Research on the Measurement and Influencing Factors of High-quality Integration Level of Cultural Tourism

Wenwen Li

Anhui University of Finance and Economics, Bengbu, 233030, China

Abstract: The high-quality integration of cultural tourism is an inevitable requirement for the high-quality development of cultural industry and tourism industry. Based on the panel data of 16 prefecture-level cities in Anhui Province from 2011 to 2020, this paper uses the coupling coordination model to measure the high-quality integration level of cultural tourism in each city of Anhui Province, and compares and analyzes the temporal and spatial differences of the high-quality integration level of cultural tourism. The results show that from 2011 to 2020, the high-quality integration level of cultural tourism industry in Anhui Province is mostly in a state of mild imbalance and barely coordination, and there are very few cities with good coordination, so there is still much room for improvement. The results of constructing panel quantile model show that the explanatory variables have obvious heterogeneity on different levels. Specifically, residents' demand, human capital and technical level have greater influence on high-level integration areas than on low-level integration areas, while economic development and government support have greater influence on low-level integration areas. Based on the above conclusions, this paper puts forward the path to promote the high-quality integration and development of cultural tourism in Anhui Province.

1. Introduction

Entering a new stage of development, the cultural industry and tourism industry have ushered in an important period of strategic opportunities. In order to implement the 14th Five-Year Plan for People's Republic of China (PRC)'s National Economic and Social Development and the Outline of Long-term Goals in 2035 and the 14th Five-Year Plan for Cultural and Tourism Development, the state proposes to attach importance to the high-quality integration of cultural industry and tourism industry, and demands to fully implement the innovation-driven strategy of cultural tourism industry, promote the transformation of tourism from scenic spot tourism to global tourism, make full use of regional cultural resources, and realize "culture+", "tourism+" and "culture+tourism" through the high-quality integration of cultural tourism. Anhui province is rich in cultural resources and tourism resources, with numerous natural landscapes and cultural relics, including 3 world cultural heritages, 5 national archaeological sites parks, 5 national historical and cultural cities, 35 national historical and cultural towns and villages, and more than 5,500 intangible cultural heritages. There are 12 national 5A-level tourist attractions and 204 4A-level tourist attractions. Based on the

high-quality cultural tourism resources, Anhui Province puts forward six characteristic plates including "the most beautiful southern Anhui", "Happy Wanjiang", "Leisure Central Anhui", "Red Dabie Mountain", "Romantic Huaihe River" and "Legendary Northern Anhui" to promote the high-quality development of cultural tourism through plate linkage, so as to build a new pattern of cultural tourism development. However, at present, there are still some problems in Anhui's cultural tourism industry, such as low development efficiency, urgent optimization of industrial structure, insufficient integration and imperfect policies. The process of high-quality integration of cultural tourism needs to be further promoted. In order to realize the development goal of building a modern system of cultural tourism integration and continuously promoting the high-quality integration of cultural tourism industry in Anhui Province, this paper intends to put forward corresponding countermeasures to promote the high-quality integration process of cultural tourism industry in Anhui Province by measuring the high-quality integration level of cultural tourism in Anhui Province and comparing the influencing factors.

