

## Research Article

# Correlation Degree Analysis of Tourism and Economic Growth Based on Computable General Equilibrium Model

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With the globalization of the world economy and the improvement of people's living standards, tourism has become a "sunrise industry" in the modern economy. Around the world, tourism is becoming an important lifestyle and socio-economic activity in modern human society, and showing a good development trend. With the continuous growth of tourist sources, the continuous expansion of industrial scale, the continuous publicity of tourism demand personality, the increasing enrichment of tourism products, the integration of market competition into every link of service, the gradual improvement of tourism quality and level, the widespread application of network, the rapid intensification of technological innovation for Tourism, the promotion of traditional culture, and the increasingly prominent cultural competition in tourism, Popular group tourism stands out. Whether in developed or developing countries, tourism plays an increasingly significant role in promoting social and economic development. It is particularly important to quantify the contribution of tourism in the national economy and which industries are better developed by tourism. It is of great significance for each tourism region and each region to formulate corresponding strategies for the development of current scenic spots, and also plays a greater role in promoting the coordinated development of tourism. By analyzing a large number of relevant data, according to the relevant research theories of tourism economics and the contribution of tourism development to the economy at home and abroad, firstly, this paper analyzes the development status of tourism resources in Gansu Province, and uses the time series analysis method to obtain the pulling effect of the increase of Tourism income on the economy; Secondly, the grey correlation degree is used to quantitatively analyze the relationship between tourism and other industries; Finally, according to the conclusion of the article and the research results of many scholars, this paper puts forward the Countermeasures of how to better develop tourism and promote economic development to a greater extent. The development of tourism has a very important impact on expanding social demand.

## 1. Introduction

At present, tourism has a high status in many countries, and some have risen to the pillar industry and become one of the new economic growth points, developing tourism to develop the economy of the whole region. Many scholars have made analyses and Research on the economic impact and benefits of tourism, but they all focus on the qualitative aspect, that is, to describe the existing situation, and there are still few quantitative studies. At this time, quantitative analysis is more important [1–6].

Qualitative analysis is to explore and determine the essential characteristics of things. For example, analyze the changes in the scale of tourists in tourism activities

and the increase or decrease in the price of tourism products. In essence, these phenomena are caused by what problems. The essence of qualitative analysis is to grasp the essence through the phenomenon. Quantitative analysis is to explore and study the impact of changes in quantity on things. Some changes in tourism activities are caused by various tourism phenomena. If the price of tourism products changes, the supply and demand of tourism will change, resulting in changes in all aspects. The quantitative analysis mainly focuses on quantitative analysis to grasp the characteristics and development trend of this activity from the changing state of things, so quantitative analysis also has important practical significance [7–12].

The research of empirical analysis method is to express the authenticity of the situation of objective things and the relationship between these things. It does not take value judgment, but objectively studies the internal law of economic phenomenon itself, and analyzes and predicts the consequences of some economic behavior according to the research. The problems it expresses can be explained by evidence and facts. The normative analysis is to analyze a problem based on a certain value judgment. It emphasizes that science and its development are related to values. Based on a certain value judgment, this method puts forward the standards for analyzing and dealing with economic problems and evaluates a certain economic behavior on this basis. The normative analysis in this paper mainly analyzes the good and bad of some tourism economic behaviors and tries to put forward the methods and Countermeasures to solve the problems. Therefore, this method is more subjective.

The tourism economy has become an important part of the social economy. Its characteristics are as follows: the tourism economy is a commercialized tourism activity. On the one hand, tourists are the main body of tourism demand. The scale, quantity, consumption level, tourism purpose, and tourism content of tourism demand not only determine whether tourism economic activities can be carried out effectively, but also have a decisive impact on the development level and scale of the tourism economy. On the other hand, tourism operators are the main body of tourism supply. Providing various needs for tourists is the premise and foundation to ensure the realization of tourism value and promote the effective implementation of tourism economic activities. The impact on residents' employment and living standards; The impact on investment activities and investment structure and on accelerating the development of underdeveloped countries and regions. The indirect impact of tourism on the national economy refers to the impact on those economic industries that do not participate in providing direct services to tourists but only provide supply to the tourism economy. At the same time, we should also dialectically analyze the impact of the tourism economy. Tourism plays many positive roles in promoting regional economic development, but there are also negative effects such as rising regional prices and regional economic instability caused by excessive dependence on tourism. This paper only analyzes the positive impact of the tourism economy, so as to demonstrate the role of tourism in promoting regional economic development; Considering the availability of relevant data and the feasibility of the analysis process, this paper selects two aspects for quantitative analysis: the contribution of tourism to GDP and the correlation effect between tourism and other industries [13–23].

In practice, the relationship between the development of tourism and the market economy has gradually strengthened in various aspects. At present, more countries in the world recognize the status of China's market economy. Our country has gradually established the status of tourism and developed it as an industry. At the same time, it has established relevant industrial chain development, and gradually conducted in-depth research and Exploration on

the tourism economy, And grasp the important laws of market development and change, so as to better grasp the development trend of the industry and realize the rapid development and development of regional tourism and local economy. Accurate positioning of the development direction of tourism is directly related to the all-around development of tourism. An objective analysis of the economic situation of Gansu Province and a quantitative analysis of the correlation between tourism and other fields are of great practical significance in solving many major problems in the development of the regional tourism industry and promoting the adjustment of tourism industry structure.

The above model itself also assumes that the production function is linear, the input factors are completely irreplaceable, the industry does not have economies of scale, the local economy is not restricted by production capacity or supply. These assumptions are not completely consistent with reality. For example, which's study on Mauritius found that after taking into account the constraints of supply, the income multiplier and employment multiplier of tourism should be reduced by 28%–34%. To make a comprehensive and systematic quantitative analysis of the impact of the change of tourism final demand on the economic system, we need to analyze not only the role of the change of tourism final demand on relevant industries but also the impact of this change on residents' consumption and enterprise production, product market, labor force and other factor markets. The computable general equilibrium model (CGE) is based on the general equilibrium analysis theory. According to the general equilibrium analysis, the impact of the economy on any part can be transmitted to the whole system. It can reveal the interrelationship between industries, and reflect the changes in output prices and the impact of changes in macro-economic policies on input prices. Compared with other methods, the CGE model can more comprehensively evaluate the role of Tourism activities on the regional economic system. Based on the overview of the CGE model, this paper attempts to build a CGE model of tourism activities in Jiangsu Province, so as to analyze the impact of the change of inbound tourism demand on the regional economy of Jiangsu Province. This paper focuses on methodology and model building. For this purpose, based on the social accounting matrix of tourism activities, this paper will focus on three aspects: how to build a static CGE model to analyze the impact of tourism activities on the regional economy, data collection and parameter estimation in the process of model building, as well as various results of model calculation and their economic significance.

