


## Article

# Temporal and Spatial Coupling Characteristics of Tourism and Urbanization with Mechanism of High-Quality Development in the Yangtze River Delta Urban Agglomeration, China

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**Abstract:** The Chinese economy has entered the phase of high-quality development. Urbanization is an important driving factor in promoting the domestic economic cycle, while tourism is an emerging force in the development of urbanization. The convergence of these two factors will contribute to the high-quality development of regional economies. By constructing an evaluation index system of tourism development and urbanization level, 26 cities in the Yangtze River Delta Urban Agglomeration have been identified as the study area. The study has adopted the entropy method and the coupling coordination model to analyze the comprehensive development level of tourism and urbanization and the coupling coordination relationship between them from 2008 to 2018. The results show that the Yangtze River Delta presents a spatial pattern of orderly changes in the development of tourism, forming a spatial structure of “one pole and many centers”, with Shanghai as the core. In terms of spatial distribution, it generally presents the spatial trend characteristics of “high in the east and low in the west” in the east–west direction, and “protruding in the middle and lower at both ends” in the south–north direction. Coordination and interaction are steadily developing to a high level, with significant spatial dependence and spillover effects. Based on the research results, the study applies a new development vision to explore the coupling coordination high-quality development mechanism of tourism and urbanization in the Yangtze River Delta region; the corresponding policy recommendations are discussed.

**Keywords:** tourism; urbanization; coupling coordination; high-quality development; Yangtze River Delta Urban Agglomeration

## 1. Introduction

Urbanization plays an important role in stabilizing economic growth and transforming the mode of economic development. To accelerate the development of urbanization, we need to accelerate the development of industry. In the original process of urbanization development in China, there was a high degree of dependence on industrialization, which resulted in serious environmental pollution problems and affected the quality of urbanization development. As a new developmental force in urbanization [1], tourism offers an immense scope for efficient integration, strong correlation, and wide coverage. It transforms and upgrades urban industrial structures through industrial linkage and stimulates urbanization, thereby promoting regional economic development. The expanding city-scale facilitates the development of tourism, significantly promoting quality and

efficiency improvements, as well as the transformation and upgrading of tourism. The coupling relationship, coordination, and mutual promotion between tourism development and urbanization are evident [2]. China promotes high-quality economic development in the new era as one of its major strategies for development [3]. High-quality development is an advanced form of economic development, including economic growth, industrial upgrading, the improvement of living standards, and environmental protection [4]. Coordination between tourism and urbanization with high-quality development is not only an important approach to new urbanization, but also an inevitable requirement to improve the quality of tourism development. The current time has inevitably led to coordinated and high-quality development of tourism and urbanization. The coupling and coordination of these factors have become an important link of high-quality economic development, as well as an imperative solution to improve people's lives. High-quality development is undoubtedly furthered by the coupling and coordination relationship between these two factors. The new development pattern of "dual circulation" is an important theoretical innovation of the socialist political economy with Chinese characteristics [5]. In 2020, with a view to China's new development stage and changing environment and conditions, the Chinese government proposed to build a new development pattern with domestic major cycles as the main body and domestic and international double cycles promoting each other. Among them, the internal cycle is the supply-and-demand of the domestic cycle, and the external cycle is the supply-and-demand of the international industrial chain.

The inception of academic research on tourism and urbanization came with scientific discussion on tourism urbanization. Mullins P first proposed the concept of tourism urbanization and explained the relationship between tourism and urbanization [6]. With the increase in urban tourism activities and the rise of event tourism, relevant research results are emerging. Research focuses on the model [7], as tourism urbanization can be divided into industrial heritage tourism urbanization and new tourist attractions urbanization [8], and on the process [9] of tourism urbanization. With tourism and urbanization progressing rapidly, current research focuses on the relationship between tourism and urbanization and their impact on economic [10] and social aspects [11]. The impacts of tourism are seen in economic [12,13], spatial, and temporal patterns [14], multidimensional effects [15,16], and its symbiotic relationship with urbanization [17–19], especially in terms of the coupling and coordinated development of the two in different regions [20]. Studies on the coupling coordination between tourism and urbanization are in the process of gradual development, and the coupling coordination between tourism and urbanization at all scales is involved [21–23]. Practically speaking, the coupling coordination degree model is not only applied to the coupling research of the two subsystems, but is also commonly used in the coupling coordination research of three subsystems; some studies entailed a quantitative analysis of the temporal and spatial evolution characteristics based on the model across the tourism, urbanization, and ecological environment subsystems in Heilongjiang Province [24], in Shaanxi Province [25], in Coastal city [26], and in China's other major tourist cities [27]. In addition, the coupling coordination degree model has been applied to explore the coupling relationship between urbanization and ecosystem health [28]; among tourism carbon emissions, economic development, and regional innovation [29]; among tourism, transportation, and low-carbon city systems [30]; and so on. It has been widely used in empirical applications. Some scholars pay attention to the negative impact of tourism urbanization, believing that tourism activities will increase the pressure on the ecological environment, thereby reducing the quality of urbanization [31]. These research results have a practical guiding role in promoting the coupling and coordinated development of tourism and urbanization. However, in contemporary contexts, the task of coordinated, high-quality progress faces the problem of unbalanced and inadequate development. High-quality development demands attention and research in the current time. High-quality development has the distinct characteristics of the times and is a major research topic in the new era [32]. The research mainly focuses on connotation [33], characteristics [34], index

system construction and measurement [35], etc., which is still in the initial stage of weak theory and practice.

