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# Study on Influencing Factors of Tourism Development in Beijing

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## **Abstract**

Based on the tourism data from 2008 to 2018, this paper studies the factors affecting the development of tourism in Beijing. Firstly, principal component analysis is used to analyze the collected data, and it is determined that it is most appropriate to retain two principal components, and the results of applicability test show that this method is reasonable. Then, according to the component scores obtained by principal component analysis, using multiple regression analysis to study each index, it is found that the number of travel agencies, the area of park green space at the end of the year and the number of tourists in scenic spots have a greater influence on the development of Beijing tourism, while the number of hotels is the least influential factor. Finally, based on the influence degree of various factors and the current situation of tourism development, this paper puts forward some reasonable suggestions for the better development of Beijing tourism.

# **Keywords**

Tourism development; Principal component analysis; Pluralistic regression; SPSS.

#### 1. INTRODUCTION

With the rapid development of economy, people's quality of life has been greatly improved. Besides enjoying material life, people are willing to spend a lot of time and money on pursuing spiritual life. In the new period, China has entered the era of tourism popularization, and tourism has become a new fashion leading the trend. Tourism is a highly comprehensive industry which integrates the six elements of tourism, shopping, transportation, entertainment, food and housing. It can not only promote economic growth, but also help residents get employment. Therefore, it is of great theoretical and practical significance to study the development status and influencing factors of tourism.

In this paper, the tourism-related data from 2008 to 2018 are selected to study the influencing factors of Beijing's tourism development, so as to provide decision-making reference for its better development. Relevant scholars such as Yan Peiyi and Wang Yingrong (2019) found that the scale of fixed assets and the number of employees are the main factors affecting the development of tourism [1]; Wu Shun (2018) analyzed by establishing a multivariate linear regression model that the number of domestic tourists, the number of star-rated hotels and the per capita disposable income of households have a significant impact on the tourism industry in Inner Mongolia [2]; Zhan Xianzhao (2017) found that the tourism income of Shandong Province is related to the main factors such as per capita GDP, the number of tourists, the number of travel agencies and traffic conditions by establishing and revising the multivariate regression model [3]. Up to now, most of the references are comparative studies on the influencing factors of tourism development in different regions of China or other provinces,

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while there are few independent studies on the influencing factors of tourism development in Beijing with rich history and culture.

There are many factors affecting the development of Beijing's tourism industry, such as tourism resources, food and accommodation services, human environment and so on. In this paper, the National Bureau of Statistics and the Beijing Municipal Bureau of Statistics will collect relevant data, take tourism income as the explanatory factor, and nine influencing factors, such as the number of hotels, the number of scenic spots and the area of park green space at the end of the year, as explanatory variables, and use the principal component regression method to analyze the influence of each factor on the development of Beijing tourism, and then put forward effective strategies for the better development of Beijing tourism.

#### 2. VARIABLE ANALYSIS AND METHOD ESTABLISHMENT

## 2.1. Analysis of Variance

Number of scenic spots of grade a and above. Beijing, which is known as a tourist resort, has a large number of tourist attractions, among which the Forbidden City, Summer Palace, Yuanmingyuan and other scenic spots of Grade A and above with strong ancient culture play an important role in Beijing's tourism industry. It is necessary to analyze the influence of the number of such scenic spots on Beijing's tourism development.

Number of travel agencies. Travel agencies can balance the development of local economy, and their quantity changes reflect the development of Beijing's tourism industry from the side. The better the tourism industry develops, the more travel agencies are needed to accommodate more tourists. Therefore, the number of travel agencies should also be considered when analyzing the influencing factors of Beijing's tourism development.

Number of hotels. As the saying goes, people take food as their priority. The hotel can not only provide special dishes for tourists, but also provide short rest places for tourists. The number of hotels will change with the demand of tourists, and when the number of tourists increases, the demand of hotels will increase accordingly. Therefore, this paper will take the number of hotels as an influencing factor to analyze the development of tourism in Beijing.

Number of visitors in scenic spots. Tourists mainly visit scenic spots, and the number of tourists in scenic spots will have a direct impact on the business income of tourist areas. The more the number of tourists, the higher the tourism income. Although sometimes the number of visitors will be small, the tourism income will still increase, but the income growth rate is decreasing.