## 2. CGE Model and Theoretical Basis

The world's first CGE model was constructed by Johansen. After this, there was a hiatus in the development of CGE models, with no significant progress until the 1970s. Two factors aroused interest in the CGE model in the 1970s: (1) The world economy faced big shocks, such as sudden changes in energy prices or the international monetary system, and rapid increases in real wage rates; (2) The increasing ability of CGE model in data refinement has

promoted its wide application. A typical CGE model uses a set of equations to describe supply, demand, and market relations. In this set of equations of the number of goods and factors of production are variable, all the prices (including prices), wages are also variable quantity, in a series of optimized conditions (producers profit optimization, consumers benefit optimization, import gains profits, and export into the optimization, etc.), under the constraint of solving the equations, it is concluded that to achieve a balanced in every market a set quantity and price. CGE model consists of supply, demand, and equilibrium of supply and demand. The constraint equations of the CGE model describe the different cost constraints of producers, which always pursue the maximization of profit under the constraint of cost minimization. The optimization equation of the CGE model describes the behavior of producers seeking the maximum profit, is the optimal relationship between output and input, and is usually an equilibrium equation under first-order conditions. In the OPEN economy CGE model that includes foreign sector or other regional sectors, it is also required to describe the incomplete substitution elasticity relationship between the local market and other markets.

CGE model is built on the basis of a variety of economic theories, the main theoretical basis includes: ① Walrath general equilibrium theory is the core theoretical support of the CGE model, the whole model is built on the basis of this theory. At any given set of prices, market demand is always equal to market supply, even if the lattice is not the market equilibrium price. ② One of the important significance of neoclassical economic theory CGE model is to calculate the equilibrium value of supply, demand, and factor input under equilibrium state. Neoclassical economic theory provides a method and theoretical basis for calculating this equilibrium. The theories of “maximization” and “rationality” in the neoclassical economy have been applied in THE CGE model. In the model, residents, enterprises, and other subjects are regarded as “rational” and pursue utility or profit maximization or cost minimization, and the idea of “maximization” is described in the model by formula. (3) Production structure theory mainly includes the constant return scale, increasing and decreasing of three kinds of situations, CGE models generally assume constant scale reward, this also reduces the complexity of the model, of course, sometimes assume scale increasing, return has learn said the two different assumptions may lead to the difference in the results and even the opposite. CGE model solving algorithm is the process of solving equations describing the CGE model. MCP method is a new method to solve the CGE model in recent years. MCP (mixed complementary problem) is described as a model consisting of linear equation, nonlinear equation, or inequality, which can contain market equilibrium and game equilibrium at the same time. The closure is the division of endogenous variables and exogenous variables according to the theoretical basis of the model set. CGE model has three kinds of macro closure: (1) The first is the neoclassical closure rule, the price is flexible and usually full employment; (2) The second is the closure of macro structuralism, in which the employment rate is

regarded as an endogenous variable and the number of the labor force in each sector can be adjusted freely according to its own needs; ③ The third is the closure rule between the two. The CGE model is based on a variety of economic theories, including Walrath general equilibrium theory, neoclassical economic theory, and production structure theory.

The assumptions of the CGE model are as follows: (1) assume that China’s economy is a perfectly competitive market; (2) Assuming monetary neutrality, relative price is the key to affect the economy; (3) It is assumed that the input-output relationship among departments remains unchanged, and each department produces only one product; (4) Assume that the government uses all tax revenue for consumption, and the consumption tendency of goods in each department is fixed. Most CGE models can be divided into the following parts: ① production module, ② consumption module, ③ government behavior module, ④ foreign trade module, ⑤ market equilibrium module, and ⑥ macroclosure module.

The direct consumption coefficient refers to the number of products produced by other departments for each additional unit of total output in the production process of a certain product sector. The direct consumption coefficient reflects the degree of dependence between departments. A larger direct consumption coefficient indicates a higher degree of dependence on the department. The calculation formula is [24–32]:

$$a_{ij} = \frac{X_{ij}}{X_j} \quad (i, j = 1, 2, \dots, n). \quad (1)$$

Here,  $a_{ij}$  represents the direct consumption coefficient of department  $j$  to Department  $i$ ,  $X_j$  represents the total input of department  $j$ , and  $X_{ij}$  represents the output of department  $i$  directly consumed by department  $j$  in the production process.

Refers to the intermediate demand rate, in a year, each department for a department of intermediate demand the sum total the department demand the proportion of demand and final demand (middle), the intermediate demand rate is higher, said the department production has the properties of the intermediate products and more goods, on the other hand, the intermediate demand rate is lower, said the unit production of goods more has the nature of the final product. The calculation formula is [33]

$$G_i = \frac{\sum_{j=1}^n X_{ij}}{\sum_{j=1}^n X_{ij} + Y} \quad (i, j = 1, 2, \dots, n), \quad (2)$$

Where,  $G_i$  represents the intermediate demand rate of department  $i$ ,  $X_{ij}$  represents the output of department  $i$  directly consumed by department  $j$  in the production process, and  $Y_i$  represents the maximum of department  $i$ .

Intermediate input rate refers to the proportion of intermediate input used by other departments in the production process of a certain department in the total input of the department. The higher the intermediate input rate is, the lower the value-added rate of commodities produced by the department is. The calculation formula is

$$F_j = \frac{\sum_{i=1}^n X_{ij}}{X_i} \quad (i, j = 1, 2, \dots, n), \quad (3)$$

where  $F_j$  represents the intermediate investment rate of the  $j$  department.