The academic discussion on the integration of cultural tourism started from the perspective of industrial integration. Cultural industry and tourism industry have natural coupling and common realistic demand base.[1]The integration of literature and tourism is an inevitable trend. At present, the research on the integration of cultural tourism industry mainly focuses on the following aspects: First, the connotation of cultural tourism integration. Cultural industry and tourism industry are independent industries, but they have strong internal correlation and functional complementarity. The integration of cultural tourism is not a simple sum of the two industries, but an integration in industrial development, Zhang Haiyan (2010)[2]It is believed that the process of cultural tourism integration can be outlined from four angles: technology, products, market and enterprises, Wang Xiuwei (2021)[3]Then it summarizes the essence of the integration of literature and tourism from five dimensions: product, format, elements, market and value. The second is the construction of the index system for the integration of cultural tourism. Based on data availability, Zhang Yanfei (2013)[4]The index system is constructed from four aspects: income, income, organization and personnel. Weng Gangmin (2016)[5]From five aspects: the total amount, the number of institutions, employees, operation and resources, 24 secondary indicators of cultural industry and tourism industry are selected to construct the index system; Liu Qian (2021)[6]It is believed that factor input and value output are the main paths to realize value creation and value appreciation. Therefore, an evaluation system of cultural tourism integration is constructed from the dimensions of input and output, and the integration level of cultural industry and tourism industry is measured by entropy method and coupling coordination model. The third is to explore the dynamic mechanism of the integration of literature and tourism. Although the research angles are slightly different, market demand, corporate behavior, government policies and technological changes are usually used as the driving force for the integration of literature and tourism, for example, Zhang Haiyan and Wang Zhongyun (2013).[7]It is believed that factors such as enterprise behavior orientation, diversified demands of tourists, government guidance, the development of intermediary institutions and the role of market mechanism are the most important driving forces for the integration of tourism industry and cultural industry. Zhao Shuhong and Chen Tingting (2020)[8]It is pointed out that the integration of resource elements, the upgrading of tourism demand, the support of innovation and change, and the decision-making of enterprise management are the driving forces for the integration of cultural industry and tourism industry in ethnic areas. Benson et al. (2020)[9]It is believed that consumer demand, market supply, scientific and technological innovation, policy environment, infrastructure and human resources constitute important driving forces for the coordination of culture and tourism industry. Meng Maoqian (2017)[10]Then it can be divided into two kinds: endogenous power including market demand, profit-seeking of enterprises, competition and cooperation of enterprises, and exogenous power including industrial promotion, technological

progress and industrial policy.

As the economy moves towards the stage of high-quality development, the integration of cultural tourism industry will inevitably move towards high-quality development. The integration of cultural tourism is an important starting point and inevitable requirement for high-quality development.[11] The deep integration of cultural industry and tourism industry is the inevitable choice of the times and the inevitable trend of industrial development.[12]. In terms of the connotation of high-quality integration of cultural tourism industry, although there is no clear definition of high-quality integration of cultural tourism industry at present, some scholars have made useful discussions around this issue, for example, Tommy (2019)[13]Based on the background of Yangtze River Delta integration development, it is proposed to improve the development level of cultural tourism by high-quality integration and collaborative innovation, Hou Bing et al. (2020)[14]This paper makes a preliminary exploration on the connotation and motivation of the deep integration of cultural tourism. In the measurement of high-quality integration of cultural tourism industry, scholars take the whole country or different regions as the spatial scale and adopt factor analysis.[15]Entropy method[3]And coupling coordination model[16]We will measure the high-quality development level of cultural tourism integration. As samples, taking 31 provinces cities in China[9], taking cities in the Yangtze River Delta[14], and take the Grand Canal Cultural Belt as the research object,[3] the research conclusions all show that although the overall development is on the rise, the level of cultural tourism integration is not high, and the gap between provinces is large, and the synergy of cultural industries is low. Based on this, in order to promote the deep integration and development of cultural industry and tourism industry, Fan Jianhua and Qin Huiduo (2020)[12]It is pointed out that we must make concerted efforts in administrative management, market overall planning, business integration, personnel training and other aspects to promote all-round and multi-dimensional reform and innovation of institutional mechanisms, Shen Junbo (2020)[17]It is suggested to promote the high-quality integration of cultural tourism from the perspectives of ecological protection, institutional innovation, market operation, industrial restructuring and brand appreciation, Zhou Jin (2021)[18]It emphasizes promoting the high-quality integration and development of the cultural tourism industry through the digital transformation of innovative industries.

Although the academic circles have made multiple explorations on the high-quality integration and development of the cultural tourism industry, the research on the high-quality integration of the cultural tourism industry in Anhui Province needs to be further expanded. This paper aims to measure the high-quality integration level of cultural tourism in Anhui Province, explore the heterogeneous influence of various factors by constructing quantile regression model, and then explore the realistic path of further high-quality development of cultural tourism integration in Anhui Province.

2. Anhui cultural tourism industry high-quality integration level measurement

2.1. Index system construction

Based on the perspective of industrial integration, according to the mechanism of deep integration and high-quality development of cultural industry and tourism industry, combined with the current situation of cultural tourism integration in Anhui Province, and drawing lessons from existing research.[19][20]Based on the principles of scientificity, rationality, availability and measurability, seven secondary indicators are selected from the input factors and output performance of the cultural industry and the tourism industry to construct the index system (Table 1).

