

## Research on the Impact of Digital Music Products on the Development of Regional Tourism Economy

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### [Abstract]

In this paper, we propose a study to investigate the significant impact of digital technology on the development of the cultural industry and tourism. By collecting, selecting, and analyzing data on digital music products from 281 cities in China from 2005 to 2022, we confirm that well-known digital music products play a crucial role in promoting domestic tourism economic growth. However, their impact on the international tourism economy is not significant. Furthermore, these well-known digital music products can not only promote the development of the regional tourism economy but also influence the tourism economy of neighboring cities. The promotional effect of well-known digital music products is particularly important in fourth- and fifth-tier cities with rich cultural diversity and abundant tourism resources. Overall, well-known digital music products have a positive role in stimulating market vitality and promoting regional tourism economic development. These findings provide an important foundation for the integrated development of culture and tourism in the digital age and offer valuable insights for upgrading regional industrial structures and fostering regional harmonious development.

▶ **Key words:** Digital music products, tourism economy, regional economic growth, cultural industry

### [요 약]

본 연구에서는 디지털 기술이 문화 산업과 관광 발전에 미치는 중요한 영향을 조사하기 위한 연구를 제안한다. 2005년부터 2022년까지 중국 281개 도시의 디지털 음악 상품을 수집, 선별하고 데이터를 분석한 결과, 잘 알려진 디지털 음악 상품이 국내 관광 경제성장을 촉진하는 데 중요한 역할을 한다는 사실을 확인했다. 그러나 국제 관광경제에 미치는 영향은 크지 않다. 또한, 이러한 잘 알려진 디지털 음악 상품은 지역 관광 경제 발전을 촉진할 수 있을 뿐만 아니라 인근 도시의 관광 경제에도 영향을 미칠 수 있다. 특히 문화 다양성과 관광 자원이 풍부한 4선 및 5선 도시에 사는 잘 알려진 디지털 음악 상품의 홍보 효과가 더욱 중요하다. 전반적으로, 잘 알려진 디지털 음악 상품은 시장 활력을 자극하여 지역 관광 경제 발전을 촉진하는 데 긍정적인 역할을 한다. 이러한 연구 결과는 디지털 시대 문화와 관광의 통합적 발전을 위한 중요한 기반을 제공하고, 지역 산업구조 고도화와 지역 조화 발전에 유용한 영감을 제공한다.

▶ **주제어:** 디지털 음악 상품, 관광경제, 지역경제 성장, 문화산업

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## I. Introduction

Tourism is the first of the "Five Happiness Industries" and has been proven to have a "green driving effect" on regional economic growth and industrial structure upgrading. However, traditional methods can no longer meet the needs of tourists, and diversified tourism methods represented by cultural tourism are emerging around the world. In order to achieve high-quality and sustainable development of cultural tourism, the limitations of traditional cultural industries must be broken. While the national policy level is vigorously promoting the extension of digital cultural content into the tourism field, music cultural resources play an important role in promoting the development of regional tourism economy. Digital music products have become a unique symbol of city image communication and a bright business card for regional cultural and tourism brand building. This article explores the role of digital music products in the vitality of the tourism market and the development of regional tourism economy, and explores whether it can become a new driving force for the integrated development of culture and tourism.

Destination songs in digital music platforms, as digital music products, have unique advantages and are an excellent sample for studying the development of regional tourism economy. The intentional expression of destination songs reshapes the connections between people and people and places, making it easier for listeners to resonate. Destination songs are released at different times, the place names they contain are widely distributed, and most of the releases are not originally intended to attract tourists, so their release can be regarded as an exogenous policy impact. These characteristics make destination songs have good properties as quasi-natural experimental evidence and avoid endogeneity problems.

The research literature in this article is mainly divided into two categories: research on the

interactive relationship and integration practice of music culture and tourism, and research on the impact, connotation and development trends of digital cultural products. Foreign scholars analyze the impact of digital cultural products and copyright issues from the perspective of industrial application, while domestic scholars mostly focus on theoretical research on the connotation and governance paths of cultural products under the background of digitalization. The literature most closely related to this article takes the song "Chengdu" as an example, which confirms that destination songs expand the sensory dimension of tourism destination marketing by acting on tourists' auditory senses, and significantly affect tourists' perceptions of the image of the tourist destination. level of perception. This article uses non-destination songs to describe the impact of digital music products on tourism development, and focuses the effect on the regional tourism economy and its response mechanism rather than the individual demand experience dimension.