The production process is divided into two stages. The first stage is the composite factor production stage, which adopts the Cobb-Douglas function. The second stage is the domestic production stage, which adopts the Leontief function. Through solving the profit maximization in the above two stages, the following five sets of equations can be obtained:

$$\begin{aligned} Y_j &= b_j \prod_h F_{h,j}^{\beta_{h,j}}, \\ F_{h,j} &= \frac{\beta_{h,j} p_j^y}{p_h^f} Y_j, \\ X_{i,f} &= a x_{i,f} Z_f, \\ Y_f &= a y_f Z_f, \\ p_j^z &= a y_j p_f^j + \sum_i a x_{i,f} p_i^q. \end{aligned} \quad (4)$$

Assuming that the savings obtained are distributed among various commodities in a fixed proportion  $p$ , the following equation can be obtained according to the principle that investment equals savings:

$$\begin{aligned} X_i^v &= \frac{\lambda_i}{p_i^q} (S_p + S_g + \varepsilon S_f), \\ S_g &= ss^g \left( T^d + \sum_j T_j^z + \sum_j T_j^m \right), \\ S_p &= ss^p \sum_h P_h^f F F_h. \end{aligned} \quad (5)$$

Assuming that the utility function of residents satisfies the form of Cobb-Douglas function and is constrained by the initial factor endowment of residents, the optimal solution can obtain the demand function of residents for the  $i$  commodity.

$$X_i^p = \frac{a_i}{p_i^q} \left( \sum_h p_h^j S F F_{hp} - S^p - T^d \right), \quad (6)$$

$Y_j$  is number of compound elements,  $F_{h,j}$  is number of intermediate inputs,  $p_h^f$  is prices of factors of production,  $p_j^y$  is price of the compound factor,  $X_{i,f}$  is direct consumption,  $x_{i,f}$  is direct consumption coefficient,  $Z_f$  is level of domestic output,  $X_i^v$  is investment demand for complex commodities,  $\lambda_i$  is composite commodity investment share,  $S_p$  is household savings,  $\varepsilon$  is foreign exchange rates,  $S_g$  is total income tax,  $ss^g$  is government savings, and  $FF_h$  is resident factor endowment.

### 3. Empirical Analysis of Growth Relationship

The data of domestic tourism income, international tourism income, growth rate of tourism income, number of inbound tourists, number of domestic tourists and per capita

spending of domestic tourism are mainly from the Tourism Yearbook. The number of A-level scenic spots mainly comes from China Tourism Statistics Yearbook, The ticket price of the scenic spot is mainly obtained through telephone consultation with the management office of the main scenic spot or the scenic spot office. GDP, population, land area, the output value of primary industry, secondary industry output value, the output value of the third industry, tourism practitioners, the total number of employees, urban per capita disposable income and rural per capita income, investment in fixed assets, the density of highway mileage, the density of railway mileage, sulfur dioxide emissions per square kilometer, per square kilometer wastewater emissions, solid waste per square kilometers data of discarded emissions, per capita park green area and forest coverage rate are mainly from the statistical yearbook and municipal statistical yearbooks. Considering the availability and consistency of data, tourism employees are reflected by the number of accommodation and catering employees. The rise of tourism is the product of social and economic development, an objective law that inevitably appears when the society develops to a certain stage, and a symbol of social progress. With the continuous expansion of tourism market scale, tourism plays an increasingly prominent role in driving the economy, and its development drives the GROWTH of GDP. Tourism activities are the activities of final consumption. Tourism consumption can expand the market of the primary and secondary industries, open up fields and bring business opportunities for other service industries.

Assessing the value of an industry to an economy has always been tricky. Tourism belongs to the service industry. Because of the intangible nature of service, it is more difficult to evaluate the value of the service industry than manufacturing enterprises. Estimating the value of tourism is even more difficult because it is difficult to define the scope of tourism services. At present, the contribution of the tourism economy to the national economy in China is usually measured by the percentage of tourism income in the gross domestic product, which makes the status and role of tourism industry in China's social and economic development lack of comprehensive, scientific and objective quantitative analysis. According to Keynesian economic theory, the total social demand determines the total social production and total income. As long as there is demand, the society can produce a certain number of products corresponding to it, that is, demand determines supply. From the perspective of demand, this paper studies the influence and promotion of tourism economy on national economy by analyzing tourists' consumption in the process of tourism. See Figure 1 for the change of growth rate of China's tourism revenue and domestic tourism revenue.

Tourism is a sensitive industry to the external environment, and the social, economic and political conditions of tourist sources, destinations and relevant countries and regions will directly affect the development of tourism and the operation of tourism enterprises. Economic prosperity, political stability and major cultural and sports activities will stimulate the development of tourism to varying degrees. On

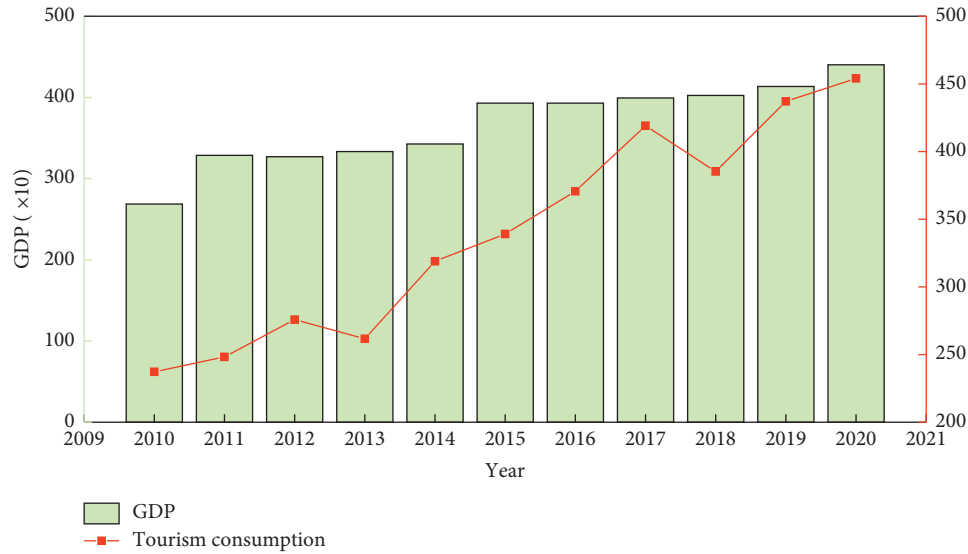


FIGURE 1: Relationship between GDP and tourism revenue.

