

## Economic Development in the Traditional Cultural Areas of Chinese Ethnic Minorities in the Age of Science and Technology

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**Abstract:** As global scientific and technological progress plays an increasingly important role in economic development. From the trajectory of development in developed countries, we can clearly see the important role of science and technology in economic development. China's rapid economic development in recent decades has also played an important role in promoting scientific and technological progress. As the areas outside the minority nationalities in our country are often in harsh environments, they are constrained by natural environmental conditions in the course of economic development and have a certain impact on economic development. This article puts forward the great development and prosperity of the socialist cultural undertakings with Chinese characteristics in the era of science and technology for ethnic minorities. How to integrate the economic development of the ethnic minority areas of China with the major decision-making and deployment of the central government will be our response Key research issues. This article summarizes the current outstanding problems in the economic development of ethnic minority areas in China by explaining the overall situation of the economic and social development of ethnic minority areas in China in recent years, and considers the prospects and countermeasures for the economic development of ethnic minority areas in China Suggest. In this paper, the DEA model is used to analyze the comprehensive efficiency of the cultural industries in China's minority autonomous regions, and the target value is analyzed for regions with a comprehensive efficiency of less than 1, and the DEA super efficiency model is used to rank the comprehensive efficiency of the cultural industries in all research areas. The results of the study show that Ningxia, Tibet, and Inner Mongolia rank in the top three in terms of comprehensive efficiency, while the input-output DEA values in Yunnan, Guizhou, and Xinjiang are less than 1.

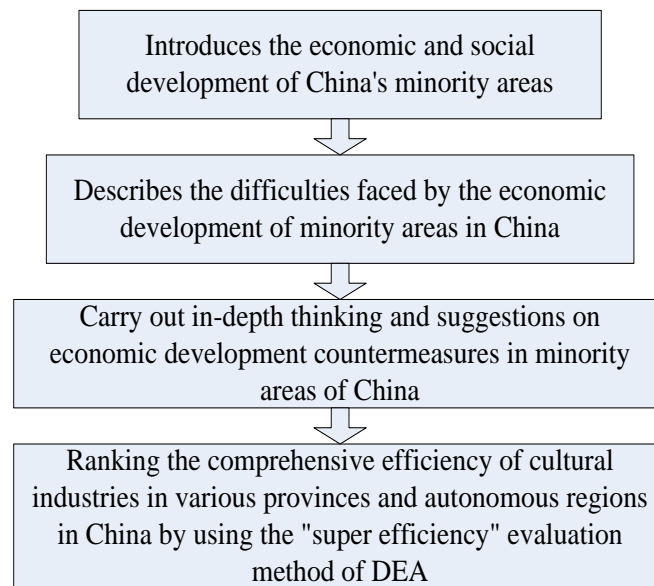
### 1. Introduction

With the expansion of economic globalization and technology, competition between countries has become increasingly fierce. The cultural industry has slowly become a major factor in regional and national competitions against the backdrop of globalization of science and technology. The development of cultural industries has created regional and national "soft power", thereby strengthening the comprehensive competitiveness of countries and regions. It has become an effective way for many countries and regions in the world to improve their competitiveness.

The purpose of this article: One is to analyze the development level of the cultural industry in the western minority regions in China from the perspective of comprehensive efficiency evaluation. The second is to make a correlation analysis of the factors that affect the cultural industry in western minority areas. The third is to find out the factors that hinder the development of cultural industries in the western minority areas, and to solve the problems in the development of the cultural industries in the western minority areas for the regional culture of the western minority areas, which can promote the healthy development of the economy in the western minority areas.

The call for sustainable development of the country has important significance not only for the minority regions in the west, but also for the healthy and rapid development of the national cultural industry.

This paper uses the relevant theories of industrial development to construct an input-output indicator system that reflects the development of China's cultural industry, and applies the DEA "super efficiency" evaluation method to analyze the efficiency between effective decision-making units, and Rank the overall efficiency of the cultural industries in various provinces and autonomous regions. According to the ranking, the factors that affect the development of cultural industries in various regions are analyzed by gray correlation, and the degree of influencing factors is further ranked from strong to weak. Finally, based on the analysis results, find out the current problems in the development of cultural industries in minority areas of China, and put forward appropriate countermeasures and suggestions for the problems. The structure flow chart of this article is shown in Figure 1 below.



