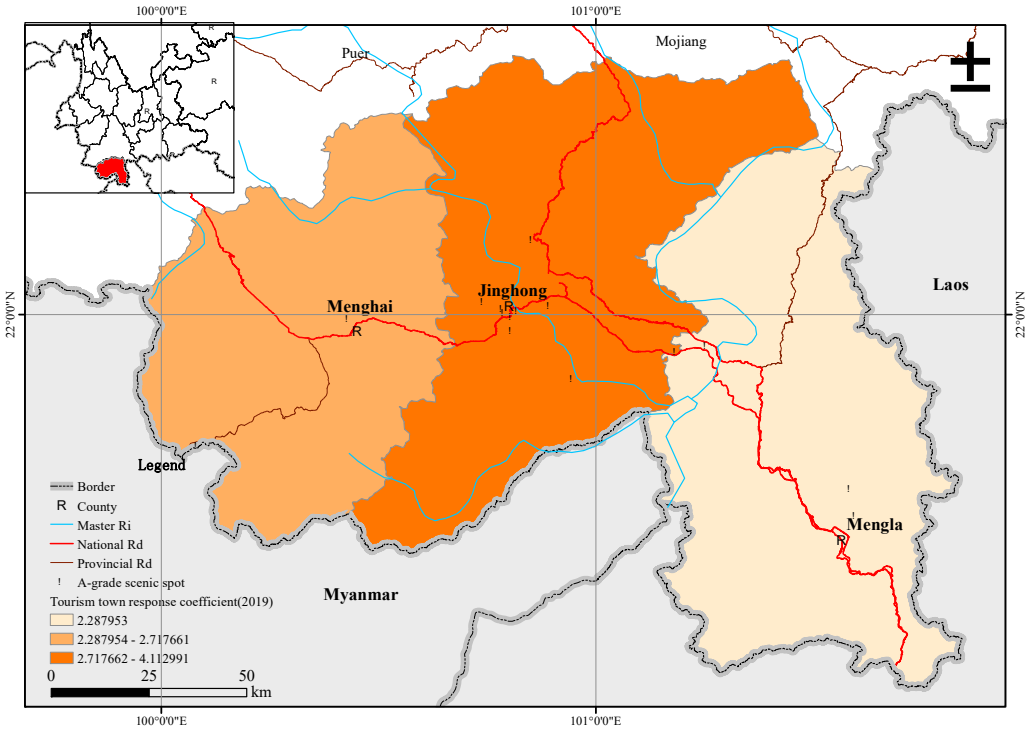

Figure 4. The distribution of R in Xishuangbanna in 2019. Source: Self–drawn.

With the advent of the era of regional tourism and ethnic tourism, both R and TL developed at an increasing rate. Tourism has become a dominant industry in Xishuangbanna, and its role in promoting urbanization is continuously increasing.

4.2. Evaluation of Tourism Urbanization Quality in Xishuangbanna

4.2.1. Analysis of the Weights of Tourism Urbanization Indicators in Xishuangbanna

From the weights of the Xishuangbanna tourism urbanization indicators in Table 1, the weights of the five dimensions are ranked as follows: A3 social indicators (0.3157) > A2 economic indicators (0.2848) > A1 population indicators (0.1566) > A5 spatial indicators (0.1363) > A4 eco-environmental indicators (0.1066). In terms of development trends, social indicators and economic indicators show clear upward trends with fluctuations, population indicators fluctuate greatly, and spatial indicators and eco-environmental indicators fluctuate little.

The main reasons for the above results are as follows. Xishuangbanna has rich natural and cultural tourism resources, such as ethnic cultures, ethnic customs, and tropical rainforests, and tourism and its related industries have become an important means of creating local wealth. In addition, the influx of tourists and incoming individuals has greatly promoted the rapid development of urbanization. Among the five dimensions, A3 social indicators have the highest weight. Among the indicators, the most noticeable is B9 tourism support system (0.1555). Ethnic tourism resources, the construction of tourism service facilities, and the development of scenic spots have great impacts on the level of social urbanization. The level of development of travel agencies, catering establishments, and other facilities to some extent determines the local capacity to receive tourists, thus affecting local tourism development. Improvements in B6 basic living conditions (0.0861) reflects significant enhancement in the quality of life of people in the region. The importance of B7 education level (0.0509) has gradually come to the forefront, with attention being paid to the education of ethnic minority students and the number and quality of teachers being increased considerably, greatly boosting the level of education and urbanization in ethnic areas. B8 medical level (0.0232) reflects the strength of livelihood protection in the region, and although it accounts for a relatively small proportion, it indicates to a certain extent the level of local social development. Therefore, social indicators such as the abundance of local tourism resources, tourism reception level, residents' living conditions, and education level are important indicators for measuring the weights of the tourism urbanization level in Xishuangbanna. A2 economic indicators, which reflect the level of economic tourism urbanization, rank second in weight. Xishuangbanna began developing its tourism industry in the early 1980s and is one of the earliest ethnic areas in China to do so. The tourism industry plays a crucial role in local economic development. Before 1999, the proportions of the three major industries ranked as follows: primary industry (51.18%) > tertiary industry (33.43%) > secondary industry (15.39%); in 1999, the ranking was as follows: tertiary industry (42.10%) > primary industry (41.04%) > secondary industry (16.86%); by 2009, the secondary industry surpassed the primary industry: tertiary industry (41.98%) > secondary industry (29.14%) > primary industry (28.89%); and from 2019 onward, the proportion of the tertiary industry exceeded 50%, forming a stable ranking: tertiary industry (54.47%) > secondary industry (23.58%) > primary industry (21.95%), with tourism developing into a clearly advantageous industry. Among them, B3 economic and industrial structure (0.1685) has the largest weight, followed by B4 economic development quality (0.0652) and B5 consumption level (0.0511). In 2019, the total tourism revenue of Xishuangbanna was 82.800 billion yuan, accounting for 145.75% of the local GDP, indicating that the tourism industry has become an overwhelmingly advantageous industry in local economic development and that the vigorous development of tourism will drive the level of urbanization to a higher level, which is an important indicator of the degree of urbanization.

