

Research on the Development of Tourism Economy in Border Areas

Taking Pingxiang City of Guangxi as an Example

Gang Deng^{1,*}

¹School of Economics, South-Central University for Nationalities, Wuhan, Hubei, China

*Corresponding author. Email: 164852092@qq.com

ABSTRACT

This paper first introduces the research background of the development of tourism economy in Pingxiang City, and then describes the current situation of the development of tourism economy in Pingxiang City through the data of tourism economic indicators. Then it uses Pearson correlation analysis method and multiple regression model analysis method to obtain the correlation between tourism income and macro and micro economic indicators, as well as the impact of various factors on tourism income. It's concluded that the output value of the tertiary industry has the greatest correlation. With other conditions remain unchanged, the domestic tourism income of Pingxiang city increases by 0.032 units for each unit of highway mileage increase, and 0.057 units for each unit of total import and export foreign trade. Finally, the paper puts forward the relevant strategic countermeasures for Pingxiang to develop tourism economy.

Keywords: border areas, tourism and economy

I. INTRODUCTION

Border regions with political collisions, economic integration, and cultural diversity are one of the best laboratories to study the process of globalization. As a comprehensive industry, tourism has not only become the leading industry for social development in border areas, but also an important carrier for social and economic exchanges between countries and regions. In recent years, Pingxiang City has adhered to the main theme of open development and made great articles on tourism economic development, focusing on development of all-round, multi-level and wide-ranging open cooperation for ASEAN, which has set off a wave of opening up to the outside world and has developed from the past "border edge" become an "open frontier" and "a strong foreign trade city". It allows those regions to integrate into the construction of "Belt and Road" initiative, serve and participate in the construction of a new land and sea channel in the western region, strengthen cooperation with ASEAN, and accelerate the construction of the China-Vietnam Friendship Pass International Tourism Cooperation Zone. Jiang Lujuan and Zhou Zhonghui (2020) took Pingxiang City of Guangxi as an example to study the advantages and strategies of border tourism development; Huang Ailian (2019) took Pingxiang City of Guangxi as an example to discuss the integrated development of cross-border tourism and imported fruits; Liu Jialin (2019) held Pingxiang City in Guangxi as an example, it explored how to further develop its tourism strategy in the context of the rise of leisure tourism; Ling Changrong, Yang Chao (2012) and others took Pingxiang City in Guangxi as an example to propose the border city tourism market development path, and give countermeasures and suggestions for the development of border city tourism. In summary, there

is not much literature about the combined development of tourism economy in Pingxiang City, Guangxi, and there is a lack of first-hand real data. This study supplements the relevant data of Pingxiang City, Guangxi, and uses quantitative methods to analyze its tourism economic development proposals.

II. THE STATUS QUO OF TOURISM ECONOMIC DEVELOPMENT

The border tourism industry in Pingxiang has developed rapidly, and has become a growth pole of port economic development. In recent years, with the continuous in-depth development of tourism at various ports, immigration tourists and tourism income have shown a good development trend.

The amount of tourism foreign exchange consumption in Pingxiang City is extremely high in all counties and cities in Chongzuo City, and the total amount of tourism consumption is also very high. In 2017, the number of incoming tourists and total tourism consumption of Pingxiang City both showed an upward trend. In 2017, Pingxiang City received 156,400 inbound overnight tourists, an increase of 3.8%; it received 6,152,900 domestic tourists, an increase of 22.9%. Total tourism consumption was 5.514 billion yuan, an increase of 23.47%. Tourism foreign exchange consumption was US\$58.878 million, an increase of 9.96%.