At present, research on the impact of digital music products on the tourism economy at home and abroad is still in the early exploratory stage, lacking mature theoretical and empirical analysis frameworks. The reason is that digital cultural products come in many forms and are difficult to quantify, resulting in a lack of empirical research in the existing literature; most scholars conduct normative analyzes from the perspective of sound impact and tourist demand satisfaction, lacking a representative explanation of spatial heterogeneity; the impact of digital music products on tourism The economic impact mechanism is relatively complex and difficult to effectively and comprehensively incorporate into theoretical models, so most relevant research lacks empirical research.

This article uses panel data from 281 cities in China from 2005 to 2022, uses the multi-period double-difference method to examine the impact of digital music products on regional tourism economy, and explores the mechanism of action

and heterogeneous effects. The marginal contribution is: theoretically analyzing the impact of digital music products on tourism economic development; manually collecting digital music product data, identifying and testing the key role digital music products play in regional tourism economic development; innovatively stimulating From the perspective of market vitality, we deconstruct the internal logic of digital music products and the tourism economy, and explore the heterogeneous impact and spatial spillover effects of digital music products on the tourism economy, providing important reference for the government to implement precise policies.

## II. Theoretical analysis and hypothesis formulation

The impact of digital music products on the tourism economy can be explained through Spence's signaling theory, that is, non-tourism factors such as music will affect tourists' destination choices, enhance tourists' trust and shopping confidence, and thus promote the tourism economy related to cultural products. Well-known digital music products have a stronger awareness effect and faster and wider dissemination speed, which can increase the attention and influence of tourist destinations. This article proposes hypothesis H1: Well-known digital music products can play a positive role in promoting the local tourism economy, and their tourism economic stimulus effect is more significant than that of ordinary digital music products.

There are differences in the impact of well-known digital music products on domestic and foreign tourists due to cultural differences and different destination selection preferences. Digital music products can play the role of conveying domestic tourist destination intentions and cultural core, but their communication effect among foreign tourists is poor. Well-known digital music products

have a greater impact on domestic tourists than foreign tourists, and their promotion effect on the regional tourism economy will fluctuate cyclically over time. Therefore, this article proposes hypothesis H2: Well-known digital music products have a greater influence on domestic tourists than foreign tourists, and their long-term influence on the tourism economy may fluctuate cyclically.

In addition to directly promoting the development of regional tourism economy, well-known digital music products can also promote the development of tourism supporting industries, extend the tourism industry chain, and maximize tourism revenue. The tourism promotion effect of digital music products is mainly reflected in additional tourism consumption such as accommodation and catering. When the level of regional tourism production factors and industrial agglomeration reaches a certain level, factors such as technology, labor, and capital may overflow due to the polarization-trickle-down effect, thereby driving the development of the neighboring tourism economy. At the same time, tourists are more inclined to choose multiple adjacent destinations in one trip, and tourism practitioners in surrounding areas will also imitate the tourism products, services, management skills, etc. of advantageous areas, setting a model for the development of tourism in surrounding areas. effect and the catfish effect. Therefore, this article proposes hypothesis H3: Well-known digital music products can enhance regional tourism economy by stimulating market vitality, while also producing spatial spillover effects on the tourism economy of neighboring cities.

There are large differences in cultural diversity, tourism resource endowment and economic development levels among different regions in China, and the tourism economic effects of well-known digital music products may also be heterogeneous. Regional cultural tourism resources are an important prerequisite for well-known digital music products to exert tourism economic effects.

There is still uncertainty about the heterogeneous impact of the scale of urban development on them. The development of tourism in areas with large-scale urban development started early, but the profit-oriented characteristics of production factors caused by well-known digital music products may not be obvious enough in these big cities, and their cultural diversity and cultural tourism resource endowments are not obvious either. Advantage. On the contrary, unique natural conditions, long ancient culture, and unique ethnic customs create superior conditions for creating characteristic cultural tourism in the central and western regions or underdeveloped cities. Therefore, this article proposes hypothesis H4: The effect of well-known digital music products on tourism economic growth will be affected by external factors such as regional cultural diversity, cultural tourism resource endowment, and urban development scale.

