

Research on the Development Status and Countermeasures of China's Rural Tourism in the Post-epidemic Era

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ABSTRACT

Rural tourism is a significant part of tourism and essential in promoting rural revitalization. But now, rural tourism has become one of the industries most affected by the epidemic. So the paper chooses to study the factors affecting rural tourism development under the epidemic. This paper established the COVID-19 pandemic as the independent variable, rural tourism revenue as the dependent variable, and set up some control variables: local urbanization level, local industrial structure, local economic openness, and local economic growth. Then it finds secondary data to form data sources and uses EVIEW and SPSS to conduct the regression analysis. The conclusion is that COVID-19 has a seriously negative impact on rural tourism development in China. This article provides ways to improve rural tourism enterprises' development, such as developing online tourism. At the same time, this article can make more people pay attention to rural tourism. So the rural tourism income may be improved, which is helpful to rural revitalization. It can make readers better understand the development status of rural tourism under the epidemic situation and enable enterprises to make personalized improvements based on the development status. It also conveys the idea of supporting rural tourism development to the government. Academically, this article takes the epidemic situation as an independent variable for qualitative analysis, which is rare. It also provides ideas for scholars who want to study the epidemic's impact on rural tourism in the future.

Keywords: China, Rural tourism, Development status, Countermeasure

1. INTRODUCTION

1.1. Research Background

Tourism is one of the industries which are most affected by the epidemic. The tourism industry's latest data is seriously affected by the diseases, which shows that it has lost about \$3 million in its daily activities, with an average loss of 18 billion yuan per day. The national tourism industry has been exhausted by the virus. Based on the data of the number of tourists profit in China during the Spring Festival in 2019, It is speculated that the tourism industry will lose 1.7 trillion yuan due to the epidemic. The number of Chinese tourists and the growth rate of tourism revenue decreased by 56% and 69% respectively. In terms of

rural tourism, the number in China decreased by 60.9% to 1.207 billion from January to August 2020.

We choose to study the factors affecting rural tourism development because tourism is an essential industry in China. Through tourism, people can broaden their horizons, improve their health, increase their knowledge and rest physically and mentally. The development of tourism is based on development level of the economy, but also restricted by it. At the same time, it directly promotes the development of the economy. With the development of China, tourism has increasingly shown its essential position in the Chinese economy. Rural revitalization is essential for China to achieve shared prosperity, so we need to pay more attention to the rural industrial structure and economic development. Tourism is a significant industry in rural

areas. Tourism has not only been more widely seen as an effective means of addressing the socio-economic problems of rural areas in general and the agricultural sector in particular [1]. The countryside attracts tourists by relying on their traditional culture and regional individualization. But in recent years, being affected by the epidemic, rural tourism development has declined significantly, so we want to analyze the factors affecting its development and improve it.

1.2. Literature Review

Lin et al. examine the impacts of rural tourism on ecological environments and local developments in Gukeng village of Fujian, China, and suggest improving the status quo of rural tourism. They found that rural tourism development provided more job opportunities, improved infrastructure construction, and attracted investments from enterprises on leisure facilities. However, they pointed out that rural tourism development leads to increasing living costs in the locality and the lack of workforce for security and environmental sanitation maintenance. The influx of tourists occupied the public resources of residents [2].

Li et al. used discourse analysis to delve into the impacts and the future development of urban and rural tourism through collecting and analyzing data on the high-frequency word in news reports related to tourism during the pandemic. They found that the view of all stakeholders on the impact of pandemic and tourism development trends, including governments, experts, tourists, and scenic area managers, was generally positive. They also summarized four critical junctions in the post-pandemic recovery of urban and rural tourism in China [3].

Wang analysed the factors influencing the development of rural tourism and their relationships. His finding suggests that the distance between the two-place has the most significant influence on other factors and is difficult to change; Residents' satisfaction and acceptance of rural tourism are the outcome factors that are most vulnerable to other factors and change. According to the causal relationship among 21 critical influencing factors, this paper constructs the causal relationship model of factors influencing rural tourism development, which provides a reference for the development and management of rural tourism [4].

The previous papers about the tourism industry dug into its impacts on locality and analysed the main factors influencing tourism development. The established national-level or worldwide models are too broad to apply to China's specific rural tourism industry.

Few models take governments' policies into their factor choices during and after the pandemic. In response to COVID-19, Chinese governments conduct a

series of public health policies, including the lockdown of epidemic areas, mandatory quarantine to close contacts, health codes. Due to the pandemic and the strict control policies, the number of domestic tourists in China decreased 52.1% during 2020, decreasing 52.1% [5].