Table 1: High-quality Integration Index System of Cultural Tourism Industry

System category	Primary index	Secondary index	unit
cultural sector	Input factors	Number of people employed in culture, sports and entertainment industry	human
		Collection of books in public libraries	Thousand volumes
		Gymnasium number	individual
	Output performance	The added value of cultural industries and related industries	hundred million yuan
		Proportion of expenditure on education, culture and entertainment services to GDP	%
		Proportion of per capita entertainment consumption expenditure of urban and rural residents to GDP	%
		Average daily service times of public cultural facilities	human
recreation industry	Input factors	Number of A-level scenic spots	individual
		Number of tourist star-rated hotels	individual
		Number of employees in accommodation and catering industry	human
	Output performance	Per capita expenditure of domestic tourism	Yuan Dynasty (1206-1368)
		Total domestic tourism revenue	hundred million yuan
		Number of inbound tourists	human
		Inbound tourism income	human

2.2. Calculation method of coupling coordination degree

Coupling refers to the dynamic relationship between different systems. The coupling degree indicates the degree of correlation between systems. However, it does not explain the level of coordinated development between systems. For example, the coupling degree between the two subsystems of cultural industry and tourism industry may be high, but the overall development level may be low. This is not the best state of high-quality integration and development of cultural tourism. Coordination degree is used to reflect the synergy between systems. In this paper, the coupling coordination model is used to measure the development level of high-quality integration of the cultural tourism industry, and the specific steps are as follows:

Standardize data processing. Due to the inconsistent nature of indicators, in order to ensure the comparability of data, it is necessary to use range standardization to dimensionless the indicators, and the formula is:

$$\text{Positive indicators:Standard}_{ij} = \frac{x_{ij} - \min\{x_j\}}{\max\{x_j\} - \min\{x_j\}} \tag{1}$$

$$\text{Negative indicator:Standard}_{ij} = \frac{\max\{x_j\} - x_{ij}}{\max\{x_j\} - \min\{x_j\}} \tag{2}$$

1) Weight calculation. Using entropy method to weight standardized data, firstly, make clear the proportion of indicators, and record it as:

$$W1_{ij} = \frac{\text{Standard}_{ij}}{\sum_{i=1}^{n} \text{Standard}_{ij}} \ (n \ is \ Observed \ value) \tag{3}$$

Secondly, to clarify the information entropy of the index(e_j)and redundancy(d_j):

$$e_j = -\frac{1}{\ln t} \sum_{i=1}^{n} (W1_{ij} * \ln W1_{ij}) \qquad (\text{The t is the year}) \tag{4}$$

$$d_j = 1 - e_j \tag{5}$$

Finally, the index weight is calculated as follows:

$$W2_j = \frac{d_j}{\sum_{j=1}^{m} d_j} \quad \text{(The m is the number of indicators)} \quad (6)$$

2) Calculate the comprehensive development level of cultural industry and tourism industry respectively, and the formula is:

$$S_i = \sum_j^m (W1_{ij} * W2_j) \quad (7)$$

3) Calculate by using the coupling and coordination degree model. The coupling degree can be used to measure the interaction and influence of multiple systems, reflecting the connection strength of each system. The coupling degree formula is expressed as:

$$C = \frac{2\sqrt{S_1 * S_2}}{S_1 + S_2} \quad (8)$$

The comprehensive evaluation index is follows:

$$T = \sum_{i=1}^{n} \alpha_i * S_i, \quad \sum_{i=1}^{n} \alpha_i = 1 \quad (9)$$

Among them, α_i is the weight of each subsystem. This paper takes the importance of cultural industry and tourism industry as consistent on the premise, so $\alpha 1 = \alpha 2 = 0.5$. According to the formula of coupling coordination degree. The formula is as follows:

$$D = \sqrt{C * T} \quad (10)$$

2.3. Measurement result of coupling coordination degree

The above-mentioned coupling coordination model is used to measure the high-quality integration development level of the cultural tourism industry in 16 cities in Anhui Province. The data come from Anhui Statistical Yearbook (2012-2021) and official website, Anhui Provincial Department of Culture and Tourism. The measurement results show that from 2011 to 2020, the coupling and coordination degree of cultural tourism industry in Anhui Province is mostly in the range of (0.30, 0.60), which is in a state of slight imbalance and barely coordination, and few cities are well coordinated (Table 2). The degree of coupling and coordination can reflect the level of coordinated development of cities. The results show that the degree of coupling and coordination of cultural tourism industry in Anhui Province is not high, which means that the degree of integrated development of cultural tourism industry needs to be further deepened, and there is still much room for improvement.

