

Research on the Influence Mechanism of Overseas Education on the Efficiency of Inbound Tourism

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Abstract

Under the influence of the epidemic and the downturn of international trade, how to make better use of the policy advantages of the "the Belt and Road" to attract overseas students to China, so as to promote the efficiency of inbound tourism trade is an important topic that deserves attention at present. This paper uses the panel data of the number of inbound tourists to China from 2009 to 2018 to measure the efficiency of inbound tourism trade. The study found that every 1% increase in the size of international students will increase the efficiency of inbound tourism trade by 0.5704 percentage points. At the same time, international students are divided into two categories: government scholarships and fees for further analysis and research. Therefore, this paper believes that in order to improve the efficiency of inbound tourism trade, we should steadily expand the scale of foreign students in China and optimize the education system of foreign students.

Keywords

Overseas Students in China; Efficiency of Inbound Tourism Trade; The Belt and Road Initiative Optimize; The Education System.

1. Introduction

Since the Ministry of Education issued the policy to promote overseas students in China in 2010, the number of overseas students in China has been increasing. In 2013, the number of overseas students in China was about 328000, which had risen to 492000 by 2019. The implementation of the "the Belt and Road" strategy has also brought new opportunities and opportunities for the upsurge of studying in China. Especially since 2013, the promotion of the Silk Road study abroad program of the "Silk Road" of the "the Belt and Road" and the relevant education agreements signed between China and the 24 countries along the route have accelerated the process of internationalization of China's education. With China's opening-up and high-quality economic development, the role of overseas student education in improving trade in services and promoting economic growth has become increasingly obvious.

Cross border tourism is not only an important driving force for the development of international trade, but also an important symbol to measure the competitiveness of a country in international trade in services. Since the reform and opening up, the development of inbound tourism has also entered a climax, which has made great contributions to China's foreign exchange revenue and the economic development of various regions. Actively promoting inbound tourism is an important policy to promote the development of domestic tourism in recent decades. According to statistics, the number of inbound tourists reached 145.3078 million in 2019, with a corresponding international tourism revenue of 131.254 billion US dollars. However, the sudden outbreak in late 2019 has seriously impacted the development of tourism. Under the prevention and control of the epidemic, China has adopted a closed policy

for a long time, which poses unprecedented challenges to the development of inbound tourism. As an important part of inbound tourists, the group of overseas students in China is different from ordinary inbound tourists. Its characteristics of long-term settlement in China, relatively stable economic sources and high tourism quality make this group play an irreplaceable role in stimulating inbound tourism in the post epidemic era. Based on this, this paper takes overseas students as the economic main body, analyzes the economic contribution and influence mechanism of overseas students in China on the efficiency of inbound tourism trade, so as to make it a new driving force to improve the efficiency of tourism trade and promote the development of cross-border tourism.

The existing literature on the economic role of foreign student education is mostly limited to two aspects, one is the economic benefit analysis of the host country. Zhang Minxuan, Huang Fusheng, etc. took foreign students from a university in Shanghai as the observation subjects, and through the construction of economic income model, empirical analysis proved that foreign students in China can promote the total domestic economy [1]. By studying the economic benefits of Canadian foreign students, scholars such as Wang Jianliang found that various inbound consumption of foreign students has brought huge economic benefits to the country [2]. The second is the economic mechanism analysis of two-way investment. The study found that the flow of international talents can promote enterprises' participation in foreign investment in high-income countries, thus affecting enterprises' economic decisions and promoting enterprises to go global [3]. Gu Yuanyuan and Qiu bin also confirmed through empirical analysis that overseas education in China has a significant role in promoting OFDI in China [4]. In their empirical research, Liu Kai and others used overseas students from countries along the "the Belt and Road" as the main body of research, which confirmed in more detail the role of overseas education in promoting OFDI in China [5]. As an important part of international trade in services - the economic analysis of inbound tourism, most economic entities tend to be the source of most inbound tourists. In their research report, Wen Yan and sun Gennian analyzed the impact mechanism of the size of inbound tourists in 118 countries on the efficiency of China's inbound tourism trade by quoting the stochastic frontier model [6]. By analyzing the inbound tourism of countries along the "the Belt and Road", Wei Wei and others found that the impact of tourists from the "the Belt and Road" countries on China's inbound tourism is relatively stable, and they are the main source country of China's inbound tourism [7].

