Research on the Industry Integration of Culture Industry and Tourism in Shannxi Area

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Abstract. This paper first states the characteristics of culture industry and tourism industry then establish the evaluation index for evaluating the development level of these two industries. Take the Shannxi area as an example, we analyze the development level of culture industry and tourism industry and the integration of the two in 11 cities in 2010-2014. The results show that the development level of culture industry and tourism industry in Shannxi area is increasing year by year, but the whole development level of two kinds of industry is low, and the difference of the two kinds of industry integration in different places is great. Moreover, the coupling degree in urban is generally in the verge of disorder and barely imbalance. Based on this, the paper suggests some constructive proposals to promote industrial development.

Introduction

Tourism industry is a national strategic backbone industry, which plays an important coordinating role in economic development to enhance the economic efficiency. Guo-Jun Zeng and Jian-Dong Cai\textsuperscript{1} conclude the development tourism industry is closely related to national economy, and it has a significant effect on the national economy. The tourism industry has a strong correlation with other industries, which reflects its comprehensive, relativity, and the integrity characteristics. The tourism industry in China is developing in the direction of industry integration. Industry integration is not thoroughly, but the trend of it is significant. Jin Cheng, Lin Lu and Fu-Biao Zhu\textsuperscript{2} examine that the integration of tourism promotes the innovation of tourism industry, optimizes the industrial structure, enhances the competitiveness of the tourism industry, and plays an important role in promoting the overall development of the tourism industry. While culture industry is a new star in the economic field, from 1980s it began to develop, now it has become an important subsystem of the national economy. In the Eighteenth CPC National Congress, the government has confirmed the culture industry as a backbone industry. Culture industry involves many industries and has long industry chain. Culture industry is closely related to tourism industry\textsuperscript{3}, and the essence of tourism is the perception, cognition and thinking of culture. Tourism is the carrier of culture, which embodies the connotation of culture. The integration and development of tourism and culture industry is a new research trend in the world.

Literature Review

Industry integration began abroad, Reinhard B etc.\textsuperscript{4} investigates the rural cultural tourism. Kole\textsuperscript{5} addresses the custom in tourism destination is an important product form as

In summary, as for the study on the integration of culture industry and tourism industry, scholars mainly focus on the integration value, process and the approach. However, how to measure the development level and the integration degree has not formed a complete set of measurement system, and how to analyze the regional horizontal and vertical empirical is seldom.

Model of Culture and Tourism Industry Integration

Culture industry and tourism industry integration belongs to integration crossing. They start from product integration to business and then to market. Industry integration refers to a series of elements influence each other in two or over two industries. This paper uses coupling model to measure and evaluate the integration of culture and tourism industry.

