

# Research on Difference of Regional Tourism Economy in Tibet

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**Abstracts:** Tibet lies in the southwest border of the motherland and located in the hinterland of the Qing-Tibet Plateau, known as the “third pole of the world”. With the rapid development of tourism, the unbalanced development of regional tourism economy has become a common social and economic phenomenon. The paper Based on Tibet seven cities as the research object, in terms of the time and space, this dissertation analyzed the Tibet nearly a decade of tourism regional difference of tourism economy, with a series of analytical methods, such as range, standard deviation, extreme point and variable coefficient and so on. The result shows that the regional difference of Tibet tourism economy is evident. The absolute difference is enlarge unremmittingly, while the relative differences show a shrink trend in fluctuation. from the space tourism economy of Lhasa is well ahead of other cities in Tibet, The tourism economy of xigaze and Nyingchi are far behind of Lhasa, the tourism economy of Naqu and Ali are far behind of Lhasa from the space Lhasa, as the core of Tibet becomes the circle of tourism economic in Tibet. Then, according to the factor analysis method, evaluate seven cities in Tibet tourism to make Tibet tourism economy development level into four types, predevelopmental, rapid development, slow developmental and retarded development.

**Keywords:** Tibet, Tourism Economy, Difference of Regional

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## 1. Introduction

With the rapid development of tourism, the unbalanced development of regional tourism economy has become a common social and economic phenomenon. The research on regional tourism is helpful to understand the change progress of regional difference, current development status and development tendency. It has great theoretical and practical significance in promoting the coordinated development of regional tourism to optimizing the spatial distribution of production factors and formulating targeted regional control policies. [1-5] Tibet lies in the southwest border of the motherland and located in the hinterland of the Qing-Tibet Plateau, known as the “third pole of the world”. Since the reform and opening up, Tibet's tourism industry has emerged from nothing, which shows great vitality and unique charm. However, some factors which make the differentiation of regional tourism economic development in Tibet is particularly prominent, [6] such as geographical conditions and resources characteristics. Lhasa's tourism revenue and tourist trips much higher than those of Nyingchi, Xigaze, Ali,

Changdu and Naqu, which are not conducive to the sustainable development of Tibet's tourism economy and the early realization of a moderately prosperous society in Tibet. Therefore, the correct understanding and grasp the differences of regional tourism economy to understand the role of Tibet tourism development in the regional manager, improve the tourism industry status, optimize the distribution of tourism resources and factors of production, realize the regional cooperation and win-win, pertinence of the regional difference regulation policy, promote Tibet's tourism industry overall strength of ascension and the implementation of the strategy of sustainable development has very important significance.

## 2. Data Sources and Research Method

### 2.1. Data Sources

This paper takes seven cities in Tibet autonomous region as

the basic research unit. The data are mainly from the Statistical Yearbook of Tibet in 2006-2007, some of the missing data are from the statistical bulletins of relevant prefecture-level cities in Tibet and some official websites of the national, Prefectural Tourism Bureau, Forestry Bureau and Cultural Relics Bureau.

## 2.2. Research Method

This paper uses many research methods, such as range, standard deviation, extreme value ratio, variable coefficient, factor analysis and so on. [7-12]

### 2.2.1. R

R also known as Range, is the dispersion between maximum value and minimum value of overall unit variables, range is the easiest way to measure absolute difference. The computational formula is [12]:

$$R = X_{\max} - X_{\min} \quad (1)$$

In this formula, R is range,  $X_{\max}$  is the maximum value of regional per capita tourism income,  $X_{\min}$  is the minimum value of that. The larger the R is, the greater the absolute difference of regional tourism economic development will be. [13-20]

### 2.2.2. Standard Deviation

Standard Deviation, also known as mean square error, is the simplest statistics to represent the range of variation of each observed value in the sample. It can reflect the index to which the sample is far from the overall average. The computational formula is as follows [12]:

$$S = \sqrt{\sum_{i=1}^n \frac{(X_i - \bar{X})^2}{n}} \quad (2)$$

In the formula, S is standard deviation,  $X_i$  is the per capita tourism income in this area,  $\bar{X}$  is the average of per capita tourism income of each area, n is the number of regions. The larger the S is, the greater the absolute difference of regional tourism economic development will be.

