

# **An Analysis of the Path of Integration of National Traditional Sports and Modern Cultural Tourism Industry**

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**Abstract:** Amidst the context of globalization and the rich tapestry of cultural diversities, traditional ethnic sports, which constitute a crucial segment within the edifice of Chinese culture, are confronted with the twin predicaments of heritage preservation and innovative evolution. As the modern cultural tourism sector ascends in prominence, delving into the integrative trajectory between national traditional sports and the modern cultural tourism industry has emerged as the linchpin for fostering a mutually beneficial scenario of cultural perpetuation and economic augmentation. Initially, this treatise sketches the backdrop and extant issues pertaining to the convergence of ethnic traditional sports and the modern cultural tourism industries. Subsequently, it expounds upon the framework and substance of this paper, encompassing the theoretical formulation of the integrative pathway, the empirical analysis paradigm, and the experimental design blueprint. The experimental outcomes evince that the application of this integrative path is capable of enhancing the sagacity in the orchestration of cultural and tourism industry undertakings, thereby propelling the multifarious growth of the cultural and tourism industry.

## **1. Introduction**

In an era characterized by the continuous intensification of globalization and the ceaseless exchange of cultures, traditional ethnic sports, being an integral and significant part of the traditional culture of the Chinese nation, are imbued with profound historical connotations and distinct national traits. Nevertheless, with the hastening pace of the modernization drive, traditional national sports find themselves confronted with the dual predicaments of inheritance and growth. Against this backdrop, probing into the integration avenue of national traditional sports and the modern cultural and tourism industries holds momentous significance for facilitating cultural inheritance and enhancing the caliber of the cultural and tourism industries.

This paper undertakes an in-depth examination of the growthal issues pertaining to the integration of traditional ethnic sports and the modern cultural and tourism industries and puts forward an operational integration pathway. Initially, the current application scenario of traditional ethnic sports within the modern cultural tourism industry is expounded. Subsequently, the theory underpinning the integration path is deliberated upon. Thereafter, experiments are devised to validate the research content and dissect the outcomes. Through the research presented herein, it is our aspiration to furnish robust theoretical sustenance and practical directives for the profound integration of national traditional sports and the modern cultural and tourism industries, thereby propelling the diversified and high-quality progression of the cultural and tourism industries.

## **2. Related Work**

Scholars' research in the field of tourism and related areas presents a diversified characteristic, deeply analyzing various aspects of the tourism industry from different perspectives. Liang et al. centered their efforts on the evolution of the intelligent leisure sports tourism sector, basing their work on 5G technology. Their aim was to surmount the hurdle of devising innovative industrial

development paradigms. In pursuit of this, they introduced novel model trajectories, with the intention of enabling the industry to effectuate transformation and elevation via 5G <sup>[1]</sup>. Confronted with the challenge of augmenting the worth of the sports tourism industry, Zhang et al., buttressed by multi - sensor network technology, formulated a sequence of strategies to enhance the industry's value <sup>[2]</sup>. Ziakas et al., through their research on "Interscopic Fan Travelscape", were intent on dismantling the obstacles between sports and art within the tourism sphere and fostering their convergence to pioneer novel tourism manifestations <sup>[3]</sup>. Mousavi et al. zeroed in on the pivotal function that rural sports and local pastimes play in the growth and sustainability of sports tourism. They endeavored to rectify this overlooked element in the sustainable development of sports tourism <sup>[4]</sup>. Employing a blended research methodology, Zuo et al. probed into the influence exerted by the natural milieu on traditional Chinese sports and games, thereby unearthing the underlying relationship between the two <sup>[5]</sup>. Zhao et al. scrutinized the impact of digitalization on the quality of cultural, sports, and tourism enterprises from the vantage points of resources and capabilities. Their objective was to resolve the query regarding the universal benefit of digitalization and to disclose the inverted U - shaped connection <sup>[6]</sup>. Lajçi et al. undertook a study of the significance of cultural heritage in the Rugova region for the tourism development in Kosovo. They harbored the hope of promoting local tourism growth by tapping into the value of cultural heritage <sup>[7]</sup>. Starčević et al. delved into the impact of intangible cultural heritage on the financial performance of rural tourism, with the purpose of leveraging intangible cultural heritage to augment the financial returns of rural tourism <sup>[8]</sup>. Chengcai et al. explored the high - caliber development route of China's ice and snow tourism from the perspective of the Winter Olympics, with the aim of realizing high - quality development within the ice and snow tourism industry <sup>[9]</sup>. Madandola et al. took the old town of Oyo in Nigeria as a case in point to investigate the promotional effect of cultural heritage tourism on sustainable development <sup>[10]</sup>. Notwithstanding, the current body of research is marred by inadequacies in terms of thorough exploration of characteristic resources across diverse regions, systematic integration of sports tourism with multiple domains, and comprehensive digital implementations. Future research endeavors can be expanded along these lines to further refine the research framework of sports tourism and related fields.