Ranking third in weight are A1 population indicators. An important aspect of urbanization in ethnic minority areas is population urbanization. With the rapid development of tourism in Xishuangbanna, on the one hand, there was an influx of the urban population from outside, and on the other hand, migration occurred locally under the influence of foreign cultures. Rural tourism vigorously promotes rural economic, cultural, and social exchanges in the region. The traditional rural model has gradually become community-based, with a decline in the agricultural population and a rapid increase in the urbanization rate. B1 population agglomeration indicators (0.1075) directly reflect the level of tourism urbanization in Xishuangbanna. B2 population employment indicators (0.0491) show that the development of tourism has brought new employment opportunities to the local area and that self-employed individuals are mostly engaged in industries related to tourism services. Ranking fourth in weight are A5 eco-environmental indicators. Among them, B12 ecological construction (0.0946) and B13 environmental protection (0.0417) reflect the progress in eco-environment construction during the urbanization process in Xishuangbanna. Ethnic customs and tropical rainforests are important resources for the development

of tourism in Xishuangbanna, and the development of ecological construction is particularly critical. The awareness of environmental protection needs to be strengthened, and the protection and sustainable use of resources is key to achieving healthy and sustainable tourism urbanization in Xishuangbanna. The rapid development of ethnic tourism as well as the vigorous construction of tourism service facilities, catering business venues, and entertainment facilities has brought pressure to local traditional dwellings and the ecological environment to a certain extent. To achieve sustainable development of the regional tourism economy, the ecological environment inevitably occupies an important position in the process of promoting tourism urbanization. Ranking last in weight are A4 spatial indicators. B10 land function (0.0603) accounts for a large proportion and reflects the land use situation in Xishuangbanna. From 2010 to 2019, the area of arable land showed year-on-year growth. The increment from 2010 to 2018 was small, with an average annual growth rate of 4.39% and a maximum growth rate of 23.96% in 2019. Urban built-up areas mainly changed three times between 2010 and 2019, with a growth rate of 4.36% in 2011, 9.02% in 2013, and 25.60% in 2019, which was the highest. The expansion of urban areas also reflects the level of tourism urbanization in Xishuangbanna. B11 spatial density (0.0462) reflects the tourist carrying capacity in Xishuangbanna. The tourist spatial density and the tourist density index have been increasing continuously. The ability to meet the spatial requirements of the current number of tourists reflects, to some extent, the level of local tourism urbanization.

4.2.2. Analysis of Limiting Factors for Tourism Urbanization in Xishuangbanna

As seen in Figure 5, the top 10 indicators that most influence tourism urbanization are C3 size of the incoming population, C31 number of travel agencies, C35 number of corporate enterprises in the catering industry, C42 forest coverage, C33 number of ethnic minority villages, C6 urban registered unemployment rate, C13 revenue from one-day tours via border entry, C36 arable land area, C18 per capita retail sales of social consumer goods, and C26 number of schools per 10,000 students. These indicators are crucial for the development of tourism urbanization in Xishuangbanna and serve as limiting factors in this process.

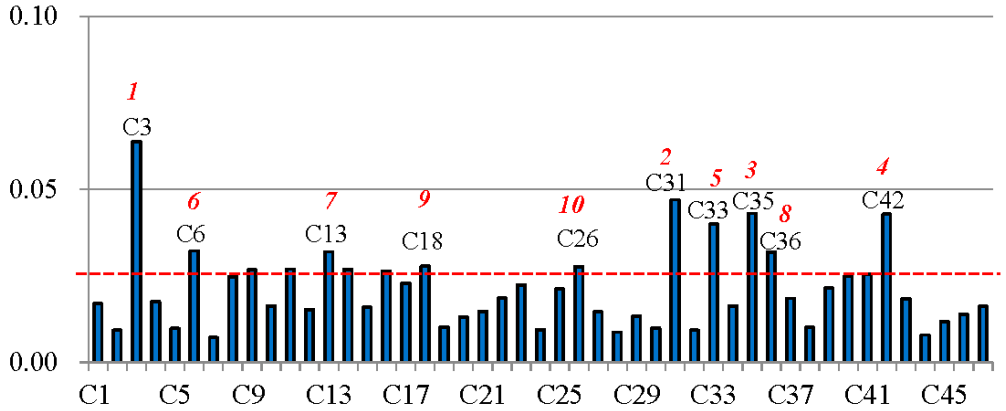

Figure 5. Distribution of weights of limiting factors for tourism urbanization in Xishuangbanna. Source: Self–drawn.

C3 size of the incoming population (0.0638) has the largest weight. The incoming population in Xishuangbanna mainly includes non-local residents, regular tourists, and migrant workers (engaged in tourism services). The incoming population is mainly attracted by the development of the local tourism industry, and most gather in urban areas, accelerating urbanization development in Xishuangbanna. C31 number of travel agencies (0.0470) and C35 number of corporate enterprises in the catering industry (0.0430) have the second and third largest weights, respectively, and reflect the tourism reception capacity of Xishuangbanna. The development of tourism infrastructure is crucial for tourist satisfaction

and thus important to the level of tourism urbanization. C42 forest coverage (0.0428) is an important indicator of the forest conditions in Xishuangbanna and reflects forest tourism resources. Increasing the forest coverage is of great significance not only to human beings but also for improving the tourism value and function of local resources. C33 number of ethnic minority villages (0.0399) is the external manifestation of ethnic tourism resources in Xishuangbanna, and the development of ethnic minority villages injects vitality and impetus into the development of local ethnic tourism, driving the development of regional ethnic tourism and the socioeconomic progress of ethnic minority villages and promoting the development of rural industrial structure, rural surplus labor migration, and the preservation of traditional culture within the region. C6 urban registered unemployment rate (0.0322) reflects the development of urban employment, with an average urban registered unemployment rate of 2.76% over the past decade. The development of tourism has created a large number of job opportunities for society, shifting employment from the primary industry to tertiary and secondary industries, leading to the continuous migration of the rural population to urban areas and promoting tourism urbanization. Regarding C13 revenue from one-day tours via border entry (0.0319), Xishuangbanna is located on the southwestern border of China, bordering Myanmar, Laos, and Vietnam. It possesses the natural advantage of border tourism and is one of the hotspots for border tourism in Yunnan. Border tourism is of great significance to the development of the tourism industry in Xishuangbanna and the promotion of border harmony. C36 arable land area (0.0318) reflects whether Xishuangbanna can achieve a balance between food supply and demand, which is related to social stability. The guarantee of arable land area plays a pivotal role in economic development and social stability and plays an important role in preventing inflation, ensuring people's livelihoods, and maintaining social stability. C18 per capita retail sales of social consumer goods (0.0348) reflects improvements in people's material and cultural living standards in Xishuangbanna within a certain period of time, the degree of realization of social purchasing power, and the size of the retail market. From 2010 to 2019, the average annual growth rate of per capita retail sales of social consumer goods in Xishuangbanna was 25.77%, showing a steady growth trend, indicating that the living standards of residents are constantly improving, which is also an important manifestation of urbanization development. C26 number of schools per 10,000 students (0.0346) reflects the status of the educational infrastructure in Xishuangbanna, providing favorable conditions for a quality education for the local population and for attracting talent and thus accelerating urbanization.