$$S = \sqrt{\sum_{i=1}^n \frac{(X_i - \bar{X})^2}{n}} \quad (3)$$

### 2.2.3. Extreme Value Ratio

The Extreme Value Ratio is used to reflect the special situation of the economic difference of a country or region. The calculation formula is [12]:

$$L = X_{\max} / X_{\min} \quad (4)$$

In the formula, L is extreme value ratio,  $X_{\max}$  is the maximum of per capita tourism income, while  $X_{\min}$  is the minimum. The larger the L value is, the more serious the relative difference of regional tourism economic development will be.

### 2.2.4. Variable Coefficient (C·V)

C·V is the ratio of the standard deviation to the mean. It is a

common indicator to measure relative difference and can reflect the degree of relative difference between regions. In the difference of tourism economic development, it is used to reflect the relative gap of per capita tourism income between different regions and the total region. The calculation formula is [12]:

$$C \cdot V = S / \bar{X} = \sqrt{\sum_{i=1}^n \frac{(X_i - \bar{X})^2}{n}} / \bar{X} \quad (5)$$

In this formula, C·V is the Coefficient of Variable.  $X_i$  is the per capita tourism income in that area,  $\bar{X}$  is the average per capita tourism income of each area, n is the number of regions. The larger the C·V value is, the relative difference of region tourism economic development will be.

### 2.2.5. Factor Analysis

The basic thought of factor analysis is to find a few public factors that can control the original variable by analyzing the internal structure of the variable correlation coefficient matrix. The principle of select the common factor is contain more information of the original variables as far as possible. To set up the factor analysis model and use public factors to reproduce correlating the original variables. It's aim is to simplify the variables, reduce the dimension of the variable, explain and name the original variables. (11, 12) Supposing that there are n regions, there are p indicators reflecting a comprehensive regional characteristic. Factor analysis model extracts m ( $m < p$ ) common factors can still maintain the regional differences reflected by the original p indicators. The model of that is [12]:

$$\begin{cases} X_1 = a_{11}F_1 + a_{12}F_2 + a_{1p}F_p + \varepsilon_1 \\ X_2 = a_{21}F_1 + a_{22}F_2 + a_{2p}F_p + \varepsilon_2 \\ \dots \dots \dots \\ X_p = a_{p1}F_1 + a_{p2}F_2 + a_{pp}F_p + \varepsilon_p \end{cases} \quad (6)$$

The model is called factor model. X is the new variable after standardized,  $X = (X_1, X_2, \dots, X_p)^T$ , F is a common factor, an unobservable theoretical variable that is independent of each other.  $F = (F_1, F_2, \dots, F_p)^T$ . The matrix A which composed of common factor coefficients is the factor loading matrix,  $a_{ij}$  is factor loading matrix.

$$A = \begin{bmatrix} a_{11} & a_{12} & \dots & a_{1m} \\ a_{21} & a_{22} & \dots & a_{2m} \\ \dots & \dots & \dots & \dots \\ a_{p1} & a_{p2} & \dots & a_{pm} \end{bmatrix} \quad (7)$$

The processing formula of data standardization

$$P_i = (D_i - \bar{D}) / \delta \quad (8)$$

$$\delta = \sqrt{\sum_{i=1}^n \frac{(D_i - \bar{D})^2}{n}} \quad (9)$$

In this formula,  $P_i$  is the dimensionless index after conversion of some indicators,  $D_i$  is the index before conversion, and  $\delta$  is the standard deviation of the indicator.

### 3. Analysis on Regional Differences of Tibet Tourism Economy

#### 3.1. Analysis on Single Index Measure of Regional Differences of Tourism Economy in Tibet

##### 3.1.1. The Absolute Difference of Tourism Economy in Tibet

According to the tourism and population date of cities in Tibet provided by the Statistical Yearbook of Tibet, the extreme value difference rate R and standard deviation S of total tourism income and per capita tourism income of cities in Tibet were calculated, and the result are shown in table 1. From the table, we can see that the tendency of absolute difference of tourism economy in Tibet is expanding continually.