Domestic per capita disposable income. Generally speaking, income plays a decisive role in residents' consumption. On the basis of stable income and sufficient funds, people's pursuit of tourism demand will be higher. The higher the per capita disposable income in China, the higher the tourism demand of people. Therefore, theoretically speaking, domestic per capita disposable income will have a certain impact on tourism development.

Passenger turnover. This factor is an important indicator to measure the passenger transport workload in a region, which can reflect the difference between the number of passengers transported by holidays and Non-holiday, and can be taken as one of the indicators to be considered when studying the influencing factors of tourism development.

Transportation, warehousing and postal investment. The continuous improvement of the quality of life ushered in the era of mass tourism, and self-driving tour became a new fashion. Under this condition, the convenient transportation and parking spaces in scenic spots greatly affected the development of tourism and even economy in this area. Therefore, the investment in transportation, warehousing and postal services in Beijing is also an essential factor to study the development of tourism in this city.

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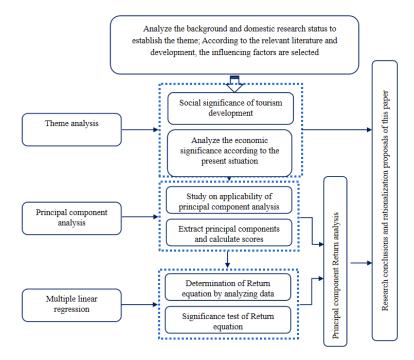
Year-end park green area. Sustainable development is a new requirement of national development, and dealing with the relationship between environment and industry is an important issue facing the development of industry at present [5]. Tourism industry is closely related to environment, which is the foundation of the establishment of tourism industry, and the quality of tourism resources is affected by environmental quality. Therefore, the area of park green space in Beijing also affects the development of tourism in this city to a certain extent, so it is selected as an influencing factor to be studied.

Number of domestic tourists. Tourism development mainly depends on domestic tourists, and tourism income will increase with the increase of tourists, that is, there is a positive correlation between the number of domestic tourists and tourism income. Therefore, the number of domestic tourists should be included in Be taken into consideration.

#### 2.2. Method Establishment

The multivariate linear regression method is simple and convenient in operation, and can intuitively get the coefficients of each index and their economic significance. However, this method has defects in dealing with multicollinearity problems, and it is precisely this defect that makes our model usually fail to achieve good results [6]. In addition, important variables may also be missed during variable screening. Principal component regression is the most important and common method in multivariate regression analysis. It uses the idea of dimension reduction to replace the original multiple variables with a few comprehensive variables, which solves the multicollinearity problem in multivariate linear regression. At the same time, the principal component regression is practical for solving some practical economic problems.

The purpose of this paper is to study a series of factors affecting the development of tourism in Beijing. In order to avoid the situation that the results can not meet the needs of subsequent analysis and the relationship between explanatory variables and interpreted variables deviates from reality when using multivariate regression analysis, principal component regression method is adopted for analysis, and the overall thinking of writing is shown in Figure 1.



**Figure 1.** Logical block diagram of this paper

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#### 3. DATA PREPROCESSING

#### 3.1. Data and Sources

The data of four variables selected in this paper, namely tourism income (100 million yuan), passenger turnover (10,000 kilometers), domestic tourists (10,000 trips) and domestic per disposable capita income. are all from the **National** Bureau **Statistics** (http://data.stats.gov.cn/). The data of six influencing factors, namely, the number of scenic spots, travel agencies, hotels, the number of tourists in scenic spots, the area of park green space at the end of the year, and the investment in transportation, warehousing and postal industry, are all from the Beijing Municipal Bureau of Statistics (http://tjj.beijing.gov.cn/). The tourism data list shown in Table 1 is obtained by sorting out the collected data.