4.2.3. Temporal Evolution of the Evaluation Values for Tourism Urbanization Quality in Xishuangbanna

The evaluation values for tourism urbanization quality in Xishuangbanna are calculated using the indicator system in Table 1 and Equations (2)–(9) (Table 4). Since 2010, the overall level of tourism urbanization in Xishuangbanna has shown an N-shaped upward trend (Figure 6), increasing from 0.2059 in 2010 to 0.6480 in 2019, with an average annual growth rate of 15.38% and the highest growth rate of 42.87% in 2016. Among the five indicator systems, the evaluation values of tourism urbanization quality rank as follows: SI > EI > EE > TP > ST. The urbanization level of society is the highest, especially the B9 tourism support system, which has a weight ratio of 41.91%, indicating that it contributes the most to the overall tourism urbanization process. In the evaluation results for tourism urbanization quality, those for the year 2012 were mainly affected by population indicators and fluctuated greatly, the development trends in other years were generally consistent with social and economic indicators, and spatial indicators and eco-environmental indicators showed steady changes. Therefore, the development of tourism urbanization in Xishuangbanna is greatly influenced by social and economic factors (Table 5).

Table 4. Evaluation results for tourism urbanization quality in Xishuangbanna.

N	Z_{ij}					SUM
	TP	EI	SI	ST	EE	
2010	0.0177	0.0259	0.0756	0.0231	0.0274	0.1697
2011	0.0500	0.0428	0.0879	0.0231	0.0281	0.2318
2012	0.1039	0.0594	0.0792	0.0242	0.0476	0.3142
2013	0.0374	0.0556	0.1010	0.0282	0.0553	0.2776
2014	0.0254	0.0778	0.1019	0.0282	0.0323	0.2655
2015	0.0308	0.1119	0.0920	0.0300	0.0558	0.3205
2016	0.0450	0.1581	0.1292	0.0319	0.0979	0.4621
2017	0.0748	0.1409	0.1732	0.0487	0.0944	0.5321
2018	0.0516	0.1817	0.1666	0.0545	0.1159	0.5703
2019	0.0534	0.2356	0.2498	0.0827	0.0940	0.7155

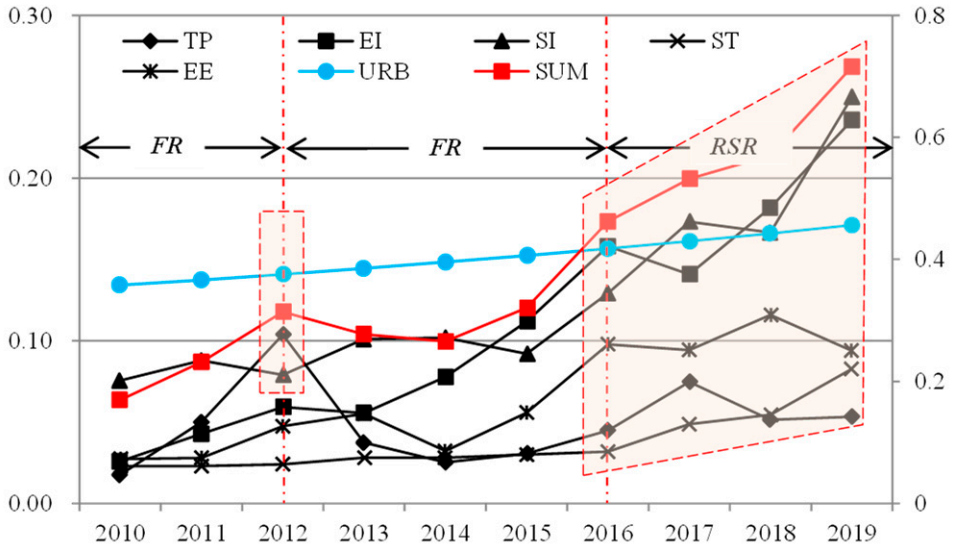

Figure 6. Trends of the evaluation results for tourism urbanization quality in Xishuangbanna. Source: Self–drawn.

Table 5. Evaluation values for and development types of coupling coordination degrees of tourism urbanization quality in Xishuangbanna.

Year	T	C (Coupling Degree)		D (Coupling Coordination Degree)	
		Value	Stage	Value	Class
2010	0.0402	0.8662	High level	0.1866	Serious imbalance
2011	0.0540	0.8933	High level	0.2197	Moderate disorders
2012	0.0673	0.8950	High level	0.2453	Moderate disorders
2013	0.0641	0.9093	High level	0.2415	Moderate disorders
2014	0.0657	0.8462	High level	0.2358	Moderate disorders
2015	0.0765	0.8672	High level	0.2576	Moderate disorders
2016	0.1096	0.8430	High level	0.3040	Moderate disorders
2017	0.1246	0.9075	High level	0.3363	Moderate disorders
2018	0.1340	0.8745	High level	0.3423	Moderate disorders
2019	0.1759	0.8356	High level	0.3834	Mild disorder

The temporal evolution of the tourism urbanization response coefficient is characterized by an overall upward trend but with fluctuations during the period. The development can be divided into three phases. The first phase is the fast response (FR) period (2010–2012). The trends of the tourism urbanization indicator and population indicator are comparable, and the development of tourism urbanization in this period was greatly affected by population factors. In 2012, the size of incoming population reached 38,610, with a growth rate of 597.56%, most of which was the urban population. As a result, there were large fluctuations in the urbanization rate in the short term, and the tourism urbanization response coefficient increased fast, indicating a rapid increase in development. The second phase is the adjustment response (ADR) period (2012–2015). The tourism urbanization response coefficient entered a new period of fluctuation and adjustment, and the development trend is similar to that of the population and eco-environment indicators, indicating that the influence of population and eco-environment indicators increased in this period, weakening the impact of tourism and urbanization. The third phase is a steady rise response (RSR) period (2015–2019). The tourism urbanization response coefficient entered a period of steady growth; the development trajectory was basically consistent with the social, spatial, and economic indicators; and the patterns of development fluctuations were similar. Therefore, to realize the sustainability of tourism urbanization, it is necessary to address the interactions of the population, society, economy, space, and environment with urbanization.