TABLE I. THE FIRST PART OF PINGXIANG'S TOURISM ECONOMIC DATA

Time	Tourism and Economic Indicators			
	Number of inbound tourists (ten thousand person-times)	Foreigners (ten thousand person-times)	Regional gdp (100 million yuan)	International tourism foreign exchange income (ten thousand us dollars)
2016	15.07	14.59	65.34	5354
2015	14.38	13.97	51.94	4967.83
2014	13.62	13.15	50.89	4618.36
2013	13.61	13.06	40.39	4606.37
2012	11.95	11.18	36.20	3947.02
2011	10.52	9.73	31.40	3175.23

^a. Data source Chongzuo City Statistics Bureau

TABLE II. THE SECOND PART OF PINGXIANG'S TOURISM ECONOMIC DATA

Time	Tourism and Economic Indicators		
	Domestic tourist number (ten thousand person-times)	Domestic tourism income (100 million yuan)	The number of star-rated hotels (a)
2016	501	41.10	10
2015	426.00	31.36	10
2014	375.71	23.93	9
2013	324.01	18.58	9
2012	281.31	15.48	8
2011	255.81	13.55	6

^a. Data source Chongzuo City Statistics Bureau

From "Table I" and "Table II", it can be seen that the number of inbound tourists received in Pingxiang City in 2016 was 1.43 times that in 2011, the number of foreigners in Pingxiang City in 2016 was 1.49 times that in 2011, and the GDP of Pingxiang City in 2016 was 2011 2.08 times in 2016, Pingxiang's international tourism foreign exchange income in 2016 was 1.68 times in 2011, Pingxiang's domestic tourist number in 2016 was 1.95 times in 2011, and Pingxiang's domestic tourism income in 2016 was 3.03 times in 2011. In 2016, the number of star-rated hotels in Pingxiang City was 1.66 times that in 2011.

III. EMPIRICAL ANALYSIS

A. Correlation between tourism income and economy

The Pearson correlation analysis method is used to study the economic benefits brought by the development of tourism. The tourism development index uses the domestic tourism income measure. Macroeconomic indicators are measured by regional GDP and related to the value of primary, secondary and tertiary industries. The microeconomic indicators are measured by the per capita disposable income of urban residents and the per capita disposable income of rural residents. SPSS software is applied, the related analysis of Pingxiang's tourism industry and its economic impact is made.

TABLE III. 2011-2016 THE FIRST PART OF PINGXIANG CITY TOURISM, MACRO AND MICRO ECONOMIC INDICATORS

Time	Tourism and Economic Indicators			
	Domestic tourism revenue (100 million yuan)	Regional GDP (100 million yuan)	Primary industry production value (ten thousand yuan)	Secondary industry production value (ten thousand yuan)
2016	41.1	65.34	53060	187210
2015	31.36	51.94	49908	164172
2014	23.93	50.89	47995	155744
2013	18.58	40.39	46365	133486
2012	15.48	36.20	43440	114718
2011	13.55	31.40	43800	94300

^a. Data source Chongzuo City Statistics Bureau

It can be seen from the "Table III" that the domestic tourism revenue of Pingxiang City in 2016 was about 3.03 times of that in 2011, the regional GDP of Pingxiang City in 2016 was about 2.08 times of that in 2011, the primary industry production value of Pingxiang City in 2016 was 1.21 times of that in 2011, and the secondary industry production value of Pingxiang City in 2016 was 1.98 times that of 2011.

TABLE IV. 2011-2016 THE SECOND PART OF PINGXIANG CITY TOURISM, MACRO AND MICRO ECONOMIC INDICATORS

Time	Tourism and Economic Indicators		
	Tertiary industry production value (ten thousand yuan)	Per capita urban residents disposable income (yuan)	Per capita disposable income of rural residents (yuan)
2016	413229	29772	9889
2015	355190	27455	8346
2014	305253	25877	7664
2013	224147	23718	7090
2012	203877	21582	6280
2011	175900	19285	5305

^{a.} Data source Chongzuo City Statistics Bureau

It can be seen from the "Table IV" that the tertiary industry production value in Pingxiang City in 2016 was 2.35 times of that in 2011. The per capita urban residents disposable income in Pingxiang City in 2016 was 1.54 times that in 2011, and the per capita disposable income of rural residents in Pingxiang City in 2016 was 1.86 times that in 2011.