To sum up, although scholars have paid attention to the important impact of foreign students in China on China's international trade, most of the research is limited to its direct economic role, and there are few studies on the impact of more detailed international service trade such as cross-border tourism. At the same time, the analysis of inbound tourism is mostly based on the use of stochastic frontier gravity model, there are few research papers that analyze the impact mechanism of the whole tourist source countries and refine the economic subject. Especially in the post epidemic era, promoting the efficient development of inbound tourism still has great research space and economic value. Therefore, based on the existing literature, this paper takes the overseas students from the "the Belt and Road" countries as the main body, studies its impact mechanism on the efficiency of China's inbound tourism trade, and provides a new direction and explores a new path for the development of China's inbound tourism.

2. Empirical Analysis

2.1. Research Design

2.1.1. Empirical Model

Based on the existing papers, the following measurement model is constructed:

$$\ln y_{it} = \beta_0 + \beta_1 \ln \text{students}_{it} + \beta_2 \ln \text{GDP}_{it} + \beta_3 \ln \text{dist}_{it} + \beta_4 \ln \text{inst}_{it} + \varepsilon_0$$

Where y is the total number of inbound tourists from countries along the line from 2009 to 2018. $Students$ represents the total number of foreign students in China in the same year. GDP represents the ratio of the host country's GDP to China's GDP, $dist$ represents the domestic political stability of the host country in each year, $Inst$ represents the straight-line geographical distance between the host country and China, and I and t represent the country and year respectively, ε_0 Represents the random disturbance term, and some variables are logarithmicized to enhance the stability of the model. ε_0

The economic model judges whether the scale of overseas students in China has an impact on the efficiency of tourism trade by observing the significance of the regression results and the positive and negative symbols. We expect that the scale of overseas students in China has a positive impact on the efficiency of inbound tourism trade. If it is established, it is significantly positive. β_1

2.1.2. Sample, Variable Description and Data Source

The impact of the "the Belt and Road" policy on China's economy and the benefits of attracting overseas students is undoubtedly very significant. Therefore, this paper chooses some countries along the "the Belt and Road" as the main research object. Considering the integrity of data and national influence, after excluding some data, the relevant data of 52 countries along the line are finally selected as research samples for empirical analysis. The observation time is from 2009 to 2018.

Explanatory variable: This paper selects the total number of tourists to China from 52 countries from 2009 to 2018 as an indicator to measure the efficiency of tourism trade. The data comes from the National Bureau of statistics.

Core explanatory variable: the number of foreign students in the host country ($Instudents$), expressed by the number of foreign students in China over the years. Data source: concise statistics of overseas students in China

Control variables: referring to the common practice of existing literature, the ratio of the GDP of the host country and China over the years is selected as the index to measure the economic gap between the two countries ($\ln GDP$), and the geographical distance between the two countries is used to measure the transportation costs and cultural differences ($\ln dist$), The host country's political stability ($Inst$) is measured by the host country's institutional quality (the average of six indicators in the global governance system: corruption control, government efficiency, political stability, legal environment, regulatory quality, voice and accountability) [5].

2.1.3. Descriptive Statistics of Samples

	$\ln y$	$\ln students$	$\ln GDP$	$\ln dist$	$inst$
$\ln y$	1.000				
$\ln students$	0.486***	1.000			
$\ln GDP$	0.102**	0.455***	1.000		
$\ln dist$	-0.322***	-0.563***	-0.550***	1.000	
$inst$	-0.124***	-0.411***	-0.733***	0.383***	1.000

Figure 1. Correlation coefficient plot

According to the analysis in the figure, except that the correlation coefficient between $\ln GDP$ and $\ln Y$ is significant at the significance level of 5%, other variables are significant at the confidence level of 1%. The data shows that the correlation coefficients between other variables are small except $\ln dist$ and $\ln GDP$. At the same time, for the sake of caution, this paper uses the variance expansion factor for further test, and its mean value is 2.05, which is far less than 10,

indicating that there is no obvious multicollinearity problem. In addition, the correlation coefficient between $\ln\text{students}$ and $\ln y$ is 0.486, which preliminarily shows the positive role of foreign students in China in the efficiency of inbound tourism trade.

