Evaluation of development potentials of regional tourism industry—Taking Hebei province as an example

Lihong Han¹, Yu Su²
¹School of Economics and Management, Hebei University of Science and Technology, Hebei, China
²School of Economics and Management, Hebei University of Science and Technology, Hebei, China

Corresponding author and e-mail: Yu Su, 20139257@stu.haut.edu.cn

Abstract. The thesis selects 18 evaluation indicators, adopts comprehensive analytic hierarchy and linear process and method to measure the development potential of tourism in Hebei Province. Taking the eastern provinces and regions of China as a comparative sample, the study found that the tourism industry in Hebei Province faces problems such as small scale, short chains, and low integration of resources. It also proposes countermeasures for potential improvement in terms of cultivating leading tourism companies, building tourism clusters, and promoting cultural and tourism integration.

1. Introduction
Li Keqiang, Premier of the State Council, clearly proposed in the government work report to "develop and expand the tourism industry" and successively promulgated a series of tourism industry support policies. The development of the tourism industry must not only pay attention to the external competitive strength, but also the accumulation of internal potential [1]. The provincial government has the power to establish administrative management and economic development, and to make decisions. Researching the development potential of the tourism industry from the provincial level has practical application value. The inner circle of Beijing and Tianjin, and the Bohai Sea to the east, Hebei Province has inherent resource advantages for the development of tourism in terms of location accessibility and abundance of tourism resources.

2. Related theoretical research
2.1. Tourism industry development potential
The sum of the limits that can be reached by the regional environmental conditions, the support of social and economic conditions, and the supply of tourist attractions is the development potential of the regional tourism industry [2]. The potential of the tourism industry will not be manifested at a normal level, and will only be stimulated by the external environment. The potential of the tourism industry is hidden in the industry. It is in the early stage of accumulation and is an ability to prepare for future transformation into competitive strength and support the sustainable development of the tourism industry. This ability can optimize the allocation of resources within the tourism industry,
maximize the efficiency of the tourism industry, and obtain the greatest advantage in participating in
the tourism market competition [3].

2.2. Development potential of Tourism industry
From the perspective of system theory, the input of the regional tourism industry system refers to
factors such as tourism resources, human resources, capital, and tourism technology. In addition to the
above input factors of the tourism system, it also includes internal microcosms such as tourism
industry scale, industrial structure, and industrial clusters. Therefore, the system input and system
components of the tourism industry can be summarized as industrial supply factors [4]. Adequate
supply is the basis for the healthy development of tourism and the release of potential. The system
operating environment of the tourism industry includes external environmental factors such as location
conditions, ecological environment and economic environment. The development environment of the
tourism industry provides important support and guarantees for the tourism industry from different
levels. The output of the tourism industry system refers to the impact of tourism activities on the
environment and all tourism services provided to tourists. The theory of tourism demand believes that
tourists’ demand for products and services is a substantial manifestation of market demand in the
tourism industry [5]. Guided by the thought of system theory, combining the above analysis results, it
can be concluded that the development of the tourism industry is mainly affected by the internal
supply of the industry, the tourism market demand and the industrial development environment.

3. Construction of evaluation index system of regional tourism industry development potential

3.1. Index selection and system construction
Combining the influencing factors of the development potential of the regional tourism industry,
comprehensively considering the availability and comparability of indicators, construct an evaluation
index system from the three aspects of tourism industry supply potential, tourism market demand
potential, and tourism environment support potential, including 8 secondary indicators and 18 three-
level indicators.

3.2. Choice of evaluation method

3.2.1. Determination of indicator weight. Choose the analytic hierarchy process to determine the index
weight, the specific steps are as follows:
(1) Build a hierarchical structure model. The problem of tourism industry potential is broken down
into target level, criterion level, and index level.
(2) Construct a judgment matrix. The judgment matrix is given by relevant experts of the Ministry
of Culture and Tourism, which is authoritative and authentic. Use the pairwise comparison method and
the 1-9 comparison scale to construct the pairwise comparison matrix until the lowest level.
(3) Consistency check.

\[ CI = \frac{\lambda_{\text{max}} - n}{n - 1} \]

\( \lambda_{\text{max}} \) is the maximum eigenvalue, and n is the order of the judgment matrix. When CI ≤ 0.10, the
consistency of the judgment matrix passes the test; when CI > 0.10, the judgment matrix is corrected.
(4) Calculate combination weights and perform hierarchical total sorting. The combination weights
of the elements of the above layer are weights, and the weight vectors of the elements of this layer are
weighted and summed. The weight of each index is shown in Table 1.