Throughout the existing studies, experts and scholars mostly focused on provinces and key tourism cities and made single identifications based on time series. Few scholars took urban agglomeration as the research object and combined time and space to conduct a dynamic analysis of space-time evolution. It can be observed that the discussion on the coupling coordination between tourism and urbanization at the medium scale and its high-quality development is relatively unexplored, as well as being an urgent concern. Consequently, this study not only applies the perspective of spatial-temporal heterogeneity to analyze the coupling coordination characteristics of tourism and urbanization, but also investigates the coupling coordination framework of high-quality development and optimizes the layout of the regional economy for an empirical application of its findings. This elucidation of the high-quality development mechanism between tourism and urbanization coupling coordination will provide a point of reference for regional development in other urban agglomerations, helping to establish a regional small-cycle hub, promote the domestic big cycle, and advance both domestic and international dual circulation.

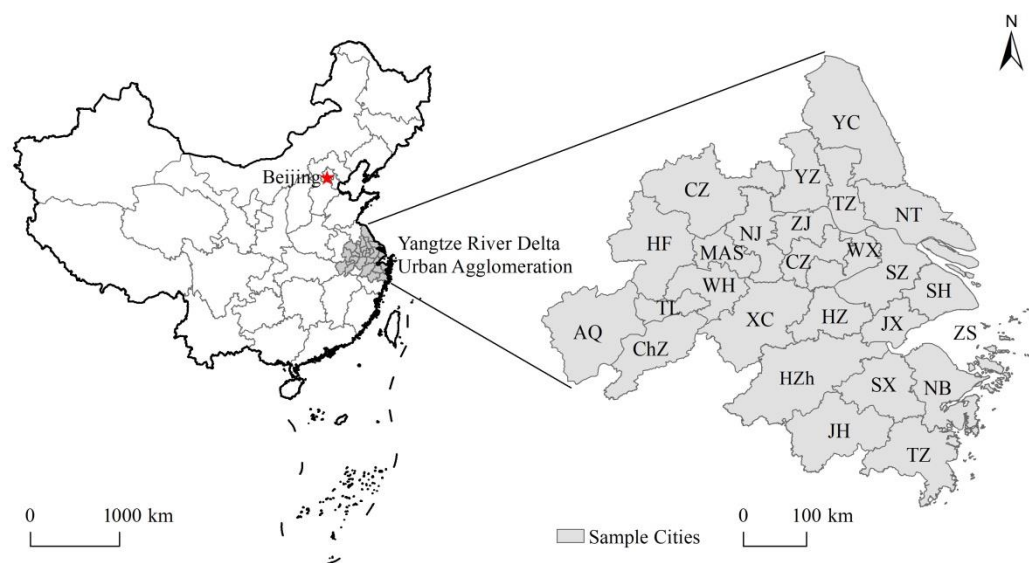
## 2. Data Sources and Study Methods

### 2.1. Study Area and Data Sources

The Yangtze River Delta Urban Agglomeration (Figure 1) is one of the regions with the most rapid urbanization development [3,36], as well as one of the most prominent tourist destinations in China [37]. As the strongest economic growth pole in China, its high-quality development is a crucial focal point to construct a new “dual circulation” development pattern. The tourism and urbanization systems are complex in structure and extensive in content, exhibiting a coupling and coordinated development relationship that is strongly interactive. The Yangtze River Delta Urban Agglomeration is a demonstrably representative region worth discussing in terms of the coupling coordination degree of tourism and urbanization. The premise of analyzing the coupling coordination between tourism development and urbanization development is to construct an index system that includes comprehensive content and reasonable levels. Approaching high-quality development with regard to performance improvement, the key factors to focus on are innovation driven by new requirements, data availability for indexing what is typical, scientific merit, measurability, and the principle of system relevance. Drawing lessons from the results of extant studies [38,39], the project has identified 26 cities of the Yangtze River Delta in 2008–2018 as the study area, selecting 24 specific indicators (Table 1), respectively, from the tourism and the urbanization systems.

Among them, economic benefit and development support in tourism are indicators that can reflect the quality and efficiency of tourism, while “ecological” indicators are added to the widely used “population, economy, society, and land” indicators of urbanization [36]; these factors also fulfill new requirements of structural optimization, performance improvement, and innovation-driven development for high-quality development.

The data selected in this paper primarily originate from the statistical yearbook, the tourism statistical yearbook, and the statistical bulletin of each city. Because of disparate criteria for the selection of index data, there are differences in dimension and magnitude between sets of data. Range standardization has been used for data processing, and missing values have been supplemented by interpolation.



**Figure 1.** Location of the Yangtze River Delta Urban Agglomeration. Note: The location of the Yangtze River Delta Urban Agglomeration comprises the province-level administrations of Jiangsu, Zhejiang, Anhui, and Shanghai (Jiangsu Province includes the 9 cities of Nanjing (NJ), Yancheng (YC), Yangzhou (YZ), Taizhou (TZ), Nantong (NT), Zhenjiang (ZJ), Changzhou (Czh), Wuxi (WX), and Suzhou (SZh). Anhui Province includes the 8 cities of Hefei (HF), Chuzhou (ChZ), Ma'anshan (MAS), Wuhu (WH), Anqing (AQ), Tongling (TL), Chizhou (CZ), and Xuancheng (XC). Zhejiang Province includes the 8 cities of Hangzhou (HZ), Huzhou (HuZ), Jiaxing (JX), Zhoushan (ZS), Shaoxing (SX), Ningbo (NB), Taizhou (TZ), and Jinhua (JH)).