4.3. Evaluation of the Coupling Coordination Degree of Tourism Urbanization Quality in Xishuangbanna

Using Equations (10)–(12) and the evaluation values of tourism urbanization quality in Xishuangbanna from 2010 to 2019, the coupling degree (C), coupling coordination degree (D), and development types of the five major indicator systems in the development process of tourism urbanization in Xishuangbanna are obtained (Table 4); the evolutionary trend lines are plotted in Figure 7. Since 2010, there has been an overall high degree of coupling between the five dimensions (population, economy, society, space, and ecological environment) of tourism urbanization in Xishuangbanna, with the coordination coefficient between 0.8662 and 0.9075 and an average of 0.8738, indicating a "high-level coupling phase". However, due to the low comprehensive evaluation indicators for the five major systems, the overall coupling coordination degree of tourism urbanization quality in Xishuangbanna is low, ranging from 0.1866 to 0.3834, with three types of coupling coordinated development (severe, moderate, and mild imbalances). Among them, the development trend of the coupling degree (D) is similar to the comprehensive evaluation value (T) for the five major systems of tourism urbanization (Figure 7, blue line). Overall, there is a benign development trend of a steady increase, but there is a downward trend in coupling degree in very few years. The development trend of the coupling coordination degree (C) is similar to that of the eco-environmental indicator (EE) (Figure 7, red line), showing an overall fluctuating development trend. In particular, the development trend was mainly influenced by the population indicator in 2010 (0.0177, with a relatively low value) and by changes in the eco-environmental and population indicators in 2014 and 2019. Therefore, in the later phases of the development of tourism urbanization in Xishuangbanna, it is still necessary to further strengthen the coordination relationship of the population, economy, society, space, and ecological environment with urbanization in the region to promote the sustainable development of the regional socioeconomy.

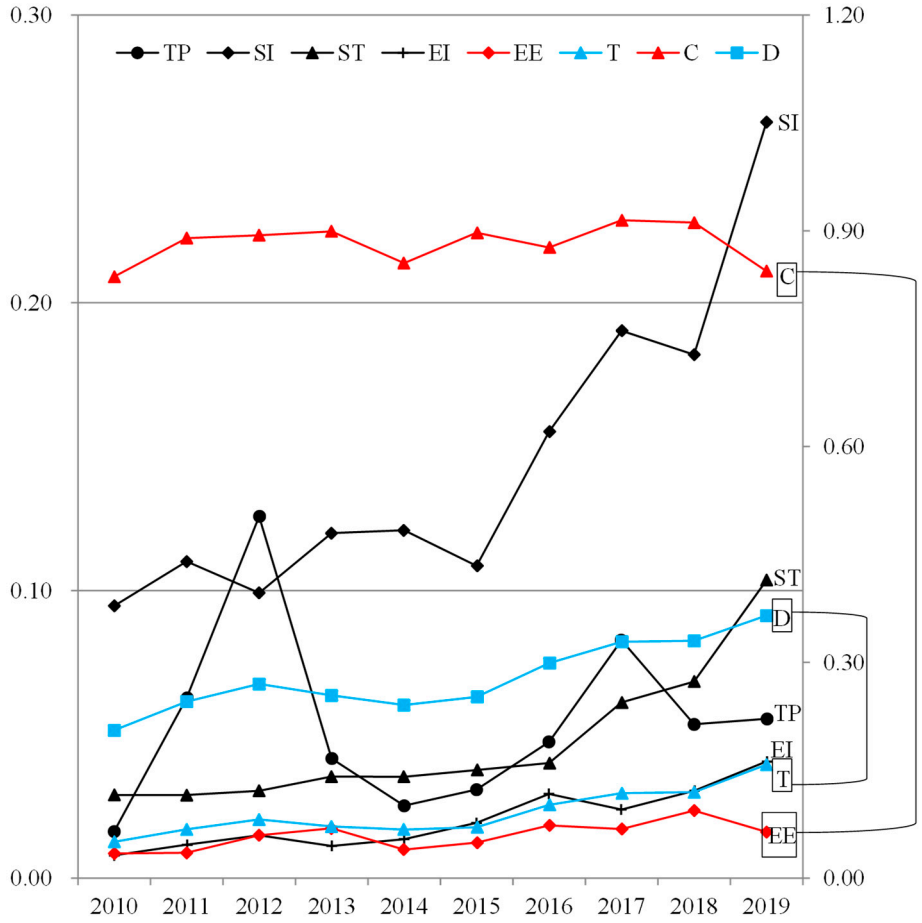

Figure 7. Trends of the coupling coordination degree of tourism urbanization quality in Xishuangbanna. Source: Self–drawn.

5. Discussion

5.1. Study and Discuss

In China's ethnic minority areas, tourism has rapidly developed into a regional leading industry in the process of urbanization thanks to their rich tourism resources. Recent research on urbanization quality evaluations [14,22,23,45,47,54,55] has shown that urbanization is closely correlated with tourism development, socioeconomics, ecosystems, residents' quality of life, and infrastructure construction. Only through the coordinated development of these systems can steady improvement of urbanization be achieved. Different scholars have investigated the development patterns of local urbanization from different perspectives based on the actual local conditions of their respective study areas. Tourism development in ethnic minority areas drives urbanization through its own mechanisms. Considering this characteristic and based on a review of existing studies [21,23,47,52,55], with the continuous development of the local economy and society, the coupling coordination of tourism, urbanization, environment, population, and economy are steadily increasing, showing progressive expansion and mutual promotion. In this study, a tourism urbanization model is constructed using five core elements (population, economy, society, space, and ecological environment), and a coupling coordination degree model is introduced to empirically analyze the intensity of the response of urbanization development in Xishuangbanna to tourism growth, to comprehensively evaluate the value of each subsystem, and to determine the coupling coordination degree of the five major systems of tourism urbanization from 2010 to 2019.

5.2. Policy Suggestion

Based on the above results, the following policy recommendations are proposed. (Figure 8).

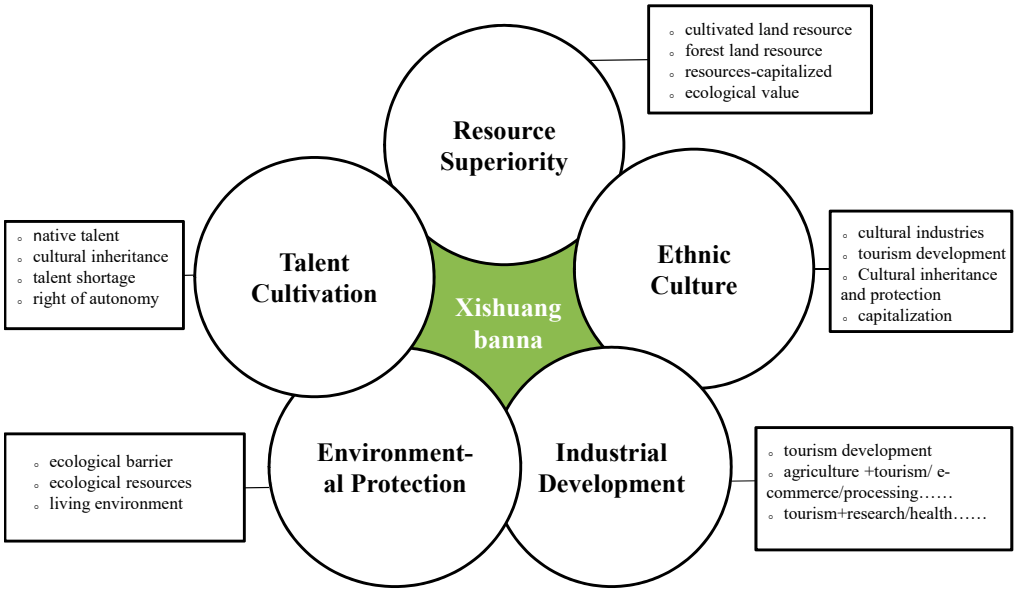

Figure 8. Development policy proposed path map of Xishuangbanna [52,56–77]. Source: Self-drawn.