Specifically: (1) From the perspective of the overall temporal and spatial evolution, in the past decade, the coupling and coordination degree of the cultural tourism industry in Anhui Province has generally fluctuated, which means that the level of high-quality integration and development of the cultural tourism industry has been continuously improved. The polarization effect of Hefei is obvious, and the level of coupling and coordination in southern Anhui is generally high, while that in northern Anhui is generally low. The integration advantages of Hefei.(2) From the perspective of local temporal and spatial evolution, the polarization effect of Hefei in the central region is obvious, and it has always been in a far-ahead state. This may be because Hefei has a higher level of economic development, a higher level of rationalization and upgrading of industrial structure, a better basic resource for the development of cultural industry and tourism industry, and a more adequate allocation of resources such as technology, talents and capital, which makes Hefei's cultural tourism coupling and coordination higher level of integrated development of cultural tourism industry. The degree of coupling and coordination in northern Anhui, such as Huainan,

Huaibei, Suzhou, Bozhou and Fuyang, has always been at a low level, which may be related to the inconspicuous location advantage, the poor flow of factor resources, the low level of economic development, and the slow progress of industrial structure upgrading, thus hindering the integration and development of cultural tourism industry, and there is still much room for improvement. The coupling and coordination degree of Huangshan, Wuhu and Chizhou in southern Anhui is also at a high level, and the coupling and coordination level of cultural tourism in Maanshan, Xuancheng, Chuzhou and Bengbu has been gradually improved in recent years, which shows that the high-quality integration and development of cultural tourism has made great progress and great potential for development.

Table 2: High-quality Integration Level of Cultural Tourism Industry in Anhui Province (2011-2020)

region	city	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Southern Anhui	Mount Huangshan	0.598	0.617	0.636	0.61	0.61	0.608	0.599	0.611	0.626	0.618
	Wuhu	0.486	0.516	0.501	0.526	0.507	0.514	0.532	0.568	0.578	0.55
	Ma'anshan	0.485	0.489	0.48	0.488	0.48	0.472	0.476	0.485	0.512	0.497
	Tongling	0.518	0.505	0.519	0.523	0.441	0.473	0.471	0.474	0.493	0.547
	Xuancheng	0.402	0.407	0.432	0.442	0.44	0.444	0.441	0.436	0.434	0.47
	Chizhou	0.505	0.525	0.539	0.553	0.545	0.534	0.465	0.474	0.503	0.497
Wanzhong	Hefei	0.732	0.762	0.751	0.779	0.779	0.797	0.811	0.871	0.902	0.82
	Lu an	0.416	0.418	0.4	0.393	0.413	0.412	0.405	0.403	0.423	0.429
	Anqing	0.498	0.494	0.515	0.498	0.517	0.545	0.532	0.536	0.55	0.524
	Chuzhou	0.33	0.389	0.388	0.402	0.43	0.431	0.435	0.448	0.489	0.449
Northern Anhui	Fuyang	0.26	0.242	0.247	0.297	0.32	0.314	0.3	0.355	0.378	0.377
	Suzhou	0.328	0.348	0.32	0.36	0.349	0.358	0.372	0.353	0.369	0.359
	area south of the Huai He River and north of the Chang Jiang River	0.395	0.393	0.399	0.427	0.417	0.394	0.428	0.437	0.428	0.407
	Bozhou	0.333	0.313	0.306	0.31	0.317	0.328	0.31	0.345	0.39	0.383
	northern Anhui Province	0.33	0.37	0.365	0.382	0.406	0.407	0.364	0.37	0.4	0.381
	Bengbu	0.362	0.371	0.407	0.399	0.397	0.398	0.433	0.453	0.457	0.456
The whole province	average/mean value	0.438	0.446	0.446	0.461	0.458	0.463	0.460	0.476	0.496	0.485