1.3. Research Framework

This study aims to analyze the factors affecting rural tourism under the epidemic. The possible innovation is few previous studies on rural tourism development after the epidemic. They do not specifically consider the impact of the epidemic on these variables. Therefore, our research will emphasize this point and maintain the preciseness of the research to make it valuable.

First, we will establish COVID-19 pandemic as the independent variable, rural tourism revenue as the dependent variable, and find some control variables that we think are important. These variables usually have two common characteristics. One is that they are affected by the epidemic, and the other is related to rural tourism development.

Then, we summarize the variables and find methods to quantify them one by one. The specific data will be obtained through the National Bureau of statistics.

After that, we will use the multiple linear regression method on Eviews, SPSS, and other software to analyze the impact of each variable on rural tourism development. Finally, we will summarize the results. We will analyze its practical factors and discuss feasible improvement schemes to further develop rural tourism under the epidemic situation.

2. METHOD

This paper will investigate the development of Chinese rural tourism after covid-19. We found that there are 6 variables: Rural Tourism Revenue, Covid-19 Pandemic, Local Economic Growth, Local Urbanization Level, Local Economic Openness, and Local Industrial Structure.

The first is to find the data related to the variable, and we will search it on the internet. Rural tourism Revenue is the dependent variable of this study, which can best represent rural tourism development. This study will obtain this data by querying secondary data. If there is no direct data, it will be replaced with similar data representing rural tourism revenue. COVID-19 is mainly related to the severity of the epidemic and the prevention and control measures of the government.

The epidemic's severity will affect tourists' willingness to travel, thus affecting tourism income. The government's prevention and control measures in China are mostly like covid test and healthy certificate. As an

important economic activity, tourism would undoubtedly be closely tied to this general market-oriented policy, meaning that tourism would be further opened to foreign investors. This also gradually geared China to receive Chinese nationals. Thus, the tourism policies formulated in this period were mainly based on achieving these two objectives as identified in the “National tourism plan 1986-2000” [6]. The Local Economic Growth is related to the local environment infrastructure construction. The environment and the perfection of infrastructure can significantly impact tourism revenue. The Local Urbanization Level is also one of the factors affecting rural tourism income. The improvement of rural urbanization will increase income and rapid economic growth in this area. The Local Economic Openness can also have an impact on tourism income. Generally speaking, the more open the local economy is, the wider the market will be, and the higher the income. The local industrial structure is related to industrial diversification, affecting the local income.

Then the paper will use regression analysis to find the relationship between the variables. Even where no sensible physical relationship exists between variables, we may wish to relate them by some sort of mathematical equation. While the equation might be physically meaningless, it may be extremely valuable for predicting the values of some variables from knowledge of other variables, perhaps under certain stated restrictions [7]. The regression analysis determines the causal relationship between variables by specifying dependent variables and independent variables, establishing a regression model, solving various parameters of the model according to the measured data, and then evaluating whether the regression model can fit well with the measured data. If it can be well fitted, it can be further predicted according to the independent variables. This paper will use this method to test the epidemic’s impact on rural tourism revenue.

3. RESULT

3.1. Hypothesis

According to the Ministry of Culture and Tourism of the People’s Republic of China, domestic tourism revenue was 2.23 trillion yuan, down 61.1% year-on-year in 2020. Based on the downward trend in tourism revenue in 2020, this study hypothesizes that the pandemic also significantly impacted rural tourism revenue.

3.2. Indicator Description

3.2.1. Rural Tourism Revenue- INC

Since rural tourism revenue is unavailable, this paper uses total rural income instead. Since total rural income varies significantly between provinces and cities, this paper adopts the ratio between total rural income and GDP (total rural income/ GDP) to represent the income level of rural tourism. In this way, the development of rural tourism is shown more visually.

3.2.2. COVID-19 Pandemic- COVID

Since the outbreak of COVID-19 spread in 2020, this paper chooses the dummy variable COVID, representing 1 in 2020 and 0 otherwise.

Considering that many factors can influence rural tourism revenue, this model includes the following variables as control variables:

3.2.3. Local Economic Growth- GDP

Economic growth refers to the increase in the production of economic goods and services comparing one period to another. GDP, GDP per capita, GDP growth rate, and the GDP per capita growth rate are all common indicators of economic growth. This article adopts the GDP growth rate since it indicates economic growth.