## 2.1 Identification strategy

This paper adopts the idea of a multi-period double difference model. On the one hand, it creates differences before and after the release of destination songs. On the other hand, it creates differences between cities with or without corresponding destination songs. The estimation based on this double difference controls other synchronicities. The impact of policies and ex-ante differences between cities can better identify the net tourism economic effect of digital music products. This article uses whether the music product name contains a city name as the basis for screening destination songs, and uses the cumulative number of comments on destination songs on NetEase Cloud Music to identify well-known digital music products. At the same time, this article draws on the research ideas of distinguishing the popularity of digital platform movies, books, and travel products by the number of comments, and uses the method of comparing the relative popularity of songs on the platform for

supplementary screening to minimize sample bias and measurement error. This article uses the difference-in-difference method to group and identify policy effects based on inherent differences in the sample. Considering that urban tourism development will be affected by overall tourism planning and policies at the provincial level, this paper further considers province-time joint fixed effects in the robustness test section to capture the policy effects of each province changing over time. In terms of identifying the popularity of digital cultural products, this article selects the names of music products as the data source, uses whether the names contain city names as the basis for screening destination songs, and draws on the research ideas of distinguishing the popularity of digital platform movies, books, and tourism products by the number of comments. At the same time, this article uses the accumulated comments of destination songs on NetEase Cloud Music to identify well-known digital music products, and supplements the screening by comparing the relative popularity of songs on the platform. The mechanism of this awareness effect comes from the signaling theory of economics, and the number of comments represents the interactive popularity and spread of word-of-mouth.

Through the above music platform combined with Baidu search engine, we searched for the release years of well-known digital music products, and finally screened out 24 well-known digital music products with release times between 2005 and 2022. The relevant 24 cities formed a processing group, and the other cities formed a processing group. Control group ④. The basic regression model settings of this article are as follows:

$$Y_{it} = \beta_0 + \beta_1 \text{release}_{it} + \beta_2 X_{it} + \mu_i + \gamma_t + \varepsilon_{it} \quad (1)$$

In formula (1), the subscript  $i$  represents the domestic city, and  $t$  represents the year. The explained variable  $Y_{it}$  represents the tourism economy of region  $i$  in year  $t$ ,  $X_{it}$  represents a series of control variables that may affect the

regional tourism economy,  $\mu_i$  and  $\gamma_t$  represent regional and time fixed effects respectively,  $\epsilon_{it}$  is the random error term, and  $release_{it}$  is the core explanatory variable of this article. "Release of well-known digital music products", its coefficient  $\beta_1$  measures the impact of well-known digital music products on the regional tourism economy.

2.2 Variables and data

Table 1. Baseline regression results: adding control variables

Variables	( 1 )	( 2 )	( 3 )	( 4 )	( 5 )	( 6 )
	adtp	adtr	aitp	aitr	agtp	agr
release	1.156 *** (2.69)	3.683 *** (7.01)	-0.007 (-0.65)	0.004 (0.11)	1.169 *** (2.70)	3.708 *** (6.87)
Control variables	Control	Control	Control	Control	Control	Control
Time and regional fixed effects	Control	Control	Control	Control	Control	Control
Samples	4,215	4,215	4,215	4,215	4,215	4,215
R <sup>2</sup>	0.675	0.690	0.183	0.214	0.674	0.681

Note: The t values in parentheses are adjusted according to the city-level robust standard errors. \*\*\* represents significant at the 1% level, \*\* represents significant at the 5% level, \* represents significant at the 10% level, and below same.

This article selects per capita domestic tourism income (adtp), per capita domestic tourist times (adtr), per capita foreign tourism income (aitp), per capita foreign tourist times (aitr), per capita domestic and foreign tourist income (agtp), per capita domestic and foreign tourist times (agr) ) as the explained variable. In order to control the impact of other factors on the development of regional tourism economy, this article introduces a series of control variables into the model based on sorting out relevant literature and actual situations, mainly including: (1) taking into account the level of regional economic development, infrastructure construction To determine the impact of degree on regional tourism development, per capita GDP and per capita foreign direct investment are selected as proxy variables for regional economic development level, and per capita fixed investment and per capita annual electricity consumption are selected

as proxy variables for regional infrastructure construction; (2) Regional service and reception capabilities are an important factor in determining the development of local tourism. This article uses the development level of the tertiary industry, the number of travel agencies per 10,000 people and the financial proportion of cultural tourism expenses to reflect the regional service and reception capabilities; (3) Regional transportation capabilities It can directly affect the transportation convenience of tourist destinations. Therefore, this article selects the number of buses per 10,000 people at the end of the year and the number of taxis per 10,000 people at the end of the year to reflect the transportation capacity of the region; (4) The regional human and natural environment provides a strong support for the development of local tourism. Support, this article uses the number of books in public libraries per 10,000 people, the number of college students per 10,000 people, and the percentage of green coverage in built-up areas to measure the human and natural environment of a region. At the same time,  $release_{it}$  is 1, and  $release_{it}$  is 0 before release, which is the operational variable of the core explanatory variable of this article "well-known digital music product release".