3. The study on the influencing factors of high-quality integration of Anhui cultural tourism industry

3.1. Model construction and variable description

Quantile regression is a method to estimate regression parameters by minimizing the sum of absolute values of weighted residuals. Compared with ordinary least square method, quantile regression can better control individual heterogeneity and fully and effectively reveal the influence of explanatory variables on explained variables at specific quantiles. Taking the high-quality integration level of the cultural tourism industry as the explained variable, and five dimensions of economic development, residents' demand, government support, human capital and scientific and technological support as the explained variables, the quantile regression model is constructed as follows:

$$Q_T \ln Y_{it} = \alpha_i + \beta_1(T)\ln PerGDP_{it} + \beta_2(T)\ln PerCDI_{it} + \beta_3(T)\ln PD_{it} + \beta_4(T)\ln HC_{it} + \beta_5(T)\ln PA_{it} + \mu_{it}, i = 1, \cdots, n, t = 1, \cdots, T$$

Where Yit stands for the explained variable of the I-th individual in the T period, μit stands for random error, αi stands for the difference between individuals unaffected by the period and other

variables, and t stands for quantile.

Economic development. Industrial integration is a dynamic development process aimed at adapting to economic growth and promoting a virtuous circle of industrial development. The level of regional economic development is the basis for the integration and development of cultural tourism industry, which determines the height of cultural tourism integration (Zou Jiayun, 2014).[21]. The level of economic development has improved, the industrial structure has been upgraded, the industrial integration has deepened, the infrastructure and environment for the integration of cultural tourism have been further optimized, more market players have entered the cultural tourism industry, the development of the industry has matured, and intensified competition has promoted the further high-quality integration and development of the cultural tourism industry. This paper selects per capita GDP as the proxy variable of economic development dimension.

Residents' demand. Consumer demand is the most fundamental demand, and the improvement of residents' consumer demand level is the primary driving force of industrial integration. In the new era, the people's consumption focus has changed to the spiritual and cultural level, and they have higher requirements for the types, forms and presentation forms of cultural and tourism products, which will further promote the high-quality integration of cultural industries and tourism industries. The level of disposable income is an important factor affecting consumer demand. Only when residents have higher disposable income will they pursue the satisfaction of their higher-level needs. In general, the level of per capita disposable income is positively correlated with residents' upgrading consumption demand. In this paper, per capita disposable income (PerCDI) of urban residents is used to measure residents' demand for cultural tourism.

Government support. Through policy inclination, the government can break down barriers between industries, deepen supply-side structural reform, and strengthen high-quality integration of cultural and tourism industries. By introducing relevant policies, the government promotes the innovation of cultural tourism system and mechanism, and improves the industrial investment and financing system, which is conducive to the optimization of the high-quality integration development environment of cultural tourism. With the deepening of the "the belt and road initiative" strategy, China's foreign cooperation in cultural tourism has been broadened, and with the implementation of the three national strategies of "Yangtze River Delta Integration", "Yangtze River Economic Belt" and "Rise of Central China", Anhui Province has multiple policy advantages to achieve high-quality integration of cultural tourism. The high-quality integration of cultural tourism cannot be separated from the government's support. In this paper, the proportion of education, culture and entertainment service expenditure to fiscal expenditure (PD) is selected as the proxy variable of government support dimension.

Human capital. Talent is the key to promote the high-quality integration of cultural tourism. The new format generated by the high-quality integration of cultural tourism will cause an urgent demand for high-level and professional human capital. Anhui's economic development level is relatively backward, high-quality practical and technical talents are lacking, and the incentives for scientific research and innovation talents are relatively insufficient. Cultivating innovative and practical talents is conducive to expanding the team of high-level and high-skilled talents in the cultural and tourism integration industry and adapting to the needs of the transformation of innovative achievements and the expansion of market scale. The number of college graduates (HC) is used as the proxy variable of human capital dimension.

Science and technology support. Technological progress provides new kinetic energy for the high-quality integration of cultural tourism. Different industries rely on the same production technology in the production process, so that the previously separated industries become closely linked, and technological innovation will directly promote industrial integration. Stimulating the innovation vitality of cultural tourism and promoting the content innovation of cultural tourism

industry can promote the deeper and higher quality integration of cultural tourism industry and technology. In this paper, the number of effective invention patents (PA) is used as the proxy variable of scientific and technological support.