Table 1. List of tourism data

Year	Tourism income	Number of scenic spots of Grade A and above	Number of travel agencies	Number of hotels	Number of receptions in scenic spots	Domestic per capita disposable income	Passenger turnover	Transportation, warehousing and postal investment	Year- end park green area	Number of domestic tourists
2018	5556	247	1192	419	31131	28228	22199810	1150.97	32619	30693.2
2017	5122.4	244	1139	519	30402	25974	20558450	1128.4	31019	29353.6
2016	4683	241	1162	523	30350	23821	18893132	761.37	30069	28115
2015	4320	227	1238	528	29405	21966	17476775	714.7	29503	26859
2014	3997	221	1243	581	28685	20167	16027249	767.54	28798	25722.2
2013	3666.3	213	1147	614	26726	18311	14987719	652.99	22215	24738.8
2012	3301.3	203	1021	612	24276	24565	15957877	696.08	21178	22633.7
2011	2864.3	211	919	598	24255	21810	15286501	505.18	19728	20884
2010	2425.1	201	819	729	17307	19109	13995404	645.6	19020	17900
2009	2144.5	179	888	757	15385	17175	11464758	612.54	18070	16257
2008	1907	158	860	836	11855	15781	10419977	560.52	12316	14181

#### 3.2. Data Standardization

In view of the fact that the selected nine influencing factors and the ten variables of tourism income have different units and varying degrees, it is necessary to standardize the data to eliminate the dimensional influence. For the convenience of later analysis and description, the data of nine explanatory variables, such as the number of scenic spots of Grade A and above, the number of travel agencies and the number of hotels, are standardized and recorded as  $X_1^*, X_2^*, \dots, X_9^*$  in turn, and the tourism income data of the interpreted variables are standardized and recorded as  $Y^*$ . The results of data standardization are shown in Table 2.

Table 2. Standardized data list

Year	$Y^*$	$X_1^*$	$X_2^*$	$X_3^*$	$X_4^*$	$X_5^*$	$X_6^*$	$X_7^*$	$X_8^*$	$X_9^*$
2018	1.570	-0.183	0.577	-0.776	0.926	1.234	1.290	0.579	1.162	1.123
2017	1.248	-0.192	0.288	-0.515	0.846	0.899	1.005	0.532	0.983	0.957
2016	0.922	-0.201	0.413	-0.504	0.841	0.580	0.715	-0.229	0.877	0.804
2015	0.653	-0.245	0.828	-0.491	0.738	0.305	0.470	-0.325	0.814	0.648
2014	0.413	-0.263	0.856	-0.352	0.659	0.039	0.218	-0.216	0.735	0.508
2013	0.168	-0.288	0.331	-0.266	0.446	-0.236	0.037	-0.453	0.000	0.386
2012	-0.103	-0.319	-0.357	-0.271	0.179	0.691	0.206	-0.364	-0.116	0.125
2011	-0.428	-0.294	-0.914	-0.308	0.177	0.282	0.089	-0.760	-0.278	-0.091
2010	-0.753	-0.326	-1.460	0.035	-0.580	-0.118	-0.135	-0.469	-0.357	-0.461
2009	-0.962	-0.394	-1.083	0.108	-0.790	-0.405	-0.574	-0.537	-0.463	-0.664
2008	-1.138	-0.459	-1.236	0.315	-1.174	-0.611	-0.756	-0.645	-1.106	-0.922

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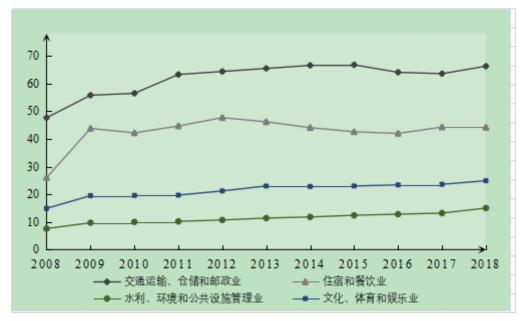
## 4. SOCIAL SIGNIFICANCE ANALYSIS

Tourism occupies an important position in the tertiary industry, and its development will not only have a strong impact on regional economy, but also promote social development and progress. By analyzing the social significance of tourism development, we can deeply understand its present situation, so as to put forward reasonable suggestions to promote tourism development according to the follow-up analysis results.

## 4.1. Promote Employment of Residents

In the new period, China has entered the era of tourism popularization. The development of tourism not only expands a brand-new channel for cultural exchange, but also provides an effective means for developing economy and promoting employment. In recent years, the employment situation is not optimistic, the employment pressure is getting bigger and bigger, and the layoffs caused by the development of science and technology are becoming more and more obvious. At this time, tourism, as a highly comprehensive industry integrating the six elements of travel, purchase, transportation, entertainment, food and housing, plays an important role in promoting employment.