**Table 1.** The development index of the tourism industry and urbanization.

| System           | First-Class Index   | Second-Class Index   |
|------------------|---------------------|--|
| Tourism industry | Market size         | Number of domestic tourists  |
|                  |                     | Number of inbound tourists   |
|                  | Economic benefit    | Contribution of tourism to GDP                                     |
|                  |                     | Domestic tourism revenue   |
|                  | Development support | Foreign exchange income of tourism                                 |
|                  |                     | Number of star hotels  |
| Urbanization     | Population          | Number of travel agencies  |
|                  |                     | Number of tourist attractions above grade A                        |
|                  |                     | Number of accommodation and catering workers                       |
|                  | Economic            | Proportion of urban population                                     |
|                  |                     | Urban population density   |
|                  |                     | Proportion of people employed in secondary and tertiary industries |
|                  | Society             | Proportion of added value of secondary and tertiary industries     |
|                  |                     | Per capita fiscal revenue  |
|                  |                     | GDP per capita   |
|                  | Ecology             | Number of university students per 10,000                           |
|                  |                     | A library of 100 people has a large collection of books            |
|                  |                     | Number of beds in medical institutions per 10,000 people           |
| Land             | Land                | Afforestation coverage rate of built-up area                       |
|                  |                     | Per capita public green space                                      |
|                  | Land                | Electricity consumption per unit of GDP                            |
|                  |                     | Proportion of built-up area  |

## 2.2. Evaluation Methods

### 2.2.1. Information Entropy Weight

The information entropy weight method can use the statistical properties of the selected indicators to determine their respective weights, which can effectively avoid the subjectivity of the Analytic Hierarchy Process (AHP) or Delphi method in the weighting process [40,41]. Therefore, this method is adopted to measure the level of the tourism industry and urbanization. For specific steps, refer to the relevant literature [42].

### 2.2.2. Coupling Coordination Degree Model Construction

Coupling coordination theory aims to study whether the system and the internal elements of the system develop harmoniously in the process of mutual coupling, whether they develop from disorderly to orderly, and whether they develop from simple to complex to form a unified, organic whole. This theory has some key concepts, such as the degree of coupling (C) and the degree of coordination (D) [43]. In this study, the degree of interaction and mutual influence between the two systems is called the coupling coordination degree. It consists of three parts, namely, the classification system and discriminant standard of the degree of development (T), the degree of coupling (C), and the degree of coordination (D) [44,45].

$$T = \alpha u_1 + \beta u_2 \quad (1)$$

In the equation,  $T$  represents the comprehensive evaluation index of tourism and urbanization to reflect their comprehensive benefits.  $\alpha$  and  $\beta$  represent undetermined weights. As two systems in different fields, tourism and urbanization influence and restrict each other in the development process. The coupling and coordination relationship between them is very obvious. Tourism plays a leading role in hospitality, entertainment, shopping, and other industries and creates many job opportunities. Meanwhile, urbanization affects the development of tourism and provides the economic support, tourist market, and infrastructure for the development of tourism. In the development process of urbanization, it will continue to improve the infrastructure, such as transportation, hotel facilities, cultural entertainment, shopping malls, and so on, which provides a broader platform for tourism development. Since tourism and urbanization complement each other, both  $\alpha$  and  $\beta$  are assigned a value of 0.5.  $u_1$  and  $u_2$  represent the tourism index and urbanization index, respectively.

$$C = m \left\{ (u_1 \times u_2 \cdots \times u_m) / (u_1 + u_2 \cdots + u_m)^m \right\}^{1/m} \quad (2)$$

$$C = 2 \left\{ (u_1 \times u_2) / (u_1 + u_2)^2 \right\}^{1/2} \quad (3)$$

$C$  denotes the coupling degree of the two systems.

$$D = \sqrt{C \times T} \quad (4)$$

$D$  is measured by integrating  $C$  and  $T$  to reflect the differences in coupling coordination levels.

The coupling degree reflects the degree of interaction of the system, and the coordination degree reflects the coordination of the coupling degree. Referring to previous studies on the correlation levels of the coupling degree and the coordination degree, the coupling degree and the coordination degree of the two systems are divided into five levels, respectively, by using the method of a uniform distribution function (Table 2).

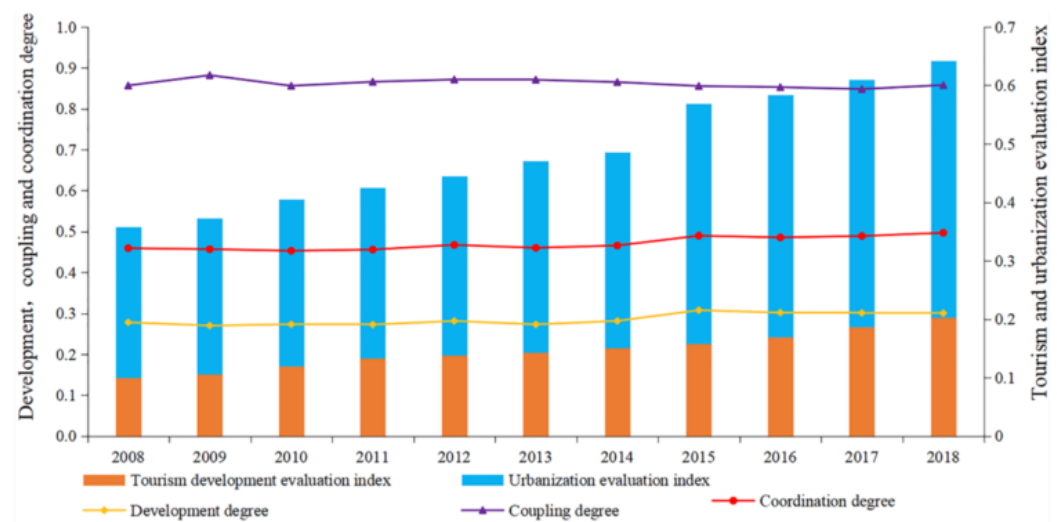
**Table 2.** Types of coupling degree and coordination degree.