Table 1. The weights of evaluation indicators for the development potential of regional tourism
industry.

| First level indicator | Weights | Secondary indicators | Weights | Level three indicators | Weights |
|-----------------------|---------|----------------------|---------|------------------------|---------|
| Industry supply       | 0.394   | Industry             | 0.626   | Abundance of tourism resources X1 | 0.256   |
### Determination of Indicator Weight

After the evaluation index is dimensionless, the linear synthesis method is used to calculate the comprehensive evaluation value of each index. The formula is:

\[ z_i = \sum_{j=1}^{t} \omega_j A_{ij} \]

Where, \( z_i \) is the comprehensive score value of the tourism industry development potential of the i-th province, \( \omega_j \) is the weight coefficient of the j-th index, \( t \) is the number of indicators, and \( A_{ij} \) is the score value of the j-th index of the i-th province.

### Empirical Research

#### Data Sources

Based on the comparability and availability of the data, the indicator data comes from the 2018 China Statistical Yearbook and the statistical bulletins of various provinces.

#### Evaluation Results

Hebei Province belongs to the eastern part of China, so the eastern provinces and regions are used as comparative samples. The comprehensive evaluation results of the development potential of the tourism industry are shown in Table 2.
Table 2. Comprehensive score of tourism industry development potential.

| Overall ranking | area              | Tourism industry development potential overall ratings | Tourism industry supply potential Score | Tourism market demand potential Score | Tourism environment support potential Score |
|-----------------|-------------------|------------------------------------------------------|----------------------------------------|---------------------------------------|---------------------------------------------|
| 1               | Guangdong Province| 2.458                                                 | 2.361                                  | 2.760                                 | 2.335                                       |
| 2               | Beijing City      | 1.583                                                 | 1.590                                  | 0.463                                 | 2.376                                       |
| 3               | Jiangsu Province  | 1.580                                                 | 1.564                                  | 1.103                                 | 1.937                                       |
| 4               | Zhejiang Province | 1.543                                                 | 1.681                                  | 1.076                                 | 1.745                                       |
| 5               | Shanghai City     | 1.489                                                 | 1.129                                  | 0.803                                 | 2.324                                       |
| 6               | Shandong Province | 1.319                                                 | 1.534                                  | 0.966                                 | 1.364                                       |
| 7               | Fujian Province   | 1.252                                                 | 0.958                                  | 1.421                                 | 1.414                                       |
| 8               | Liaoning Province | 0.862                                                 | 1.140                                  | 0.194                                 | 1.071                                       |
| 9               | Hebei Province    | 0.780                                                 | 0.620                                  | 0.986                                 | 0.788                                       |
| 10              | Tianjin City      | 0.751                                                 | 0.362                                  | 0.253                                 | 1.481                                       |
| 11              | Hainan Province   | 0.550                                                 | 0.389                                  | 0.757                                 | 0.558                                       |

Hebei Province has a comprehensive score of 0.78 for the development potential of the tourism industry, ranking 9th among the 11 provinces in eastern China, and is located in the middle and lower reaches. Compared with the developed provinces, the gap is obvious and the overall strength is relatively backward. It is urgent to release the tourism potential.

Figure 1. Tourism industry supply potential score.

Hebei's tourism industry supply potential score is 0.62, which is significantly lower than that of developed provinces such as Guangdong, Zhejiang and Beijing. According to the analysis results, the tourism industry in Hebei Province has problems such as small industrial scale and low resource utilization. It is urgent to improve the quality of the tourism industry and expand the scale of the tourism industry.

Figure 2. Tourism market demand potential score.
Hebei’s tourism market demand potential score was 0.986, second only to Zhejiang Province, a strong tourism province, and ranked 4th among 11 provinces. It shows that Hebei Province has a great potential for tourism market demand, and there is a certain development space and development prospects, which can better illustrate the value of developing the potential of Hebei Province’s tourism industry.