the other hand, economic recession, political turmoil, war, epidemic and other natural disasters and emergencies will have a negative impact on tourism. However, its white self recovery ability is very strong, and its contribution to the national economy is constantly increasing. Its prosperity and development will have very important significance for the overall economic development. The above analysis shows that the development of tourism consumption in China has great potential. At present, due to the change of consumption structure and the change of consumption concept, the space of the domestic consumption market is vacant, the development of domestic tourism, it is a good opportunity to fill the consumption vacancy. As tourism products and services have their own characteristics, tourism consumption is different from that of other products and services. Generally speaking, tourism consumption has multi-level, irreplaceable and final consumption. Multi-level refers to the ladder of supply and demand caused by the difference in the quality of tourism products and consumer preferences. Nonsubstitutability refers to the nonsubstitutability of different time and space or consumption of different tourism products and services. In addition, tourism consumption is a direct and final consumption, not storage. From this point of view, tourism consumption has such excellent characteristics as the national economy as a new growth point and vigorously support the policy is completely in line with the reality, it will be conducive to increase the speed of national economic development, improve the quality of national economic development, will eventually bring greater development for the national economy in Figure 2.

Due to the inavailability of quarterly data of per capita GDP, this section uses the quarterly data of per capita disposable income of urban residents INC as an indicator to measure economic growth and the quarterly data of per capita expenditure of domestic tourism CONS to explore the dynamic impact of economic growth on tourism spending by using the state-space model. First, the unit root test for In (CONS) and In (INC) is performed, both of which are first-

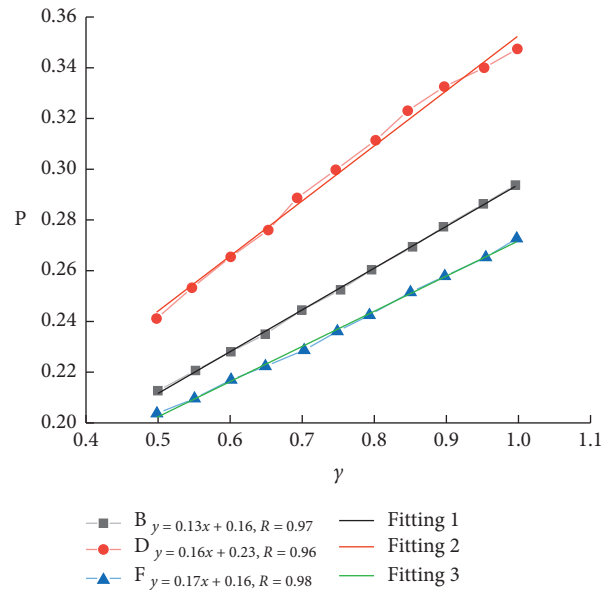


FIGURE 2: Relationship between correlation degree and  $p$ .

order integrals. Then, The Johansen cointegration test is conducted, and the test results are shown in Tables 2 and 3. Trace statistics and maximum statistics test both indicate that there is a cointegration relationship between In (CONS) and In (INC) at the significance level of 5%, indicating that there is a long-term equilibrium relationship between N (CONS) and In (INC). The variable parameter state-space model is established below, and the specific form is shown in Figure 3.

From Figure 4, we can also see that the income elasticity of tourism is only slightly greater than 1 and the overall trend is declining, that is, the impact of residents' discretionary income on tourism spending is declining year by year, although the overall decline is small. And tourism consumption can be a variety of different levels of consumption, especially domestic tourism people can take flexible and

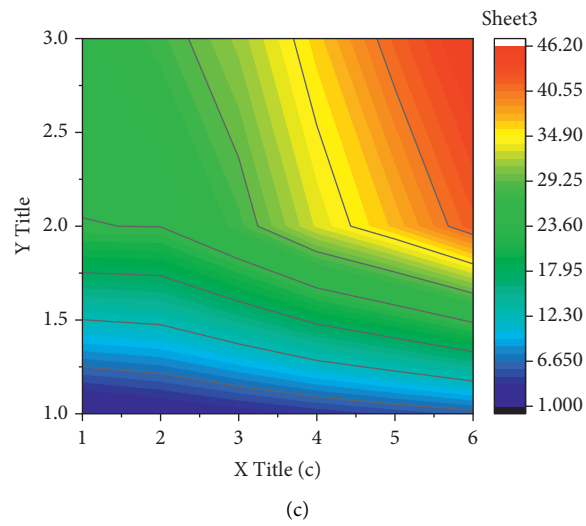
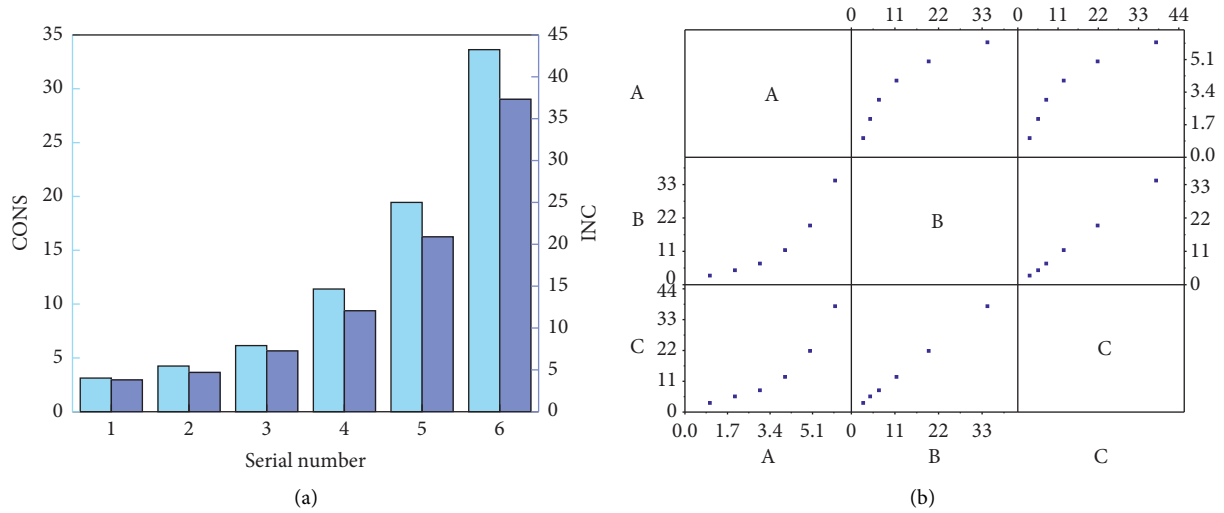


FIGURE 3: Performance comparison.