First, the rational utilization of arable land resources should be emphasized while fully leveraging the advantages of forest resources. Border ethnic areas possess abundant and intact natural resources, characterized by both capital and ecological value. In the later phase of development, the basic principle of combining protection, development, and utilization should followed, aiming for the optimal allocation of advantageous resources to promote the coordinated development of the regional socioeconomy and environment. Second, emphasis should be placed on the inheritance and protection of the traditional cultures of ethnic minorities, promoting the development of ethnic cultural industries and prioritizing the education of traditional culture. Achieving a balance between conservation and development in the process of construction and promoting the inheritance, carrying forward, development, and protection of ethnic cultures are core and key points for socioeconomic development in ethnic minority areas. Third, industrial development transformation should be pursued. Relying solely on the development of tourism can pose a substantial risk of fluctuations in the local economy. Promoting agricultural industrialization ensures steadier and more resistant development in border ethnic areas. The concepts of "agriculture + tourism/e-commerce/processing" and "tourism + research/health" can serve as the main strategies for industrial development in the region. Fourth, eco-environmental protection should be strengthened. Factors such as the rapid increase in population, the growing population pressure, and the lack of environmental protection awareness in recent years have posed substantial threats to the ecological development of border areas. The sustainable development of the ecological environment in ethnic border areas is important, as this development serves as a natural ecological barrier, offers resources for tourism development, and ensures the protection of production and living environments. To this end, efforts can be made to continuously implement ecological protection and restoration projects, protect arable land, strengthen eco-environmental supervision, and utilize the role of traditional cultural beliefs to promote the optimization of eco-environmental protection in ethnic border areas. Fifth, human resource development should be emphasized. Ethnic border areas are located in remote areas, and their socioeconomic development lags. In general, a key limiting factor is the serious shortage of talent in addition to the backwardness of infrastructure such as in transportation facilities. To better promote the coordinated

development of cultural resource utilization, inheritance, and protection in ethnic border areas, it is imperative to cultivate local talent through human resources development.

The political environment in ethnic areas is generally stable and united, but there are still some factors of instability. The unique geographical location of these areas, mostly border regions, makes it particularly important for China to handle its neighboring relations. Achieving the development of bilateral border ethnic cities is of significant social and strategic importance in promoting regional economic prosperity, maintaining social stability, and consolidating frontier ecological security. Due to its geographical location, ethnicity, and border characteristics, Xishuangbanna determines that the development characteristics of this region can provide valuable references for cities with similar resources and development features in the surrounding areas. Currently, most domestic scholars' research on tourism urbanization cases focuses on developed inland cities (such as Zhangjiajie, Aba Prefecture, Wuyi Mountain area [78–81]). This also lays a foundation for the contribution of the research results presented in this paper. The special identity as a "bilateral border" city will provide positive reference significance for the tourism bilateral border cities.

6. Conclusions

6.1. Research Results

The following conclusions are drawn from this study. First, from 2010 to 2019, Xishuangbanna's tourism urbanization response coefficient, the location entropy of the tourism industry, and the level of tourism urbanization indicators all increased. Second, the indicators in the evaluation of tourism urbanization quality were ranked as follows based on fluctuation ranges: social indicators > economic indicators > population indicators > spatial indicators > eco-environment indicators. From 2010 to 2015, the population indicators fluctuated the most, and the tourism urbanization level was most affected by the population indicators in 2012; then, the influence showed a downward trend. The social and economic indicators exhibited fluctuating upward trends, with increasingly significant impacts on tourism urbanization. The fluctuation ranges for spatial and eco-environmental indicators were small. Third, based on the weights of the tourism urbanization indicators, the limiting factors affecting tourism urbanization in Xishuangbanna including the size of incoming population, the number of travel agencies, the number of corporate enterprises in the catering industry, the forest coverage, the number of ethnic minority villages, the registered unemployment rate, revenue from one-day tours via border entry, the arable land area, the per capita retail sales of social consumer goods, and the number of schools per 10,000 students. For Xishuangbanna, where tourism is the leading industry, the number of inbound tourists, the construction of tourism service facilities, the level of tourism development, and employment have strong impacts on tourism urbanization. Rich tourism resources provide advantages for local tourism development. With the development of tourism, more tourists drive local economic development, stimulate consumer demand, and make tourism an engine for revenue generation, ultimately leading to the rapid development of tourism urbanization. Fourth, in the evaluation of the coupling coordination degree of tourism urbanization quality considering the five indicator systems, the comprehensive evaluation indicators were all low, resulting in a low overall coupling coordination degree of tourism urbanization quality in Xishuangbanna, ranging from 0.1866 to 0.3834, as well as the presence of three types of coupling coordinated development (severe, moderate, and mild imbalances).

The coordinated development of the population, economy, society, space, and ecological environment systems is very important for the sustainable development of tourist cities, and these systems affect each other. Based on the temporal evolution characteristics, the coupling degree (D) of the five indicator systems of tourism urbanization in Xishuangbanna generally showed a benign development trend of a steady increase, with a downward trend very few years. Due to the lack of a comprehensive evaluation indicator for tourism urbanization, the overall coupling coordination degree (C) was low, with three types (severe, moderate, and mild imbalances), showing a fluctuating upward trend as a

whole. Overall, the steady and coordinated development of various indicator systems is critical for the sustainable development of tourism urbanization. The excessive pursuit of tourism urbanization and the one-sided pursuit of the scale and spatial expansion of scenic spots while neglecting the construction of urban public services and neglecting the ecological environment may lead to the waste of a large amount of land and capital in the region, making it impossible to achieve the coordinated development of tourism and urbanization and instead resulting in a form of "pseudo-urbanization". Therefore, excessive reliance on tourism to drive urbanization development cannot lead to the best urbanization development in Xishuangbanna. To achieve healthy and sustainable development of tourism urbanization in Xishuangbanna, it is necessary to ensure coordinated development among various systems. Similarly, to achieve sustainable socioeconomic development, tourism cities located in ethnic border areas should not rely too much on ethnic tourism development.