Index Selection

Coupling degree evaluation index selection should follow the coupling mechanism, scientific, integrity and accessibility. Scholars construct indexes for culture industry and tourism industry from different perspectives. Chang-Hai Song [12] uses the quality development of tourism environment, tourists, tourism business, tourism industry and tourism destination to measure the development level of the tourism industry. Gang-Min Weng & Ling-Yan Li[11] build the system from the number of institutions, employees, operating indicators and resource indicators. Based on previous studies, this paper builds an evaluation system to measure the integration level of Shannxi’s culture industry and tourism industry, as is shown in table 1.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Level indexes</th>
<th>Secondary Indexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourism Industry</td>
<td>Number of Catering Facilities [piece]</td>
<td>Number of Catering Facilities [piece]</td>
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<tr>
<td></td>
<td>Number of Accommodation Facilities [piece]</td>
<td>Number of Accommodation Facilities [piece]</td>
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<tr>
<td></td>
<td>Number of Star Hotels [piece]</td>
<td>Number of Star Hotels [piece]</td>
</tr>
<tr>
<td></td>
<td>Passenger Turnover Volume [100 million people*kilometer]</td>
<td>Passenger Turnover Volume [100 million people*kilometer]</td>
</tr>
<tr>
<td></td>
<td>Bus Number Per Capita [piece]</td>
<td>Bus Number Per Capita [piece]</td>
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<tr>
<td></td>
<td>A-level scenic spots Number [piece]</td>
<td>A-level scenic spots Number [piece]</td>
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<td></td>
<td>4A-level Scenic Spots Number [piece]</td>
<td>4A-level Scenic Spots Number [piece]</td>
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<tr>
<td></td>
<td>Number of Travel Agencies [piece]</td>
<td>Number of Travel Agencies [piece]</td>
</tr>
<tr>
<td>Tourism Performance</td>
<td>Domestic Tourists [10 Thousand people]</td>
<td>Domestic Tourists [10 Thousand people]</td>
</tr>
<tr>
<td></td>
<td>International Tourists [10 Thousand people]</td>
<td>International Tourists [10 Thousand people]</td>
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<tr>
<td></td>
<td>Domestic Tourists Revenue [100 million Yuan]</td>
<td>Domestic Tourists Revenue [100 million Yuan]</td>
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<tr>
<td></td>
<td>International Tourist Revenue [10 thousand Dollars]</td>
<td>International Tourist Revenue [10 thousand Dollars]</td>
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<tr>
<td></td>
<td>Tourism Revenue to GDP Ratio [1]</td>
<td>Tourism Revenue to GDP Ratio [1]</td>
</tr>
<tr>
<td></td>
<td>Total Consumption of Tourists [100 million Yuan]</td>
<td>Total Consumption of Tourists [100 million Yuan]</td>
</tr>
</tbody>
</table>
Table 1. Evaluation System of Culture Industry and Tourism Industry (Cont.).

<table>
<thead>
<tr>
<th>Industry Level indexes</th>
<th>Secondary Indexes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Culture Industry</strong></td>
<td>Cultural Elements</td>
</tr>
<tr>
<td></td>
<td>Number of Libraries [piece]</td>
</tr>
<tr>
<td></td>
<td>Number of Museums and Galleries [piece]</td>
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<tr>
<td></td>
<td>Number of Cultural Centers [piece]</td>
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<td></td>
<td>Number of Culture Station [piece]</td>
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<td></td>
<td>Number of Arts Troupe [piece]</td>
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<td></td>
<td>Number of Cinemas [piece]</td>
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<td></td>
<td>Number of Research Institutions [piece]</td>
</tr>
<tr>
<td><strong>Cultural Performance</strong></td>
<td>Cultural Industry Professionals [10,000 people]</td>
</tr>
<tr>
<td></td>
<td>Number of Participants [10 Thousand people]</td>
</tr>
<tr>
<td></td>
<td>Revenue of Culture Industry [100 million Yuan]</td>
</tr>
<tr>
<td></td>
<td>Per capita income in Culture Industry [Yuan]</td>
</tr>
<tr>
<td></td>
<td>Input costs in Culture Industry [100 million Yuan]</td>
</tr>
</tbody>
</table>

**Model**

To ensure comparability between indicators, the paper uses range standardization treatment method. The matrix is \( A = (a_{ij})_{m \times n} \), it has \( m \) evaluation objects and \( n \) evaluating indicators. After standardizing \( A \), we get matrix \( R = (r_{ij})_{m \times n} \), where \( r_{ij} \) is the factor of \( R \).

\[
    r_{ij} = \frac{a_{ij} - \min_{i} a_{ij}}{\max_{i} a_{ij} - \min_{i} a_{ij}} + 0.01. \tag{1}
\]

In order to avoid negative or 0, we let the formula plus 0.01.

\[
    h_j = \frac{1}{\ln m} \sum_{i=1}^{m} s_{ij} \ln s_{ij}, \tag{2}
\]

\( h_j \) represents the entropy of the \( j \)-th index, where \( s_{ij} = r_{ij} / \sum_{i=1}^{m} r_{ij} \), and \( s_{ij} \) is the proportion of the \( i \)-th object in the \( j \)-th index.