3.2.4. Local Urbanization Level- URBAN

Urbanization refers to transforming the rural population into the modern population. The degree of urbanization plays an essential role in bridging the urban-rural divide. In rural regions, urbanization leads to higher income and quicker economic growth. The ratio of the urban population to the overall population is used to indicate the urbanization rate in this study.

3.2.5. Local Economic Openness- OPEN

The degree of local trade development is represented by local economic openness; in general, the higher the economic openness, the more import and export commerce, the faster the economic development. The import and export ratio to GDP is used in this research to measure the degree of economic openness in a particular region.

3.2.6. Local Industrial Structure- IND

The local industrial structure represents the income composition of various cities and provinces. The share of the tertiary sector is used to depict the industrial structure in this article.

The specific variables in table 1 are selected as follows:

Table 1. Summary of the specific variables

Type	Name	Label	Description
Dependent Variable	Rural Tourism Revenue	INC	See Above
Dependent Variable	COVID-19 Pandemic	COVID	1 in 2020, 0 otherwise
Control Variable	Local Urbanization Level	URBAN	Urban Population/ Total Population
Control Variable	Local Industrial Structure	IND	Tertiary Sector Share
Control Variable	Local Economic Openness	OPEN	Total Imports and Exports/ GDP
Control Variable	Local Economic Growth	GDPG	The Growth Rate of GDP

3.3 Model Description

This paper developed a static panel data model based on the selected indicators between the pandemic’s impacts and rural tourism revenue.

The following multiple regression model was developed to test the hypothesis above:

The p-th province and the q-th year, respectively, are denoted by p and q in the regression model. σ^2 denotes individual variances in the cross-section of provincial units that do not change over time, and ϵ_{it} denotes random error term. β_1 denotes the coefficient of the COVID-19 pandemic. β_2 represents the decrease of rural tourism income after the epidemic, which means that the pandemic negatively impacts the rural tourism industry.

3.4 Data Description

This paper selected 31 provinces and cities in China as samples and related data from 1995 to 2020, where 733 valid sample points were obtained after removing the missing values.

This paper used EXCEL to pre-process the data and Stata to analyse data.

The data in this paper were obtained from the China Statistical Yearbook and the WIEGO database.

3.5 Empirical Data Analysis

3.5.1 Data Summary

Table 2. Basic Information about Each Variable

Variable	Observations	Mean	Standard Deviation	Max	Min
INC	733	0.256	0.0726	0.545	0.114
COVID	733	0.0423	0.201	1	0
URBAN	733	0.497	0.167	0.896	0.172
IND	733	0.429	0.0945	0.839	0.254
OPEN	733	0.283	0.355	2.043	0.00722
GDPG	733	0.128	0.0726	0.371	-0.280

Table 2 shows that the mean rural income as a percentage of GDP is 0.256, implying that rural tourist revenue makes up a modest share of local GDP. Furthermore, the mean urbanization rate is 0.497, implying that China's urban population accounts for almost 49.7% of the overall population. Furthermore, the mean value of the industrial structure is 0.429, suggesting that tertiary industry contributes roughly 42.9 percent of GDP. Furthermore, the mean value of local economic openness is 0.283, reflecting a 28.3 percent import-export ratio. Furthermore, the mean economic growth rate is 0.128, showing that the local economy is expanding rapidly.

3.5.2 Regression Analysis

This paper first analysed the correlation between total rural income and the COVID-19 pandemic. From Table 3, the R-squared value in this simple regression shows that the COVID-19 pandemic explains nearly 47% of the variation of total rural income. Also, the P-value is less than 0.01, indicating that this variable is significant at a 1% significance level. Therefore, the COVID-19 pandemic should be kept in the multiple regression model.

Table 3. Correlation between Total Rural Income and COVID-19 Pandemic

INC	Coefficient	Robust Std. Err.	t	P> t	[95% Conf. Interval]
COVID	-0.096	0.204	-4.71	0.000	-0.136 - 0.560
Constant	0.360	0.186	19.29	0.000	0.323

				0.396
Number of Observations	F (25,707)	Prob>F	R-square	Root MSE
733	18.50	0.0000	0.4736	0.05363

Based on the above conclusion, this paper conducted stepwise regression analysis. Column (1) represents the regression result between total rural income and the COVID-19 pandemic variable. In addition to the COVID-19 pandemic, column (2) adds two more variables, the industrial structure and urbanization rate. Lastly, column (3) adds all control variables to Column 2. The results are as shown in Table 4.