Table 1. The absolute difference of the regional tourism in Tibet.

Year	Total income of tourism (billion)		Tourism income per capita (yuan)	
	R	S	R	S
2006	15.85	5.06	2731.63	901.85
2007	23.62	7.84	4190.54	1352.88
2008	10.85	3.54	1918.32	689.63
2009	29.93	9.63	5245.9	1928.2
2010	37.85	12.14	6601.93	2571.17
2011	46.22	14.71	8008.78	2912.59
2012	59.81	19	10251.79	3840.60
2013	74.41	23.38	12555.27	4646.69
2014	96.08	31.44	17264.08	5829.26
2015	153.91	49.75	26650.84	9410.46
2016	182.66	59.84	31395.61	11110.70

In 2006, the range of the total tourism income in Tibet's seven cities is 1.585 billion yuan, standard deviation is 0.506 billion yuan, the range of per capita tourism income is 2731.63 yuan, the standard deviation is 901.85 yuan. In 2016, the range of the total tourism income in Tibet's seven cities is 8.266 billion yuan, standard deviation is 5.984 billion yuan, the range of per capita tourism income is 31395.61 yuan, standard deviation is 11110.70 yuan. Among them, the total income of tourism in Tibet's seven cities expanded by 11.5 times, the average annual growth of 27.7%, the standard deviation of tourism income increased by 11.8 times with an average annual growth of 30%. The per capita tourism income gap increased by 11.49 times, with an average annual growth of 27.7%. The standard deviation of per capita tourism income increased by 12.32 times, with an average annual growth of 28.55%. We can also learn from table that the range and standard deviation of the total tourism income and per capita income in 2008 have declined, which is mainly affected by the "3.14" incident in Lhasa, Tibet's tourism industry has received a great impact. Tourism revenue has been reduced in many places, while the tourism income of Lhasa has a more serious impact. Consequently, the regional tourism economic differences have been reduced.

##### 3.1.2. Relative Difference of Tourism Economy in Tibet

According to the tourism and population date of cities in Tibet provided by the Statistical Yearbook of Tibet, the L and C·V between total tourism income and per capita tourism

income were calculated. The chart 1 and 2 show the changes of the relative differences of the tourism economy between cities in Tibet. It can analysis that:

#### i. The Relative Difference of Tourism in Tibet Is Decreasing

Tibet tourism economy relative differences between seven cities always change. From the point of extreme value ratio, in 2009, the biggest relative difference of total tourism income between seven cities was 200.53, while the smallest relative difference of that in 2014 was 13.16. The relative difference of total tourism income in 2009 was 15.24 times that of 2014. And the highest rate of per capita tourism extreme value ratio occurred in 2013 at 12.46. The extreme value ratio of per tourism income in 2008 was 3.88 times that of 2014. According to the ratio chart of regional tourism mechanism in Tibet, we know that the overall relative difference is gradually narrowing.

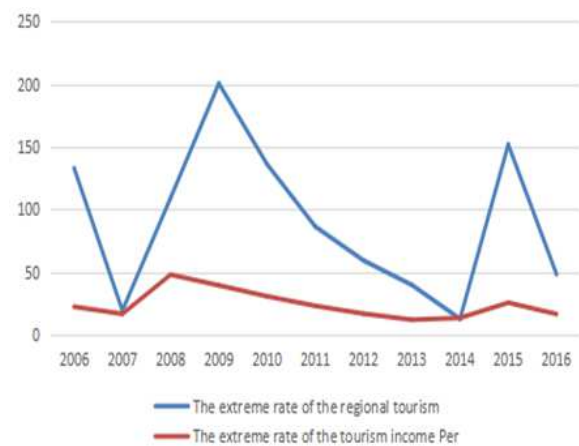


Figure 1. The extreme rate of the regional tourism.