Table 1. Descriptive statistical tables for each variable

Variable name	sample size	mean value	standard deviation	minimum value	Maximum value
LNy	520.000	10.407	2.239	0.693	16.332
$\ln\text{students}$	520.000	6.430	1.909	2.197	10.261
$\ln\text{GDP}$	520.000	0.143	1.110	-2.154	2.835
$\ln\text{dist}$	520.000	8.370	0.460	7.110	8.883
inst	520.000	-0.163	0.767	-2.000	1.630

2.2. Empirical Test

2.2.1. Unit Root Inspection

For the panel economic model established above, this paper first tests its unit root. Mainly use stata15 software and LLC test method to test the unit root of $\ln\text{students}$, $\ln\text{GDP}$ and $\ln\text{dist}$ respectively. The alternative assumption is that the tested data contains unit root. According to the table below, the panel data of each variable passed the unit root test at the confidence level of 1%.

Table 2. Unit root test results

	$\ln\text{students}$	$\ln\text{GDP}$	$\ln\text{dist}$
Statistic	-12.9211	-12.0351	-10.7394
p-value	0.000	0.000	0.000

2.2.2. Cointegration Test

In this paper, the commonly used westerlund cointegration test method is used to test the cointegration of $\ln\text{students}$, $\ln\text{GDP}$ and $\ln\text{dist}$ to observe whether there is a cointegration relationship between variables. Observing the test results, its statistical value is 7.6508, and the corresponding p value is 0.0000. It passed the test at the 1% confidence level, rejected the original hypothesis, indicating that there is a long-term equilibrium relationship between variables.

2.2.3. Regression Analysis Results

After the above unit root test and cointegration test, our data can be subject to the following regression analysis. Before the regression analysis, this paper also conducted Hausman and other related tests, and established the model as a fixed effect model. Through the observation of model 1, it can be found that the impact of foreign students in China on the efficiency of inbound tourism trade is significantly positive. Then the control variables except the core variables were regressed, and the results showed that all control variables passed the significance test, and the symbols were consistent with the expected results. After adding the variables of foreign students, the remaining control variables have not changed significantly. Therefore, the next part mainly analyzes the variable of the size of foreign students in China. The regression results in the third column of the table show that the variable of the size of foreign students in China is significant under the confidence interval of 0.01%. At the same time, after the introduction of the main variable, the fitting effect of model 3 is better than the first two models, indicating that the size of foreign students in China has a significant impact on the efficiency of inbound tourism trade. The coefficient of the main variable is 0.5704, indicating that every 1% increase in the size of foreign students will increase the efficiency of inbound tourism trade by 0.5704 percentage points.

Table 3. Regression results analysis table

	(1)	(2)	(3)
	model1	model2	model3
lnstudents	0,5699***		0,5704***
	(0,0450)		(0,0553)
lnGDP		-0,4045**	-0,4736***
		(0,1355)	(0,1237)
inst		-0,3599*	-0,0960
		(0,1773)	(0,1635)
ln dist		-1,8754***	-0,8038***
		(0,2408)	(0,2428)
_Thecons	6,7431***	26,1041***	13,5197***
	(0,3019)	(2,0251)	(2,2125)
N	520	520	520
adj. R-sq	0,2348	0,1141	0,2643

***P<0.01, ** p<0.05, * p<0.1, t value in brackets

3. Re Inspection based on Government Incentives

Table 4. Comparison of return results of government scholarship international students and self-funded students

	Y (Government Scholarship international students)		Y (self funded)
Students1	127.8**	Students2	25,59**
	(-51.79)		(9,132)
GDP	-22,040	GDP	-26,966
	(-14,894)		(15,091)
inst	-84,497	inst	-82,864
	(-55,322)		(-55,216)
dist	69.74***	dist	76.55***
	(-19.56)		(-19.83)
Constant	-69,816*	Constant	-109,349*
	(-118,061)		-120,764
Observations	520	Observations	520
R-squared	0,038	R-squared	0.041