The employment data of tourism-related fields are collected through Beijing Statistical Yearbook, and the line chart shown in Figure 2 is drawn. The line chart of employment data from 2008 to 2018 shows that the number of employed people in transportation, warehousing and postal services has changed greatly and the overall trend is increasing; The number of employed people in the accommodation and catering industry increased the most in 2009, and the number of employed people in the industry fluctuated around 400,000 in the following nine years; Although the overall change trend of employment in the other two industries is small, it still shows a continuous upward trend. With the development of tourism, the number of employed people in tourism-related fields is also rising, which indicates that tourism development can increase the demand for talents in related fields, and then promote employment.



**Figure 2.** Line chart of employment in tourism-related fields

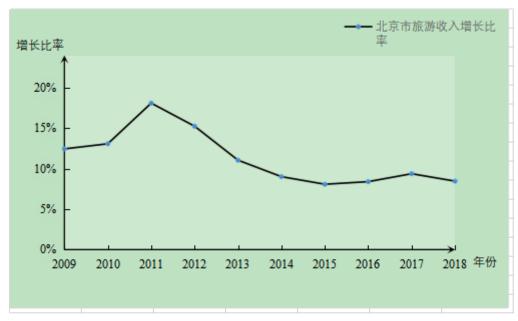
The development of tourism needs the introduction of a large number of talents in related industries, that is, the development of tourism can indirectly promote employment, help

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alleviate employment pressure, and then promote the development of society. In addition, Beijing, the capital city, has a profound cultural background. If tourism can be better developed, it will guide more tourists to understand history and traditional culture, and promote cultural exchanges while developing economy.

## **4.2. Drive Economic Development**

Nowadays, social tourism has become one of the most popular outdoor activities in the world. Tourism occupies an important position in the tertiary industry and is also an important part of the national economic and social development to a higher level, which makes the country attach great importance to the development of tourism. By analyzing the data of Beijing tourism income from 2008 to 2018, it can be seen that the income in 2009 increased by 12.45% on the basis of 2008, and the growth rate of tourism income in the following two years kept rising, and reached the maximum value of 18.11% in 2011. According to the growth rate, draw the line chart of Beijing tourism income growth rate shown in Figure 3.



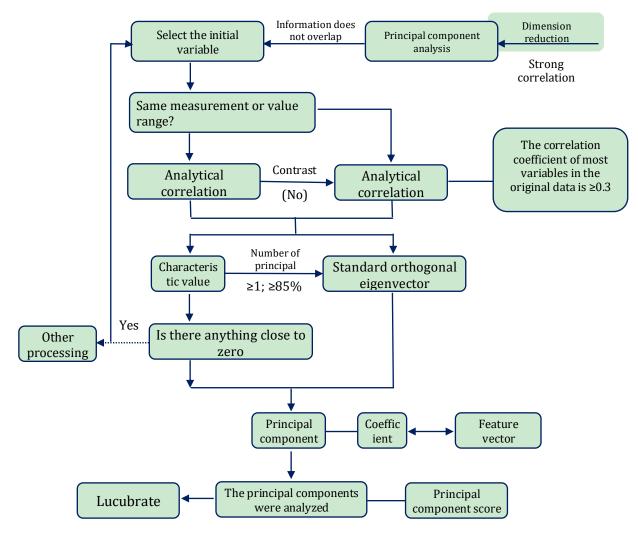
**Figure 3.** Line chart of growth ratio of tourism income in Beijing

According to Figure 3, the growth rate of tourism revenue in Beijing fluctuated around 8.40% from 2014 to 2018. From 2008 to 2018, the income of Beijing's tourism industry increased year by year, but the rate of increase was not stable. This phenomenon was inextricably linked with the number of travel agencies, the number of tourists in scenic spots, and the area of parks at the end of the year. Therefore, studying the development of Beijing's tourism from the factors mentioned above and putting forward reasonable suggestions will have certain reference significance for developing the tourism economy of this city.

#### 5. PRINCIPAL COMPONENT ANALYSIS

Principal component analysis method uses the idea of dimension reduction, which is suitable for analyzing data with strong correlation among variables. If the correlation between the data of the selected variables is weak, then the expected dimension reduction effect can not be achieved by using this method, that is, the information amount of the original variables condensed by the final principal components is not much different, so it is necessary to study the applicability of principal component analysis first [7], and the overall analysis idea of principal component analysis is shown in Figure 4.