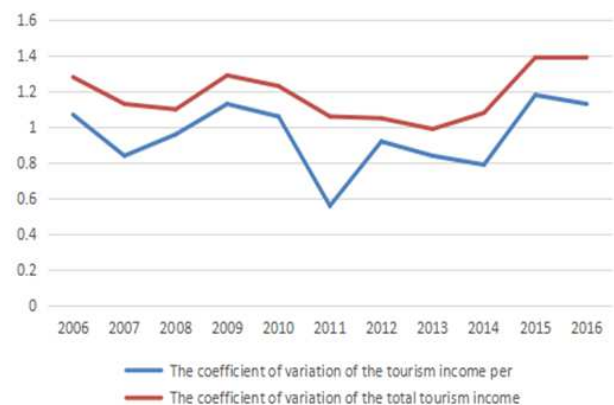


Figure 2. The coefficient of variation of the regional in Tibet tourism in Tibet.

#### ii. The Coefficient of Variation of Regional Tourism Shows a Rebound Trend

According to the variation coefficient graph of tourism income in seven cities in Tibet, the variation coefficient of total tourism income was gradually shrinking from 2006 to 2014, however, it was expand and rebound in 2015, which indicating that the development of regional tourism economy in Tibet was still unbalanced.

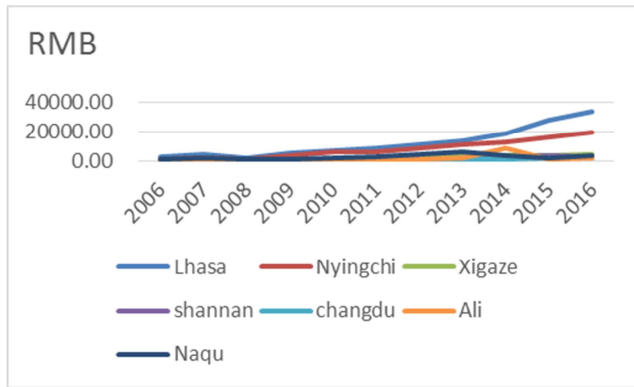


Figure 3. Per capita tourism income of Tibet.

### 3.1.3. Spatial Analysis of the Variation of Per Capita Tourism Income in Tibet

It can be seen from figure 3 that per capita tourism income of Tibet showed a sustained growth trend from 2006 to 2016. About the per capita tourism income of Tibet's cities, the capital Lhasa has been in a leading position, Nyingchi was the second after Lhasa, which was due to the idea "to swim Tibet from the beginning of the forest" and the appropriate altitude, climate of Nyingchi. While Changdu was basically at the lowest level, was closely related to its poor road transport facilities and the relatively large population distribution. From 2006 to 2013, under the position influence of the Qinghai-Tibet railway, Naqu was always in the third place. Since 2013, Xigaze was jumped to the third place. The opening of the ladakh railway has increased the tourism income greatly of Xigaze, These data fully show that the development of transportation facilities is a precondition for the development of tourism in Tibet.

### 3.2. Analysis of Multi-index Comprehensive Evaluation for Regional Difference of Tourism Economy in Tibet

In order to make up for the deficiency of single index, some researchers construct the comprehensive index system of tourism economic development from the aspects of economy, society and environment.

#### 3.2.1. Regional Difference of Tourism Economy in Tibet Based on Factor Analysis

##### i.. Selection of Evaluation Indicators

Learning from the relevant research results, the evaluation of the condition of tourism economic development mainly from the aspect of tourism revenue, tourism reception, tourism resource conditions, tourist reception facilities, the growth rate of tourism economy and regional economic support and so on, constructed a comprehensive evaluation index system of Tibet's tourism economy, including six elements and 13 indexes, and then calculated the regional differences of tourism economy in Tibet comprehensively.

Table 2. The comprehensive evaluation index system of tourism economy.