| Coupling Degree (C) | Coupling Level    | Coordination Degree (D) | Coordination Level     |
|---------------------|-------------------|-------------------------|------------------------|
| 0–0.20              | High decoupling   | 0–0.20                  | Serious disorder       |
| 0.21–0.40           | Decoupled         | 0.21–0.40               | Reasonable disorder    |
| 0.41–0.60           | Low coupling      | 0.41–0.60               | Moderate coordination  |
| 0.61–0.80           | Moderate coupling | 0.61–0.80               | Favorable coordination |
| 0.81–1.0            | Highly coupled    | 0.81–1.0                | Strong coordination    |

### 3. Spatiotemporal Differentiation of Coupling Coordination Degree between Tourism and Urbanization

#### 3.1. Time Series Changes of Coupling Degree between Tourism and Urbanization

The mean values of tourism development and urbanization evaluation index, development degree, coupling degree, and coordination degree, according to the tourism and urbanization index of the Yangtze River Delta Urban Agglomeration from 2008 to 2018, are shown in Figure 2.

**Figure 2.** Trends of evaluation index and development, coupling, and coordination degrees of tourism and urbanization.

In terms of the evolution characteristics of time series, the mean value of tourism and urbanization evaluation of the cities in the Yangtze River Delta Urban Agglomeration gradually increased every year from 2008 to 2018. The level of urbanization is higher than that of tourism, with the coupling degree exhibiting an upward trend with a slight fluctuation. The mean value of the coupling degree in all regions is between 0.8 and 1 and highly coupled, indicating a strong correlation between tourism and urbanization. Urbanization provides special funds for tourism development, improves infrastructure construction, and expands tourism demands. Through industrial integration, tourism development can expand employment, improve population structure, optimize land resource allocation, and enhance urbanization levels. To facilitate the 2009 Shanghai World Expo, the Yangtze River Delta region jointly launched 55 Expo-themed experience routes and nearly 100 experience sites in the Yangtze River Delta Urban Agglomeration. Subsequently, it is seen that both the tourism evaluation index and the coupling degree are high, while the mean value of the coordination degree between tourism and urbanization in the Yangtze River Delta Urban Agglomeration is between 0.4 and 0.5, which reflects moderate coordination.



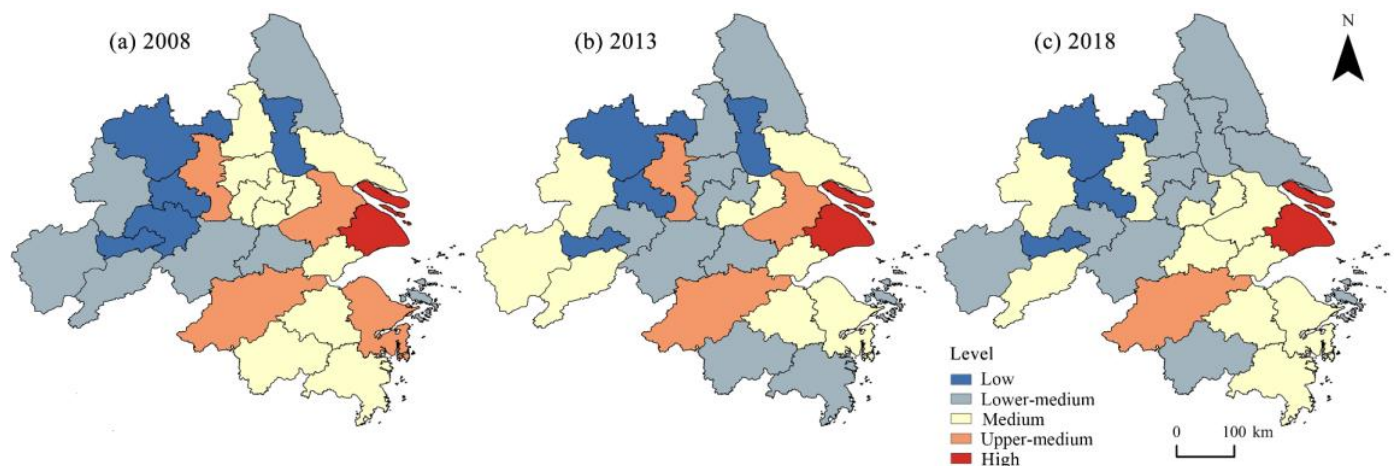
The comprehensive parameter curve of tourism development and urbanization shows that the evaluation index of tourism generally presents a slow annual growth trend, while the evaluation index of urbanization generally presents a continuous growth trend. The growth of tourism is slower than that of urbanization because the regions that lack tourism resource endowment cannot optimize the use of the dividend effect of urbanization, failing to innovate advantageous tourism products. At the same time, the gap between tourism development and the urbanization evaluation index has widened because the urbanization growth rate is relatively fast, and the development of tourism in some regions fails to keep pace with the times, presenting a low-quality development situation where supply exceeds demand. Alternatively, areas that originally had better tourism development failed to pay attention to the environment, affecting the local ecological resources. In the future, based on ecological concerns, it is necessary to increase investment in special funds, high-quality professionals, and infrastructure provided by urbanization. It is imperative to implement new visions and constantly develop new tourism products in line with market demands to steadily improve the coordination between tourism and urbanization.