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**Figure 4.** Principle diagram of principal component analysis

## 5.1. Applicability Analysis

According to the data shown in the correlation coefficient table, this paper measures the correlation between pairwise variables, and further judges the applicability of principal component analysis. Use *SPSS* to calculate the correlation between indicators, and sort out the output results to get the correlation coefficient table shown in Table 3.

**Table 3.** Correlation coefficient table

Correlation coefficient	$X_1^*$	$X_2^*$	$X_3^*$	$X_4^*$	$X_5^*$	$X_6^*$	$X_7^*$	$X_8^*$	$X_9^*$
$X_1^*$	1								_
$\boldsymbol{X}_{2}^{*}$	0.604	1							
$X_3^*$	0.926	0.322	1						
${X}_4^*$	-0.657	0.127	-0.885	1					
$X_5^*$	-0.798	-0.217	-0.943	0.895	1				
$X_6^*$	-0.759	-0.09	-0.941	0.949	0.977	1			
$X_7^*$	0.931	0.705	0.777	-0.462	-0.583	-0.526	1		
$X_8^*$	-0.651	0.123	-0.873	0.966	0.894	0.957	-0.412	1	
$X_9^*$	-0.706	0.062	-0.914	0.987	0.928	0.978	-0.481	0.98	1

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From the correlation coefficient table, it can be seen that the absolute values of the correlation coefficients among the variables are mostly greater than 0.3, which has a strong correlation, indicating that it is suitable to consider using principal component analysis to study the influencing factors of tourism development in Beijing. In order to further verify the applicability of principal component analysis in this paper, the results are shown in Table 4 through KMO test.

Table 4. KMO and Bartlett test

Kaiser – Meyer – Olkin measure o	Kaiser – Meyer – Olkin measure of sampling sufficiency				
	Approximate chi- square	214.298			
Sphericity test of Bartlett	df	36			
	Sig.	0.000			

It can be seen from the results of  $\it KMO$  and  $\it Bartlett$  tests that the  $\it Kaiser-Meyer-Olkin$  measure of sampling adequacy is 0.617>0.5, which shows that the principal component analysis method is applicable in this paper.

## **5.2. Extraction of Principal Components**

Since the test of correlation coefficient table in Table 3 and *KMO* and *Bartlett* in Table 4 shows that principal component analysis is applicable, principal component analysis is used to study the standardized variable data, and the common factor variance table and the explained total variance table can be obtained as follows.

**Table 5.** Common factor variance table

	Initial	Extract
Number of scenic spots of Grade A and above	1.000	0.979
Number of travel agencies	1.000	0.937
Number of hotels	1.000	0.997
Number of receptions in scenic spots	1.000	0.977
Domestic per capita disposable income	1.000	0.932
Passenger turnover	1.000	0.977
Transportation, warehousing and postal investment	1.000	0.916
Year-end park green area	1.000	0.975
Number of domestic tourists	1.000	0.996

The main purpose of the common factor variance table is to show the information extracted from the selected original variables by principal component analysis. According to the data in Table 5, this analysis contains more than 90% information of the selected original variables. In addition, the value of the third characteristic root in Table 6 is only 0.228, so it is more

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appropriate to extract two principal components according to the principle that the characteristic root is greater than 1, and the characteristic root of first principal component is 6.794 and that of the second principal component is 1.892. According to the cumulative contribution rate, it can be seen that under the premise of retaining two principal components, the cumulative contribution rate can reach 96.513% > 85%, which indicates that the effect of retaining two principal components is better.

**Table 6.** Explained total variance table

-			<u>-</u>				
		Initial eigen	value	Select the sum of squares to load			
Ingredients	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	
1	6.794	75.487	75.487	6.794	75.487	75.487	
2	1.892	21.026	96.513	1.892	21.026	96.513	
3	0.228	2.532	99.045				
4	0.044	0.489	99.533				
5	0.022	0.248	99.782				
6	0.014	0.157	99.939				
7	0.003	0.036	99.975				
8	0.002	0.020	99.995				
9	0.000	0.005	100.000				

The coefficient matrix of principal components can be used not only to write the expression of each principal component, but also to show which variables each principal component can best represent. From the output component score coefficient matrix, it can be seen that first principal component mainly reflects six variables: the number of hotels, the number of scenic spots, the per capita disposable income in China, the turnover of passengers, the area of park green space at the end of the year and the number of domestic tourists; The second principal component mainly reflects three variables: the number of scenic spots of Grade A and above, the number of travel agencies, transportation, warehousing and postal investment. First principal component and the second principal component can simplify the index and reduce the dimension on the basis of retaining the important information of each original variable.

