



Evaluating the Sustainable Development of Revolutionary Heritage Tourism: An Empirical Analysis of Cultural-Tourism Integration in Guangdong, China

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Abstract: Grounded in sustainable development theory, this study has developed a comprehensive evaluation system to assess cultural-tourism integration using a hybrid approach combining the Entropy Weight Method, TOPSIS, and Coupling Coordination Degree Model. Applied to nine cities in Guangdong Province, the analysis reveals significant regional disparities and identifies an inverse relationship between economic efficiency and ecological carrying capacity. The results further demonstrate a systemic imbalance characterized by high coupling but low coordination among economic, social, environmental, and cultural subsystems. These findings provide both theoretical insights and practical implications for advancing high-quality sustainable development in cultural tourism.

Keywords: Cultural-tourism integration; Evaluation index system; Entropy weight method; TOPSIS; Coupling coordination degree

Introduction

Currently, the guiding role of culture in tourism development has become increasingly prominent. Peilin and Shuo^[1] noted that the integration of culture and tourism is an inevitable trend in implementing the new development philosophy. Among various cultural tourism sectors, thematic tourism activities centered on revolutionary history, deeds, and spirit—constitutes a distinctive and significant category. Recent statistics from China's Ministry of Culture and Tourism (2023) indicated that cultural tourism revenue now accounts for over 30% of total tourism revenue and continues to grow steadily, signaling its transition from a niche to a mainstream market. The deepening exploration of cultural tourism resources and continuous innovation in related products have made these destinations increasingly popular among tourists. Despite notable market progress, challenges such as inadequate management, underutilization of cultural resources, and insufficient supporting services persist, which necessitating further research and policy guidance.

Scholars have employed various methods, including input-output analysis, the entropy method, coupling coordination degree models, and exploratory spatial data analysis, to assess the integration and coordinated development of cultural and tourism industries^[2-5], forming a systematic research foundation. As a new industrial form involving the deep integration of culture and tourism with a revolutionary history theme, further clarification of core concepts and theoretical frameworks is necessary to measure this deep integration, especially given the limited research on evaluating cultural and tourism integration within single-sector formats. In other words, current academic assessments of this specific form of cultural tourism tend to be fragmented and one-dimensional, lacking a comprehensive, integrated, and multi-dimensional evaluation index system for assessing the development level of cultural tourism integration^[6].

To address this gap, this study aimed to investigate the following research questions: (1) How can the level of integrated development of revolutionary heritage tourism be comprehensively evaluated? (2) What are the spatial disparities and dimensional imbalances (economic, social, environmental, cultural) in its development across different cities in Guangdong? (3) What is the coupling coordination degree between these subsystems, and what does it reveal about the sustainability of current development models?

Literature Review

2.1 Sustainable Development Theory

Formally introduced in 1987, sustainable development's core principle is that present development should not compromise the ability of future generations to meet their own needs^[7]. It represents a development model that harmonize relationships among economy, society, environment, and resources^[8]. This framework is particularly critical for cultural tourism, as its core resources are non-renewable and irreplaceable, making them susceptible to issues like over-exploitation and redundant construction^[9, 10]. This context creates an urgent need to establish a balance between tourism development, ecological conservation, and cultural preservation^[11]. Achieving this entails not only addressing practical conflicts but also systematically coordinating the interests of various stakeholders across the economic, social, environmental, and cultural domains. Consequently, the application of sustainable development theory to cultural tourism establishes a clear imperative for a holistic assessment framework capable of evaluating whether this intricate balance is being effectively achieved.