### 3.2. Spatial Distribution of Coupling Coordination Degree between Tourism and Urbanization

The study has used ArcGIS10.2 Jenks Natural Breaks to classify the tourism development and urbanization level of each administrative unit in the Yangtze River Delta Urban Agglomeration in 2008, 2013, and 2018 into five levels from low to high (low, low-medium, medium, upper-medium, and high) in order to explore the spatial pattern evolution of tourism and urbanization development in the Yangtze River Delta Urban Agglomeration.

#### 3.2.1. Spatial Pattern Distribution of Tourism and Urbanization Development Level

From the perspective of spatial distribution, tourism development in the Yangtze River Delta Urban Agglomeration presents a spatial pattern of orderly changes (Figure 3). In 2008, the tourism development of Shanghai was at a high level, while those of Nanjing, Suzhou, Hangzhou, and Ningbo were at an upper-medium level, forming an overall spatial structure of “one pole and multiple cores”. In 2013, Shanghai was still at a high level; Nanjing, Suzhou, and Hangzhou were at an upper-medium level; Ningbo changed from an upper-medium level to a lower-medium level; Wuhu jumped from a low level to a lower-medium level.

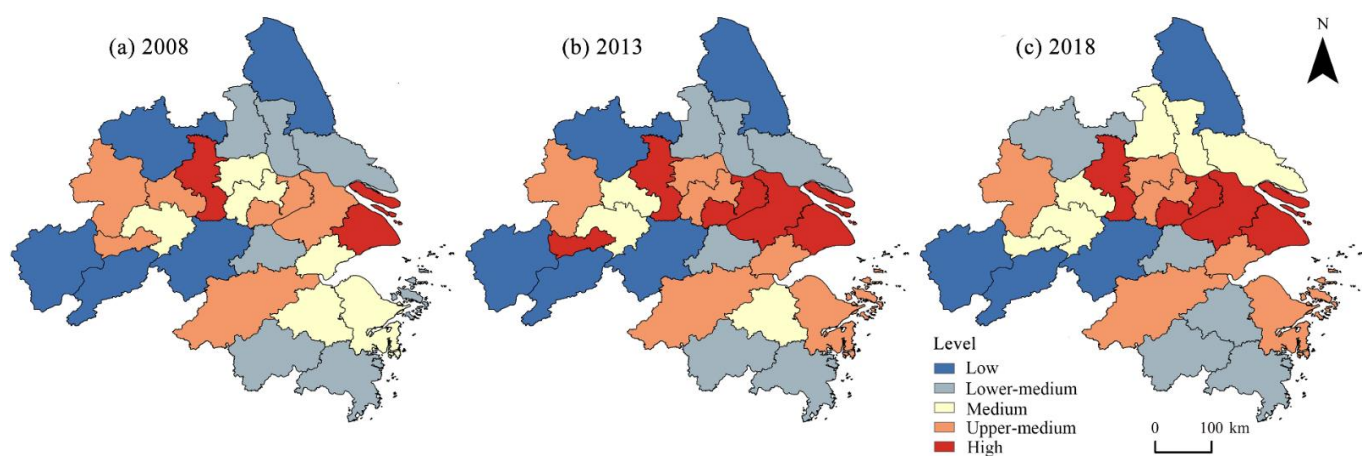


**Figure 3.** Spatial temporal pattern of Yangtze River Delta tourism industry in 2008 (a), 2013 (b), and 2018 (c).

In 2018, Shanghai remained in the leading position; Huzhou and Taizhou rose to a medium from a low level; Nanjing and Suzhou shifted from the upper-medium level to the medium level. These findings demonstrate that the level of tourism development has stepped up; the gap between high-quality regions and low-quality regions is large; and the

grade characteristics are significant. Some mature tourism cities do not maintain their original industrial development advantages in the process of tourism development, and some even show a relative regression. These findings indicate that the development of tourism in these cities has not kept pace with the change of the diversified demands of mass tourism and timely adjustment, and that the effective supply of tourism is insufficient. In general, the development level of tourism essentially matches the regional economic development.

The spatial distribution of urbanization development in the Yangtze River Delta Urban Agglomeration is unbalanced, presenting a relatively stable spatial pattern (Figure 4). From 2008 to 2018, China's urbanization process improved rapidly, and the level of urbanization significantly increased. In 2008, Shanghai and Nanjing were rated as high-level urbanization areas. In 2013, Suzhou, Wuxi, and Tongling rose from an upper-medium level to a high level, and Changzhou, Zhenjiang, Jiaxing, and Ningbo from a medium level to an upper-medium level.



**Figure 4.** Spatial and temporal patterns of urbanization in the Yangtze River Delta in 2008 (a), 2013 (b), and 2018 (c).

In 2018, Yangzhou, Taizhou, and Nantong advanced from a lower-medium to a medium level. Overall, the urbanization level of each city presents the spatial characteristics of agglomeration and diffusion, expanding from the main cities in the coastal areas to the surrounding cities and forming the agglomeration area with a high urbanization level in the coastal urban agglomeration. Shanghai exhibits unique geographical conditions and resource endowment and has a strong ability to gather elements, thereby maximizing the polarization and siphon effect. Yancheng in northern Jiangsu Province and Xuancheng, Anqing, and Chizhou in Anhui Province have always been at a low level, caused by their lack of industrial support, innovation ability, and low level of openness, to some extent reflecting the “Matthew effect” of the quality of urbanization development.