3.2. Analysis of empirical results

When constructing the model of influencing factors of the high-quality integration of cultural tourism in Anhui Province, in order to make the regression results more accurate, the fixed effect, random effect and houseman test were carried out, and the test results showed that the p values were all 0.0000, so the fixed effect regression model was the best. However, the benchmark regression can only get the influence of various factors on the expected value of high-quality integration of cultural tourism in Anhui Province, and cannot analyze the regional differences of the influence of related factors on the high-quality integration of cultural tourism. Quantile regression model can solve this problem. In order to investigate the differences of influencing factors on the integration degree of tourism, tourism and high quality at different quantile levels, this paper divides Anhui Province into three grades according to the coupling coordination degree of tourism and tourism, and selects three quantiles of 0.1, 0.5 and 0.9 for quantile regression. In order to better compare the difference between quantile regression and benchmark regression, table 3 also lists the results of benchmark regression. The influence degree of each variable is different at different quantiles. Specifically:

Economic development. The elastic coefficients of economic development are all above zero, which shows that economic development has a positive and significant impact on the high-quality integration of cultural tourism in the whole dependent variable condition distribution. With the increase of quantile, the influence of economic development on the high-quality integration of cultural tourism shows a trend of increasing first and then decreasing, and the integration level reaches a certain height, and the influence of economic development on the integration of cultural tourism becomes smaller. At the 50% percentile, economic development has the greatest impact on the high-quality integration level of cultural tourism in cities. The reason may be that in areas with high economic development level, the cultural tourism industry system and market system are relatively sound. In order to further realize the high-quality integration of the cultural tourism industry, it is more important to make up for the shortcomings. [2[]

Residents' demand. The coefficient is positive in all quantiles, which shows that the increase of residents' demand promotes the high-quality integration of the cultural tourism industry in areas with different integration levels. With the rapid economic development in China, the per capita disposable income of urban residents has increased continuously in the past few decades, the consumption will has been greatly enhanced, and the consumption structure has been transformed and upgraded, so people pay more attention to the pursuit of spiritual and cultural consumption. From the change of the quantile regression coefficient of residents' demand, it can be seen that the regression coefficient at the quantile from 10% to 90% is gradually increasing, and the coefficient of residents' demand is the largest in areas with high integration level, which may be due to the rapid economic development in these areas, the higher income level of residents, and the relatively large consumption expenditure willing to spend on higher levels, which has a more obvious driving effect on the integration of cultural tourism.

Government support. Government support is positive and significant in each quantile. From the change of quantile regression coefficient of government support, it can be seen that the promotion effect of government support on high-quality integration of cultural tourism is gradually weakening from low-integration area to high-integration area. At the 10% quantile, the regression coefficient supported by the government is 0.224, which shows that in order to realize the high-quality

integrated development of cultural tourism, the more the low-integration area of cultural tourism needs the government's policy inclination, while the high-integration area of cultural tourism depends more on the market demand.

Human capital. The elastic coefficient of human capital is positive and significant in the quantiles of 50% and 90%, which shows that human capital can promote the high-quality integration of cultural tourism in areas with high integration level. This may be because there are a large number of practical professionals in areas with high integration level. The human capital in low-integration areas can inhibit the high-quality integration of cultural tourism, but it is not significant. This may be due to the low level of urbanization in low-integration areas, which leads to brain drain, which leads to difficulties in regional cooperation, lack of creativity and lack of vitality in market investment. Compared with quantile regression coefficient, the influence of human capital in the benchmark model is overestimated.[23]

Table 3: Results of panel quantile regression model

variable	Benchmark regression	Quantile regression		
		q10	q50	q90
economic development	0.143*** (0.025)	0.176*** (0.034)	0.193*** (0.030)	0.163*** (0.032)
Residents' demand	0.180** (0.080)	0.399*** (0.057)	0.425*** (0.094)	0.709*** (0.062)
Government support	0.094*** (0.020)	0.224*** (0.042)	0.217*** (0.032)	0.192*** (0.036)
manpower capital	0.126*** (0.041)	-0.001 (0.013)	0.042*** (0.013)	0.067*** (0.011)
engineering level	0.028** (0.011)	-0.009 (0.025)	-0.012 (0.019)	0.064*** (0.021)
constant term	-1.897*** (0.619)	-4.664*** (0.586)	-4.854*** (0.841)	-7.010*** (0.431)
N	160	160	160	160
R2	0.862	0.668	0.641	0.747

Note: *,**,*** represent significant at the level of 10%, 5% and 1% respectively; Robust standard error in brackets.