**Figure 1.** Flow chart of the structure of this article

## 2. Proposed Method

### 2.1 The Path of Economic Development in Traditional Ethnic Minority Areas

In the next few years of the "Twelfth Five-Year Plan" period, the economic situation will become more complicated, the domestic economic growth rate and the price increase rate will be "double-declined", and the stable development of China's ethnic minority areas faces many challenges. China has formulated the economic development strategy of "grasping the characteristics of the first industry", with the primary task of improving people's livelihood and increasing the income of the people, focusing on strengthening the county's infrastructure construction, improving the industrial and agricultural product circulation system and market regulation mechanism, and promoting the pace of reform.

(1) Do everything possible to cultivate the source of economic growth power to ensure stable economic growth

Through the strong recommendation of the "Three-Year Great Change in Urban Appearance", the urban construction in the minority areas of China has experienced rapid development and the urbanization process has been greatly improved. The development of a series of projects such as the reconstruction of old cities and the improvement of urban infrastructure has become a strong driving force for China's economic growth in the past three years. However, the urbanization process and the construction and management of cities and towns in minority areas in China still have a large gap with advanced provinces and cities and neighboring provinces and cities. Mainly manifested in the backward construction of county towns, few and small urban districts, and low

urban management level.

1) Accelerate the construction of county towns and improve urban functions. Minority areas should focus on "fighting characteristics", "fighting exquisite", and "fighting livable", with a high starting point and generous re-planning of county development, further improve the county's infrastructure construction, design and construction of a batch of ethnic culture, Urban complexes, landmark buildings, and livable communities with local ethnic characteristics combine the management of river channels, the construction of green corridors, the development of cultural industries, and the integration of creative elements, and coordinate the construction of county industrial zones with the construction of the main urban area, so that the county industry The district will give full play to the role of gathering industrial population, promoting urban consumption, and supporting urban construction.

2) Accelerate the construction of new urban areas. Judging from the development experience of ethnic regions in advanced provinces and cities, the new urban area is an important carrier for the development of modern industrial agglomeration and an important platform for leading the adjustment of regional industrial structure. During the "Eleventh Five-Year Plan" period, China's Caofeidian New District and Bohai New District have made outstanding achievements in their development and construction, and Beidaihe New District has started. But on the whole, the small number, small scale, and weak influence of the new urban areas in ethnic minority areas make it difficult to lead and drive the adjustment of the industrial structure of the region and the whole province. Therefore, we should stand at the global height of creating a new platform for industrial upgrading. First, on the basis of drawing on the experience of open construction in Zhengding New District and Beidaihe New District, we should focus on supporting the construction of new districts in some ethnic minority areas, and give priority to areas such as national land planning, project arrangement, land use indicators, fiscal policies, and financial support. , As soon as possible to play a leading role in the adjustment of industrial structure. Second, we must strictly control the industrial development direction of the new district. It is necessary to compile the planning of the new district with high standards, strict project entry standards, the introduction of high-end projects as the focus of industrial development in the new district, and study and formulate corresponding development guidance j to provide policy guarantee for the accelerated development of the new district. Third, we must use the new area as an experimental platform for economic transformation in minority areas.

3) Do a good job of people's livelihood facilities and construction of people's livelihood projects, and promote the growth of investment and consumption of high-end industries. People's livelihood design and livelihood projects include culture, sports and fitness, social stability and people's "happiness index". Especially in the cities and towns in some developed regions, "people's livelihood development" has been compared as an investment environment. "People's livelihood resources" has now become a key resource that can attract high-end industries and senior talents to settle in. The ethnic minority areas in China are extremely backward in terms of investment in livelihood facilities, which is related to the low level of urbanization. Although the livelihood projects have achieved certain results in recent years, they still have a large gap with advanced provinces and cities. To this end, the following aspects should be actively seized: First, large-scale construction of places such as medical and health care, and second, encouragement and support of private capital investment in the development of these areas.

(2) Starting from optimizing the investment structure and ensuring the "strength" of economic structural transformation and expansion

1) Strongly support the development of strategic emerging industries. Like most provinces in the country, China's new strategic industries have a late start, a small scale, and a low level. This means that whoever starts early, has the right path, and works hard will be the first to take the lead and develop first. In the field of development, we should avoid decentralization. ...

First, in terms of realization, ethnic minority areas should choose i-2 emerging industries according to their own industrial bases, plan to build a demonstration area, and introduce funds, technology, and talents by strengthening cooperation between domestic and foreign emerging

industry leading enterprises, and strive for short-term Achieve rapid development. The second is to issue their own implementation opinions on accelerating the cultivation and development of strategic emerging industries, encourage compliance with the country's increasing regulation of traditional industries, and the increasingly tightening of resource and environmental constraints, and guide the backbone of national traditional industries to gradually become strategic Emerging industry transformation. 3. Incorporate the development of strategic emerging industries in ethnic regions into protective development plans to curb vicious competition between domestic and foreign enterprises. The fourth is to help ethnic minority areas strive for policy support such as state financial subsidies, tax incentives, and loan discounts. Fifth, help technological innovation in ethnic minority areas and avoid falling into a passive situation due to backward technology. Incline high-tech industrialization and major equipment support projects in minority areas to enhance the core technological innovation capabilities of enterprises.