### 3. Method

#### 3.1 Construction of Integration Path

When constructing a theoretical system for the integration of national traditional sports and modern cultural tourism industry, the comprehensive application of multidisciplinary theories can enable this paper to study the integration of the two in more depth. From the perspective of cultural anthropology, the process of exploring the roots of national sports culture can be expressed by the following formula:

$$C = \sum_{i=1}^n R_i \times T_i \quad (1)$$

Among them,  $C$  represents the core connotation of national sports culture,  $R_i$  represents the representative weight of the  $i$ -th cultural element (such as folk rituals, traditional skills, etc.), and  $T_i$  is the length of time that the cultural element exists. This means that the connotation of national sports culture is the accumulation of many cultural elements with different representative weights that have been accumulated over the years <sup>[11-12]</sup>. From an economic perspective, the benefits of industrial integration can be analyzed with the help of the formula:

$$E = \sum_{j=1}^m I_j \times G_j \quad (2)$$

Here,  $E$  represents the total benefit of industrial integration,  $I_j$  is the influence coefficient of the  $j$ -th industrial linkage factor (such as tourist consumption, brand value-added, etc.), and  $G_j$  is the economic benefit growth value generated by this factor, hosting traditional ethnic sports events attracts a large number of tourists, and watching the events (corresponding to the factor driving tourist consumption in  $I_j$ ) increases the income of local catering, accommodation and other industries ( $G_j$ ) [13-14]. In the field of management, the integration process planning can be based on the formula:

$$P = \prod_{k=1}^l S_k \quad (3)$$

Among them,  $P$  represents the smooth progress of the integration process, and  $S_k$  is the execution success rate of the  $k$ th key management step. When each  $S_k$  value approaches 1, can the entire integration process be efficiently promoted, achieving a deep and orderly integration of national traditional sports and modern cultural and tourism industries, and building a solid integration theory system architecture.

### 3.2 Integration Process of Traditional Ethnic Sports and Modern Cultural Tourism Industry

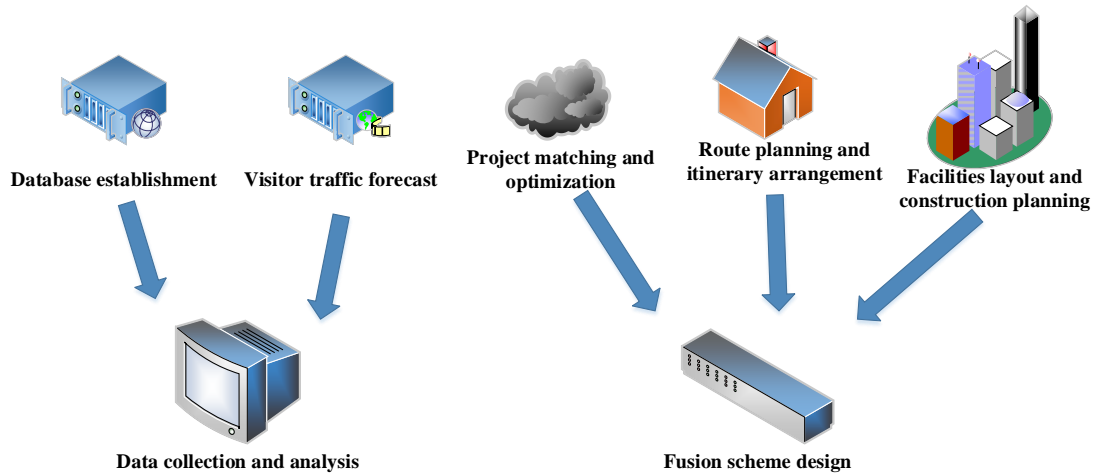


Figure 1. Fusion process

This article discusses the integration process of traditional ethnic sports and modern cultural tourism industry, as shown in Figure 1. The specific steps are as follows:

#### (1) Data collection and analysis

1) Database establishment: By leveraging information technology, a database is created to cover detailed information on traditional ethnic sports projects. Additionally, geographic information system technology is utilized to visually integrate the distribution of traditional ethnic sports projects with the geographical locations of tourism resources.