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2.2 Cultural tourism

The concept of cultural tourism has evolved over the past two decades, shifting from a focus on “single heritage visits” toward the “co-creation of cultural experiences.” The UNWTO defined it at its 22nd General Assembly in 2017 as “tourism in which the visitors’ fundamental motivation is to learn, discover, experience, and consume the tangible and intangible cultural attractions/products of a destination.” Richards ^[12] further elaborated that cultural tourism involves “travel by people from their place of residence to cultural attractions to obtain new information and experiences to satisfy their cultural needs.” Additionally, some scholars emphasize that cultural tourism is a type of tourism product primarily aimed at learning, research, and investigation, enabling tourists to appreciate rich cultural heritage during sightseeing and vacation, thereby gaining meaningful travel experiences—such as historical tours and folk custom tours, which are currently emerging. As a distinctive form of tourism integrating ideological concepts, collective memory, and economic functions, it has been examined extensively within the theoretical framework of heritage tourism ^[13, 14]. Academic inquiry has approached the challenge of its sustainable integration from several angles, which can be categorized into three streams: (1) Perspectives: Analyzing factors influencing destination attractiveness from micro^[15, 16] and macro-levels ^[17]; (2) Development Pathways: Proposing strategies like digitalization and industrialization to foster integration ^[18-20] ; and (3) Indicator Systems: Developing systems to evaluate specific dimensions such as resources^[21], competitiveness^[22], or efficiency using various quantitative models^[23] .

While these research streams offer valuable insights, their collective body of work reveals a critical limitation when measured against the holistic imperative of sustainable development. Existing evaluations often remain fragmented, focusing on single dimensions in isolation and lacking a comprehensive, multi-dimensional index system for assessing integrated development levels. This methodological gap means that current assessments of cultural tourism tend to be one-dimensional, failing to capture the complex interplay and coordination among the economic, social, environmental, and cultural subsystems. The present study is designed to address this specific gap.

Research Methodology

3.1 Research Design

Geng, et al. ^[11] emphasized that culture-tourism coupling is a multidimensional, systemic concept whose richness cannot be captured by single indicators. Selection should adhere to principles of scientificity, comprehensiveness, systematicness, and data availability. Wang ^[24] highlighted the vulnerability and irrecoverability of non-renewable revolutionary history resources, underscoring the necessity for sustainable development in cultural tourism.

Therefore, guided by sustainable development theory and considering the interrelations among the tourism economy, society, environment, and culture, this study draws on the work of Ding, et al. ^[25] and Peng ^[26] to construct a comprehensive evaluation index system. The framework consists of an objective layer (evaluating cultural tourism integration) and four criterion layers: economic level, social benefits, environmental quality, and cultural resources. The 13 indicators within these layers were specifically selected to capture the core tenets of integrating revolutionary heritage with tourism. They are designed to measure not only the economic vitalization of these historically significant regions but also the social and educational value derived, the ecological sustainability of the sites, and the preservation and activation of the cultural heritage itself. A detailed breakdown of these indicators is provided in Table 1

Table 1 Evaluation Index System for Cultural and Tourism Integration

Target	Dimension	Indicator
Evaluation Index System of Cultural and Tourism Integration	Economic Level	Total Tourism Revenue
		Ratio of Total Retail Sales of Consumer Goods to GDP
		Share of Tourism Revenue in Tertiary Industry Value-Added
	Social Benefits	Number of Three-Star-and-Above Hotels
		Total Tourist Arrivals
		Newly Created Urban Employment
	Environmental Quality	Forest Coverage Rate
		Proportion of Days with Air Quality Meeting Standards
		Per Capita Public Green Space
	Cultural resources	Number of Museums
		Number of State-Level Key Cultural Relics Protection Units
		Number of Classic Cultural Tourism Scenic Spots
		Number of Patriotic Education Bases

Note: Weights for each indicator were determined using the Entropy Weight Method.

3.2 Research Methodology

To evaluate the complex, multi-dimensional nature of sustainable cultural-tourism integration, this study employs a systematic, three-stage hybrid analytical approach. This integrated methodology is specifically designed to provide a comprehensive assessment by moving from individual indicator importance to overall performance, and finally to internal systemic harmony. First, the Entropy Weight Method (EWM) is utilized to objectively determine the weight of each evaluation indicator, thereby mitigating the influence of subjective judgment. Second, these objective weights are incorporated into the TOPSIS model to calculate a comprehensive score and rank the overall developmental level of each city. Finally, the Coupling Coordination Degree (CCD) model is applied to assess the internal synergy and balance among the economic, social, environmental, and cultural subsystems, revealing a crucial dimension of coordination that an aggregate score alone cannot capture.