As a twin ethnic border region, Xishuangbanna has chosen the path of developing tourism to drive urbanization development by leveraging its abundant ethnic tourism resources and natural advantages. Its special twin border, ethnic minorities, natural resources, etc. give Xishuangbanna's development unique significance and stability. In addition, the crucial role of ethnic development in national stability makes government guidance particularly important in Xishuangbanna. The urbanization development of Xishuangbanna not only concerns the coordinated development of local minority populations, economy, and environment but also relates to China's borders. It is evident that using Xishuangbanna as a strong typicality can provide positive reference for the development of twin border tourism urbanization.

6.2. Research Limitations and Prospects

This study has some limitations. First, the construction of the evaluation indicator system for tourism urbanization is not sufficiently comprehensive. Different scholars have attempted to select indicators from different perspectives. Currently, the tourism urbanization indicator system is not unified, and different indicators may lead to different results; therefore, the results herein should be further validated objectively. Second, tourism urbanization is influenced by many factors, and the dominant factors vary with location and time zone. Future studies should consider such changes in the driving mechanism. Third, due to data availability limitations, the time span of this study (2010–2019) is relatively short. Fourth, more comprehensive research by starting from the characteristics of cities with dual borders is needed; researchers should select cities with similar development features for comparative studies.

Future research can use our study as a starting point to track changes in a wider range of temporal parameters, expand the study area, and further empirically examine the impact of tourism development on urbanization in China's ethnic border areas.

Author Contributions: J.Y. (Jiao Yu): Conceptualization, Methodology, Software, Writing—Original draft. L.L.: Conceptualization, Methodology, Writing—Reviewing and Editing. J.L.: Resources, Data curation, Funding acquisition. J.Y. (Jianxin Yang): Formal analysis, Writing—Reviewing and Editing. Y.R.: Formal analysis and Editing. All authors have read and agreed to the published version of the manuscript.

Funding: This study was supported by the National Natural Science Foundation of China (No. 42101275) and 2022 Guangxi University young and middle-aged teachers scientific research capacity enhancement project (2022KY0023).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Any additional data related to this study are available from the corresponding author upon reasonable request.

Conflicts of Interest: No potential conflict of interest are reported by the authors.

References

1. Mullins, P. Tourism urbanization. *Int. J. Urban Reg. Res.* **1991**, *15*, 326–342. [CrossRef]
2. Gladstone, D.L. Tourism urbanization in the United States. *Urban Aff. Rev.* **1998**, *34*, 3–27. [CrossRef]
3. Truly, D. International retirement migration and tourism along the lake chapala riviera: Developing a matrix of retirement migration behaviour. *Tour. Geogr.* **2002**, *4*, 261–281. [CrossRef]
4. Luchiari, M.T.D.P.; Serrano, C.F. Tourism and environment in Brazil. *Tour. Geogr.* **2008**, *3*, 261.
5. Diedrich, A.; Aswani, S. Exploring the potential impacts of tourism development on social and ecological change in the solomon islands. *Ambio* **2016**, *45*, 808–818. [CrossRef]
6. Reichel, A.; Lowengart, O.; Milman, A. Rural tourism in Israel: Service quality and orientation. *Tour. Manag.* **2000**, *21*, 451–459. [CrossRef]
7. Mullins, P. Cities for pleasure: The emergence of tourism urbanization in Australia. *Built Environ.* **1992**, *18*, 187–198.
8. de Souza, D. Urbanization tourism and production and consumption of space: The case of Salinópolis/PA. *Geogr. Em Questão* **2014**, *7*, 65–86.
9. Moswete, N.; Thapa, B.; Toteng, E.N.; Mbaiwa, J.E. Resident involvement and participation in urban tourism development: A comparative study in Maun and Gaborone, Botswana. *Urban Forum.* **2008**, *19*, 381–394. [CrossRef]
10. Dou, Y.-D.; Li, B.-H.; Liu, P.-L. Study on coupling mechanism, coupling process and coupling effect between tourism industry and new urbanization. *Resour. Dev. Mark.* **2015**, *31*, 1525–1528. [CrossRef]
11. Zhang, Y.; Yang, Q.; Min, J. An analysis of coupling between the bearing capacity of the ecological environment and the quality of new urbanization in Chongqing. *Acta Geogr. Sin.* **2016**, *71*, 817–828. [CrossRef]
12. Zhang, Y.; Fang, Z.; Xie, Z. Study on the coupling coordination between ecological environment and high-quality economic development in urban agglomerations in the middle reaches of the yangtze river. *Int. J. Environ. Res. Public Health* **2023**, *20*, 3612. [CrossRef]
13. Li, J.-S.; Wang, X.-R.; Miao, C.-H. The Coordination Analysis about Level and Quality of Urbanization: A Case Study of Henan Province. *Econ. Geogr.* **2014**, *34*, 70–77. [CrossRef]
14. Xiao, Y.; Yang, Y.; Song, Y. Comprehensive evaluation on urbanization quality and its spatial and temporal characteristics in China. *China Popul. Resour. Environ.* **2018**, *28*, 112–122.
15. Le-Yi, X.; Xin-Sheng, C.; Cheng-Jun, L. Research on the grading and evolution of urbanization quality in China from the perspective of industry. *J. Econ. Geogr.* **2018**, *38*, 68–75. [CrossRef]
16. Moomaw, R.L.; Shatter, A.M. Urbanization and economic development: A bias toward large cities? *J. Urban Econ.* **1996**, *40*, 13–37. [CrossRef]
17. Li, B. A summary research of the external and internal town tourism. *Tour. Trib.* **2010**, *25*, 88–95. [CrossRef]
18. Tong, D.; Sun, Y.; Tang, J.; Luo, Z.; Lu, J.; Liu, X. Modeling the interaction of internal and external systems of rural settlements: The case of Guangdong, China. *Land Use Policy* **2023**, *132*, 106830. [CrossRef]
19. He, T. A study on tourism urbanization of West ethnic region based on synergetics. *Guizhou Ethn. Stud.* **2013**, *34*, 122–126. [CrossRef]
20. Lai, X.; Nie, H.; Teng, H. Discussion on development model of tourism urbanization in the West ethnic rural region. *Guizhou Ethn. Stud.* **2014**, *35*, 134–137. [CrossRef]
21. Wu, Y.; Wang, W. Development patterns of special urbanization in the minority borderlands: A case study of Yunnan province. *J. Yunnan Norm. Univ. Philos. Soc. Sci.* **2010**, *42*, 58–64. [CrossRef]
22. Yang, J. Research on promoting urbanization by tourism in ethnic areas—An analysis of the formation mechanism of tourist towns in Jiuzhaigou county. *J. Southwest Univ. Natl. Humanit. Soc. Sci. Ed.* **2012**, *33*, 137–140.
23. Jing, W.; Wen-Ting, L.; Ya-Juan, L. Research on the construction of tourism urbanization level evaluation system in minority areas: A case study of enshi tujia and miao autonomous prefecture. *J. Cent. China Norm. Univ. Nat. Sci.* **2021**, *55*, 137–146. [CrossRef]
24. Wang, X. *Research on the Interactive Coordination Development of Touristization and Urbanization in China*; Ocean University of China: Qingdao, China, 2014.
25. Qiu, Z. Research on tourism urbanization in minority regions. *J. Southwest Univ. Natl. Humanit. Soc. Sci. Ed.* **2005**, *26*, 26–28.
26. Liu, S.; Wu, J. Research on the development mode of tourism urbanization in ethnic minority areas—A case study of Zhangjiajie Yongding district. *Rural Econ. Technol.* **2020**, *31*, 180–183.
27. He, Y. A study on farmers' perception of the impact of tourism urbanization in ethnic minority areas—A case study of wuling mountain area of Chongqing. *Northeast Agric. Sci.* **2021**, *46*, 114–119. [CrossRef]
28. Wang, Y. *A Study on the Urbanization Styles of Minority Areas in Northwest China: Based on the Case Studies in Gansu and Xinjiang*; Lanzhou University: Lanzhou, China, 2010.
29. Lin, L. *A Study on the Sustainable Development of Small Tourist Towns in the Ethnic Minority Regions of Northern Guilin*; China University of Geosciences (Wuhan): Wuhan, China, 2021.
30. Meijers, E.; Hoogerbrugge, M.; Hollander, K. Twin cities in the process of metropolisation. *Urban Res. Pract.* **2014**, *7*, 35–55. [CrossRef]
31. Musolino, D.; Pellegrino, L. Integration of twin cities: A Delphi investigation of the urban areas on both sides of the Strait of Messina. *J. Urban Aff.* **2022**, 1–23. [CrossRef]