2) Do a good job of technological transformation projects, and promote the upgrading of industrial product institutions through investment in technological transformation. The traditional industries in China 's minority areas have a large proportion and a large scale. This is indeed an advantage for Hebei 's industries. Because if we successfully achieve the transformation and upgrading of traditional industries through technological transformation and form a complex of traditional high-growth industries with "advanced capabilities, high technological content and many innovative products", then we will eagerly strive for "strategies". We can do well in the traditional industrial characteristics of our country, we can easily occupy a place in the national industrial division, and of course we turn our weaknesses into competitive advantages. It is necessary to upgrade the technical equipment level of traditional industries, increase the intensity of technological transformation, take the path of transformation and development based on technological innovation, and promote industrial upgrading.

3) We should strengthen the infrastructure construction at the county level and improve the ability of sustainable development. Farmland water conservancy should be regarded as the focus of county infrastructure construction, emphasizing the strengthening of weak links, expanding the scale of construction, enriching the construction content, and improving the capacity of supporting facilities in county economic development. Make full use of the central and provincial and municipal special funds for small-scale water conservancy maintenance subsidies. Strengthen provincial and municipal road reform, promote uniform road and rural road hardening, and promote the construction of urban and rural road networks. Promote the comprehensive upgrade of agricultural informatization, make full use of agricultural informatization resources, integrate agricultural information resources, and do a good job in the construction of an integrated agricultural information service platform. Accelerate the pace of agricultural science and technology innovation, and improve the ability to support agricultural production technology.

4) We should increase people's daily income increase. Most of the ethnic minority areas in China are agricultural counties. The current situation of relying on farmers to eat and rely on the sky determines that we still need to do a good job in agricultural production. We must accelerate the adaptation of the agricultural structure, focusing on livestock, vegetables, fruits and typical aquaculture Development and growth, and promote the improvement of agricultural quality and efficiency. We must promote the industrialization of agriculture, focus on the construction of agricultural processing projects, cultivate powerful leading enterprises, establish agricultural product industrialization bases, and create a batch of famous agricultural product brands. We must vigorously develop the labor service economy, improve the environment for farmers to work in cities, improve the level of labor service export organizations, cultivate Hebei labor service brands, and promote the transfer of agricultural labor to cities and non-agricultural industries. By focusing on the leading economy of the county economy, agricultural processing industry, typical agriculture and modern agricultural service industry, we strengthen guidance and support, expand the business field of the whole people, and increase the income of family businesses. Improve county-level financial services, innovate financial products and financial means, expand people's investment and wealth management channels, and increase people's direct investment.

5) We should improve the commodity circulation system and market regulation mechanism to promote a basic balance between supply and demand for industrial and agricultural products. Focus on the mechanism of commodity production and market regulation, strive to reduce intermediate links and circulation costs, and promote the stability of agricultural product prices and the basic balance of supply and demand. We must continue to strengthen the construction of the commodity circulation system, dynamically develop modern distribution methods such as supply and e-commerce, and establish a new and effective commodity marketing network.

### **3. Experiments**

#### **3.1 Development Status of Cultural Industries in Ethnic Minority Areas**

Due to location factors, the economy of the western region has always been in a relatively backward state. Since China has made considerable progress in the western region, the western economy has made great progress and society has also made great progress. Against this backdrop of the times, the cultural industry in the western region has gradually developed. However, the western minority areas have been in a relatively backward state for a long time, and the development of China's cultural industry is still unbalanced so far, which is just at the beginning of this link.

#### **3.2 Establishment of the Indicator System**

This article uses the theory of industrial development, combined with the specific development of the cultural industry in the western minority areas, to establish an evaluation index system. First of all, the establishment of DEA evaluation index system should be able to achieve the purpose of evaluation, which can fully reflect the purpose of evaluation. Secondly, the number of evaluation indicators should not be too large. It should be as simple as possible under the condition of reaching the goal, so as not to reduce the evaluation function. Third, there must be a correlation between entry and exit, so that the decision-making unit is meaningful. The final evaluation index system should be selected from different sides, so as to enhance the diversity of input and output index systems. Based on the above, establish an evaluation index system for the cultural industry in western minority areas. The specific construction method is as follows:

(1) Find out the evaluation purpose. Through the research on the literature of relevant indicator systems at home and abroad, this paper studies and examines the cultural industry from the perspective of industrial investment. In view of the fact that China's research on the cultural industry is still in its infancy, the statistics of various sectors of the cultural industry are not very comprehensive and specific. At the same time, considering the principles of uniformity, comparability and usability of the data caliber, the input and output index lists are obtained after a summary test.