3.2.1 Entropy Weight Method

As an objective weighting method, the entropy weight method determines weights based on the degree of variation among indicators, effectively reducing the influence of subjective factors and enhancing the scientific rigor and objectivity of the research [27]. The specific procedure is as follows:

Data normalization: Original data were normalized using the range method to eliminate dimensional differences[28]:

$$Y_{ij} = \frac{X_{ij} - \min(X_{ij})}{\max(X_{ij}) - \min(X_{ij})} \quad (1)$$

where Y_{ij} represents the normalized value of the j -th indicator for the i -th city, X_{ij} is the original value, and $\min(X_j)$ and $\max(X_j)$ are the minimum and maximum values of the j -th indicator, respectively.

Weight Calculation: To ensure the logarithmic operation in information entropy calculation is meaningful and avoid zero values, a small shift is applied to the normalized data: $y_{ij} = Y_{ij} + 0.01$. Then, the utility value of each indicator is calculated through information entropy to determine the weights. The formulas are as follows:

Calculate the proportion of the j -th indicator in the i -th region:

$$P_{ij} = \frac{Y_{ij}}{\sum(Y_{ij})} \quad (2)$$

Calculate the entropy value of the j -th indicator:

$$E_j = -\frac{1}{\ln m} \sum_{i=1}^m P_{ij} \ln P_{ij} \quad (3)$$

Calculate the utility value of the j -th indicator:

$$D_j = 1 - E_j \quad (4)$$

Calculate the weight of the j -th indicator:

$$W_j = \frac{D_j}{\sum_{j=1}^n D_j} \quad (5)$$

where m is the number of study areas and n is the number of indicators.

3.2.2 TOPSIS Comprehensive Evaluation Method

The TOPSIS method rank evaluation objects by calculating indicator weights, determining ideal solutions, and comparing the proximity of each alternative to the ideal solution. The attribute value corresponding to an indicator with a larger weight is closer to the optimal value, indicating a better evaluation of the alternative [29]. The calculation process is as follows:

Construct the weighted normalized matrix:

$$Z_{ij} = Y_{ij} \times W_j \quad (6)$$

Determine the ideal best (Z^+) and ideal worst (Z^-) solutions:

$$Z^+ = \max(Z_1^+, Z_2^+, Z_3^+ \dots Z_n^+) \quad (7)$$

$$Z^- = \min(Z_1^-, Z_2^-, Z_3^- \dots Z_n^-) \quad (8)$$

Calculate the Euclidean distances to the ideal best and worst solutions:

$$D_i^+ = \sqrt{\sum_{j=1}^n [W_j(Z_{ij} - Z_j^+)]^2} \quad (9)$$

$$D_i^- = \sqrt{\sum_{j=1}^n [W_j(Z_{ij} - Z_j^-)]^2} \quad (10)$$

Calculate the relative closeness to the ideal solution:

$$A_i = \frac{D^-}{D^+ + D^-} \quad (11)$$

3.2.3 Coupling Coordination Degree Model

The coupling degree reflects the degree of interaction among systems in cultural-tourism integration but are insufficient to express the benign coupling and coordination status. Therefore, a coupling coordination degree model is constructed to address this limitation. The calculation process is as follows:

Scores of each system:

$$U_z = \sum_{i=1}^n W_{ij} \times Y_{ij} \quad (12)$$

Coupling degree of four systems:

$$C = \frac{\sqrt[4]{U_1 \times U_2 \times U_3 \times U_4}}{U_1 + U_2 + U_3 + U_4} \quad (13)$$

Comprehensive Score:

$$T = a \times U_1 + b \times U_2 + c \times U_3 + d \times U_4 \quad (14)$$

The coupling coordination degree:

$$D = \sqrt{C \times T} \quad (15)$$

where a,b,c,d are undetermined coefficients with a+b+c+d=1. Given the equal importance of economic, social, environmental, and cultural dimensions in sustainable cultural tourism development, each is assigned a weight of 0.25. Drawing on [30], the coupling degree is divided into four intervals, and the coupling coordination degree into 10 levels (see Table 2).