A element	B index	unit
Tourism income	Total tourism revenue $X_1$	100 million
	Total tourism revenue as a proportion of GDP $X_2$	%
Tourist reception	Tourist reception $X_3$	Ten thousand
Tourism resource conditions	Number of A-level scenic spots $X_4$	-
	Tourism resource endowment $X_5$	-
Tourist reception facilities	Number of star grade hotel $X_6$	-
	Number of family inn $X_7$	-
	Number of travel agency $X_8$	-
	Airport throughput $X_9$	million
The growth rate of tourism economy	Growth rate of tourism revenue $X_{10}$	%
	Growth rate of tourist trips $X_{11}$	%
Regional economic support	GDP	Billions
	Growth rate of GDP	%

In this table, the natural endowment of tourism resource is an important element to evaluate the quantity and quality of tourism resources, depending on the type of Tibet tourism resources characteristics, and appraise the tourism resource endowment of Tibet synthetically by weighted summation method. The main thought of that is: select the number of scenic spots, world heritage, national famous historical and cultural city (town, village), national forest park, national wetland park, cultural relic protection site (such as key national and provincial) 9 indicators as Tibet tourism resources endowment the basic of comprehensive evaluation. Meanwhile, Delphi method was used to conduct weight decomposition and score evaluation for the above tourism resources. The main scores are shown in table 3.

Table 3. The weight definition and numeration of tourism resources in Tibet.

Kind	Weight	Rank	Score
Number of scenic spot	0.05		30
World heritage	0.2		120
National historical and cultural city (town, village)	0.15		90
Key cultural relies under protection	0.05	National level	30
		Autonomous region level	20
Museum	0.05		30
National nature reserve	0.15	National level	90
		Autonomous region level	60
		City level	30
National forest park, wetland park	0.15		90
National scenic spot	0.15		90
The demonstration plot of beautiful countryside and ecological civilization	0.05		30

##### ii. Factor Analysis

###### 1. Factor extraction

In the evaluation of the comprehensive development level of Tibet's tourism economy, there are differences in the order of magnitude and dimension among the indicators. In order to avoid differences in the evaluation results, the data should be standardized first. The formula of data standardization is as follows:

$$P_i = (D_i - \bar{D})/\delta \quad (10)$$

$$\delta = \sqrt{\frac{\sum_{i=1}^n (D_i - \bar{D})^2}{n}} \quad (11)$$

In the formula,  $P_i$  is the dimensionless index after the

conversion of some index,  $D_i$  is the index before conversion,  $\delta$  is the standard deviation of the index and the processed standardized data will be input into SPSS software for factor analysis. Figure 4 shows the gravelly soil which describe the characteristic values of each factor.

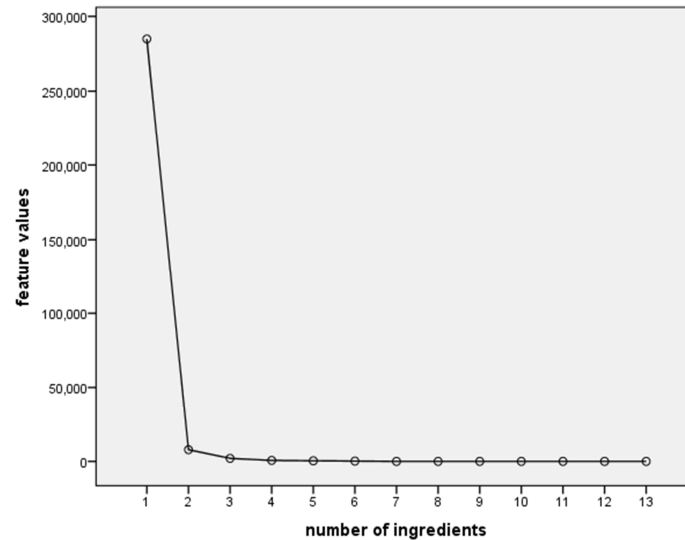


Figure 4. The stone chart of the factor characteristic value.

It can be seen from Figure 4 that the characteristic values of the first factor is the biggest, the second and third factors are relatively large. Starting from the fourth factor, the characteristic gradually approaches 0. And the number of factors is determined mainly based on: the cumulative contribution rate reaches over 80%, the characteristic root of the correlation coefficient matrix is greater than 1, the break point of the poly line graph of the characteristic root distribution and so on. At the same time, if the factors are determined according to the cumulative contribution rate, the characteristic roots should be considered comprehensively to determine the appropriate number of factors. It can be seen from table 4 that

the contribution rate of F1, F2, F3 is up to 90.129. The variance contribution rate of the first factor F1 is 67.777, the characteristic value is 8.811, the variance contribution rate of the second factor F2 is 14.122 and the characteristic value is 1.836. The variance contribution rate of the third factor F3 is 8.230 and the characteristic value is 1.070. These three factors can reflect 90.129 of the overall information of 13 indicators, and the eigenvalue are all greater than 1, the extraction results are ideal. Therefore, this study selects the three (F1, F2, F3) common factors to reflect the comprehensive development level of the tourism economy in Tibet.