The relevant analysis results of Pearson are as follows:

The correlation coefficient of GDP to domestic tourism income is 0.975, the correlation coefficient of primary industry production value to domestic tourism income is 0.984, the correlation coefficient of secondary industry production value to domestic tourism income is 0.951, and the tertiary industry production value to domestic tourism income is 0.985, the correlation coefficient of urban residents' per capita disposable income to domestic tourism income is 0.958, and the correlation coefficient of rural residents' disposable income to domestic tourism income is 0.974.

The above analysis shows that the domestic tourism revenue has the greatest correlation with the tertiary industry production value. The order of correlation is the tertiary industry > primary industry > GDP > per capita disposable income of rural residents > per capita disposable income of urban residents > secondary industry.

B. Influencing factors and degree of tourism income growth

In order to study the impact of various development factors on tourism income, the domestic tourism income of Pingxiang City was selected as the dependent variable, and the highway mileage and the total amount of foreign trade import and export of Pingxiang City were the independent variables. Using data from 2011-2016 as a sample, multiple linear regression analysis method was used for the study. Here, the explained variable is Pingxiang City's domestic tourism revenue, and the explanatory variable is Pingxiang City's highway mileage and total foreign trade import and export. To empirically analyze the degree of influence of various factors on Pingxiang's domestic tourism revenue, establish a linear regression model with Pingxiang's highway mileage X_1 , total foreign trade import and export X_2 as independent variables and Pingxiang's domestic tourism revenue as dependent variable Y:

$$Y = \beta_1 + \beta_2 X_1 + \beta_3 X_2 + \varepsilon \quad (1)$$

In the formula, the highway mileage X_1 of Pingxiang City and the total foreign trade import X_2 are independent variables, the domestic tourism income of Pingxiang City is the dependent variable Y, β_1 is a constant term, β_2 and β_3 are regression coefficients, and ε is a random term.

TABLE V. THE TOURISM, INFRASTRUCTURE, ECONOMIC INDICATORS OF PINGXIANG CITY

Time	Tourism and Infrastructure Indicators		
	Domestic tourism revenue (100 million yuan)	Highway mileage (km)	Total foreign trade import and export (100 million us dollars)
2016	41.1	7278	185.74
2015	31.36	7047	201.33
2014	23.93	7016	146.94
2013	18.58	6935	102.77
2012	15.48	6811	71.34
2011	13.55	6648	50.76

^{a.} Data source Chongzuo City Statistics Bureau

It can be seen from the "Table V" that the domestic tourism revenue of Pingxiang City in 2016 was 3.03 times of that in 2011, the highway mileage of Pingxiang City in 2016 was 1.09 times of that in 2011, and the total foreign trade import and export volume of Pingxiang City in 2016 was 3.66 times of that in 2011.

TABLE VI. CORRELATION

		Domestic tourism revenue (100 million yuan)
Pearson correlation	Domestic tourism revenue (100 million yuan)	1.000
	highway mileage (km)	.944
	total foreign trade import and export (100 million US dollars)	.910
Significance (single tail)	Domestic tourism revenue (100 million yuan)	.
	highway mileage (km)	.002
	total foreign trade import and export (100 million US dollars)	.006
Cases	Domestic tourism revenue (100 million yuan)	6
	highway mileage (km)	6
	total foreign trade import and export (100 million US dollars)	6

It can be drawn from "Table VI" that the correlation coefficient between domestic tourism revenue and highway mileage is 0.944, and the correlation coefficient between

domestic tourism revenue and total foreign trade import and export is 0.910. The correlation is extremely strong and has research significance.

TABLE VII. MODEL SUMMARY

Model	R	Square of R	Adjusted R side	Standard estimation error	Durbin Watson
1	.956 ^a	.915	.858	3.98348	1.020
a. Predictors: (constant), total foreign trade imports and exports (100 million US dollars), highway mileage (km)					
b. Dependent variable: Domestic tourism revenue (100 million yuan)					

It can be seen from "Table VII" that the squared value of R in the column is 0.915, and the model fits well.