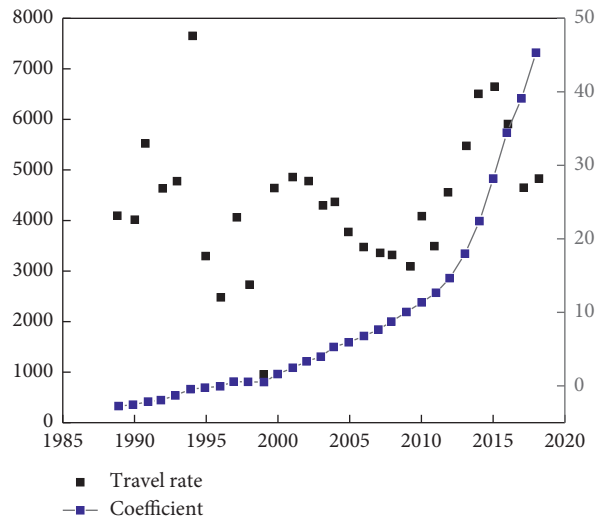


FIGURE 4: Coefficient and its travel rate trend chart.

diverse travel ways, according to one's ability. Travel distance can also be short or long, so the impact of income and expenditure is gradually reduced.

It can be seen from Figure 5 that personal disposable income has a great impact on domestic tourism spending, and the income elasticity of tourism spending is greater than 1, which indicates that traveling is still a relatively luxurious thing for urban residents in China. However, in industrial economics, it is believed that the growth rate of industries with low income elasticity will not increase or remain constant to a certain extent with the increase of people's economic income. Basic food needs, ordinary clothing needs. But in industries with high income elasticity, demand will greatly expand as people's income increases. According to this theory, since the income elasticity of tourism is greater than 1, it means that with the increase of disposable income, more and more people will choose to travel to meet their spiritual needs and knowledge needs, so there will be more and more demand space in this aspect.

As shown in Figure 6, the positive impact of international tourism income also has a positive impact on catering and accommodation industry. Although there are fluctuations, (2) before this the influence is on the decline, in the third period began rising rapidly, in 5 peak, then smooth, shock response to reduce gradually, start from 25 edition and stable growth, increase of international tourism income in food and lodging industry investment the influence of some positive constant. According to Maslow's hierarchy of needs, in any case, people's basic physiological needs will require to be met first. It is also the case when tourists carry out tourism activities. They will inevitably require accommodation and catering at the tourist destination. Therefore, the increase in the number of tourists in tourist destinations is certainly conducive to the development of local accommodation and catering industry, and promote investors to increase investment. First of all, accommodation and catering provided by tourist destinations must meet the basic consumption needs of tourists in both quantity and quality, so that tourists can combine work and rest, ensure that tourists have normal daily life and food guarantee, and ensure that tourists can successfully complete the whole process of tourism. In terms of catering, we should try to highlight the local flavor characteristics, so that catering becomes an important factor to promote the development of tourism in the destination. In terms of accommodation, it is necessary to form a reasonable local structure and layout system innovation on a certain scale, further dig the accommodation culture system, improve the traditional accommodation function, so that tourists can also enjoy the unique charm of local culture through accommodation. In short, tourists should have a feeling of enjoyment of accommodation and catering when visiting scenic spots and scenic spots. Otherwise, the lack of accommodation or catering in any aspect, such as hygiene or service quality, will greatly affect the image of the tourist destination.

As shown in Figure 7, the response of public facilities hedge industry to the positive impact of international tourism income is roughly the same as that of catering and accommodation industry. It also drops to the lowest point in

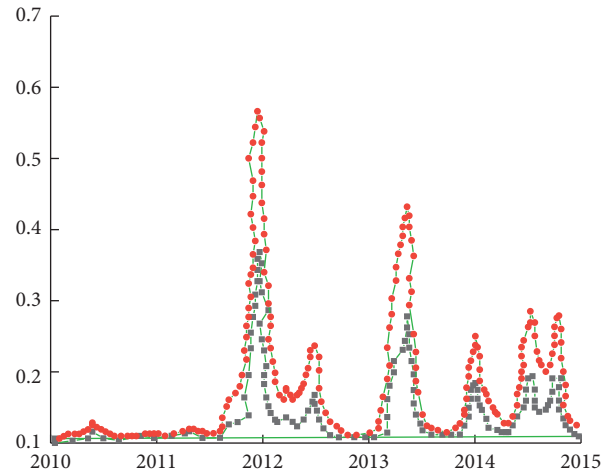


FIGURE 5: Posterior volatility.

the second phase, then rises rapidly, reaches the highest point in the fourth phase, then gradually falls back, and tends to be stable in the long term. This shows that the positive impact of international tourism revenue will increase investment in the public facilities management industry.

#### 4. Suggestions on the Contribution of Tourism to the Economy

The total income of tourism has an obvious promoting relationship to the total economic amount in Figures 8 and 9. How to promote tourism to drive economic growth, promote the coordinated development of tourism with other industries, and drive the economic growth of the whole region, we need to do the following: First, choose the strategic mode of industrial linkage and regional cooperation. Establish a new development concept in the tourism development area, expand the tourism industry innovation model, multi-directional new channels to improve the quality of tourism, increase the excess income of tourism. For all industries in the tourism industry, it should be dominated by all-round and multi-echelon investment subjects, fully mobilize the enthusiasm of all stakeholders, and strengthen the key links of the tourism industry chain. Taking the "center-periphery" mode as the main line, taking the correlation between tourism industry and nontourism industry as the link, on the basis of the development of tourism industry, the further development of industry, agriculture and other related industries; Attaching importance to the development of regional economic integration, adjusting the development strategy on the basis of traditional short-line tourism, taking strengthening the cooperation within and between provinces as a new idea. Strengthening mutual exchanges and cooperation is aimed at improving the effective allocation of resources of newly developed tourist attractions and scenic spots along the way, and realizing the improvement of comprehensive benefits of tourism through the tourism development strategy of linkage industry and regional cooperation. Second, the government should play an active leading role. First of all, we