Table 4. The explanation of total variance.

Component	Initial eigenvalue			Extracting squared and loading		
	Total	% of the variance	% of the cumulative	Total	% of the variance	% of the variance
1	8.811	67.777	67.777	8.811	67.777	67.777
2	1.836	14.122	81.899	1.836	14.122	81.899
3	1.070	8.230	90.129	1.070	8.230	90.129
4	.752	5.788	95.917			
5	.307	2.365	98.283			
6	.223	1.717	100.000			
7	4.434E-16	3.411E-15	100.000			
8	3.251E-16	2.501E-15	100.000			
9	1.301E-16	1.001E-15	100.000			
10	2.051E-17	1.577E-16	100.000			
11	-8.067E-17	-6.205E-16	100.000			
12	-1.642E-16	-1.263E-16	100.000			
13	-4.440E-16	-3.416E-16	100.000			

## 2. Factor rotation

For better interpretation and naming of factors, choosing variance quartic maximum orthogonal method for rotation analysis and get the load matrix (table 5) of common factor after rotating. From table 5 we can see that the common factor

F1 has a large load on 10 variable indexes except the growth rate of tourism total income, the growth rate of total tourism and the growth rate of GDP. These indicators includes the comprehensive development level of tourist economy and can be named as the comprehensive factor. The common factor F2

has a large load on the variable growth rate of total tourism revenue and the growth rate of tourists trips, which can be named as tourism growth factor. The common factor F3 has a large load in the variable GDP growth rate, which can be

named as the economic growth factor. By naming each factor, the influence of each common factor on the system can be better explained.

*Table 5. Rotated component matrix.*

	Index	Common factor F1	Common factor F2	Common factor F3
X <sub>1</sub>	Tourist reception	.993		
X <sub>2</sub>	Total tourism revenue	.977		
X <sub>3</sub>	Tourism resource endowment	.950		
X <sub>4</sub>	GDP	.940		
X <sub>5</sub>	Number of the travel agency	.935		
X <sub>6</sub>	Airport throughput	.931		
X <sub>7</sub>	Number of A-level scenic spots	.923		
X <sub>8</sub>	Total tourism revenue as a proportion of GDP	.915		
X <sub>9</sub>	Number of star grade hotel	.902		
X <sub>10</sub>	Number of family inn	.873		
X <sub>11</sub>	The growth rate of total tourist trips		.909	
X <sub>12</sub>	The growth rate of tourism revenue		.837	
X <sub>13</sub>	The growth rate of GDP			.707

*Table 6. Principal component Factor analysis.*

Common factor	Variable item	Factor loading	Eigenvalue	Variance contribution rate (%)	Cumulative variance contribution rate (%)
Comprehensive factor	Tourist reception	.993	8.811	67.777	67.777
	Total tourism revenue	.977			
	Tourism resource endowment	.950			
	GDP	.940			
	The number of travel agency	.935			
	Airport throughput	.931			
	Number of A-level scenic spots	.923			
	Total tourism revenue as a proportion of GDP	.915			
	Number of star grade hotel	.902			
	Number of family inn	.873			
Tourism growth	The growth rate of tourism trips	.909	1.836	14.122	81.899
	The growth rate of tourism revenue	.837			
Economic growth	The growth rate of GDP	.707	1.070	8.230	90.129

### 3.2.2. The Spatial Difference of Comprehensive Development Level of Tourism Economy in Tibet

1. The formula to determine the weight is:

$$W_i = \lambda_1(\sum_{j=1}^k \lambda_j)^{-1}, i, j = 1, 2, \dots, k \quad (12)$$