TABLE VIII. ANOVA

Model		sum of square	Degrees of freedom	Mean square	F	Sig
1	Regression	510.150	2	255.075	16.075	.025 ^a
	Residual	47.604	3	15.868		
	Total	557.754	5			
a. Dependent variable: Domestic tourism revenue (100 million yuan)						
b. Predictors: (constant), total foreign trade imports and exports (100 million US dollars), highway mileage (km)						

It can be seen from "Table VIII" that the value of the significance is 0.025, which is less than 0.05, indicating that

the significance is strong.

TABLE IX. COFFICIENT

Model	Unstandardized coefficient		Standardized coefficient		Sig
	B	Standrad error	Beta	t	
constant	-204.088	119.587		-1.707	0.186
Highway mileage(km)	0.032	0.018	0.647	1.743	0.180
Total foreign trade umport and export (100 million US dollars)	0.057	0.064	0.333	0.897	0.436

a. Dependent variable: Domestic tourism revenue(100 million yuan)

It can be seen from "Table IX", reading the unstandardized coefficients, you can write the model equation:

$$Y = -204.088 + 0.032X_1 + 0.057X_2 \quad (2)$$

It proves that under other conditions unchanged, for every additional unit of highway mileage, Pingxiang's domestic tourism revenue increases by 0.032 units; for each additional unit of total foreign trade import and export, Pingxiang's domestic tourism revenue increases by 0.057 units.

IV. STRATEGIES TO PROMOTE THE DEVELOPMENT OF THE TOURISM ECONOMY

A. Strengthening foreign cooperation

The government should strengthen the foreign cooperation, take Pingxiang Puzhai and Xinqing County of Vietnam as the first batch of pilot areas of Sino Vietnamese Friendship International Tourism Cooperation Zone, and make Pingxiang City one of the important cultural tourism resorts of China and ASEAN. The relevant institutions should take the Pingxiang friendship pass and other rich tourism resources as the carrier, strive to establish cross-border tourism brand, strengthen foreign cooperation, and make Pingxiang Puzhai and Vietnam's Xinqing become the first pilot area between China and Vietnam. The friendship international tourism cooperation zone makes Pingxiang one of the important cultural tourism destinations of China and ASEAN. The measures to develop tourism in friendship pass of Pingxiang City include publishing travel brochures, broadcasting feature films and video propaganda films on TV stations, websites, airports, railway stations, bus stations and other media, and organizing tourism departments and enterprises from all over the world to participate in transnational tourism promotion activities, such as tourism fairs and tourism commodity fairs.

In Pingxiang City, the government will vigorously carry out the creation of the "Border Window" construction project, in accordance with the standard of "five one" (one information center, one brand cultural activity, one normal cultural exchange mechanism, one border outreach team, and one media platform) and build a demonstration zone with border ports as

publicity bases, connecting points into lines, and expanding lines into areas. Grasping the foundation of the existing investment promotion construction, for example, Pingxiang Comprehensive Bonded Area carries out business investment, industrial chain investment, social investment, and annual overseas investment, and holds investor briefings in Chongqing, Kunshan, Zhengzhou, and Shenzhen. Participating in the China-ASEAN Expo investment promotion, hiring key executives and industry celebrities from the district as industrial park development consultants, cooperating with domestic and foreign industry associations (commercial associations) or celebrities as industrial park development consultants, supporting established enterprises to continue to increase capital expansion.

The measures to develop tourism in Pingxiang include further promoting cross-border cooperation and strengthening international tourism cooperation with ASEAN countries, especially Vietnam, Thailand, Cambodia, Malaysia, Singapore and other countries in Indochina Peninsula, and strive to integrate into China-ASEAN tourism cooperation circle, as well as promote the development of multinational tourism. The government should actively promote global tourism and focus on building Pingxiang as a global tourism city.