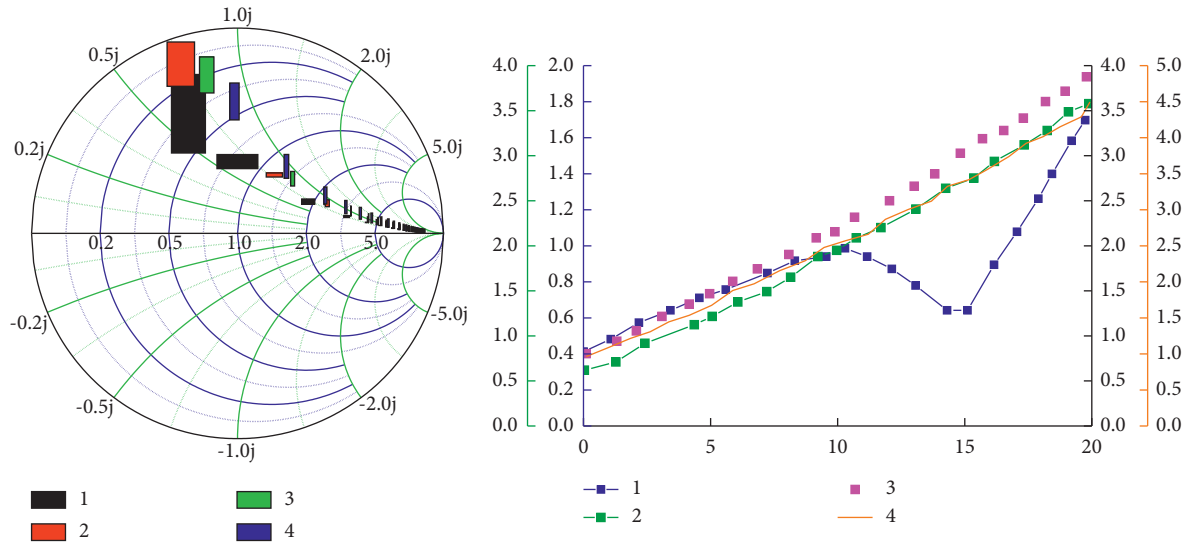


FIGURE 6: Comparison of model results.

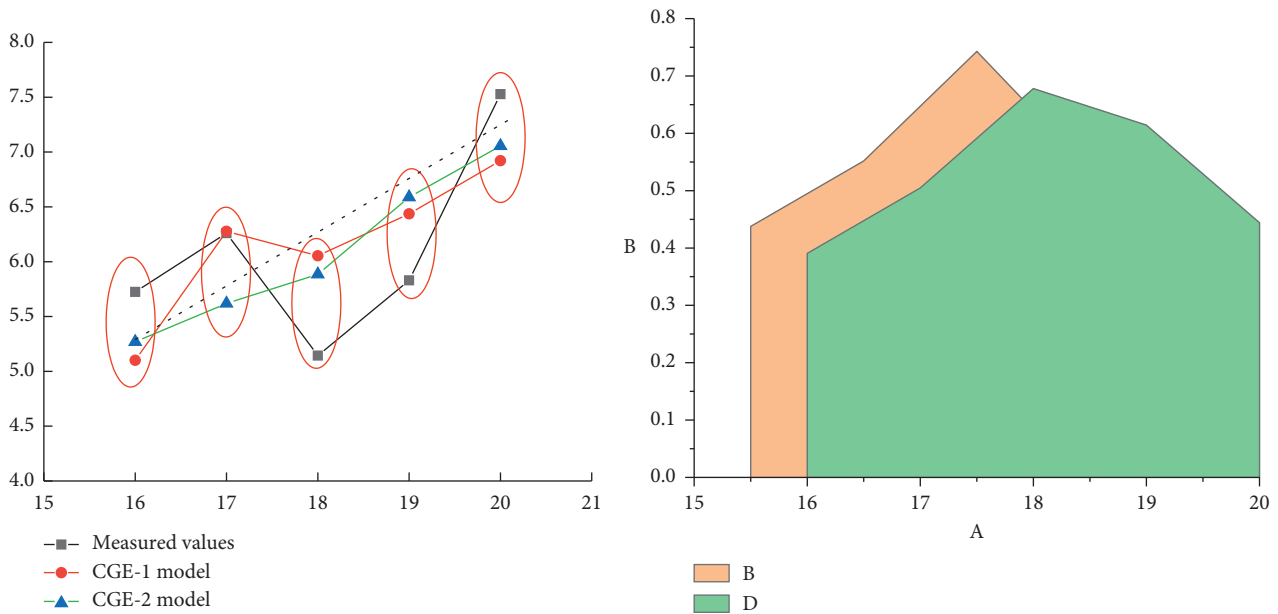


FIGURE 7: Model processing results.

should highlight the status of the tourism industry and give priority to its development in the adjustment of industry structure. Therefore, it is necessary for the government to regard tourism as a leading industry and give key support so as to transform the resource advantages into industrial and economic advantages as soon as possible. Secondly, determine the financial tilt of capital support. Financial support is one of the forms in which the government plays a leading role in the early stage of tourism development, and financial funds are mainly used in development and construction and market promotion. With the deepening of development and construction, more government funds are invested to improve the investment environment and infrastructure, so as to better provide convenient conditions for the development of the tourism industry. At the same time, we should

constantly improve the tourism environment and take the road of sustainable development. The government should create conditions for the sustainable development of tourism through policies and regulations and promote the healthy development of tourism. Thirdly, we should improve macro-control and policy of tourism industry. Tourism is closely related to many industries and departments in the national economy. The smooth development of tourism economic activities must be supported and cooperated by other relevant departments and industries. At the same time, tourism products and services are jointly completed by several tourism departments and enterprises, which objectively need these departments and enterprises to achieve the optimal matching. Therefore, in order to improve the macro-economic benefits of tourism, it requires the state to



