

# Study on the Spillover Effect of Tourism Flow Based on the Customer Market Segmentation—Take the Business Travel Market in Guangdong Province as an Example

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**How to cite this paper:** Liu, Y. and Lin, J.P. (2018) Study on the Spillover Effect of Tourism Flow Based on the Customer Market Segmentation—Take the Business Travel Market in Guangdong Province as an Example. *Modern Economy*, 9, 1002-1008. <https://doi.org/10.4236/me.2018.95064>

**Received:** April 24, 2018

**Accepted:** May 20, 2018

**Published:** May 23, 2018

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## Abstract

In the open economic system, the factors that affect the development of regional tourism are more influenced by the level of tourism development in other regions, and show the spatial spillover effect of tourism activities. In this paper, the problem of the spillover effect of tourist flows based on customer market segmentation is solved. Through this study, the following conclusions are drawn: there is a significant spatial spillover effect on the overall tourism flow of the business tourist market in Guangdong province, but the spillover effect is negative, which is represented by the competition substitution effect. The tourism development of different cities in Guangdong province is similar to that of tourism development. The tourism flow of business tourists in Guangdong province has distinctive features and purpose.

## Keywords

Spatial Spillover Effect, Market Segmentation, Business Tourist Market, Tourism Flow

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## 1. Introduction

### 1.1. Research Background

With the increasing of economic openness and the influence factors of regional economic growth, more and more complex, regional economic development is no longer just depends on the interaction of the internal economic elements but affected by the external economic environment. This phenomenon shows the spillover effect of externality of economic activity on object [1].

The spillover effects of this area are evident in the tourism industry. The development of the tourism industry is highly dependent on its location and spatial relationships, no longer rely on its internal tourism economic development of tourist resources endowment, conditions but more and more affected by its surrounding areas. However, according to the new economic geography theory, the overflow area process has full spatial expression, which is reflected in the direction and scope of spillover effect. On the basis of empirical research, many scholars also found that the spillover effect of tourism space is becoming an important endogenous mechanism affecting regional or inter-city tourism cooperation and collaborative development [2].

And Guangdong as an important business province in China, the business conference type of tourists every year in Guangdong province region's tourism industry has an important influence, is a very important type of tourist market in Guangdong province, so this paper mainly studies on this market.

The structure of this paper is as follows: first, the introduction part, elaborated the research background of this research. Second, the basic theoretical analysis and related literature review. The basic theory and research progress of spatial spillover effect are analyzed and reviewed to prepare further research. Third, research model design. Will overflow model is introduced into the economic geography space in this study, analysis and research methods, combined with the characteristics of tourism development, to find a suitable build econometric model of influencing factors into the model. Fourth is the analysis of the spillover effect of commercial tourism. The fifth is the discussion and enlightenment of the research conclusion. This part mainly summarizes and summarizes the research results of this paper, and puts forward some Suggestions for the scientific positioning and coordinated development of the tourism industry in the Guangdong province.

## 1.2. Research Contributions

### 1) Theoretical significance

This study studied the spillover effects of business tourists from different cities in Guangdong province on the surrounding cities.

In this paper, the study on the spillover effects of tourism space in the province is supplemented by the regret of the lack of research on the spillover effects of urban tourism. On tourism spatial spillover effects on the influence factors of selection problem, this research set out from the characteristics of tourism both considering the close relations between tourism and the macro economy also weigh the representative indicators in tourism development, tourist spatial spillover effects of different factors on the impact of the study further discusses and complementary; This article also from the Angle of tourism market segmentation for the first time studied the spillover effects between urban tourism, to business class tourist market of tourist flow produced by the characteristics of the spillover effect are discussed in this paper, to make up for the lack of related

research regret, exploratory attempt for further research.

## 2) Practical significance

This paper study on the influence of the spillover effect between the city and to guide the tourism development planning of cities in Guangdong province, for the urban and city tourism coordinated development between seeking scientific and reasonable path, has important practical significance. According to differences of business tourism market segments of tourists spillover effect, for the city's main tourist market positioning and advantages, based on the perspective of market segmentation, from the perspective of different spillover effects tourism market segments of city seek reasonable market positioning in tourism development and the coordinated development of regional tourism has a realistic significance.