B. Improving road and other related infrastructure

The government is committed to improving the construction of transportation infrastructure such as highways, which can increase the accessibility of tourists and lay the foundation for the development of tourism in Pingxiang City. Relevant institutions should constantly improve the infrastructure of transit, transportation, water conservancy, electricity, etc, and speed up the construction and transformation of graded highways in key tourist cities and counties (districts) tourist resorts. At the same time, local government departments should increase the number of vehicles equipped with buses and scenic spots, increase the traffic signs of international standards, and make great efforts to make up for the defects of transportation infrastructure. Relevant government departments should pay close attention to highway transportation safety, complete annual highway work objectives and tasks, and create a safe, convenient, smooth, efficient, green and intelligent road transportation environment

for regional economic and social development and cross-border tourism. The government departments should also improve the road conditions to further guarantee the local economic development, optimize the customs clearance environment, implement the transit traffic policy, and speed up the infrastructure construction suitable for the development of port tourism. At the same time, the government has worked out a cross-border tourism route with distinct themes.

C. Promoting the development of border trade

Relying on the port as a carrier of large cities and towns, the Pingxiang City should strive to build a famous port city and an international city. With the port as a platform, Youyi Town of Pingxiang City vigorously develops port economy, and has achieved the largest number of border small-scale trade imports and exports and border small-scale trade exports for many years in a row. The two indicators of fruit imports and exports and rosewood imports in Pingxiang City rank first in the country and become a feature. Meanwhile the Pingxiang City ought to develop a distinctive national border trade town with Vietnam (ASEAN). As an important industry in Pingxiang Port, border trade is gradually advancing with the continuous development of economy and society.

D. Development of in-depth tourism special products

The tourism industry in Pingxiang still has shortcomings such as a single product form, lack of core attractiveness, insufficient depth and breadth of cooperation, which restricts the development of the tourism economy. In the context of the "Belt and Road", the Pingxiang City should take advantage of the geographical and resource advantages of the border regions, cultivating new tourism formats, meeting the growing demand for cross-border tourism products from tourists. Port tourism, as one of the business cards of Pingxiang's tourism industry, has brought a continuous increase in tourist reception to the local area. Moreover, Multiple tourism needs have promoted the continuous extension of Pingxiang's tourism industry chain. The Pingxiang City is a comprehensive tourism distribution center that integrates various elements such as "food, accommodation, travel, shopping and entertainment", cultural customs, various exhibitions and festivals. Local relevant departments should hold large-scale tourism business exhibitions through development cooperation platforms such as China ASEAN Expo, so as to expand the inbound business tourist market. ASEAN cross-border tourism, mahogany culture tourism and border custom tourism have become three "business cards" of Pingxiang tourism.

In addition, the local government departments should deepen the integration of diversified industries and tourism, and give full consideration to the

comprehensive development of tourism culture, sports, agriculture, industry, forestry, medicine and health, cultural industry, life service industry, handicraft industry, etc. Relevant government departments should establish a sound border tourism industry system, build imported fruit into one of the core scenic spots of Pingxiang Port Tourism, and establish the concept of combining imported fruit with various elements of port tourism. Promoting mahogany furniture products and explain the history of Pingxiang Mahogany to tourists. And the common use of mahogany products can enhance the emotional exchanges between Chinese and Vietnamese ethnic groups, thus increasing their sense of identity. Finally, the relevant departments should actively develop cross-border self-driving travel, parent-child travel, rural leisure tourism, high-end shopping tourism, ethnic culture tourism, international business tourism, international exhibition tourism, etc.

The relationship between tourism development and economic development is extremely close [1]. While developing the tourism economy, we should also pay attention to the improvement of ecological efficiency, so as to benefit the high-quality development of the tourism industry [2]. Food tourism festivals can also promote the development of tourism[3]. Geopolitical evolution will also have a major impact on the development of tourism[4]. The development of tourism also has a great impact on employment and income, and countries around the world rely on tourism[5]. Tourist attractions play an important role in community tourism, and local residents' support for the attractions is also important[6]. Tourism is an indispensable part of a country and has a significant effect on its economic, social and cultural development[7].

V. CONCLUSION

To sum up, Pingxiang City, as a border ethnic area, contains many ethnic minorities. Its tourism and economic development can promote national unity. Border trade is the characteristic industry of Pingxiang City, so the development of border trade can promote the development of local tourism.

At the same time, the local government should strengthen the combination of port economy and tourism, and improve the level of border development and opening up.

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