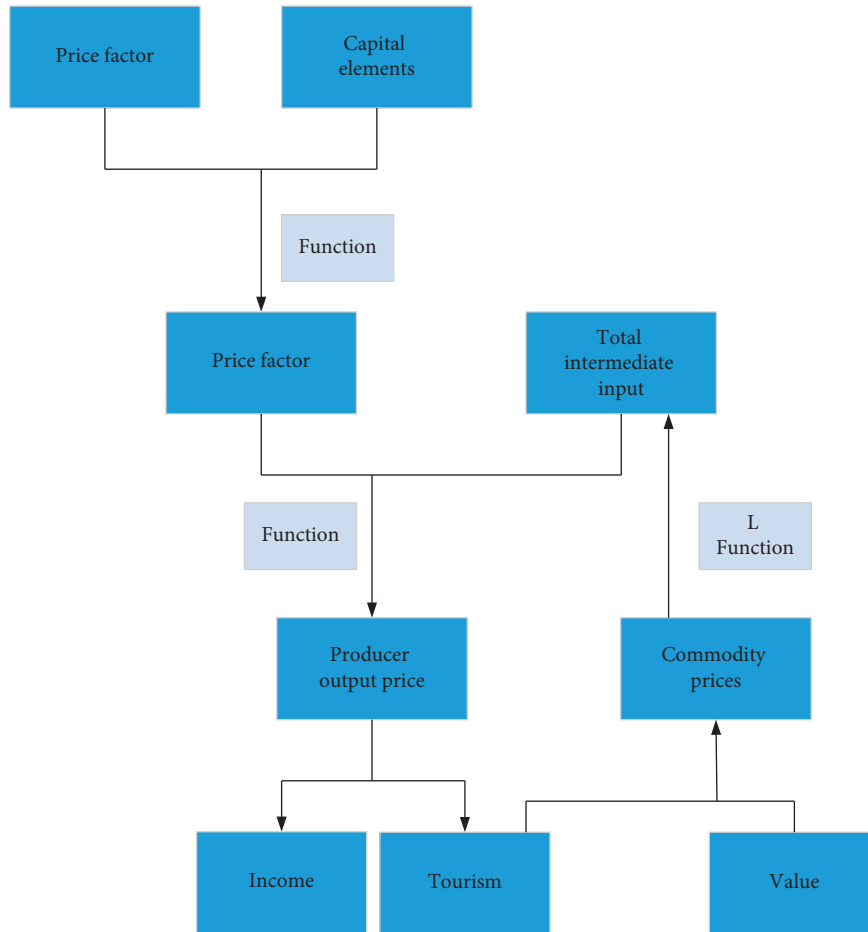


FIGURE 8: CGE model system.

constantly improve the policy of tourism industry, make full use of economic, administrative, legal, and other regulatory means, mobilize the enthusiasm of all aspects of society, and promote the development of the whole tourism industry.

In order to promote the rapid development of tourism and constantly improve the economic benefits, the following aspects must be paid attention to when improving the tourism industry policy: first, to establish and improve the tourism industry structure policy, clarify the development priorities and priorities of the tourism industry, formulate policies and measures to ensure the realization of the tourism industry development priorities; Second, formulate the tourism industry layout policy, use the regional economic theory to promote the regional development of tourism resources, and from the space of tourism and its industrial structure scientific and reasonable layout; Third, perfect the organization policy of tourism industry, establish the policy and mechanism of opposing monopoly and promoting competition, promote the large-scale operation of tourism industry, and realize the survival of the fittest; Fourthly, we should advocate the technological policy of tourism industry, strengthen the promoting significance of modern scientific and technological progress to tourism development, formulate policies and specific measures to promote the scientific and technological progress of tourism,

and promote the continuous improvement of the technological content of tourism. Fourth, reform tourism management system, establish modern enterprise system to improve the macro-economic interests of tourism must also reform the traditional economic management system, according to the requirements of the market economy, establish modern enterprise system and tourism economic management system to adapt to the socialist market economy. First of all, in the macromanagement of tourism economy, it is necessary to separate government from enterprise, clearly divide the power and responsibility of tourism administration department and enterprises, fully mobilize the enthusiasm of tourism enterprises and tourism operators, and improve the economic interests of tourism enterprises and tourism operators. Secondly, it is necessary to improve tourism management, promote standardized and scientific industry management, reduce the interference of administrative departments in the business activities of tourism enterprises, promote tourism enterprises and tourism operators to face the market, operate independently under the state macro-control, and engage in various tourism economic activities. Thirdly, we should improve the practice of relying solely on state investment, establish a tourism investment mechanism that can fully mobilize the enthusiasm of all parties, promote the pattern of multi-

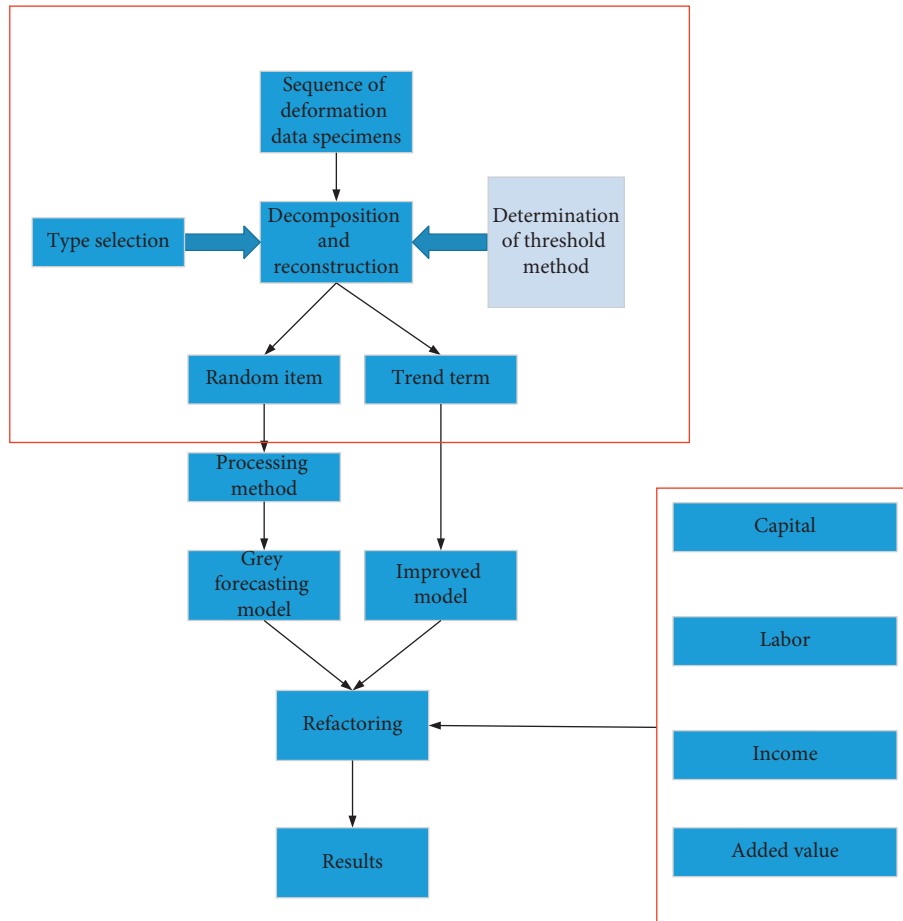


FIGURE 9: Tourism and revenue patterns.