\[
    \omega_j = \frac{1 - h_j}{n - \sum_{j=1}^{n} h_j}, \tag{3}
\]

\[
    \mu = \sum_{j=1}^{p} \omega_j M_{ij}, \tag{4}
\]

\[
    \phi = \sum_{j=p+1}^{n} \omega_j N_{ij}, \tag{5}
\]

where \( \omega_j \) represents the weight of the \( j \)-th index. \( \mu \) is the tourism industry evaluation function. \( \phi \) is the culture industry evaluation function. \( p \) represents the number of evaluation indexes in tourism industry, \( M_{ij} \) is the \( i \)-th object and \( j \)-th index’s standard value in the tourism industry. \( n-p \) is the number of evaluation indexes in tourism industry, \( N_{ij} \) represents the \( i \)-th object and \( j \)-th index’s standard value in the culture industry.

**Coupling Coordination Degree Function**

\[
    C = \sqrt{\frac{\mu \times \phi}{\mu + \phi}}, \tag{6}
\]

\[
    T = \alpha \times \mu + \beta \times \phi, \tag{7}
\]
\[ D = \sqrt{C \times T}, \]  

where \( C \) is the function of the coupling ranging from 0 to 1, and the bigger \( C \) means the stronger coupling degree. \( T \) is the comprehensive coordination function, reflecting the contribution of these two industries to the overall coordination degree. \( \alpha \) and \( \beta \) are weight coefficients of the industry and they are 0.5. \( D \) is the coupling coordination degree, which reflects the co-development of these two industries.

**The Empirical Analysis of Coupling Coordination Degree in Shannxi Province’s Cultural Industries and Tourism Industry**

**Data Sources**

In this paper, we analyze five years’ data from 2010 to 2014 in 11 cities of Shaanxi, such as Xian, Tongchuan etc., from the perspective of regional and time. Data mainly comes from the Statistical Yearbook of Shannxi Province, Shannxi Province region Statistical Yearbook, Municipalities Bureau and so on. We can ensure the statistic is true and scientific.

**The Development Level Analysis of Cultural Industries and Tourism Industry**

The data of 2010-2014 shows that the development level of culture industries in Shannxi area is gradually increasing, but the overall development level is not high. We can see Xianyang, Weinan, Baoji, Hanzhong have fastest growing, but Yangling and Tongchuan develop slowly or even regress. Other municipal development is relatively stable. The ladder of development level shows there is an obvious gap yet.

![Figure 1. Development of the Culture Industry of Shannxi Area in 2010-2014.](image1)

![Figure 2. Development of the Tourism Industry of Shannxi Area in 2010-2014.](image2)

From figure 2, we know that the tourism development level is growing steadily, though the overall level is low. At the development of tourism industry, Xi'an is highest with a slow growth trend and Yangling is lowest with downward trend and the remaining cities grow obviously.

**The Integration Development of Culture Industries and Tourism Industry**

By comparison, we find that tourism industry is better than the culture industry. The emphasis on the two industries also has a big difference in different areas, Hanzhong and Tongchuan is developing rapidly in tourism industry, but culture industry growth is relatively
weak and the increase of the coupling coefficient is not obvious. Shangluo’s tourism industry is developing steadily, but the culture industry is in the recession. Baoji, Xianyang and Weinan get the fastest growth in culture industry and tourism industry, which lead to significantly increase of coupling degree.

![Figure 3. Integration Development of culture Industry and Tourism Industry of Shannxi Area in 2010-2014.](image)

**Conclusion and Recommendations**

According to the above analysis, we know the development level of two industries has been greatly improved while the overall level is still low and the gap among regions is huge. Therefore, we put forward some useful recommendations. First, increase the awareness of the culture industry and the tourism industry to promote the integration of culture and tourism industry. Secondly, enhance the construction of industrial factors and capital investment. Thirdly, optimize the industry security system and explore new development model. Last but not least, highlight the regional characteristics and strengthen regional cooperation.

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**References**