(2) Classify the input and output index lists and establish a preliminary index system. In this study, the primary selection index is divided into several parts through analysis, and then gradually subdivided until it can be expressed in detail by the data index.

(3) The operability test of the index. The operability test refers to the test of whether the index value can be obtained.

This article is based on the theory of industrial development and cultural industry, combined with the purpose of the research and the actual situation of cultural industry statistics in western minority areas, and is constructed according to the above methods and principles. In this paper, a total of 8 indicators were selected, which constituted the input and output parts of the system, thus establishing an indicator system for the development of cultural industries in western minority areas.

The input indicator system includes: the number of cultural relics institutions, the number of employees in the cultural industry, revenue from financial allocation, and fixed asset input. The production index system includes: industrial added value, total output, net production tax and operating surplus. The experimental results are shown in Table 1.

**Table 1.** Input and output indicators of cultural industries in western minority areas

System	Index
Input system (I)	Number of cultural relics institutions, number of employees in the cultural industry, revenue from financial appropriation, investment in fixed assets
Output system (O)	Industrial added value, total output, net production tax, operating surplus

(4) DEA's super efficiency model analysis

When using the DEA's CCR model to analyze the input and output effects of the cultural industry in the western minority areas, the final results of the CCR model show that multiple units are relatively effective at the same time, and the efficiency of the effective decision-making units cannot be compared further. The calculation model is as follows

$$\begin{aligned} & \min \theta \\ \text{s.t. } & \sum_{j=1}^n X_j \lambda_j \leq \theta X_0 \end{aligned} \quad (1)$$

$$\sum_{j=1}^n Y_j \lambda_j \geq Y_0 \quad (2)$$

$$\lambda_j \geq 0, j = 1, \dots, n \quad (3)$$

## 4. Discussion

### 4.1 Analysis of Super Efficiency Results in Qinghai and Inner Mongolia

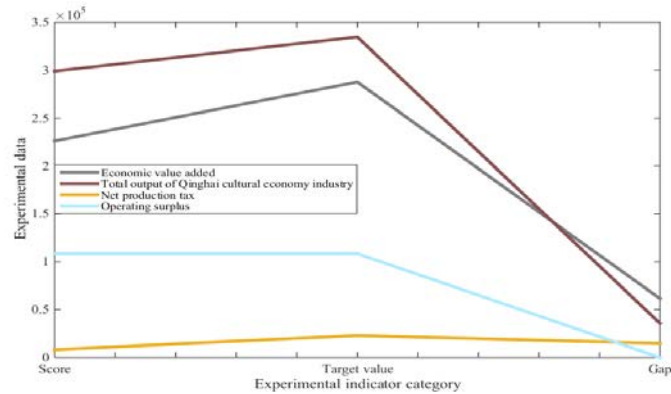
Table 1 below shows the total output value of Qinghai's cultural industry (6.3514 billion yuan) and added value (21.68 million yuan). 3. The net production tax (21.62 million yuan) and operating balance (18.91 million yuan) are relatively backward in the western minority areas. Although the total output of Qinghai DEA is higher than 1, it ranks in the bottom of the total output area of 1. two. This shows that both the input and output efficiency and output value of Qinghai cultural industry need to be improved.

**Table 2.** Analysis of Qinghai Super Efficiency Results

Decision unit	Score	Target value	Gap	Improvement rate%
Total output of Qinghai cultural economy industry	1.157465			
Economic value added	63514.5	63598.4	83.9	0.1%
Net production tax	2168.4	3647.1	1478.7	68.2%
Operating surplus	18064.2	18699.2	635	3.4%

As shown in Table 2 above, according to the calculation result of SUPER-CCR, from the perspective of the investment of Qinghai cultural industry, the current value of cultural relics units is 708, the recommended target value is 309, and the final improvement rate is 56.30%; the number of employees is now The value is 5537. The recommended target value is 6564, and the final improvement rate is 18.56%. The current values of financial investment and fixed asset investment are 25.573 million yuan and 16.096 million yuan respectively. The recommended target values are 170.1093 million yuan and 19.008.059 million yuan respectively. The final improvement rates are 33.51% and 18.56% respectively; according to the size of the improvement rate In order to achieve a fully optimal state with the output unchanged, the cultural industry in Qinghai should mainly start with the number of cultural and cultural relic units and the financial allocation of cultural institutions. The results of the study show that Ningxia, Tibet, and Inner Mongolia rank in the top three in terms of comprehensive efficiency, while the input-output DEA values in Yunnan, Guizhou, and Xinjiang are less than 1.