![Figure 3. Tourism environment support potential score.](image)

Hebei’s tourism environment support potential score is 0.788, ranking second from the bottom among 11 provinces. Among them, insufficient economic security and lack of residents' cultural quality have seriously inhibited the development of Hebei's tourism industry. Beijing's tourism environment support potential ranks first, and Hebei Province should take advantage of its proximity to Beijing to strengthen the supporting role of the tourism environment.

5. Conclusions
To give full play to government functions and create a positive tourism industry policy environment. Give full play to the role of macro-control and encourage regional tourism companies to achieve cross-regional development through joint ventures and cooperation. Strengthen financial support, appropriately relax access conditions for tourism investment, and attract large-scale social investment. Improve infrastructure construction and appropriately increase low-end accommodation places such as youth hostels. Improve the internal tourism transportation system of Hebei Province, and construct connections between roads and highways in key tourist attractions.

To cultivate leading tourism enterprises and improve their operating efficiency. In the catering industry, the traditional food culture of Hebei Province has been vigorously explored, protected and innovated. Local characteristics must be highlighted in terms of theme, decoration, dish development, service, environment, and facility layout. Optimize the structure of the accommodation industry, and take service, quality, and characteristics as the core to meet the development needs of the tourism market. Design tourism products for high-speed rail tourism, and establish a tourism circle with cities and tourist spots along the high-speed rail as destinations.

To create a tourism industry cluster and give full play to its advantages. First, upgrade the construction of special tourism products, develop industrial heritage tourism, and create characteristic industrial tourism clusters. Second, the development of urbanization will drive the development of industrial clusters. Hebei Province should increase the linkage development with neighboring tourism provinces to form industrial clusters. Third, use network technology to build a "tourism information sharing platform" to realize data sharing. Finally, the Hebei Provincial Government should also intervene in the construction of clusters to avoid polarization caused by cluster effects.

Strengthen regional tourism cooperation and develop the "big tourism" market. The first is to emancipate the mind and establish the concept of "tourism and win-win". On the one hand, we plan tourism cooperation based on the characteristics of tourism resources and carry out in-depth cooperation. On the other hand, Hebei Province will develop its own characteristic tourism products to narrow the gap with neighboring tourism provinces. The second is the establishment of effective tourism cooperation coordination mechanisms by the government, tourism enterprises, and tourism
schools. The third is to launch new models and business formats such as "tourism + industry" and "tourism + commerce" through cooperation with various departments in the tourism industry.

To promote the integration of cultural and tourism resources, and pursue connotative growth. The design highlights the slogans and slogans of Hebei's cultural heritage. Gather leaders, experts and scholars in the tourism industry to share, explore, collide, and exchange tourism knowledge. Use the Internet of Things technology to receive real-time travel information in all aspects. Develop tourism human resources in Hebei Province and increase the training and introduction of talents. Tourism universities, tourism companies and related tourism research institutes can jointly cultivate cultural and tourism talents, conduct on-the-job training for cultural and tourism talents, and expand the tourism talent team.

References
[1] Marjorie Kelly. Jordanps Potential Tourism Development. Annals of Tourism Research, 2013, 25: 904-918
[2] Wang Xuefeng, Zhang Hui. Research on the Construction and Application of Evaluation System of Regional Tourism Development Potential—Taking the Western Region as an Example. Arid Area Resources and Environment, 2013, 27(12): 203-208. (In Chinese)
[3] Ma Yong, Dong Guanzhi. Research on the Potential Model of Regional Tourism Sustainable Development. Tourism Tribune, 1997(04): 36-40+62 (In Chinese)
[4] Zhang Ji. Research on the Motivation of Internal Product Division Based on the Factor Endowment Theory. World Economic Research, 2013(05): 3-9+87. (In Chinese)
[5] Suvidha Khanna. Managerial Effectiveness in the Tourism Industry in Jammu. Journal of Hospitality Application and Research, 2007, 2(2)
[6] Qi Zipeng, Wang Ying. Creativity: A New Driving Force for China's Tourism Economic Growth. Management World, 2015(05): 178-179. (In Chinese)