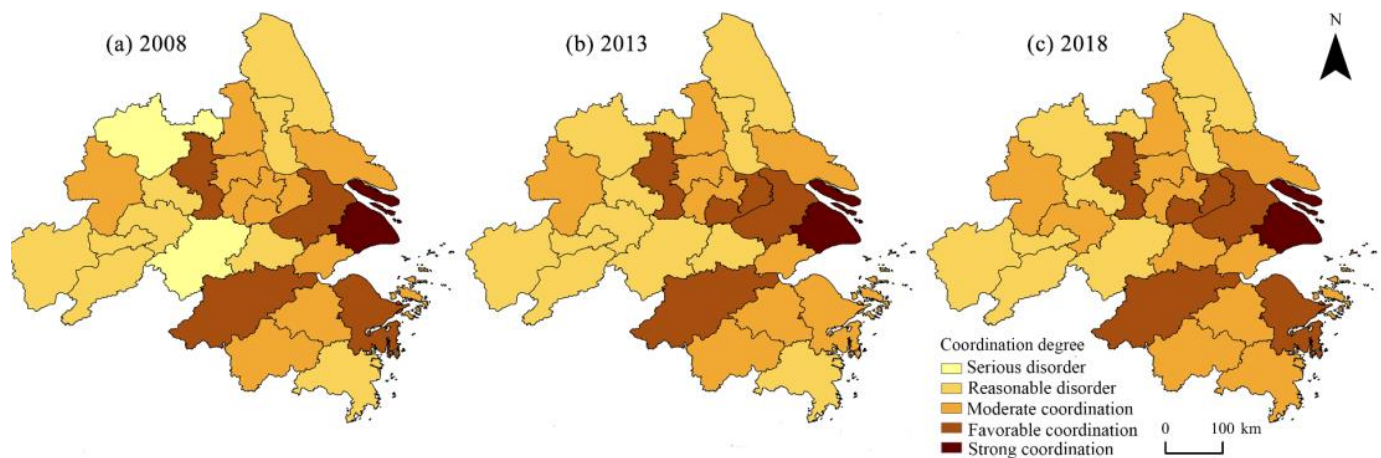
Tongling in central-southern Anhui Province experienced a process of urbanization development from an upper-medium level to a high level and then regressed to a medium level. This curve shows that resource-based cities tend to excessively depend on resources, leading to an imbalance of the proportion of industrial structure. Subsequently, ignoring the imperative for environmental protection slows down or even regresses economic development.

### 3.2.2. Spatial Differentiation Analysis of Coupling Coordination Degree

To further demonstrate the spatial differentiation characteristics of the coupling coordination between tourism and urbanization in the Yangtze River Delta Urban Agglomeration, the study has selected the coupling coordination degree data of three average time points in 2008, 2013, and 2018 to plot the spatial distribution of the coordination degree between tourism and urbanization (Figure 5). In general, the coordination degree of tourism and urbanization in the Yangtze River Delta Urban Agglomeration has improved over time; however, the development is not balanced. Coordination types have gradually changed



from serious and reasonable disorder to reasonable disorder and moderate coordination, showing a high spatial distribution pattern in eastern coastal areas and low patterns in northwest China.



**Figure 5.** Coordination degree of tourism industry and urbanization in 2008 (a), 2013 (b), and 2018 (c).

In 2008, Shanghai was in a strong coordinated state, and Suzhou, Ningbo, Hangzhou, and Nanjing were in favorable coordination. Ten cities, including Hefei, Wuxi, and Jiaxing, were in moderate coordination. Nine cities, including Anqing, Yancheng, and Taizhou, were in reasonable disorder, while the cities of Chuzhou and Xuancheng were in a state of serious disorder. In 2013, Shanghai remained in a strong state of coordination; Suzhou, Wuxi, Nanjing, and Hangzhou were in a favorable state; and ten cities, including Hefei, Changzhou, and Ningbo, were in a moderate state of coordination. Eleven cities, including Anqing, Yancheng, and Taizhou, were in a state of reasonable disorder, and Chuzhou and Xuancheng exhibited reasonable to serious disorder. So far, there are no cities demonstrating a state of serious disorder in the Yangtze River Delta Urban Agglomeration. In 2018, Shanghai was still in a strong coordinated state; Ningbo changed from moderate coordination to favorable coordination; and Suzhou, Wuxi, Nanjing, Ningbo, and Hangzhou were in a favorable state of coordination. Wuhu, Taizhou, and Huzhou revealed a state of reasonable disorder to moderate coordination, with eleven moderate coordination cities, eight reasonable disorder cities, and no serious disorder cities being found.

From the perspective of the absolute value of coordination degree, Shanghai averaged over 0.98 from 2013 to 2018. However, the coordination degrees of Yancheng, Taizhou, Ma'anshan, and Tongling are below the mean range. In terms of administrative subordination, six of these eight cities are located in the Anhui Province and two in the Jiangsu Province. In terms of geographical location, the six cities in Anhui are distant from Shanghai, while the two cities in Jiangsu are in its northern region. These factors demonstrate that a siphoning effect with a higher coordination degree is affected by distance and traffic. Combining the degrees of coupling and coordination, in 2018, the coupling degrees of Ningbo, Shaoxing, and Jinhua increased by 0.031, 0.06, and 0.01, respectively, compared with the degrees in 2008.