This article uses panel data from 281 cities at prefecture level and above in China from 2005 to 2022. The data used comes from the China Economic Database, "China City Statistical Yearbook", "China Statistical Yearbook", "China Tourism Statistical Yearbook", and provincial and municipal statistical yearbooks and statistical bulletins, etc. . Due to space limitations, descriptive statistical results are not shown in this article. In order to eliminate multicollinearity problems, the author observed the correlation coefficients between variables and found that except for a few correlation coefficients in the range of 0.70~0.75, most of the correlation coefficients were less than 0.7, indicating that there is no serious multicollinearity problem in this article. The model

The settings are reasonable. And the maximum value of the variance expansion factor of each variable is 4.74, which is less than the empirical judgment value of 10, which once again proves that the empirical results of this article are not affected by multicollinearity.

### III. Analysis of empirical results

#### 3.1 Baseline regression results

Table 1 reports the baseline regression results of model (1). Columns (1) to (4) show that the release of well-known digital music products can significantly promote the increase in per capita domestic tourist arrivals and per capita domestic tourism revenue in the region, but has no significant impact on per capita foreign tourist arrivals and per capita foreign tourism revenue. Columns (5) and (6) show that well-known digital music products have a significant positive effect on per capita domestic and foreign tourist arrivals and per capita domestic and foreign tourism income. This is consistent with the basic fact that most of the domestic tourism market is domestic tourists, and also proves that This highlights the importance of the country actively promoting the “going out” of cultural products. H1 and H2 were partially verified.

#### 3.2 Robustness check

##### 3.2.1 Parallel trend test

The premise of using the difference-in-difference method is to meet the parallel trend assumption, that is, the changing trends of urban tourism economic development in the treatment group and the control group should remain parallel before the release of well-known digital music products. Therefore, this article uses the event analysis method to test the parallel trend hypothesis and estimates the model as follows:

$$Y_{it} = \alpha_0 + \beta_k \text{release}_{ik} + \alpha_1 X_{it} + \mu_i + \gamma_t + \varepsilon_{it}$$

In formula (2),  $\text{release}_{ik}$  represents a series of dummy variables, indicating the  $k$ th year of the

release of well-known digital music products. Specifically, when  $k=0$ , it means the year when the digital music product related to city  $i$  was released, when  $k=1$ , it means the first year after the digital music product was released, when  $k=-1$ , it means the year before the digital music product was released, and so on. And so on. The meaning of other variables is the same as that of formula (1). Taking  $k=0$  as the base period, if the estimated result of the coefficient  $\beta_k$  in the  $k<0$  interval is not significant, that is, the null hypothesis that  $\beta_k$  is 0 is not rejected, which means that the tourism economic development between the treatment group and the control group is consistent with the parallel trend hypothesis. As shown in Figure 1, the estimation results of the  $k<0$  interval coefficient  $\beta_k$  are not significant within the upper and lower 95% confidence intervals. That is, before the release of well-known digital music products, there is no significant change trend in the development of the tourism economy between the experimental group and the control group. difference. Furthermore, from the perspective of the dynamic effect in the  $k>0$  interval, the estimated results of the coefficient  $\beta_k$  are all significantly positive, that is, digital music products have significantly promoted the domestic urban tourism economy. This promotion effect peaked in the 3rd and 9th years respectively and then showed a downward trend. Therefore, H2 is verified.

##### 3.2.2 Placebo test

Although time effects and regional effects were controlled in the previous identification, there is still a concern that the empirical significance of this article may come from some unobservable factors. To this end, this paper constructs a placebo test to determine whether the tourism economic effects of well-known digital music products are caused by unobservable factors. Specifically, according to the distribution status of well-known digital music products in 281 cities, treatment groups were randomly generated and

repeated 1,000 times, thereby generating 1,000 "fake" regression coefficients. Theoretically, these "spurious" regression coefficients should be close to 0. According to the results of the placebo test, it can be seen that the regression coefficients are distributed near 0 and obey the normal distribution. Only a very small number of regression results are greater than the "correct" coefficients in this article. The results are in line with the expectations of the placebo test, which indicates other unobservable factors. There is no significant impact on the main estimation results of this article. The dynamic effect and placebo test results also further support the theoretical analysis of this article. Due to differences in cultural acceptance and tourism demand, well-known digital music products have not had an impact on international inbound tourists.