Table 2 Classification Criteria for Coupling Degree and Coupling Coordination Degree

Coupling Degree	Coupling Degree	Coupling Coordination Degree	Coordination Level
(0.8, 1.0]	High Coupling	(0.8, 1.0]	Quality Coordination
(0.5, 0.8]	Moderate Coupling	(0.6, 0.8]	Intermediate Coordination
(0.3, 0.5]	Low Coupling	(0.4, 0.6]	Marginal Coordination
(0, 0.3]	Marginal Coupling	(0, 0.4]	Dysregulation

3.3 Research Context

As a pivotal cradle of China's modern revolutionary movements and a forefront region of reform and opening-up, Guangdong Province boasts rich and diverse red tourism resources with considerable historical depth and thematic breadth. These resources cover a comprehensive historical spectrum spanning the National Democratic Revolution (e.g., the Site Memorial Hall of the Guangzhou Peasant Movement Institute), the Agrarian Revolutionary War (e.g., the Haifeng Red Palace and Red Square Site Memorial Hall), and the Anti-Japanese War (e.g., the Chaoshan Anti-Japanese War Memorial Hall), constituting a coherent historical narrative. In terms of resource structure, the province possesses well-established national-level scenic spots—13 of which were listed in the third batch of the National Red Tourism Classic Scenic Spots Catalogue issued by the National Development and Reform Commission in 2016, ranking sixth nationally—while also facing challenges typical of grassroots-level sites. Overall, the resource distribution exhibits a pyramid-shaped pattern similar to the national profile, reflecting the actual development landscape of red tourism in China. Moreover, as one of China's leading economic provinces, Guangdong's robust economy provides solid support for pioneering and innovative development in cultural tourism.

Therefore, the study area comprises nine cities in Guangdong Province (Guangzhou, Meizhou, Huizhou, Shenzhen, Shanwei, Zhongshan, Dongguan, Shaoguan, and Heyuan), chosen for their abundance of representative cultural tourism resources. Underpinned by sustainable development theory, an evaluation system was built around four dimensions: economic level, social benefits, environmental quality, and cultural resources. The empirical analysis of the development level in these cities serves as a basis for proposing implications for cultural tourism development both within Guangdong and across China.

3.4 Data Source

The sample for this study comprises cities in Guangdong Province that are endowed with classic cultural and tourism scenic spots. Data were primarily sourced from official publications, including the 2022 city statistical yearbooks, government websites, and bulletins on national economic development, ecological conditions, and social statistics. Missing data for certain variables were supplemented using the interpolation method.

Results

4.1 Data Processing

Following the calculation of indicator weights via the entropy weight method (see Table 3), the TOPSIS method was used to compute the comprehensive development levels for the nine cities in 2022 (see Table 4), thus allowing for an in-depth analysis across the economic, social, environmental, and cultural dimensions.

Table 3 Indicator Weights Determined by the Entropy Weight Method

Dimension	Indicator Layer	Weight
Economic Level	Total Tourism Revenue	0.60
	Ratio of Total Retail Sales of Consumer Goods to GDP	0.22
	Share of Tourism Revenue in Tertiary Industry Value-Added	0.18
Social Benefits	Number of Three-Star-and-Above Hotels	0.33
	Total Tourist Arrivals	0.38
	Newly Created Urban Employment	0.29
Environmental Quality	Forest Coverage Rate	0.37
	Proportion of Days with Air Quality Meeting Standards	0.32
	Per Capita Public Green Space	0.31
Cultural resources	Number of Museums	0.22
	Number of State-Level Key Cultural Relics Protection Units	0.18
	Number of Classic Cultural Tourism Scenic Spots	0.40
	Number of Patriotic Education Bases	0.20

Table 4 Comprehensive Development Scores and Rankings by City (2022)

City	Comprehensive Relative Closeness (A)	Overall Ranking	Economic Development Ranking	Social Benefit Ranking	Environmental Quality Ranking	Cultural Resources Ranking
Guangzhou	0.778	1	1	1	8	1
Meizhou	0.330	3	4	6	1	2
Huizhou	0.258	6	6	4	4	7
Shenzhen	0.472	2	2	2	9	3
Shanwei	0.218	8	7	8	5	9
Zhongshan	0.199	9	5	7	6	8
Dongguan	0.226	7	3	3	7	5
Shaoguan	0.276	4	8	5	2	6
Heyuan	0.274	5	9	9	3	4