Inner Mongolia's total output of cultural industry (299.964 million yuan), added value (226.137 million yuan), net production tax (81.81 million yuan), and operating balance (108.412 million yuan) are relatively advanced in the western minority areas, only lagging behind Yunnan and Guangxi, but the comprehensive efficiency value of DEA is greater than 1 and much higher than other regions, the comprehensive efficiency ranks second, only lags behind Ningxia, indicating that Inner Mongolia's cultural industry has made outstanding achievements in the allocation of human resources and financial resources. The experimental results are as follows Figure 2 shows.

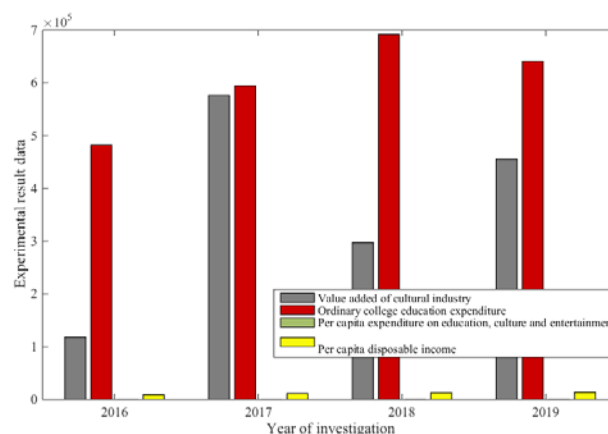


**Figure 2.** Analysis of Inner Mongolia Super Efficiency Results

As shown in Figure 2 above, according to the calculation results of SUPER-CCR, from the perspective of the investment of the cultural industry in Inner Mongolia, the present value of the number of cultural relics units is 1286, the recommended target value is 2067, and the final improvement rate is 60.75%; the number of employees is now The value is 23988 people, the recommended state target value is 38559, and the final improvement rate is 60.75%. The current values of financial investment and fixed asset investment are 90.841 million yuan and 40.459 million yuan respectively, the optimal state target values are 840.30752 million yuan and 114.317 million yuan respectively, and the improvement rates are 7.49% and 71.76% respectively; according to the size of the improvement rate It can be seen that Inner Mongolia's cultural industry should start with culture, cultural relics, cultural industry employees, and fixed asset input in order to achieve a completely optimal state with unchanged output.

#### 4.2 Analysis Series of Cultural Industries in Minority Areas of Hebei

In order to comprehensively study these related factors, summarize the factors that affect the development of the cultural industry. Choose four indicators from 2016 to 2019: general education expenses of colleges and universities, per capita consumption of education and cultural and entertainment services of urban households, per capita GDP, and per capita disposable income of urban households. The experimental results are shown in Figure 3 below.



**Figure 3.** Analysis of the number of cultural industries in Xinjiang

As can be seen from Figure 3 above, the added value of the cultural industry of Hebei's ethnic minorities doubled in 2017, a slight decline in 2018, and a substantial increase in 2019; education expenditures for ordinary colleges and universities, per capita education culture for urban households The consumption expenditure on entertainment services, per capita GDP, per capita disposable income of urban households and income from education funds have increased significantly each year, and the growth is relatively stable.

## Conclusions

This paper uses the traditional data envelopment model and the improved super-efficiency data envelopment model to calculate the comprehensive efficiency and efficiency ranking of the cultural industries in China's minority areas, and proposes specific improvements to optimize efficiency. The calculation results of the data envelopment of cultural industries in ethnic minority areas in China show that: the number of cultural relics institutions has a relatively important relationship with the overall efficiency of cultural industries, and the target value in most regions is lower than the comprehensive score, indicating that although there are many cultural relics institutions, they are not precise, Lacking its own characteristics. There are fewer high-quality talents in the cultural industry, and employees need to be streamlined. The quality of the cultural relics industry practitioners needs to be improved. For some areas where the comprehensive efficiency of the cultural industry is relatively low, the utilization ratio of financial investment in the cultural industry and the degree of market participation are relatively low.

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