32. Zhang, W. Research on the Coordinated Development between Rural Tourism and New Urbanization in Sichuan Ethnic Areas—A Case of Maoxian County in Aba Prefecture. *J. Ethnol.* **2019**, *10*, 21–28+106–108. [CrossRef]
33. Zhong, J.-Y. Research on the Coordinative Development between the Tourism Industry and Urbanization. Ph.D. Theses, Central South University, Changsha, China, 2014.
34. Yang, X. Research on the Coordinated Development of Tourism and Urbanization in Ethnic Minority Stricken Areas. *Guizhou Ethn. Stud.* **2018**, *39*, 152–155. [CrossRef]
35. Duan, J.-C. A Study on the Synergetic Relationship between Tourism and Urbanization in Tourism Cities: A Case Study of Sanya. Master's Thesis, Xiamen University, Xiamen, China, 2018.
36. Jie, T. *The Interaction between Tourism Development and Urbanization Construction—Taking Fenghuang County as Case*; South-Central University for Nationalities: Wuhan, China, 2012.
37. Yang, X.; Zhang, D.; Yuan, P.; Zhang, X. Study on coupling coordination degree of tourism-ecological environment-urbanization system—Taking the ningxia hui autonomous region for an example. *Math. Pract. Theory* **2020**, *50*, 35–47.
38. Lv, D.; Ye, M.; Yang, X. Review and reconstruction of new urbanization quality evaluation index system. *Res. Financ. Econ. Issues* **2014**, *9*, 72–78. [CrossRef]
39. Qi, X.-X.; Yang, Y.-W.; Yang, Z.-Y. Research on evaluation index system of new urbanization. *Macroecon. Manag.* **2014**, *2*, 51–54. [CrossRef]
40. Sun, C.-Q.; Tian, Y. Construction of new urbanization evaluation index system from the perspective of economics. *Henan Soc. Sci.* **2013**, *21*, 56–58.
41. Xie, X.; Zhang, L.; Sun, H.; Chen, F.; Zhou, C. Spatiotemporal difference characteristics and influencing factors of tourism urbanization in China's major tourist cities. *Int. J. Environ. Res. Public Health* **2021**, *18*, 10414. [CrossRef]
42. Wang, Z.-F.; Yu, H. Spatio-temporal difference and mechanism of tourism urbanization in Xiangxi based on transport's improvement. *Econ. Geogr.* **2013**, *1*, 187–192. [CrossRef]
43. Niu, X.-C.; Du, Z.-C.; Li, T.-S. Evaluation of regional urbanization level based on new urbanization: A case of 10 provincial cities in Shaanxi Province. *Arid Land Geogr.* **2013**, *36*, 354–363. [CrossRef]
44. Xiang, L. A study on the spatial and temporal differentiation of tourism industry-urbanization-ecological environment coordination in Yangtze river economic zone. *Ecol. Econ.* **2017**, *33*, 115–120.
45. Kurniawan, F.; Adrianto, L.; Bengen, D.G.; Prasetyo, L.B. The social-ecological status of small islands: An evaluation of island tourism destination management in Indonesia. *Tour. Manag. Perspect.* **2019**, *31*, 136–144. [CrossRef]
46. Liu, J.; Li, C.; Tao, J.; Ma, Y.; Wen, X. Spatiotemporal coupling factors and mode of tourism industry, urbanization and ecological environment: A case study of Shaanxi, China. *Sustainability* **2019**, *11*, 4923. [CrossRef]
47. Zhang, T.; Li, L. Research on temporal and spatial variations in the degree of coupling coordination of tourism–urbanization–ecological environment: A case study of Heilongjiang, China. *Environ. Dev. Sustain.* **2021**, *23*, 8474–8491. [CrossRef]
48. Huang, L.; Ma, X. Spatial coupling cooperative analysis of economic development and rural transformation in Jiangsu province. *Econ. Geogr.* **2018**, *38*, 151–159. [CrossRef]
49. Yong, Z.; Jiang-Fei, G. On coordination evalution of rural transitional development and land use transformation in Anhui province. *Sci. Technol. Manag. Land Resour.* **2018**, *35*, 69–82.
50. Xue, H.H.; Qiao, J.J.; Zhang, J.Y.; Lv, H.; He, F. Spatial patterns and coupling relations between economic development and rural economy transformation in Henan province. *J. Henan Univ. Nat. Sci. Ed.* **2020**, *50*, 167–175. [CrossRef]
51. Zhong, J.; Liu, S.; Xiong, X. Analysis on the regional difference of coordinated development between tourism and urbanization. *J. Econ. Geogr.* **2014**, *34*, 187–192. [CrossRef]
52. Guo, J.F.; Xie, N.Y. Coordinated development of characteristic industry and urbanization in minority areas. *J. Dalian Natl. Univ.* **2015**, *17*, 549–553. [CrossRef]
53. Wu, Z.; Wei, J. The contents and paths of the integration of tourism and urbanization in ethnic minority areas. *Tour. Stud.* **2016**, *8*, 4–7.
54. Wang, Z.-F.; Long, L.-Y. A study on dynamic mechanism to drive urbanization construction through tourism development in ethnic regions—Taking Fenghuang county as an example. *J. Minzu Univ. China Philos. Soc. Sci. Ed.* **2016**, *43*, 11–17. [CrossRef]
55. Jiang, H. An empirical analysis on the interactive development of tourism and urbanization in minority counties in Guizhou—A case study of Leishan county. *Anhui Agric. Sci.* **2010**, *38*, 18530–18532. [CrossRef]
56. Yang, Y.-G. *Comprehensive Natural Regionalization of Yunnan Province*; Higher Education Press: Beijing, China, 1990.
57. Xu, X.-Y. *Main Ecological Types and Development in Yunnan*; Yunnan University Press: Kunming, China, 1993.
58. Gan, S.; He, D.-M.; Feng, Y. Analysis on Cultivated Land Resources Utilizing of the Border Countiesal. *Yunnan Geogr. Environ. Res.* **2007**, *19*, 22–28. [CrossRef]
59. Liu, M.-L.; Qi, Q.-W.; Liu, J.-F. Spatial-Temporal Changes of the Land Use/Cover and Its Ecological Effect Analysis in Trans Boundary Yunnan Province. *Yunnan Geogr. Environ. Res.* **2006**, *18*, 1–5+16. [CrossRef]
60. Ma, X.-W. The Application of Capitalization of a National Culture. *Ethn. Stud.* **2001**, *1*, 18–28.
61. Hu, H.-L. On the Essence of Cultural Industries: Rebuilding the Cognitive Dimension of Cultural Industry. *J. Shandong Univ. Philos. Soc. Sci.* **2017**, *3*, 1–15. [CrossRef]
62. Li, W.-G. Contradiction and Reconciliation of the duality of economy and Culture in the Development of Ethnic Culture Industry. *J. Southwest Univ. Natl. Humanit. Soc. Sci. Ed.* **2022**, *43*, 44–51. [CrossRef]