In this formula,  $W_i$  is the weight of common factor  $i$ ,  $\lambda_j$  is the characteristic root of the  $j$ th sample.  $K$  is the value of the common factor, the weight values of the common factors F1, F2, F3 are:

$$W_1 = \lambda_1(\sum_{j=1}^3 \lambda_j)^{-1} = 8.811 \div (8.811 + 1.836 + 1.070) = 0.752 \quad (13)$$

$$W_2 = \lambda_2(\sum_{j=1}^3 \lambda_j)^{-1} = 1.836 \div (8.811 + 1.836 + 1.070) = 0.157 \quad (14)$$

$$W_3 = \lambda_3(\sum_{j=1}^3 \lambda_j)^{-1} = 1.070 \div (8.811 + 1.836 + 1.070) = 0.091 \quad (15)$$

2. The calculation formula of the comprehensive score is:

$$F_d = \sum_{i=1}^k w_i \times Y_i \quad (16)$$

In this formula,  $W_i$  is common factor weights,  $Y_i$  is the common factor weight of the  $i$ th in the  $d$ th city. According to the above formula, the scores of 7 cities in Tibet on the

common factor F1, F2 and F3 and the comprehensive development index of tourism economy are calculated. As shown in table 7, the level of tourism development in 7 cities in Tibet is significantly different. In the ranking of the comprehensive index  $F$ , Lhasa is much higher than the other six regions of tourism development, followed by Nyingchi, Naqu is located in the last. Besides, only Lhasa and Nyingchi

have an F value greater than 0. While Xigaze, Shangnan, Changdu, Naqu and Ali and other places are less than 0.

**Table 7.** The comprehensive development of tourism economy in Tibet.

City	F1	F2	F3	Comprehensi-ve index F	Precedence
Lhasa	2.15713	.45512	-.26078	1.67	1
Nyingchi	.16055	-.55620	.69668	.10	2
Xigaze	-.10832	-.85053	.12255	-.20	3
Shangnan	-.31886	-.50607	.20091	-.30	4
Changdu	-.58256	.39408	1.52348	-.24	5
Naqu	-.57369	-.84353	-1.62338	-.71	7
Ali	-.73425	1.90713	-.65946	-.31	6

According to the comprehensive score level of tourism economy in seven cities in Tibet, the development level of tourism economy in seven cities of Tibet was divided into four categories (such as table 8): tourism economy advanced development type, rapid development of tourism economy type, slow development of tourism economy type and backward development of tourism economy were analyzed by using SPSS22.0.

**Table 8.** The classification of tourism economy in the cities of Tibet.

		Region							Total
		Ali	Changdu	Lhasa	Nyingchi	Naqu	Xigaze	Shangnan	
Type	Tourism economy advanced development type			1					1
	Rapid development of tourism economy type				1		1		2
	Slow development of tourism economy type	1				1			2
	Delayed development of tourism economy type		1					1	2
Total		1	1	1	1	1	1	1	7

(1) Tourism economy advanced development type. The development level of this type of tourism economy is much higher than the average level of the whole region. As can be seen from Table 8, Lhasa is the only city in Tibet with this type of tourism development. From the comprehensive score of urban tourism economy, the score of Lhasa is 1.67, which is much higher than other cities. In addition, in 2016, Lhasa received a total of 13.6663 million tourists, accounting for 48.9% of the total number of tourists in Tibet, almost half of the total number of tourists in Tibet. The total tourism revenue was 18.649 billion yuan, far higher than the average income level of Tibet and accounting for 62% of the total tourism revenue of Tibet.

(2) Rapid development of tourism economy type. This type of tourism economy is developing rapidly, as can be seen from table Table 8 that Nyingchi and Xigaze belong to this type. In 2016, the comprehensive scores of Nyingchi and Xigaze on tourism economic development level were 0.1 and 0.2 respectively. The total tourism revenue was 3.9 billion yuan and 3.5 billion yuan respectively, slightly lower than the average level of the whole region (4.297 billion yuan). And tourist trips reached 4.37 million and 4 million respectively, slightly higher than the regional average (3.9915 million).