**Table 7.** Composition score coefficient table

	Ingred	dients
	1	2
Number of scenic spots of Grade A and above	-0.13	0.238
Number of travel agencies	-0.034	0.496
Number of hotels	-0.146	0.055
Number of receptions in scenic spots	0.136	0.183
Domestic per capita disposable income	0.142	0.032
Passenger turnover	0.143	0.097
Transportation, warehousing and postal investment	-0.104	0.341
Year-end park green area	0.135	0.192
Number of domestic tourists	0.140	0.159

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## 6. REGRESSION ANALYSIS

There is a close relationship between regression analysis and correlation analysis, and the objects analyzed by both are from the same set of data under the same index. regression analysis and correlation analysis often appear in some specific applications in the form of complementary. The former shows the degree of correlation among variables through the latter, while the latter reflects the specific correlation form of data of variables through the former. Based on the high correlation between variables, it is valuable to use regression analysis to find a specific form of correlation.

## **6.1. Principal Component Regression**

On the basis of factor scores obtained from principal component analysis, the score of first principal component is calculated by formula  $FAC1\_1 \times \sqrt{6.794}$ , and the score of second principal component is calculated by formula  $FAC2\_1 \times \sqrt{1.892}$  in the same way, and they are recorded as  $F_1$  and  $F_2$  respectively. regression analysis is made on the score data of tourism income and two principal components, and then regression equation is established. The results of regression analysis are shown in Table 8.

Table 8. Coefficient table of regression equation

Model		Non-standardized	Standard coefficient	t	Sig	Collinea statist	-	
		В	Standard error	Trial version			Tolerance	VIF
	(Constant)	0.00000000000001	0.049		0.000	1.000		
1	F1	0.305	0.020	0.794	15.535	0.000	1.000	1.000
	F2	0.428	0.037	0.588	11.517	0.000	1.000	1.000

It can be seen from the above table that the significant value of the regression coefficient is 0.000 < 0.05, which indicates that the coefficient is significant, and the independent variable can effectively predict the change of the dependent variable. In view of the fact that the Sig value of the constant is 1 > 0.05 and cannot pass the significance test, the constant is discarded. In addition, the data selected in this paper are time series data, and the problems studied are also economic problems, and there is inevitably collinearity among indicators. According to the coefficient table of regression equation shown in Table 8, the values of  $\it VIF$  are all lower than 3, so it can be concluded that there is no collinearity problem among indexes. Use the component score coefficient matrix and regression coefficient to obtain the coefficient of each index, as shown below.

$$\beta_{i} = \begin{bmatrix} -0.13 & 0.238 \\ -0.034 & 0.496 \\ -0.146 & 0.055 \\ 0.136 & 0.183 \\ 0.142 & 0.032 \\ 0.143 & 0.097 \\ -0.104 & 0.341 \\ 0.135 & 0.192 \\ 0.14 & 0.159 \end{bmatrix} \begin{bmatrix} 0.062214 & 0.06 \\ 0.201918 & 0.20 \\ -0.02099 & -0.02 \\ 0.119804 & 0.12 \\ 0.085131 & 0.09 \\ 0.085131 & 0.09 \\ 0.114228 & 0.11 \\ 0.123351 & 0.12 \\ 0.110752 & 0.11 \end{bmatrix}$$

$$(1)$$

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Among them,  $\beta_i$  ( $i = 1, 2, \dots, 9$ ) refers to the coefficients of nine indicators. The larger the coefficient, the greater the impact of the corresponding indicators on the development of tourism in Beijing. When the coefficient is positive, the corresponding influencing factors are positively correlated with tourism income, and vice versa.

#### 6.2. Statistical Test

The object of statistical test is the estimated values produced by regression analysis, and the purpose is to test the accuracy and reliability of these values. According to the results of *SPSS* -analysis, the estimated value is statistically tested by goodness-of-fit test and variance homogeneity test.