Table 4. Stepwise Regression Analysis Results

Variables	m1 INC	M2 INC	M3 INC
COVID	-0.096*** (-4.713)	-0.057*** (-2.858)	-0.114*** (-4.740)
URBAN		-0.216*** (-12.202)	-0.205*** (-8.003)
IND		0.046* (1.805)	0.068*** (2.922)
OPEN			-0.012 (-1.398)
GDPG			-0.207*** (-5.735)
Constant	0.360*** (19.291)	0.434*** (22.622)	0.480*** (20.352)
Observations	733	733	733
R-squared	0.474	0.640	0.657
Year	Yes	Yes	Yes

(Robust t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1)

The table above shows that the COVID variable is significant at the 1% significance level in all three columns and has a negative coefficient, indicating that rural tourism revenue decreased significantly after the outbreak. Specifically, the coefficient of -0.114 indicates that rural tourism revenue as a percentage of GDP decreases by 0.114 units after the outbreak.

4. DISCUSSION

Rural tourism is a new industry that combines primary industry with tertiary industry. Rural tourism is based on agriculture, aiming to develop rural areas and serve urban residents by providing various services. Rural tourism can develop landscape resources in the urban fringe to promote eco-tourism and to realize the

coordinated development of the cities and countryside [8].

The occurrence of Coronavirus in China has significant impacts all across the globe. Due to this virus threat, outside people fear mixing up with the Chinese population. The global tourists have canceled their programs to visit China, and the Chinese tourists are banned from visiting overseas nations. The rapid spread of the Coronavirus in China has stopped the normal life of the people in China. This fear has impacted the tourism industry of the country domestically and internationally. This has affected the economy of the country to a large extent. The intensification of COVID-19 will long-term impact China’s tourism industry [9].

Because the popular covid in 2020 is strongly influenced by many industries, the income of tourism decreases to be compared with the same period of the year before. It falls about 61.1%, which is a huge percentage of income go the tourism, it is a huge strike to the economy. It also shows that the covid has a negative influence on the tourism economy, by using the research method, regression model, and the GDP during the covid pandemic is decreased for big amount.

There are some solutions of tourism to attain the purpose, fix the economy, and save tourism. We should clear that tourists would like to stay at home because they are afraid of covid. In other words, the scenic area should make sure their policy, to keep the tourist safe. For instance, they can ask tourists to come with their covid test. It should demonstrate that this tourist is negative and safe doesn’t have an infection. The social effect of the “safety” policy is the best. From the perspective of combination policies, the simultaneous release of “safety” policies and “economy” policies have the greatest social impact, dramatically accelerating the recovery of the cultural and tourism industry [10].

At the same time, they should use alcohol to spray on the public place where the tourist likes to go, as the seat under the tree or somewhere else used to relax and stay. There are still many kinds of policy, which will positively support tourism development. It will lead to the tourist obeying the rule of the scenic area and will be better and easier to control the area during the covid. The means to save the tourism not only of the safety policy but also can hold some activity. For example, the scenic area can cut off approximately 20% of the ticket or some other activity program. The tourists who think the covid is a potential threat to their safety, after the tourism policy, might consider about to go travel. However, another factor for them to stay at home is the harm of the covid not merely in the tourism, civil of the country will affect their income. Therefore, the discount activity that made by scenic will let them eliminate their scruple. In this way, the scenic area’s action can promote the number of tourists and the consumption

related to the GDP. Suppose the solution above still can not attain some assistance. In that case, the government can increase their spending on tourism, help them overcome the fiscal crisis, or do some newly developed way-online visiting, which can change the situation. For tourists to gather together after Huangshan scenic spot opened, although the government issued a series of measures to control the flow, 37.96% of the population held a negative mood for this event, which is more than the number of people with positive emotions. It indicates that government departments should prepare for emergency measures and security measures before opening a scenic spot, rather than wait and solve problems when they arise. Measures of the scenic spots in the country mainly include “online booking”, “flow restriction”. Then, 48.99% of the people show positive emotions, which are far more than negative emotions, indicating that the implementation of scenic spot measures in various places has a significant effect, giving people enough sense of safety during the trip. The negative comments on the “2.5 days off” policy reached 23.18%, while the positive comments reached 37.49% [10].

4.1 Characteristics of tourism economic development under the impact of the epidemic

Under the impact of COVID-19, the development characteristics of China’s tourism industry have also changed dramatically, from the transformation of travel modes to the choice of destinations. Although this year’s tourism industry has faced unprecedented challenges, there is also hope for new transformation in the face of great challenges.