4.2 Dimensional Analysis of Cultural-Tourism Integration in Guangdong Province

4.2.1 Economic Level

In the economic dimension, total tourism revenue carries the greatest weight. The analysis reveal significant disparities among the nine cities. Guangzhou holds a pronounced lead, followed by Shenzhen, with both cities' performance largely driven by their superior total tourism revenue, a benefit of their status as national economic centers. The other seven cities exhibit closely clustered scores. Notably, Meizhou ranks third, attributable to its high ratio of retail sales of consumer goods to GDP, which indicates a well-developed tourism sector despite a lower aggregate revenue.

4.2.2 Social Benefit

Regarding social benefits, Guangzhou, Shenzhen, and Dongguan ranked highest. Guangzhou and Shenzhen led notably, suggesting stronger tourism infrastructure and service quality, which supports employment through cultural-tourism integration. Shanwei and Heyuan scored lowest, with Heyuan's pronounced lag in social benefits hindering integrated development.

4.2.3 Environmental Quality

Analysis of environmental quality reveals a prevalent inverse relationship with economic level, especially in Guangzhou and Shenzhen—a situation highly unfavorable for sustainable cultural tourism. This align with the concept of an "interactive stress relationship" between tourism development and the ecological environment ^[31]. To address this tension and achieve the necessary multi-level coordination, the "red-green integration" model proposed by ^[32] suggests fostering mutual support between ecological preservation and industrial development through scaled and branded structures.

4.2.4 Cultural Resource

Regarding cultural resources, the substantial weight assigned to the number of classic scenic spots underscores their role as primary development drivers. A clear hierarchy is revealed: Guangzhou is the dominant leader due to its comprehensive strength across all cultural asset categories. Meizhou secures a solid second place, characterized by strong performance in classic spots and overall balance. A different pattern is observed in Shenzhen and Heyuan, where development is uneven, with each city leading in only one specific aspect while lagging in others.

4.3 Coupling Coordination Analysis of Cultural-Tourism Integration in Guangdong Province

The coupling degrees and coordination degrees among the four subsystems—economic level, social benefits, environmental quality, and cultural resources—were calculated. These results form the basis for analyzing the mutual coordination state within the cultural-tourism integration evaluation system across the sample cities (see Table 5).

Table 5 Coupling Degree and Coupling Coordination Degree Analysis of Subsystems

City	Coupling Degree C	Coupling Level	Coordination Degree D	Coordination Level
Guangzhou	0.94	High	0.88	Quality Coordination
Meizhou	0.65	Moderate	0.50	Marginal Coordination
Huizhou	0.70	Moderate	0.45	Approaching Dysregulation
Shenzhen	0.93	High	0.63	Elementary Coordination
Shanwei	0.45	Low	0.32	Mild Dysregulation
Zhongshan	0.67	Moderate	0.35	Mild Dysregulation
Dongguan	0.89	Moderate	0.47	Approaching Dysregulation
Shaoguan	0.65	Moderate	0.43	Approaching Dysregulation
Heyuan	0.54	Moderate	0.38	Mild Dysregulation

Conclusion and Discussion

5.1 Conclusion

Against the backdrop of socio-economic development, tourism consumption has become an integral component of daily life, leading to significantly growing demand for tourism products and services. As a distinctive tourism form, cultural tourism serves not only leisure and entertainment purposes but also educational and cultural inheritance functions. Its unique historical and cultural value is attracting increasing interest from younger tourists eager to understand national history and revolutionary traditions, thereby promoting regional economies and sustaining the national spirit. Based on existing research, this study constructs a detailed evaluation index system for culture-tourism integration in Guangdong's cities with representative revolutionary heritage. The system, comprising four dimensions (economic level, social benefits, environmental quality, cultural resources) and 13 indicators, was analyzed using the entropy weight method, TOPSIS, and a coupling coordination degree model. This study yielded three principal findings regarding cultural-tourism integration in Guangdong Province:

1. Significant Regional Disparities: Evaluation across a 13-indicator system revealed a pronounced development gap among the nine cities. Guangzhou (0.778) was the clear leader, Shenzhen (0.472) ranked a distant second, and the remaining seven cities formed a low-level cluster (0.199-0.330) with minimal internal differentiation.