## 2. Literature Review

Spillover is an important concept in the theory of new economic growth, and it is an externality result generated by the activity of the subject. In an open economy, regional economic growth is not only depends on the development of its internal factors, and more and more affected by the surrounding areas, showing its economic activity has the externality, this effect is called the overflow.

Spillover effect are the emergence of the concept of the first system in the Grossman and Helpman monograph in economics, as a kind of positive spillover effects they will drive the effect [3] [4]. But in fact spillover effect has two sides, scholars Bretschger (1999) of its research results summarized as: for the economic subject, if the external effects brought interest, called "external economy" or "positive spillover"; The reverse is called "external uneconomic" or "negative spillover" [5].

Chinese scholars Wang Zheng described spillover effects of the two sides as positive "grace" and "negative" [6], has the positive and negative nature of the these studies enrich the connotation of spillover effects, through continuous research confirmed that became more mainstream academic point of view.

Later scholars, the application of the theory of overflow in the study of tourism, the spillover effects of tourism in the early studies, the scholars will travel overflow summarized as: normally through a number of regional tourism travel change on the surrounding area to reflect the influence .

With the deepening of the research, the scholars will overflow the concept of tourism and the integration of the concept of overflow in economics, spillover effects that show the destination tourism economic development in the tourism to the external impact of the surrounding area, an area investment in the tourism industry, tourism resources not only have an effect on the region itself, overflow makes it most likely for the tourism development of its surrounding areas benefit or influence. The spatial spillover effect of important regions or scenic spots is more significant than that of other regions.

### 3. Model and Data

The data of this study are the second-hand data of official channels and the questionnaire results of official channel sampling survey.

In this paper, the required data mainly comes from Guangdong province and Guangzhou, Shaoguan, Shenzhen, Zhuhai, Shantou, Foshan, Jiangmen, Zhanjiang, ZhaoQing and Meizhou 10 cities of economic statistics yearbook (2005-2016), the tourism bureau of guangdong province the list of A-level scenic area and the municipal tourism administration in the scenic spot with the hotel sampling investigation of tourists every year questionnaire survey (2005-2016), road information is from the odometer of the traffic administrative department of the public highway in Guangdong province.

#### 3.1. Moran' I Analysis

According to the algorithm of Moran's I, the results are shown in **Table 1**, Moran's I test result table.

The results of the moran index are positive, indicating that there is significant spatial spillover effect between the ten cities during the period 2007-2015.

#### 3.2. Econometric Model

Based on the research questions in this paper mainly discusses whether the tourism flow has spillover effects and existing research experience in the region, and the spatial lag model is selected as the main model in this paper. The basic expressions of spatial lag model (SLM) are:

$$Y = \rho WY + X\beta + \varepsilon$$

$Y$  is the interpreted variable;  $X$  is the exogenous explanatory variable matrix of  $n \times k$ ; For spatial regression coefficient, the spatial dependence of the observed value is the reaction of the influence degree between adjacent regions.  $W$  is the spatial weight matrix;  $WY$  is interpreted variable for space lag;  $\varepsilon$  is the random error term vector.

Based on the above analysis, the spatial lag model of this paper is as follows:

$$\ln \text{ARR}_{it} = \rho W \ln \text{ARR}_{it} + \beta_1 \ln \text{ATT}_{it} + \beta_2 \ln \text{GDP}_{it} + \beta_3 \ln \text{HOTEL}_{it} + \beta_4 \ln \text{PGDP}_{it} + \beta_5 \ln \text{FTE}_{it} + \beta_6 \ln \text{TIP}_{it} + \varepsilon_{it}$$

Among them, ARR is the annual domestic business visitor's reception of domestic business tourists in the area I region.  $W$  is the spatial weight matrix; ATT is the number of 3A and above scenic spots; GDP is the annual GDP of the city; HOTEL is the number of star HOTEL beds; PGDP per capita annual GDP; FTE is the total annual foreign trade export; TIP is the annual output value of the

**Table 1.** Moran's I test results table.

2007	2008	2009	2010	2011	2012	2013	2014	2015
0.3437	0.0767	0.3226	0.3115	0.3191	0.3092	0.3018	0.2994	0.2895

third industry; Is the random error term.