Science and technology support. The influence of scientific and technological support on the high-quality integration of cultural tourism is positive and significant only in the 0.9 quantile, and negative and not significant in other quantiles. This may be because in areas with high integration level, the potential of innovation level is greater and the space for technology dissemination is greater. Due to the innovation and absorption of technology, the influence of technological progress on the high-quality integration of cultural tourism has gradually increased, thus producing a cumulative effect. From the regression coefficient, the influence of scientific and technological support on the high-quality integration of cultural tourism is negative at the 10% to 50% quantile, but it is not significant. The reason may be that the level of scientific and technological development in backward areas with high-quality integration of cultural tourism is low, so it is necessary to introduce relevant technologies from outside or build a regional scientific and technological sharing platform to stimulate the vitality of innovation and creativity and promote the integrated development of high-quality integration of regional cultural tourism. The regression coefficient of the benchmark model is positive, which underestimates the influence of technical level compared with the regression coefficient at 90% quantile.

4. Suggestions

Firstly, we should improve the policy to empower high-quality integration of cultural tourism.

Ministry of tourism innovates the management system and mechanism, establish the coordination mechanism of cultural tourism integration to provide a good policy environment for the high-quality integration of cultural tourism, gives full play to the leading role of cultural tourism departments in various cities in Anhui Province in the multi-sector management framework, and builds a joint meeting mechanism with the cultural tourism department, State Administration for Market Regulation, Ministry of Finance and other relevant departments to promote the efficient operation of the cultural tourism integration market. Relevant departments deepen the reform of the cultural tourism market, organize cultural tourism professionals training according to the demand of high-quality integration of cultural tourism, cultivate a team of high-quality cultural tourism interpreters, and continuously inject new impetus into the cultural tourism industry, and increase financial investment in cultural tourism infrastructure construction, especially in areas where cultural tourism integration is relatively backward, promote overall planning and comprehensive integration, and realize regional co-construction and sharing.

Secondly, culture and tourism departments accelerate industrial transformation and upgrading and empower high-quality integration of cultural tourism, create a new format of cultural tourism integration, relying on information, ecology, talents and other factors, realize the transformation from "culture+" to "cultural tourism+", promote the upgrading of cultural tourism products through "cultural tourism+creativity" and "cultural tourism+technology", get rid of the serious problem of product homogeneity and improve the added value of cultural tourism industry. To achieve high-quality coordinated development, we must integrate from the dimension of all factors and build a new space for high-quality integration. Treating "+cultural tourism" in other fields with an open and inclusive attitude will provide more possibilities for the high-quality integration of cultural tourism, stimulate the vitality of the development of high-quality integration of cultural tourism, and meet the increasingly diversified consumer needs of residents.

Thirdly, we should promote technological innovation and empower high-quality integration of cultural tourism, promote the application of new infrastructure such as 5G, Internet and big data in the field of high-quality integration of cultural tourism, optimize scenic spot services with the help of "new infrastructure", reduce the queue congestion during holidays, and improve the risk assessment and user feedback mechanism, thus improving consumer satisfaction. Research and development department optimize the research and development system, innovate the talent training mode, stimulate the innovation vitality of talents, cultivate compound talents in the digital field of cultural tourism, and build a scientific research innovation highland that gathers professionals.

The fourth is deepen regional coordinated development and empower high-quality integration of cultural tourism. Government strengthens the construction of the demonstration zone of cultural tourism integration in Hefei metropolitan area, gives play to the leading role of the demonstration zone as a "growth pole", connects Wanjiang cities such as Anqing, Chizhou, Wuhu and Tongling, digs deep into the connotation of Wanjiang culture and Jianghuai culture, sorts out the historical context of Yangtze River culture, refines cultural characteristics, inherit and carrys forward Huizhou culture, implements cultural inheritance and innovation projects, continuously promotes cultural ecological protection, and creates a high-quality integration leading zone for cultural tourism. Taking the development strategy of "Yangtze River Delta Integration" as an opportunity, we will coordinate the construction of cultural tourism corridors, build a model of regional integration of cultural tourism in the Yangtze River Delta, a demonstration zone for cultural and ecological protection in Huizhou and a world-class cultural tourism destination.

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