2. Efficiency-Environment Trade-off: A negative correlation was observed between developmental efficiency and ecological carrying capacity in all but one city (Meizhou), highlighting the need to prioritize ecological protection in tourism planning.

3. Uncoordinated System Interaction: While the four systems showed reasonably good coupling, their coordination was generally low. This indicated that the cities had yet to achieve synergistic, high-quality integration.

5.2 Discussion

5.2.1 Enhance the coordinated development system of Cultural and Tourism industries

As a distinctive and meaningful form of tourism, cultural tourism is critical for boosting economic returns and fostering the growth of related industries. The findings revealed pronounced regional disparities and imbalanced subsystem coordination, underscoring the necessity of transitioning from fragmented management to an integrated development model. Policymakers should prioritize establishing cross-sector collaboration mechanisms that link cultural tourism with complementary industries such as catering, accommodation, and transport. Enterprises should pursue deeper collaboration with local traditional sectors. Integrated services such as catering and accommodation with cultural resources.. Furthermore, coordinated development with other regional attractions facilitates resource sharing and capitalizes on complementary advantages. Such integration not only amplifies economic benefits but also creates a cohesive visitor experience, strengthening the overall competitiveness of the cultural tourism ecosystem.

5.2.2 Optimize the Innovation and Development Path of Cultural and Tourism Enterprises

Innovation is fundamental to achieving the long-term development of cultural tourism. Innovation is fundamental to achieving the long-term development of cultural tourism. The moderate level of integration development highlighted gaps in operational efficiency and cultural resource utilization. Enterprises should accelerate the adoption of digital tools—such as big data analytics, VR, and AR—to optimize service delivery and design immersive narrative experiences. These innovations do not merely enhance visitor engagement; they establish a new operational paradigm where technology acts as a bridge connecting cultural heritage with contemporary consumption patterns.

5.2.3 Implement the concept of ecological sustainability in cultural and tourism development

The integration process must emphasize harmony between tourism and the ecological environment, adhering strictly to sustainable development principles. This entails, first, local governments should mandate environmental impact assessments and continuous ecological monitoring for all cultural tourism projects. In parallel, ecological protection education for tourists should be strengthened to foster environmental awareness and encourage conscious participation in

conservation efforts. Furthermore, the development of “culture + ecology” themed products can align visitor satisfaction with conservation objectives, creating a sustainable model that balances economic growth with environmental stewardship.

5.3 Limitations and Prospects

First, data breadth and timeliness are limited. This study uses 2022 cross-sectional data from nine cities in Guangdong, with relatively single sources and short time span, possibly limiting universality and representativeness. Some indicators (e.g., tourist emotional experience, digital technology application depth) lack official statistics, weakening conclusion comprehensiveness. Second, although the evaluation system includes four dimensions, other important factors (e.g., tourist experience and satisfaction, digital application degree) may be omitted. Future research should expand samples and improve the index system for greater comprehensiveness and scientific rigor.