channel investment such as state, collective, individual and foreign capital, accelerate the development of tourism products and the construction of tourism infrastructure, and promote the development of tourism. Finally, we must speed up the reform of state-owned tourism enterprises, establish a modern enterprise system to meet the requirements of a socialist market economy, clearly define the property right structure of state-owned tourism enterprises, promote the standardization of enterprise behavior, and establish a reasonable interest driving mechanism, so as to continuously improve the economic benefits of tourism. Fifthly, vigorously improve the quality of the tourism industry to further expand the opening to the outside world, actively implement the local strategic deployment to expand foreign investment, encourage foreign investment in tourism, attract famous enterprises to enter the tourism market in Gansu. Strengthen bilateral, multilateral, and exchanges and cooperation with local tourism organizations, and actively participate in the formulation of local rules and research on national tourism frontier issues. Give full play to the unique role of outbound tourism in establishing nongovernmental exchanges and easing economic and trade frictions, promote the improvement of reception conditions and service levels of outbound tourism destinations, and make contributions to enhancing Gansu's "soft power." China will continue to strengthen tourism exchanges and cooperation with other

tourism regions, expand nongovernmental tourism exchanges, and promote the prosperity of national tourism.

Further, improve the service level of the industry, attach great importance to inbound tourism, enhance the pertinency and effectiveness of the development of the inbound tourism market, explore the establishment of market development and publicity and promotion benefit evaluation mechanism. We will strengthen tourism statistics and encourage cities and counties with conditions to establish tourism satellite accounts. We will strengthen tourism planning, establish and perfect mechanisms for market access, professional qualification, achievement appraisal, and implementation supervision of tourism planning. We should improve the standardization level of tourism, introduce and learn from advanced domestic standards, speed up the formulation of standards of various tourism facilities and services, encourage tourism enterprises and industry associations to participate in the formulation and revision of standards in the tourism industry, and improve the application efficiency of tourism standardization. We will accelerate the development of tourism professionals. To meet the needs of tourism development, we will strengthen the quality and capacity building of tourism employees and strive to create a contingent of high-quality employees. Strengthen education and training for tourism management cadres and key personnel of enterprises. Strengthen

cooperation with education departments, actively promote tourism colleges and disciplines construction, integrate tourism education and training resources, and vigorously develop tourism vocational education. Strengthen the training of middle and senior talents, compound talents and urgently needed talents, improve the vocational qualification certification system, establish and perfect talent incentive mechanism. Promote the construction of professional tourism managers, establish and improve the market for professional tourism managers. Sixth, quality first, sustainable development, and coordinated development are inherent requirements of the scientific Outlook on Development. In the development of the new tourism industry, we should not only pay close attention to the coordination between the development of industry and human development but also coordinate the relationship between the development of the tourism industry and the development of the environment. A good natural environment is not only the condition but also the goal of tourism industry development. In China's less developed areas, economic development targets heavy, pressure, through the development of the tourism industry to promote regional economic development is very urgent. However, as a postdevelopment region, we must fully consider the possible destruction and negative impact on resources and the environment caused by the development of the tourism industry, and must not exchange short-term quantitative indicators for long-term development. Protection and optimization of resources and environment must be synchronous with the development of the tourism industry, in the development of the new type of tourism industry, the tourism industry must consider the development and human development, environmental development, cultural development and social development, the relationship between the human development, environmental development, cultural development and social development further into the development of tourism industry and support, And through the new tourism industry to develop the overall economic and social progress and development.

According to the research results, the following countermeasures and suggestions are put forward: (1) in terms of tax choice. When choosing tourism tax, tourism employment tax has a better effect. (2) In terms of tax rate formulation. Three tax rates of 5%, 10%, and 20% are selected to study the economic effect of tourism tax. Therefore, when setting the tourism tax rate, the tax rate should not be too high, and the tax rate of about 10% can be used as a reference. (3) In the implementation of supporting policies. The purpose of levying tourism tax is to regulate the healthy development of tourism and protect tourism resources, rather than simply increase government revenue.

## 5. Conclusion

- (1) The quantitative analysis results made by using the econometric model fully show that the development of tourism is closely related to the economy, and the development of tourism can drive the rapid development of the economy. Calculation of correlation

between tourism and related industries at the same time, more intuitive to see the development of the tourism industry to a great extent, and so did the other industries development and prosperity, but also shows some industries on the relevancy is lower, so should pay special attention to the development of various industries, make is closely connected with tourism, promote the common development of each other.

- (2) Computable general equilibrium analysis (CGE) has been applied in many fields of economic analysis in China. However, due to the limitations of data and methodology, previous researchers did not apply THE CGE method to the analysis of tourism problems. This paper is the first attempt to use THE CGE method to study tourism problems in China, and constructs a provincial regional static CGE model to analyze the impact of changes in inbound tourism demand on the regional economy of Jiangsu Province, which provides a reference for the further use of CGE model to study tourism problems in China. The parameter estimation of this model adopts calibration method, or adopts the data of GTAP in China instead of Jiangsu. In the future, based on the collection of relevant data, econometric methods should be used to obtain the parameter values of the model. Meanwhile, CGE modeling methods should be constantly improved to analyze the economic impact of tourism activities.
- (3) In order to achieve the purpose of tourism collection, we should also carry out and implement relevant supporting policies at the same time. For the transfer of production factors caused by tourism expropriation, the government can subsidize the employees in the tourism industry, increase their income, accelerate the upgrading and innovation of the tourism industry, improve the profitability of the industry and attract more capital investment; In view of the use of tourism tax, the government can entrust relevant professional institutions to establish a tourism resource protection fund to maintain China's tourism resources for a long time, so as to promote the sustainable development of tourism.

## Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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