### 3.2.3 Adding province-time fixed effects

Although well-known digital music products have largely avoided mutual interference or network effects between cities due to their random release characteristics, considering the large differences in the formulation and introduction of cultural tourism policies in the provinces to which each city belongs, these policies may have different impacts on the tourism economic development of various cities. In order to control the characteristics of provinces that change over time and obtain more reliable estimation results, this article adds province-time fixed effects to the baseline regression. There is no significant difference between the regression results and the previous results in Table 1, and the conclusion of this article still holds.

### 3.3 The spatial spillover effect of digital music products on regional tourism economic development

The previous article confirmed the impact of well-known digital music products on regional tourism economic development. According to the

theoretical analysis of the article, it can be seen that ignoring the spatial correlation between regions may cause estimation bias. In order to make up for this shortcoming, this paper first adopts the previous article which has confirmed that ignoring the spatial correlation between regions may cause biased estimation of the impact of digital music products on regional tourism economic development. In order to make up for this shortcoming, this paper uses the global Moran's I index to conduct statistical tests of spatial correlation, and selects the space-time double fixed space Durbin model based on the results of LM and Hausman tests. Through the simplified test of the spatial Durbin model, this article determines that SDM cannot be transformed into a spatial lag model and a spatial error model. Due to space reasons, the specific process is not shown in the article.

After passing the spatial correlation and model applicability tests, this paper incorporates the variable spatial interaction term into SDM based on equation (1) to further examine the spatial spillover effect of digital music products on regional tourism economic development.

$$Y_{it} = \beta_0 + \rho WY_{it} + \beta_1 release_{it} + \beta_2 Wrelease_{it} + \beta_3 X_{it} + \beta_4 WX_{it} + \mu_i + \gamma_t + \varepsilon_{it}$$

In formula (3),  $\rho$  represents the spatial autocorrelation coefficient, and  $W$  represents the spatial weight matrix. In order to improve the robustness of the empirical results, this paper uses both the geographical distance matrix and the spatial adjacency matrix for spatial estimation.

Since the spatial interaction term coefficient does not reflect the true marginal impact well, testing spatial spillover effects only through simple point estimates will produce erroneous estimation results. Therefore, this paper also needs to use the partial differential method to decompose the spatial effect of SDM into direct effects, indirect effects and total effects, so as to determine the impact of independent variables in a certain region on dependent variables in this region and other

regions.

Table 2 shows the estimation results of the two matrices under SDM, in which the explained variables are per capita domestic tourism visits and per capita domestic tourism income. The results show that both the spatial interaction term coefficient and the spatial autoregressive coefficient of release are significantly positive, indicating that the sample city not only has the exogenous promotion effect of well-known digital music products in space, but also has the endogenous interaction effect of tourism economic development. Further observation shows that both the direct effect and the indirect effect under the two matrix structures are significantly positive, which shows that well-known digital music products not only improve the level of tourism economy in the region, but also promote the development of tourism economy in neighboring regions. Therefore, H3 was partially verified.

Table 2. Spatial spillover effects of digital music products

Spatial matrix type Variables	Geographic distance		Adjacency distance	
	matrix		matrix	
	adtp	adtv	adtp	adtv
release	0.075*** ( 5.46 )	0.065*** ( 5.48 )	0.089*** ( 6.03 )	0.754*** ( 3.99 )
W×release	0.408** ( 2.12 )	0.638*** ( 4.00 )	0.067** ( 2.43 )	0.676* ( 1.84 )
ρ	0.611*** ( 7.34 )	0.348*** ( 2.88 )	0.052** ( 2.47 )	0.063*** ( 3.01 )
Direct effect	0.079*** ( 5.94 )	0.069*** ( 6.03 )	0.091*** ( 6.42 )	0.756*** ( 4.14 )
Indirect effect	1.253** ( 1.97 )	1.081*** ( 3.20 )	0.074*** ( 2.57 )	0.738* ( 1.90 )
Total effect	1.332** ( 2.09 )	1.150*** ( 3.40 )	0.165*** ( 4.93 )	1.494*** ( 3.41 )
Control variables	Control	Control	Control	Control
Samples	4,155	4,155	4,095	4,095
R <sup>2</sup>	0.674	0.615	0.598	0.627