(3) Slow development type. This type of tourism economic development is slow, from tables 7 and Table 8, we can see that Shannan and Changdu belong to this type. In

2016, Shannan and Changdu tourism economic development level of the comprehensive score of -0.3, -0.24, the total tourism revenue was 1.19 billion yuan and 1.435 billion yuan respectively. Tourist trips for 2.784 million and 1.75 million respectively, the total tourism revenue and the total people were below the average level of the whole region (4.297 billion yuan, 3.9915 million people).

(4) Delayed development. Compared with other types, this type of tourism lags behind in economic development, including Naqu and Ali area. The comprehensive scores of the tourism economic development level of Naqu and Ali were -0.71 and -0.31 respectively. In 2016, the total tourism revenue was 1.02 billion yuan and 383 million yuan respectively. And the tourist trips were 1.02 million and 350000 respectively. The total tourism revenue and the total tourist trips were far below the average level of the whole region (4.297 billion yuan and 3.9915 million people).

### 3.3. Regional Differences of Single Index and Multi Index Measure of Tourism Economy in Tibet

Taking the comprehensive development index of tourism economy as the abscissa and 0 as the dividing line, the level of tourism income as the ordinate, 100 as the boundary, and do scatter chart. As shown in figure 5, the seven cities in Tibet are distributed in the first, third and fourth quadrants. The tourism income and the comprehensive development level of tourism economy are both polarized, with significant differences.

Lhasa is located in the first quadrant. The comprehensive development level of tourism economy is greater than 0, and the tourism income is higher than the average value of Tibet, which indicate that the comprehensive development level of tourism economy in Lhasa is better, tourism income level is also higher. Nyingchi is located in the fourth quadrant, tourism economy comprehensive development level is more than 0, tourism income is lower than the average of Tibet, indicating that the comprehensive development level of tourism economy is better, but compared with Lhasa, the tourism

income in Nyingchi still have a big gap. Xigaze, Changdu, Shannan, Naqu, Ali area are in the third quadrant, the tourism economic development level of them is less than 0, and tourism income is lower than the average of Tibet, indicating that the comprehensive development level of tourism economy in these 5 regions is relatively poor and the level of tourism income is also poor. On the whole, the spatial differences of regional tourism economy measured by single and multiple indicators are basically the same.

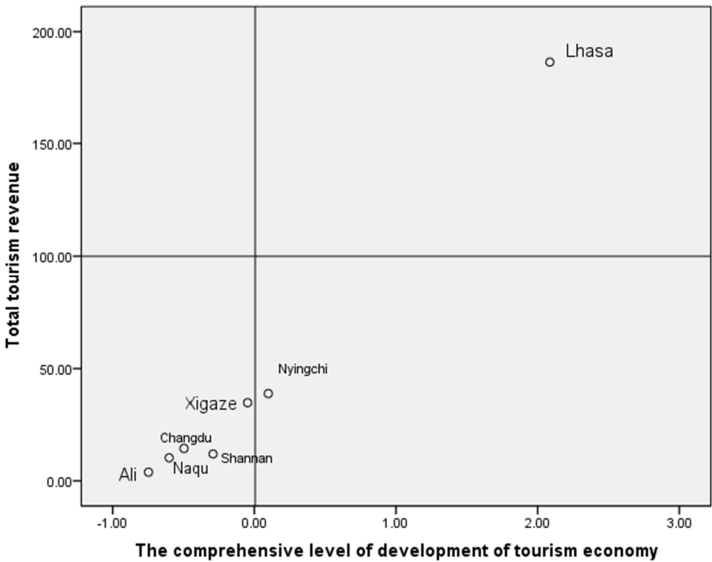


Figure 5. The scatter plot of tourism economy and tourism income.

4. Conclusion

From the above analysis, it is shown that the absolute differences in time sequence of tourism economy in Tibet shows an increasing trend, while the relative difference gradually decreases in the fluctuation. From the space, Lhasa tourism economy is far ahead of other cities, while Nyingchi and Xigaze are behind Lhasa, Naqu and Ali are far behind Lhasa. The tourism economic circle formed by the basic space of Lhasa as the core. The regional tourism economy is affected by a variety of factors, the specific impact mechanism will be carried out in the follow-up research.

Research Projects

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