In this study, the following problems are mainly considered in the selection of independent variables:

1) The main factors that influence tourists' choice of tourist destinations; 2) Interactive relationship between tourism and economic indicators; 3) The characteristics of the tourism industry itself and the interactions within the tourism industry can be measured by which indicators.

Based on previous research results and the research purpose of this study, a main effect between urban tourism economy in much the same way of combing inductive, mainly from the tourist resources endowment, the macroeconomic environment, the level of opening to the outside world, reception facilities and tourism economy development level of several factors on the independent variables selection. The following variables are mainly selected:

The number of scenic spots (ATT) above 3A: the tourism resource endowment of the city is explained by the number of tourist attractions in the cities of 3A, 4A and 5A. Annual gross domestic product (GDP): interprets the macroeconomic environment of the region; In per capita GDP (PGDP), further interprets the economic environment, the influence of the local workforce development level and the level of consumption economy has certain reactions such as the economic development of the more real; HOTEL: it covers the supporting facilities and reception capacity information of the region; Total foreign trade exports (FTE): reflecting the degree of regional openness and the level of foreign trade development; The development level of the service industry is closely related to the development level of the tourism industry, and the two have important interaction effects.

In order to maintain the stability of the data and eliminate the heteroscedasticity, the logarithmic method is adopted for all data.

Before operations on data first use EViews to heteroscedasticity testing data, the existing heteroscedastic data to eliminate heteroscedasticity processing, and use the data after processing to the operation of the model, it is concluded that the final result.

#### 4. Result from Equation

Brought the data into the model for operation, and **Table 2** is obtained.

The GDP per capita and the total export volume of foreign trade are remarkable at the 99% confidence level. The number of hotel beds is significant at 95% confidence level. Other independent variables include the number of scenic spots above the 3A level, the GDP and the total output value of the tertiary industry are not significant. At the 99% confidence level, the value of the value is significant, that is, the tourism flow of the purpose of the business meeting has a significant spatial spillover effect, which makes the connection between regions more closely and more concentrated. The substitution effect of the increase of tourist reception of one unit in a city will reduce the number of tourists in the

**Table 2.** Operation result table.

	Coef.	<i>P</i>
$\rho$	-0.1018	0.009***
lnatt	0.0141	0.172
lngdp	-0.0810	0.310
lnhotel	-0.0393	0.013**
lnpgdp	0.6024	0.003***
lnfte	14.5701	0.000***
lntip	-0.0105	0.927

Note: \*\*\*indicates significant at 99% confidence level; \*\*indicates significant at 95% confidence level; \*indicates significant at 90% confidence level.

surrounding cities by 0.1018 units, and still present the substitution effect of competition in general.

Per capita GDP per unit of growth will bring the growth of 0.6024 units of business tourists. The increase in total foreign trade exports will bring a positive growth of 14.5701 units. For each additional unit of the hotel's bed, the increase of 0.0393 units will be suppressed. The number of scenic spots, GDP and the total output value of the tertiary industry are not significant.

## 5. Conclusions and Implication

Guangdong business tourists travel flow exists significant spatial spillover effects; the spatial spillover effect exists in the form of competition, the substitution effect, when the increase of one unit of a city business tourist hotels, inhibits the surrounding areas of similar tourist hotels. It is pointed out that in the tourism industry or economic development; there are more similarities between different cities in Guangdong province.

For commercial tourists in Guangdong province, the tourism flow has distinct characteristics and purpose. Its travel activities mainly by local actual level of economic development, foreign trade export levels reflect the elements of openness and economic effect significantly, significantly influenced by the level of tourism, and require higher demands for its. The influence of other factors such as tourism resources is relatively small, indicating that the purpose of this type of market is relatively clear, and it pays attention to the level of local real economic development, and is not limited to the development level of the tertiary industry.

In conclusion, in the tourism development plan of Guangdong province, we should pay attention to the coordinated development in the whole region, and develop regional cooperation to make a better profit. In the face of the commercial tourist market tourism flow, should combine its own economic conditions and location conditions to properly locate and publicize, attract more efficient market.

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