4.1.1 The epidemic has changed residents’ willingness to travel

In the post-epidemic period, the Chinese people's willingness to travel will be reawakened. Although tourism has returned since the shutdown, the virus has had an impact on travelers' willingness to go. Tourists who want to travel but also want to get out of the house require a period of time and psychological adjustment. As a result, after the outbreak, rural tourism businesses should provide appropriate tourism products based on tourists' willingness and travel habits, and change product supply more swiftly in response to market demand.

4.1.2 The epidemic has changed travel patterns

Self-driving travel is likely to dominate the post-epidemic tourism sector. The old public transportation strategy, which mostly involves high-speed rail travel, is increasingly giving way to self-driving vehicles. The pandemic has altered the way people travel and rent cars, with consumers becoming more price and safety

conscious. To fulfill demand, the travel platform started charging a few yuan per day to hire a car and drive, and the service and the platform together created a safe travel guarantee. Governments can help to promote and support this change. However, to ensure that the travel supervision is not neglectful, do a good job during the associated travel monitoring and control.

4.1.2 Rural Tourism has increased investment in health and safety

The tourism industry will embark on a "health revolution" in the aftermath of COVID-19. In the post-epidemic age, rural tourism may promote health and safety education, increase health and safety awareness and protection, and develop long-term health awareness and behavior. The rural tourism industry, which has been affected by the disease, will surely speed up the process of elimination or upgrade. In the field of information technology, our country has achieved significant strides. The tourism industry, like the rest of society, has faced a digital challenge in the fight against the epidemic. The travel industry must transform these emergency measures into long-term change agents.

4.2 Countermeasures for the epidemic crisis in China’s rural tourism industry

4.2.1 Guide industries to help each other to save themselves

One of the industries most badly impacted by the epidemic is rural tourism. It has an impact on tourist-related industries as well as the economies of all regions, particularly local governments, with rural tourism serving as a cornerstone. Fortunately, tourism is also the industry that recovers and recovers the most quickly. To summarize, the government can enact applicable rules and regulations, such as tax reduction programs and policies that encourage people to work in a reasonable manner. Certain social welfare funds can also be used to assist businesses in getting through difficult times. The government should also lead the various tourism-related businesses in assisting one another and facing unexpected obstacles together. Tourism associations play an important role as intermediary groups between government and business, and their importance cannot be overstated. The association may do research into the tourism business, promote industry experience, and offer advice. The association can protect the industry's sound development by resolving any industry conflicts.

4.2.2 Establishing and improving laws and regulations and contingency plans for public health emergencies

The global tourism industry more than once by the impact of the public health event, SARS, MERS, Chandrasekhar, ebola tourism cause serious impact on the world. Therefore the Chinese government should accumulate experience, introduce a crisis when the backup plan, improve the ability to respond to and receive the impact of the public health events around the world countries. Improve the corresponding infrastructure construction.

4.2.3 Attaching importance to the theme of health tourism

With the improvement of economic level and the change of life concept, people are paying more and more attention to health. After this incident, people's attention to health will be raised to a new level. If enterprises can take this opportunity to launch and upgrade health tourism products, it will be a wise choice.

5. CONCLUSION

5.1 Summary main findings

This paper uses the method of regression analysis to study the factors affecting rural tourism among epidemic situations and then establishes a model. In the research, it can be quickly concluded that the impact of Covid-19 on rural tourism income is heavy. After the epidemic outbreak, the proportion of rural tourism income in GDP decreased by 0.114 units, which is extremely significant. This means that if the epidemic does not end in a short time, rural tourism will become more and more difficult under the condition of natural development. Therefore, we must improve rural tourism through external support and internal innovation.

This paper considers that government should strengthen epidemic prevention measures in terms of external support. And the government also should provide economic support to the rural tourism industry to help it survive the difficulties. In terms of internal innovation, this paper also describes the development status of rural tourism so that rural tourism enterprises can have a clear understanding of their situation. The paper provides them with some solutions that can be less affected by the epidemic and help them make decisions, such as developing online tourism.

The contribution of this paper in the academic is to study the impact of the epidemic on rural tourism, which is not mentioned in much other literature. At the same time, revitalizing the countryside is a major way to develop the economy of China. Now that the concept of common prosperity is widely emphasized, this paper can make the reader better understand the development of rural tourism and make rural tourism more valued in society.

5.2 Limitations and Future studies

This paper still has some limitations. In finding data, we use secondary data rather than primary data. Maybe other research will obtain primary data through surveys and interviews in the future to make the data source broader and the research more accurate. Secondly, this paper does not directly find the data of rural tourism income, and this data is not easy to obtain through questionnaires, so this study can only find other similar data instead. Maybe some research will find other ways better to replace rural tourism income data in the future.

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