*** p<0.01, ** p<0.05, * p<0.1

In order to attract more high-quality international students to China, China has set up a special incentive policy for international students. Next, in order to better analyze whether China's policies to attract foreign students have a different impact on the efficiency of tourism trade, foreign students are divided into government scholarship students and self-funded students for regression analysis. Similarly, before the regression analysis, the unit root test and cointegration test were carried out for the two models, and the test results passed the significance test of 1%. Compared with the regression results, the efficiency of tourism trade increases by 127.8% for every 1% increase in the inflow of foreign students funded by the government, while the efficiency of tourism trade increases by 25.59% for every 1% increase in the scale of self-funded students. Obviously, the results show that the government's subsidy policy for foreign students in China has a positive impact on attracting high-quality foreign students to promote the efficiency of inbound tourism trade.

4. Conclusion and Recommendations

Based on the data of overseas students and cross-border tourism scale of 52 countries along the the Belt and Road from 2009 to 2018, this paper establishes a panel data regression model to verify the role of overseas students in promoting the efficiency of inbound tourism scale, and in the future, Chinese overseas students will be divided into two categories: government rewarded overseas students and self funded students, Through the comparison of the two models, this paper further analyzes the impact mechanism of different types of foreign students on the efficiency of inbound tourism, and finally comes to the following conclusions: in general, foreign students in China have a significant role in promoting the efficiency of inbound tourism trade; For the level of economic development, countries that are close to or slightly inferior to China's economic development have a positive effect on promoting the efficiency of inbound tourism; At the same time, the distance of geographical distance will also significantly promote the efficiency of today's tourism trade. The closer the geographical distance is, the more significant the effect is. Finally, through the comparison of the impact of government scholarships on foreign students and self-funded foreign students, the impact of government funded foreign students is more significant. Based on the above conclusions, in order to promote the further development of overseas education in China and give better play to the promotion benefits of overseas students on the efficiency of inbound tourism trade, the following suggestions are put forward.

First of all, the government should pay attention to the important role of talent flow in promoting the efficiency of inbound tourism trade, further promote the introduction of education in China, and maintain the steady growth of the scale of overseas students in China. On the one hand, we should strengthen the publicity of studying in China, promote Chinese culture to go global, and improve the international cultural influence, so as to attract more foreign students with similar cultures or interested in Chinese culture to come to China for exchange and study. On the other hand, we should improve effective and flexible bonus support and policy promotion to attract high-quality international students. At the same time, in order to reduce the financial pressure of the government, non-governmental organizations and social organizations can be encouraged to subsidize scholarships for colleges and universities. In addition, we should actively use the Belt and Road policy and geographical advantages to attract overseas students from countries with relatively close geographical locations and similar economic development levels, so as to expand the scale of overseas students in China and explore the potential of overseas students to promote the efficiency of today's tourism trade.

Secondly, while expanding the scale of studying abroad, we should pay more attention to the improvement of the quality of overseas students in China. In the early stage of China's overseas education, the academic level of overseas students in China is at a low level. With the further development of the economy and the further improvement of China's comprehensive strength, promoting the high-quality development of overseas students should also be gradually put on the agenda. On the one hand, we should standardize the enrollment mechanism of students coming to China. Domestic colleges and universities still need to adhere to the principle of "survival of the fittest", improve admission requirements, and standardize teaching management; Improve the selection mechanism for different academic levels and subject types. On the other hand, we should improve the educational level and quality of foreign students. Strengthen the quality of the teaching team of overseas students in colleges and universities, promote the internationalization of Chinese colleges and universities, and strengthen the cooperation and contact with foreign colleges and universities, so as to attract higher education and high-quality students to study in China and improve the overall cultural level of overseas students.

Finally, we should improve the training system of foreign students, strengthen the publicity of Chinese local culture, and improve the education system of foreign students, mainly for foreign students to better understand Chinese cultural customs, be familiar with domestic tourism resources, and improve their desire to explore domestic tourist attractions and Chinese culture. At the same time, we should also do a good job in the employment and settlement of foreign students, provide corresponding preferential policies for employment and settlement for highly educated foreign students, promote the localization of foreign students, give full play to the characteristics of foreign students as a special international tourism group, give full play to the role of foreign students in promoting the efficiency of inbound tourism, and optimize the efficiency of China's inbound tourism. In the case of an epidemic, Realize the optimization of tourism efficiency.

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