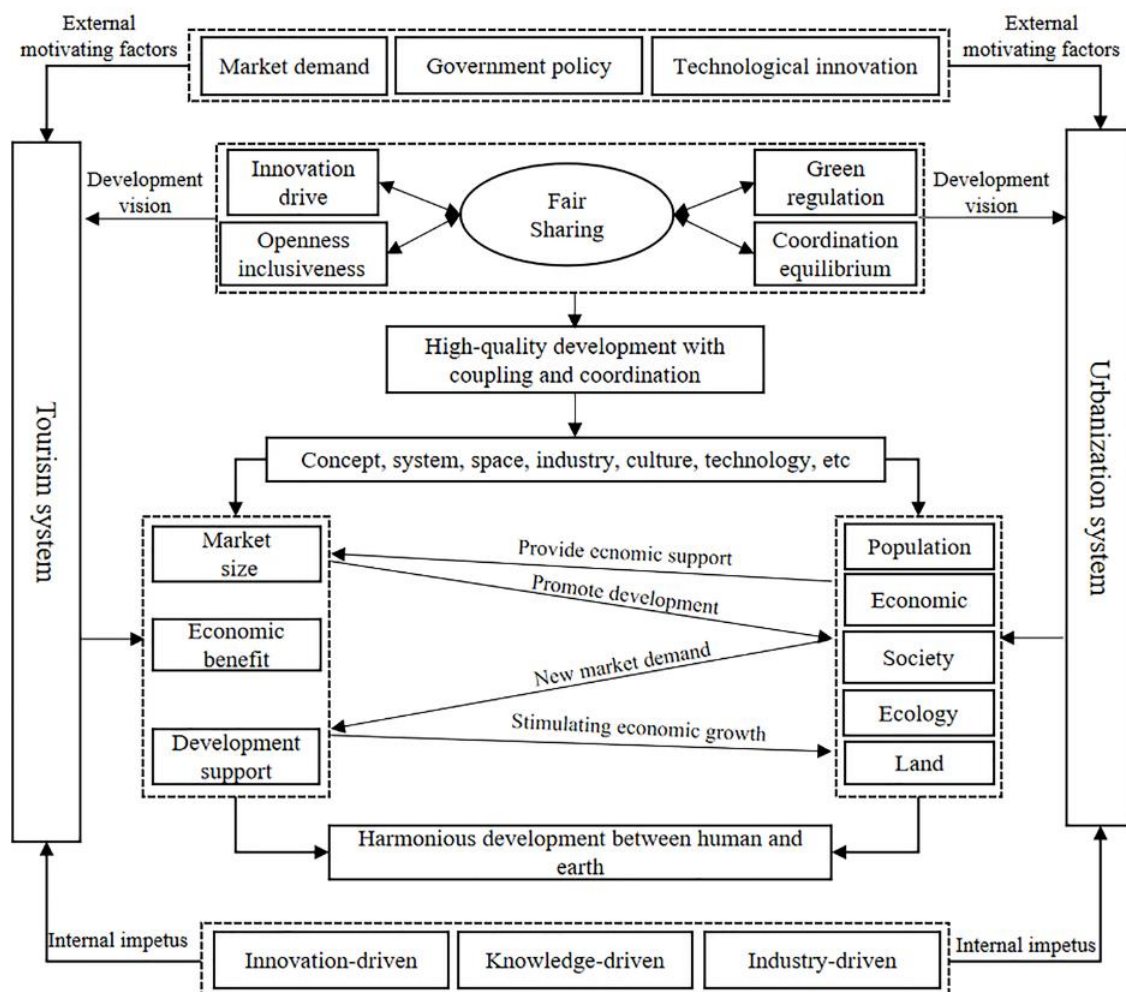
However, the coordination degree decreased by 0.045, 0.002, and 0.008, respectively, indicating that the tourism development and urbanization in Shaoxing and Jinhua are more closely related than previously believed. However, the positive coupling has decreased, and the quality of development needs to be improved. In addition, the coupling and coordination degrees of Nanjing, Zhenjiang, Changzhou, and Tongling decreased simultaneously, but the urbanization evaluation index increased.

These changes indicate that tourism development was not a significant factor in the urbanization of these cities, and that the development of interaction between tourism and urbanization was not benign. Empirical findings demonstrate that urbanization is the foundation and guarantee for the development of tourism, and that tourism development

can effectively facilitate the rapid development of urbanization. Coordination between the two systems of these cities still has much scope for improvement. In terms of spatial distribution, it generally presents the spatial trend characteristics of “higher in the east and lower in the west” in the east–west direction and “bulging in the middle and lower at both ends” in the north–south direction. The coordination interaction steadily develops to a high level, with a significant amount of spatial dependence and spillover effect.

#### 4. Coordination Mechanism of High-Quality Coupling Development between Tourism and Urbanization

There is a high degree of coupling between tourism and urbanization in the Yangtze River Delta Urban Agglomeration, but the degree of coordination is not high. In the contemporary context of economic development, unbalanced and inadequate regional development remains a prominent problem, and mechanisms for coupled, coordinated, and high-quality development are relatively lacking. Research and discussions on the high-quality development mechanism of tourism and urbanization in the Yangtze River Delta are necessary to promote the high-quality development of economic integration in the Yangtze River Delta. The 14th Five-Year Plan has repeatedly emphasized the imperative to adhere to the new development philosophy and provide a fundamental guarantee for high-quality development. The study applies the new development vision to explore the coupling coordination high-quality development mechanism of tourism and urbanization in the Yangtze River Delta region (Figure 6), providing significant findings on the coupling coordination high-quality development of tourism and urbanization.



**Figure 6.** Mechanism of coupling and coordination of tourism industry and urbanization.

Urbanization has provided economic support for tourism, and the development of tourism has facilitated the promotion of urbanization. The huge domestic demand potential of urbanization has formed a new consumer market, providing broad market demands and an internal impetus for economic development. People demand a higher quality of life and consumption, becoming a new driving force for economic growth. Market demand, government policy, and technological innovation are external motivating factors for the coupling and coordinated high-quality development of tourism and urbanization in the Yangtze River Delta Urban Agglomeration. Market demand requires equilibrium in terms of supply: industrial structure reform is the core of this necessity in order to improve the industry chain level, make up the short board, and increase effective supply to meet the development of diversified demands. Innovation-driven, knowledge-driven, and industry-driven factors form the internal impetus to realize the coupling and coordination of high-quality development.