2) Tourist flow prediction: Collect the tourist flow data of tourist attractions or regions over the past few years. Then, apply time - series analysis methods to establish a tourist flow prediction model. With this model, predict the number of tourists in different future time periods.

#### (2) Fusion scheme design

1) Project matching and optimization: Based on the database information, the integer programming methods in operations research are used to select the combination of traditional ethnic sports projects that best matches specific tourism areas and target markets.

2) Route planning and itinerary arrangement: This article uses the shortest path algorithm in graph theory and the traveling salesman problem model to calculate the optimal travel time,

transportation cost, and stop order of each route, in order to improve the efficiency and coherence of tourists' sightseeing experience.

3) Facility layout and construction planning: Based on the predicted tourist flow and tourism route planning, the layout of sports venues, supporting facilities, and tourism service facilities is simulated and optimized.

## 4. Results and Discussion

### 4.1 Experimental Test

This paper uses the multi-criterion decision analysis method, clear the adaptation assessment of national traditional sports and tourism resources, collect the geographic coordinate information of sports venues and tourist attractions, import it into the geographic information system software, using the software path analysis function, calculate the actual distance between the two, and combined with the local traffic data, the specific distance and time value will be used as the geographic spatial adaptation of the quantitative index data are shown in Table 1.

Table 1. Experimental data

Experimental point	Coordinates of sports venue	Tourist resources and attractions coordinates	Cultural connotation correlation degree score	Traffic accessibility index
1	(110, 30)	(112, 31)	0.75	0.6
2	(105, 28)	(108, 29)	0.6	0.5
3	(115, 32)	(118, 33)	0.8	0.7
4	(108, 27)	(110, 28)	0.55	0.45
5	(112, 30)	(114, 31)	0.7	0.65

Based on the complementary relationship between cultural elements, manual judgment and assignment are carried out to comprehensively obtain a quantitative score of the correlation of cultural connotations, thereby quantifying the intrinsic connection between the two at the cultural level. This paper will test these five experimental points to solve the maximum eigenvector of the judgment matrix, and after normalizing the eigenvector, obtain the weight coefficient of each criterion.

