

RESEARCH ON THE COUPLING RELATIONSHIP BETWEEN TOURISM AND NEW-TYPE URBANIZATION IN INNER MONGOLIA, CHINA

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Abstract: Coordinated development of tourism and urbanization is an important path for new-type urbanization. The coupling degree model was used to empirically analyze the interplay between tourism and new-type urbanization in Inner Mongolia. The research results show that the overall development level of tourism and new-type urbanization shows a slow rising trend, while tourism lags behind new-type urbanization. The overall coupling is high, and the long-time coupling properties are of high quality. The degree of coupling coordination is improved more quickly, and high-quality coordination is eventually achieved; Proposals have been put forward to build beautiful new towns and promote green tourism.

Key words: Tourism; New-type urbanization; Coupling coordination; Inner Mongolia

Promoting new-type urbanization is an important path for high-quality development in Inner Mongolia and an internal driving force for sustainable and balanced growth of the regional economy in the future. Due to its special advantages of low energy consumption, low pollution, high added value, strong industrial linkage and high resource utilization efficiency, tourism has become an important new engine for the construction of ecological security barrier in northern China, and a new power source for promoting new-type urbanization and economic growth [1-2]. The coordinated development of tourism and urbanization is an important path for new-type urbanization [3]. As a national strategic highland for ecological and environmental protection and high-quality development in the Yellow River basin, Inner Mongolia has taken an important role in promoting high-quality development in the Yellow River basin and exploring new-type urbanization development models. Identifying a coordinated development mechanism for tourism and new-type urbanization in Inner Mongolia will help promote the construction of new-type urbanization in the Yellow River Basin and explore high-quality development models for new-type tourism urbanization.

Relevant scholars at home and abroad have conducted in-depth analysis of the interaction between tourism and urbanization [4-8], which provides important theoretical support for the study of this paper. With the deepening process of new-type urbanization, the interactive development relationship between tourism and new-type urbanization has become a new research focus. As an important ecological security barrier in northern China, Inner Mongolia has witnessed rapid development of tourism and urbanization in recent years. However, research on the coupling between tourism and new-type urbanization in Inner Mongolia is relatively lacking.

Therefore, in this paper, we study Inner Mongolia based on panel data from 2000 to 2020 and analyze the coupled interaction dynamics of tourism and new-type urbanization in Inner Mongolia in a comprehensive way using the theory of cooperative development and the coupling degree model.

1. Research methods and data sources

1.1 Index system construction

Based on the comprehensive consideration of the interaction mechanism between tourism development and new-type urbanization, and following the principles of scientific, comprehensive, representative and accessible data and indicators, the tourism subsystem index system is constructed from four aspects: tourism market, tourism economy, tourism industry and tourism support. The new-type urbanization subsystem index system is constructed from four aspects: economic urbanization, population urbanization, social urbanization and land urbanization.

Table 1. Tourism and New-type Urbanization index system

Structure type	Index type	Index
Tourism	Tourism Market	Number of domestic tourists, Number of inbound tourists, Total number of tourists
	Tourism Economy	Domestic tourism revenue, International tourism revenue, Total tourism revenue
	Tourism Industry	Total number of travel agencies, Number of star hotels, Number of employees in the tertiary industry
	Tourism Support	Passenger turnover, Per capita consumption expenditure of urban residents, Mileage of highway routes
New-type Urbanization	Economic Urbanization	Gross regional product, Gross tertiary industry product, Gross regional product per capita
	Population Urbanization	Total population at year end, Urbanization rate, Number of employed persons
	Social Urbanization	The number of college students, The number of health technicians, The number of full-time teachers
	Land Urbanization	Gross regional product, Per capita urban road area, Green coverage rate of built-up areas

1.2 Data Sources

The index data of tourism and new-type urbanization in this paper are from Inner Mongolia Statistical Yearbook (2001-2021) and China Tourism Statistical Yearbook (2001-2021), and the individual missing data are supplemented by interpolation method.

1.3 Research Methods

Data processing: Due to the different data dimensions and orders of magnitude of the original data, the original data need to be normalized before analysis. This paper chooses the standardized method to process the original data.

Coupling degree model: The concept of coordination degree model in physics is adopted to measure the interaction and mutual influence between tourism and the new-type urbanization system.

$$C = \sqrt{\frac{U(X) \cdot E(y)}{\left(\frac{U(X) + E(y)}{2}\right)^2}}; \quad T = \alpha U(x) + \beta E(y); \quad D = \sqrt{C \times T}$$

Where, $E(y)$ is the new-type urbanization function; $U(x)$ is the tourism function; T is the comprehensive evaluation index; C is the coupling degree; D is the coupling coordination degree; α and β are undetermined coefficients. This paper considers that tourism and new-type urbanization are equally important in the system. According to the research practice, $\alpha = \beta = 0.5$ is taken.