References

- [1]. L. Peilin and X. Shuo, "New Quality Productive Forces of Cultural Tourism: Connotation Review, Support Dimensions, and Practical Path," *Tourism and Hospitality Prospects*, vol. 8, no. 3, p. 34, 2024.
- [2]. Z. Su, J. R. Aaron, W. C. McDowell, and D. D. Lu, "Sustainable synergies between the cultural and tourism industries: An efficiency evaluation perspective," *Sustainability*, vol. 11, no. 23, p. 6607, 2019.
- [3]. S. Li and S. Du, "An empirical study on the coupling coordination relationship between cultural tourism industry competitiveness and tourism flow," *Sustainability*, vol. 13, no. 10, p. 5525, 2021.
- [4]. F. Hu, "Development of Fuzzy Logic CRITIC Coupling Coordination Degree Evaluation Algorithm: Practice of Cultural and Tourism Integration Development in the Yangtze River Economic Belt, China," *International Journal of Advanced Computer Science & Applications*, vol. 15, no. 11, 2024.
- [5]. D. Xu, X. Li, S. Yan, L. Cui, X. Liu, and Y. Zheng, "A Quantitative Model to Measure the Level of Culture and Tourism Integration Based on a Spatial Perspective: A Case Study of Beijing from 2000 to 2022," *Sustainability (2071-1050)*, vol. 16, no. 10, 2024.
- [6]. H. Wang, B. Zhang, and H. Qiu, "How a hierarchical governance structure influences cultural heritage destination sustainability: A context of red tourism in China," *Journal of Hospitality and Tourism Management*, vol. 50, pp. 421-432, 2022.
- [7]. G. H. Brundtland, "Our common future—Call for action," *Environmental conservation*, vol. 14, no. 4, pp. 291-294, 1987.
- [8]. P. P. Rogers, K. F. Jalal, and J. A. Boyd, *An introduction to sustainable development*. Routledge, 2012.
- [9]. L.-J. Chen, K. Zhen-Tang, and J.-S. Wang, "Investigation, Evaluation and Exploitation of Red Tourism Resources in Huanggang City," *Hubei Agric. Sci.*, vol. 51, pp. 5517-5520, 2012.
- [10]. S. Ren, "Research on Innovative Development Strategy of Red Literature and Tourism Resources," in *2022 International Conference on County Economic Development, Rural Revitalization and Social Sciences (ICCRS 2022)*, 2022: Atlantis Press, pp. 86-90.
- [11]. Y. Geng, H. Zhu, and R. Zhu, "Coupling coordination between cultural heritage protection and tourism development: the case of China," *Sustainability*, vol. 14, no. 22, p. 15421, 2022.
- [12]. G. Richards, "Cultural tourism: A review of recent research and trends," *Journal of hospitality and tourism management*, vol. 36, pp. 12-21, 2018.
- [13]. C. C. Caraba, "Communist heritage tourism and red tourism: concepts, development and problems," *Cinq Continents*, vol. 1, no. 1, pp. 29-39, 2011.
- [14]. J. Sun and X. Lv, "Red heart at dark sites: The production of embodied patriotic ritual in tourism," *Tourism Management*, vol. 106, p. 104975, 2025.
- [15]. X. Zhou, J. W. C. Wong, and S. Wang, "Memorable tourism experiences in red tourism: The case of Jiangxi, China," *Front. Psychol.*, vol. 13, p. 899144, 2022.
- [16]. J. Wang, J. Sun, G. Wang, L. Yang, Y. Zhang, and A. M. Morrison, "Red tourism in China: emotional experiences, national identity and behavioural intentions," *Tourism Review*, vol. 78, no. 4, pp. 1037-1059, 2023.
- [17]. S. N. Zhao and D. J. Timothy, "Governance of red tourism in China: Perspectives on power and guanxi," *Tourism Management*, vol. 46, pp. 489-500, 2015.
- [18]. J. P. Liu, S. Shan, J. W. Wang, and Y. S. Liu, "Theoretical Logic and Practical Path of Digital Economy Enabling High-Quality Development of Red Tourism," *Tourism Science*, vol. 39, no. 01, pp. 69-85, 2025, doi: 10.16323/j.cnki.lykx.2025.01.001.
- [19]. Q. Zhang, C. X. Xu, and W. N. Wen, "Study on the Formation Mechanism of Red Tourism to Promote Red Cultural Identity among Youth--A Cohort Path Analysis Based on Differences in School Sections," *Tourism Science*, vol. 39, no. 01, pp. 101-118, 2025, doi: 10.16323/j.cnki.lykx.20250218.001.
- [20]. F. Wang, V. Sanagustín-Fons, and V. Martínez-Quintana, "Red Tourism and Youth Education: A Systematic Review of the Literature," *Societies*, vol. 15, no. 3, p. 69, 2025.
- [21]. G.-p. Ren, H.-k. Zheng, F.-h. Tang, H.-q. Li, Q. Sun, and G. Yin, "High-quality development of red tourism economy in resourceful province based on resource transformation efficiency," *Journal of Natural Resources*, vol. 38, no. 3, pp. 576-600, 2023.
- [22]. K. Bai, M. T. Wang, and M. G. Zi, "Competitiveness Evaluation Modeling of Red Tourism Destinations and Evaluation of Typical Cities," *Economic Geography*, vol. 45, no. 03, pp. 221-228, 2025, doi: 10.15957/j.cnki.jjdl.2025.03.022.
- [23]. F. Yang and Y. F. Liu, "Red Tourism Support Policies and County Fiscal Responsiveness: A Policy Assessment