### 4.2 Test Results

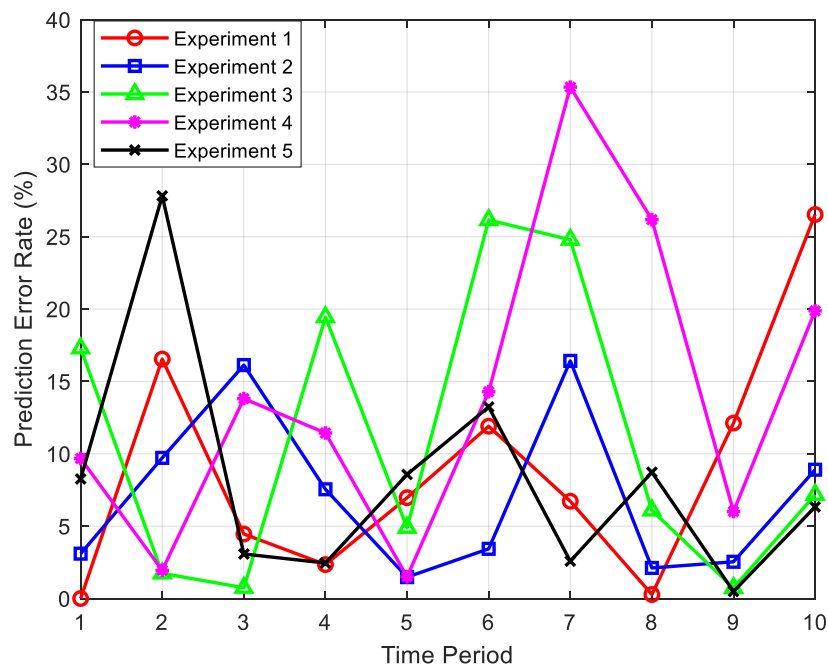


Figure 2. Prediction error of tourist flow

This paper measures the degree of deviation between the predicted and actual tourist flow through Figure 2. Experimental point 1 starts from about 0% in time period 1 and rises and falls; Experimental point 2 starts to fluctuate from about 3%; Experimental point 3 starts from about 17% and keeps changing; Experimental point 4 starts to fluctuate from about 10%; Experimental point 5 starts to fluctuate from about 9%. This up-and-down trend reflects the uncertainty of tourist flow forecasts due to various factors such as holidays and weather. Reducing this forecast error is of great significance for the rational planning of the growth of traditional ethnic sports and modern cultural tourism industries, and can provide key information reference for relevant decision-making.

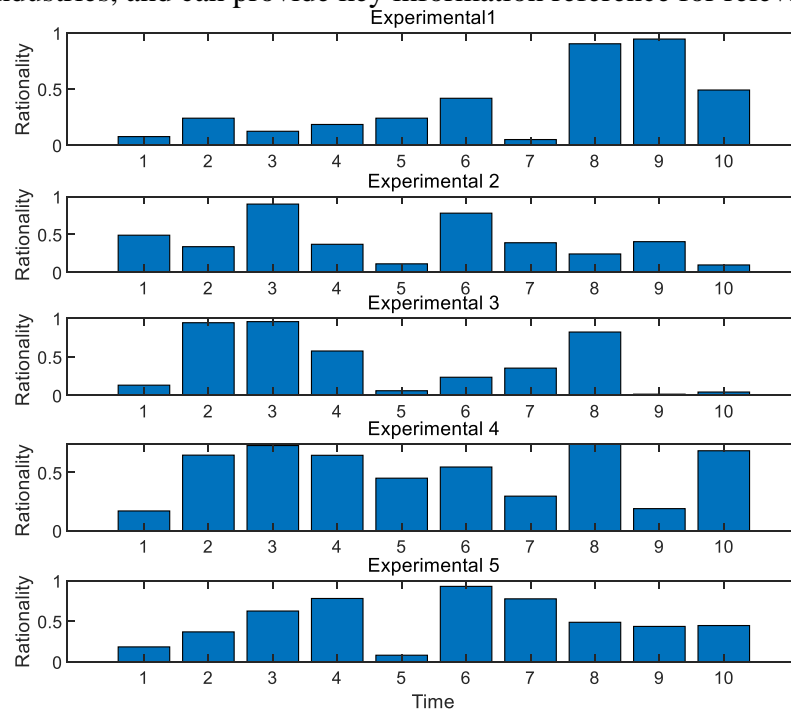


Figure 3. Reasonable rate of project arrangement

Figure 3 shows the test results of the rationality rate of project arrangement in this paper. The rationality rate in the range of 0 to 1, the higher it is, the more it meets the needs, and is conducive to resource integration, tourist experience and operation coordination. A stable and reasonable rate has a positive impact on tourist experience and resource utilization. Therefore, the combination of ethnic traditional education and modern cultural tourism industry has a high degree of fit, promoting the integrated growth of ethnic traditional sports and tourism industry and achieving a win-win situation.

## 5. Conclusion

Through experimental investigations and in - depth analyses, this academic work conducts a profound exploration into the integration route between national traditional sports and the modern cultural tourism industry. The findings of the research indicate that the adoption of this integration approach can remarkably boost the popularity and allure of traditional ethnic sports, while also facilitating the diversified expansion of the cultural and tourism industry. Nevertheless, certain deficiencies exist, for instance, the integration lacks sufficient profundity and the market positioning remains ambiguous. In the time to come, enhancements can be effected in the following respects: To begin with, intensify the cultivation and augmentation of cultural identification, and thoroughly excavate the cultural essence and worth of traditional national sports; secondly, stimulate the innovation and development of traditional national sports programs to satisfy the diverse and individualized demands of tourists; thirdly, fortify cross - field collaboration and resource integration to accomplish the coordinated development of the cultural and tourism industry. The significance of this paper lies in its provision of theoretical underpinnings and practical directives

for the in - depth integration of national traditional sports and the modern cultural tourism industry, as well as offering novel perspectives and concepts for future related research and practical endeavors.

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