Now, New Urbanization policy, characterized by people-oriented urban and rural interaction and ecological harmony, has too much in common with the tourism industry in terms of economic value, as well as social value, cultural value, and ecological value, and even in terms of the sustainable development of the overall region. The depth of convergence is the key factor that promotes the development of high-quality vision, system, space, industry, culture, and other aspects of the two systems, based on the in-depth implementation of the five-development vision. This study defines deep integration as a relationship of deep development at five levels. The first level is concept integration. High-quality development is the common goal of urbanization and tourism, and concept integration plays a fundamental role. The second level is institutional integration. Urbanization and tourism institutions are highly consistent, and integrated development is an important way to reflect institutional fairness. The third level is spatial integration. The development of urbanization and tourism breaks through the spatial administrative division and expands the shared space, making the boundary of the two constantly blurred, and blending has become a common phenomenon. The fourth level is the integration of industries. Different industries within the tourism industry and industrial boundaries within the same industry have undergone new changes, and the industrial value chain continues to extend. The fifth level is cultural integration. The cultural attribute and tourism function of tourism are the foundation of integrated development. A reliance on innovation to overcome the problem of diminishing returns to scale-of-input factors is essential to achieve a steady improvement in productivity and high-quality, coordinated economic development. Coordination and equilibrium are required to improve the cooperation system and form a complete, integrated, overall planning chain. Green regulation improves resource utilization efficiency, reduces ecological degradation, and ensures the coordinated development of economic benefits and the environment. Further, inclusiveness is required to improve the level of internal and external openness, promote the spillover of technology and knowledge, strengthen inter-regional contact and cooperation, and finally, achieve the fundamental goal of high-quality development: fair sharing.

## 5. Discussions

### 5.1. Discussion on the Results of the Time Series

This section analyzes the evolution characteristics of the mean values of the tourism development and urbanization evaluation index, the development degree, the coupling degree, and the coordination degree according to the tourism and urbanization index. The mean value of tourism and urbanization evaluation of cities in the Yangtze River Delta Urban Agglomeration gradually increased every year from 2008 to 2018. The level of urbanization is higher than that of tourism, with the coupling degree exhibiting an upward trend with a slight fluctuation. In this study, the development degree, coupling degree, and coordination degree from 2008 to 2018 are calculated and presented in the form of a histogram, focusing on the trend of change of these indicators, but the internal functional

relationship of these indicators over time is not obtained. In further work, more data will be analyzed to establish this functional relationship.

### *5.2. Discussion on the Results of the Spatial Distribution*

This section analyzes the spatial distribution of the coupling coordination degree between tourism and urbanization. It has revealed that Yangtze River Delta presents a spatial pattern of orderly changes in the development of tourism, forming a spatial structure of “one pole and many centers” with Shanghai as the core. The urbanization level presents a relatively stable spatial pattern, and the urbanization level of each city presents the spatial characteristics of agglomeration and diffusion. The main cities in the coastal and surrounding areas form the agglomeration region of high coastal urbanization levels. The coordination interaction steadily develops to a high level, with a significant amount of spatial dependence and spillover effect. These factors reveal the spatial trend characteristics of “higher in the east and lower in the west” in the east–west direction and “bulging in the middle and lower at both ends” in the north–south direction. Empirical findings demonstrate that urbanization is the foundation and guarantee for the development of tourism, and that tourism development can effectively facilitate the rapid development of urbanization. Coordination between the two systems of these cities still has much scope for improvement.

### *5.3. Discussion on the Results of the Mechanism of High-Quality Development*

This section established a coordination mechanism for the high-quality, coupled development of tourism and urbanization in the Yangtze River Delta Urban Agglomeration. Market demand, government policy, and technological innovation are external motivating factors; innovation-driven, knowledge-driven, and industry-driven factors are the internal impetus to realize the coupling and coordination of high-quality development. Research and discussions on the high-quality development mechanism of tourism and urbanization in the Yangtze River Delta are necessary to promote the high-quality development of economic integration.

## **6. Conclusions**

The Yangtze River Delta Urban Agglomeration is one of the regions with the most rapid urbanization development, as well as one of the most prominent tourist destinations in China. Based on the panel data of the 26 cities in the Yangtze River Delta Urban Agglomeration in 2008–2018, this study has analyzed temporal and spatial coupling characteristics of tourism and urbanization with a mechanism of high-quality development. In terms of the evolution characteristics of time series, the mean value of tourism and urbanization evaluation of cities in the Yangtze River Delta Urban Agglomeration gradually increased every year from 2008 to 2018. The level of urbanization is higher than that of tourism, with the coupling degree exhibiting an upward trend with a slight fluctuation. From the perspective of spatial distribution, tourism development in the Yangtze River Delta Urban Agglomeration presents a spatial pattern of orderly changes, and the spatial distribution of urbanization development is unbalanced, presenting a relatively stable spatial pattern. In general, the coordination degree of tourism and urbanization in the Yangtze River Delta Urban Agglomeration has improved over time; however, the development is not balanced. To promote the better coordinated and coupled development of tourism and urbanization, this study first proposes to apply the new development vision to creatively explore the coupling coordination high-quality development mechanism of tourism and urbanization. It will provide a point of reference for regional development in other urban agglomerations.

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