**Table 9.** Model summary table

Model	R	R square	Adjust R square	Error of standard estimation
1	0.988	0.976	0.971	0.16948061

Test of goodness of fit. According to the model summary table, R = 0.988, the determination coefficient is 0.976, which is very close to 1, and the number of samples is greater than the number of variables. Therefore, the model passed the goodness-of-fit test, that is, the fitting effect of regression equation on samples was very good.

**Table 10.** Single factor variance analysis table

	Model	Sum of squares	Variance	Mean square	F	Significant
	Regression	10.741	2	5.371	186.980	0.000
1	Residual	0.259	9	0.029		
	Total	11.000	11			

Homogeneity test of variance. According to the one-way ANOVA table, given the significance level  $\alpha=0.05$ , because of P=0.000<0.05, it is considered to pass the variance homogeneity test, that is, the regression equation is significant.

#### 7. CONCLUSIONS AND SUGGESTIONS

## 7.1. Main Conclusions

In this paper, the principal component regression method is used to analyze the influencing factors of tourism development in Beijing. According to the coefficients of each index, the regression equation of standardized data can be written.

$$Y^* = 0.06X_1^* + 0.2X_2^* - 0.02X_3^* + 0.12X_4^* + 0.06X_5^* + 0.09X_6^* + 0.11X_7^* + 0.12X_8^* + 0.11X_9^*$$
(2)

From the principal component regression equation, it can be seen that the number of travel agencies  $(X_2^*)$  has the greatest impact on the development of tourism, followed by the green area of parks  $(X_8^*)$  and the number of tourists in scenic spots  $(X_4^*)$  at the end of the year. For every increase in the number of travel agencies, the tourism income will increase by 0.2 units; Strengthening urban greening construction by expanding the area of park green space at the end of the year can attract more tourists, promote the development of tourism and improve

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tourism income; As the operating income of scenic spots will increase with the increase of the number of scenic spots, and there is a positive correlation between them, the tourism income will change by 0.12 units for every unit of the number of scenic spots. Although the impact of transportation, warehousing and postal investment ( $X_7^*$ ) and the number of domestic tourists ( $X_9^*$ ) on the development of Beijing's tourism industry is slightly lower than the first three variables, the increase of both data will promote the development of tourism industry, and then increase tourism income.

In addition, it can be seen from the equation that the passenger turnover ( $X_6^*$ ), the number of scenic spots of Grade A and above ( $X_1^*$ ) and the domestic per capita disposable income ( $X_5^*$ ) have a relatively low impact on Beijing's tourism income, and are positively correlated with it. Among the nine influencing factors, the least influence on Beijing's tourism income is the number of hotels ( $X_3^*$ ). Because too many hotels will damage the environment, when the number of hotels increases by one unit, the tourism income will decrease by 0.02 units accordingly.

## 7.2. Rationalization Proposal

According to the influence of nine factors, such as the number of hotels, the number of tourists in scenic spots and the area of park green space at the end of the year, this paper puts forward the following four rationalization proposals for the better development of tourism in Beijing.

First, guide investors to invest in additional travel agencies near scenic spots and parks, and encourage residents near tourist areas to rent homestays and make special travel meals for tourists. Renting home stays by residents is equivalent to expanding travel agencies. Residents provide travel meals for tourists, which can not only provide tourists with diversified choices, but also control the increase in the number of hotels, thus achieving the goal of optimizing service quality.

Second, scenic spots can carry out preferential activities such as parent-child ticket purchase, couple ticket purchase and holiday group purchase discount, allowing tourists to use scenic spot interpreters free of charge on weekends, and setting up tourist memorial halls next to scenic spots. These methods can attract tourists, improve Beijing's tourism competitiveness, and thus achieve the effect of increasing tourism income.

Third, increase investment in fixed assets in transportation, warehousing and postal services, appropriately increase parking spaces in scenic spots, widen roads, strengthen the construction of transportation-related facilities, and combine scenic spots and travel-related services to develop synchronously [8].

Fourth, the city appearance can bring tourists a refreshing experience, which can appropriately expand the area of park green space, strengthen the construction of urban greening, create an urban atmosphere in line with Beijing's cultural characteristics, and promote the dissemination of excellent traditional culture and the sustainable development of eco-tourism.

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