2. Result analysis

2.1 Comprehensive evaluation of tourism

From 2000 to 2020, the integrated index of tourism in Inner Mongolia showed a slow rise and sudden decline, rising from 0.0310 in 2000 to 0.9614 in 2019 and then suddenly falling to 0.5724. The evolution process was comprehensively manifested in two important development periods, the slow rise from 2000 to 2019 and the rapid decline from 2019 to 2020 when all urban economic activities were halted due to the novel coronavirus epidemic and the tourism industry was severely affected. Overall, new-type urbanization provides important tourism infrastructure such as culture and education, medical and health care, and public transportation for the rapid development of tourism. Inner Mongolia's tourism industry has strong overall development potential and has become a new economic growth point in the city's economic development.

2.2 Comprehensive evaluation of new-type urbanization

The composite index of new-type urbanization showed a slow rise. From 2001 to 2018, the 2020 composite index for new-type urbanization has long been ahead of the 2020 composite index for tourism, rising from 0.0119 in 2000 to 0.9123 in 2020. The composite index of new-type urbanization shows strong capacity for continued growth. At the same time, it can be divided into two phases. The 2000-2010 periods were a period of rapid growth, and infrastructure construction during the period of urbanization achieved remarkable results. From 2011 to 2020, affected by the policy adjustment of regional economic and industrial structure, it shows an evolutionary process of slow rise to stability, the construction of urban infrastructure tends to be perfect, the construction of urban ecological environment contributes to the beautification of urban landscape, and the construction of urban human environment and tourist reception capacity improves year by year.

2.3 Comprehensive analysis of coupling degree

The trend of the degree of coupling shows a rapid rise and tends to stabilize. The coupling rapidly increases from 0.8951 in 2000 to 0.9997 in 2019 and decreases slightly in 2020. The tourism industry and the new-type urbanization system have shown excellent cooperation in developing and evolving processes and trends. The coupling degree type has experienced two

coupling evolution stages, including high-level coupling (2000) and high-quality coupling (2001-2020). From 2001 to 2020, the tourism and new-type urbanization systems have been in a high-quality coupling phase for a long time and have maintained a steady trend of high-quality coupling for a long time. In 2020, the coupling will only decrease very slightly due to the impact of the novel coronavirus epidemic, but it still has strong potential for sustainable development.

2.4 Comprehensive analysis of coupling coordination degree

The change trend of coupling coordination degree shows a steady and slowly rising evolution trend, and the coupling coordination degree slowly rises from 0.1385 in 2000 to 0.9679 in 2019 and drops to 0.8501 in 2020, which can be divided into three stages: 2000-2003 was a period of slow growth, 2014-2019 was a period of sustained rapid growth, and 2020 showed a decline. The coupling coordination degree type experienced six coupling coordination degree evolution processes, including severe coordination (2000-2003), mild coordination (2004-2006), moderate coordination (2007-2011), good coordination (2012-2016), good coordination (2017-2019), and good coordination (2020). From 2017 to 2019, the tourism industry system and the new-type urbanization system have achieved coordinated development. Despite the impact of the novel coronavirus epidemic, 2020 has shown good coordination characteristics, with tourism and new-type urbanization already on a good trend of coordinated development.

3. Conclusions and Suggestions

3.1 Conclusion

Based on the theory of collaborative development and the coupling degree model, this paper analyzes the interactive coupling relationship between tourism and new-type urbanization by taking Inner Mongolia as an example, and draws the following conclusions: Both tourism and new-type urbanization have shown a good ability of sustainable growth and a trend of collaborative development. Tourism in Inner Mongolia has developed into a new driving force and a new engine for the sustainable and high-quality development of the regional economy; Both the degree of coupling and the degree of coordination between the two showed continuous growth trends, and the ability of tourism and new-type urbanization to develop in a synergistic manner improved significantly, indicating that new-type urbanization has played a positive role in promoting tourism and regional economic development. New-type urbanization is conducive to boosting tourism, which will be an important new driving force for high-quality development in Inner Mongolia in the future.

3.2 Suggestions

Define the development goals for new-type urbanization, take into account the actual development of different regions, and strive to build beautiful new towns suitable for living, working and traveling, so as to enhance people's happiness in life. Give full play to the role of tourism in promoting urbanization development, make full use of the comprehensive benefits of the tourism industry, and comprehensively use "tourism + real estate", "tourism + technology", "tourism + transportation", "tourism + poverty alleviation" and other means to promote urbanization construction; coupling the development plans of tourism and urbanization, promoting the integration of tourism in Inner Mongolia, enhancing the city's reception service functions, and enhancing tourism service awareness and service capacity; change the mode of

tourism development, promote high-quality global tourism, promote the transformation and upgrading of Inner Mongolia's tourism industry, advocate green tourism, fully release the driving force of tourism to promote the development of new-type urbanization, so as to promote the coordinated and high-quality development of tourism and new-type urbanization.

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