### 3.4 Heterogeneity analysis

#### 3.4.1 Regional cultural diversity perspective

Currently, few studies focus on the impact of regional cultural diversity on urban tourism economic development. Therefore, this article draws on the previous ideas of studying the impact of

regional cultural diversity on economic development, uses ethnic diversity and dialect diversity to measure regional cultural diversity [40], and then verifies whether the promotion effect of well-known digital music products on regional tourism economy is due to There are significant differences due to regional cultural diversity. In terms of measurement methods, this article chooses the Herfindahl index to measure ethnic and dialect diversity:  $ED = 1 - \pi_{ji}(2)$ ,  $DD = 1 - S_{ji}(2)$

In Formulas (4) and (5), ED and DD represent ethnic diversity and dialect diversity respectively, and their values are between 0 and 1. The larger the value, the higher the degree of ethnic and dialect diversity.  $\pi_{ji}$  and  $S_{ji}$  respectively represent the population proportion of ethnic group  $j$  in city  $i$  and the proportion of population using dialect  $j$ , and  $N$  represents the number of ethnic categories and the number of sub-dialects respectively. Among them, the measurement of dialect diversity is based on the "Chinese Dialect Dictionary", and the relevant data are organized using the practices of Xu Xianxiang and others [54]. The estimation results are shown in Table 3. The explained variables are domestic tourist arrivals per capita and domestic tourism income per capita. The cross-terms of columns (1) to (4) show that the higher the ethnic diversity and dialect diversity, the more obvious the promotion effect of digital music products on the regional tourism economy.

#### 3.4.2 Perspective of tourism resource endowment

In order to verify the impact of regional cultural tourism resource endowment on the tourism promotion effect of digital music products, drawing on relevant research, the number of historical and cultural scenic spots in World Cultural Heritage (CH) and 5A-level scenic spots (5A) was selected as the proxy variable of tourism resource endowment. Both are initiated and implemented by authoritative organizations at home and abroad. World cultural heritage represents the highest level of cultural protection and inheritance, while 5A-level historical



and cultural scenic spots also represent China's high-quality cultural tourism resources. Both have extremely high cultural value 3.

Through the analysis of the effects of digital music products on the tourism economy, the following conclusions are drawn: (1) Digital music product release: The release of digital music products generally has a positive impact on the tourism economy, and the coefficients in different models are all positive value. For example, *adtr2* (1.022), *adtr3* (2.308) and *adtr8* (2.354) show statistically significant increases in tourism economic activity. (2) Interaction effect: education (ED) and release: The interaction effect between education and digital music product release is significantly positive, especially in *adtr2* (0.228), which is highly statistically significant ( $p < 0.01$ ). (3) Domestic demand (DD) and release: The interaction effect between domestic demand and digital music product release also shows a significant positive effect, such as *adtr5* (0.047) and *adtr6* (0.064). (4) Cultural heritage (CH) and release: The interactive effect between cultural heritage and digital music product release shows a positive impact, especially in *adtr6* (0.033) and *adtr8* (0.069) (5) 5A-level scenic spots (5A) and release: The interaction effect between 5A-level scenic spots and digital music product releases is significantly positive, especially in *adtp7* (0.577) and *adtp8* (0.857), indicating that tourism activities in these scenic spots increased significantly after the release of digital music products. (6) 0 control variables: All models control various factors including time and region fixed effects to ensure the robustness of the results. (7) Model fitting degree: The R-squared value of the model is between 0.67 and 0.72, indicating that the model has strong explanatory power on tourism economic results. To sum up, the research shows that digital music products have a positive impact on the tourism economy, and the impact is more significant through the interactive effect with education, domestic demand, cultural heritage and important scenic spots.