63. Bi, M.; Wan, L. Generation of "Arena": A Research on the Industry Transfer of Ethnic Minority Cultures. *J. Northeast Norm. Univ. Philos. Soc. Sci. Ed.* **2018**, *6*, 24–30. [CrossRef]
64. Wang, T. *Research on Industrial Development Strategy of Minority Areas in Southeast Chongqing*; Southwest University: Chongqing, China, 2008. [CrossRef]
65. Li, J.-J.; Ma, N. A study on industry development in ethnic regions and methods of economic growth in the respective of the relative carrying capacity of industry resources. *China's Popul. Resour. Environ.* **2017**, *27*, 123–129.
66. Hu, Y.-L.; Shu, R. Research on Industrial transfer and Economic Development of ethnic areas. *Theory* **2012**, *36*, 43–44. [CrossRef]
67. Xing, C.-N.; Wang, R.-B. Research on the development path of cultural tourism industry in Western minority areas—Based on the analysis of Shui Autonomous County of Sandu. *Front. Econ. Cult.* **2023**, *2*, 67–70. [CrossRef]
68. Guo, J.-F.; Lan, G.-R. Development Mechanism Innovation and Path Optimization of Characteristic Industries to Enrich People in Border Minority Areas. *J. Cent. South Univ. Natl. (Humanit. Soc. Sci. Ed.)* **2021**, *41*, 41–46. [CrossRef]
69. Song, L.-H.; Zhang, F. Ecological environment problems and countermeasures in southern border areas of Yunnan. *Sci. Guizhou* **1992**, *10*, 56–59.
70. Qi, Q.-W.; He, D.-M.; Zou, X.-P. Theory, Method and Technology of 3S Based Ecosystem Monitoring, Evalution and Adjustment Along Yunnan Border Area. *Prog. Geogr.* **2005**, *24*, 1–12. [CrossRef]
71. Li, Q.-P.; Lu, R.-C.; Li, G. Research Progress on Regional Land-use Change along National Border and It's Interactive Relationship with Frontier Trade Development. *China Land Sci.* **2015**, *29*, 16–23. [CrossRef]
72. Wang, S.-M.; Hu, Y.-M.; Zheng, Y.-H. Western minority district countryside human resources development under industry transferring angle—Take Guizhou as example. *Spec. Zone Econ.* **2011**, *3*, 219–220.
73. Deng, Y.-H. The value dimension of ethnic talents in the practice of ethnic regional autonomy. *Ideol. Front.* **2016**, *42*, 107–112. [CrossRef]
74. Zeng, H.-J. Talent Resources Developing in accordance with Different Ethnic Minorities-A Strategic Choice. *J. Cent. South Univ. Natl. Humanit. Soc. Sci. Ed.* **2006**, *26*, 24–28. [CrossRef]
75. E, Y.-T.; Li, G.-R.; Liu, S.-L. Education of Minority Professionals and the Inverse Flow of Professionals in Territory of Nationality. *J. Southwest Univ. Natl. Philos. Soc. Sci. Ed.* **2002**, *23*, 237–239. [CrossRef]
76. Huang, Y.-R.; Tang, L.-H.; Zhou, Q. The current Situation, Problems and Countermeasures of ethnic personnel Training in Minority areas of Guangxi. *Guangxi Soc. Sci.* **2011**, *12*, 28–31. [CrossRef]
77. Lu, G.-Z. The Present Situation and Strategic Countermeasure on Talent Troops of the Minority Nationality in Our Country. *Manchu Stud.* **2005**, *2*, 44–50. [CrossRef]
78. Ma, X.-F.; Huang, T.-T. Simulation Analysis of the Response Dynamic of Tourism Urbanization in Zhangjiajie. *J. Jishou Univ. Soc. Sci.* **2020**, *41*, 131–141. [CrossRef]
79. Tang, J.-X.; Cai, C.-Y.; Liu, Y.-J. The Process and Influence Mechanism of Rural Revitalization Driven by Tourism Urbanization: A Case Study of Zhangjiajie City. *J. Huaqiao Univ. Philos. Soc. Sci. Ed.* **2023**, *6*, 35–53. [CrossRef]
80. Xu, C.-F.; Liu, X.-Y. Study on the Develop Pr oblem of Tourism Ur banization in the Ethnic Areas of Southwest China: Take Aba Tibetan and Qiang Autonomous Prefecture as An Example. *Guizhou Ethn. Stud.* **2018**, *39*, 148–152. [CrossRef]
81. Ma, X.-F.; Zhang, Y.-F. Analysis on the Response Pattern and Factors of Tourism Urbanization in Wuling Mountain Area—Based on PVAR model. *J. Hunan Univ. Financ. Econ.* **2022**, *38*, 15–24. [CrossRef]