- Based on the Construction of Red Tourism Classic Scenic Spots," *Journal of Nanchang University(Humanities and Social Sciences)*, vol. 55, no. 06, pp. 65-79, 2024, doi: 10.13764/j.cnki.ncds.2024.06.011.
- [24]. H. I. Wang, "War and revolution as national heritage: 'Red Tourism' in China," in *Routledge Handbook of Heritage in Asia*: Routledge, 2012, pp. 218-233.
- [25]. H. Ding, C. Yang, and P. Wang, "Evaluation System Construction and Effectiveness Assessment of Culture and Tourism Integration in Key Red Tourism Counties," *Price: Theory & Practice*, no. 07, pp. 159-165+223, 2024, doi: 10.19851/j.cnki.CN11-1010/F.2024.07.166.
- [26]. Y. Peng, "Empirical study on the development of regional tourism in key counties of red tourism in the context of cultural and tourism integration," *Enterprise Economy*, vol. 42, no. 06, pp. 88-97, 2023, doi: 10.13529/j.cnki.enterprise.economy.2023.06.009.
- [27]. Y. Zhu, D. Tian, and F. Yan, "Effectiveness of entropy weight method in decision-making," *Mathematical problems in Engineering*, vol. 2020, no. 1, p. 3564835, 2020.
- [28]. M. Q. Xing, K. Ma, C. L. Chen, and J. Li, "Measurement of green development level of agriculture in Hexi region and the coupled and coordinated path to enhance it," *Journal of Desert Research*, vol. 44, no. 06, pp. 207-219, 2024. [Online]. Available: <https://link.cnki.net/urlid/62.1070.P.20241121.0918.003>.
- [29]. C. Y. Cai, J. X. Tang, and Q. He, "A study on the relationship between the resilience of China's tourism economy and the quality of tourism development," *Journal of Natural Science, Hunan Normal University*, vol. 47, no. 1, pp. 42-53, 2024.
- [30]. X. H. Li, D. Zhang, Z. L. Song, R. Z. Lin, Z. L. Wang, and S. R. Lan, "Spatial Pattern and Coupling Development of Red+ Tourism under the Perspective of Synergistic Development: An Empirical Study Based on the Old Revolutionary Area of Western Fujian," *Journal of Southwest University(Natural Science Edition)*, vol. 44, no. 11, pp. 124-139, 2022, doi: 10.13718/j.cnki.xdzk.2022.11.012.
- [31]. Z. F. Wang and Q. Q. Chen, "Validation of the interactive coercive relationship between tourism industry and ecological environment in the Yangtze River Economic Belt and study on the coordinating effect.," *Resources and Environment in the Yangtze Basin*, vol. 30, no. 11, pp. 2581-2593, 2021. [Online]. Available: https://kns.cnki.net/kcms2/article/abstract?v=Ss1McYY34Cc11Wi51Lmc11AgcIZVTWXgYf_UngTLXvQkri8g1l4zd39QddhPezjbp7P5_3Vq3XFdxEn87GHhLcgEI75KeoKwfw9Ft12Ehnt74jVWgxECj1Nee8RkCZy38O-4lQhJiYU7nOI50GEGknXXfzHZ4h7exEQrI9aMb4YbdkhoWK893jyUakv-l8e&uniplatform=NZKPT&language=CHS.
- [32]. X. F. Wang and C. H. Jiang, "Water as a chain and "red-green integration" for revitalization and development of old revolutionary areas," *Price: Theory & Practice*, no. 10, pp. 32-36+141, 2022, doi: 10.19851/j.cnki.CN11-1010/F.2022.10.249.