### 3.4.3 Perspective of urban development scale

According to the previous theoretical analysis, there are many uncertainties in the impact of urban development scale on the main effect of the article. In order to answer this question, this article refers to the "China Cities Commercial Charm Ranking"<sup>①</sup> to classify and integrate 281 cities at prefecture level and above [55], and merge first-tier cities and new first-tier cities. The sub-sample regression results in Table 3 show that well-known digital music products do not have a significant promoting effect on the tourism economy of second- and third-tier cities. Compared with first-tier and new first-tier cities, both coefficients and significance indicate that fourth- and fifth-tier cities are more conducive to the role of digital music products in the tourism economy. This may be because first-tier and new first-tier cities have good tourism public services and mature tourism market advantages, while fourth- and fifth-tier cities not only have the advantage of being latecomers in the development of cultural tourism resources, but also have the advantages of rural tourism, red tourism, and ethnic tourism. With rapid development, digital music products can provide a channel for the public to understand the sinking tourism market. Therefore, H4 is proved. The above results show that in cities with high cultural diversity, rich cultural tourism resources, and small development scale, the tourism economic growth effect of digital music products is more significant. This means that the release of well-known digital music products is conducive to promoting coordinated regional economic development. This has also verified to a certain extent the effectiveness and correctness of the country's use of cultural tourism integration to promote common prosperity.

Table 3. Tourism economic effects of digital music products

Variables	First-tier and new first-tier cities		Second-tier cities		Third-tier cities	Fourth-tier cities		Fifth-tier cities		
	adtp	adtr	adtp	adtr	adtp	adtr	adtp	adtr	adtp	adtr
release	1.387** ( 2.12 )	1.677** ( 2.19 )	0.733 (0.86)	-0.306 (-0.28)	0.701 (0.92)	-2.14** (-2.02)	2.556* (2.55)	11.918 *** (8.59)	7.191* ** (2.17)	11.897 *** (4.35)
Control variables	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
Time and regional fixed effects	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
Samples	285	285	450	450	1050	1050	1245	1245	1185	1185
R <sup>2</sup>	0.84	0.91	0.79	0.82	0.73	0.75	0.68	0.62	0.72	0.69

## IV. Conclusions

### 4.1 Conclusion

Digital technology is becoming an important goal and direction for the high-quality development of the cultural tourism industry, and digital culture is also helping to upgrade the consumption of the tourism industry [57]. Most previous studies used theoretical or case study methods to examine the importance of music culture to the tourism system from the perspective of soundscape tourism [14]. However, these studies ignore the important role that digital music products play in the development of regional tourism economy in the Internet era, and only focus on the role of local traditional music in destination landscape construction and satisfying tourist experience. This article starts from the perspective of well-known digital cultural products that greatly affect the development of tourism economy. It starts from the perspective of digital music products, based on panel data of 281 cities in China from 2005 to 2022, and uses online music platforms to manually collect and screen digital music products. , using multi-period double

difference model, spatial Durbin model, mediation effect model, etc., to examine the impact and internal mechanism of digital music products on regional tourism economic growth in multiple dimensions.

The main conclusions are as follows: First, well-known digital music products can play a positive role in promoting the local tourism economy, and its impact is more significant than ordinary digital music products. The main conclusions of this article still hold true after a series of robustness tests such as parallel trend testing, placebo testing, and PSM-DID. Second, well-known digital music products can significantly promote the development of domestic tourism economy, but have no significant impact on the international tourism economy. Third, the mechanism analysis shows that well-known digital music products promote the development of regional tourism economy by stimulating the vitality of the regional tourism market; the spatial spillover effect analysis shows that well-known digital music products can not only promote the development of local tourism economy, but also stimulate the development of neighboring cities. tourism economy. Fourth, heterogeneity analysis shows that in cities with higher regional cultural diversity and tourism resource endowment, the tourism economic promotion effect of well-known digital music products will be more significant. Compared with first-, second- and third-tier cities, fourth- and fifth-tier cities are more conducive to their tourism promotion effect.

### 4.2 Research limitations and prospects

There is room for further improvement and improvement in this article. Given the limitations of the measurement methods and data, first, the screening of well-known digital music products only looked at the number of reviews. If sentiment analysis can be performed on review content or data can be mined through deep learning, and then more fine-grained research data can be used, it

will be helpful to examine the tourism economic effects of digital music products from a more microscopic perspective. Secondly, there are certain differences in the degree to which different audience groups receive and understand music signals. If the influence of audience group characteristics can be controlled, more accurate estimation results will be possible. Finally, empirical research that integrates digital cultural products and tourism economy into the same framework is still in its infancy. This article makes use of manually collected and screened data from digital music platforms to conduct useful attempts at theoretical exploration and empirical level. Future research can further enrich data sources by combining in-depth interviews, primary data surveys and other methods to explore the impact of different forms of digital cultural products on the tourism economy.

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