Cluster Analysis of inbound Tourism Market in Liaoning Province

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Cluster Analysis of inbound Tourism Market in Liaoning Province

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Abstract. Based on the relevant data of inbound tourism in Liaoning Province from 2007 to 2016, the development and composition of inbound tourism in Liaoning Province are analyzed with the help of Excel software. SPSS23.0 software is used to cluster the inbound tourist market and destination market in Liaoning province. The results show that the inbound tourism industry of Liaoning Province has maintained a sustained and stable growth, which has greatly promoted the development of Liaoning Province's tourism industry. According to cluster analysis, the main tourist market of Liaoning Province is divided into three categories, Japan is the first, Russia is the second, and other countries are the third, and Liaoning's inbound tourist destination market is divided into three categories: Japan is the first category, Russia is the second largest category, and other countries are the third category. Shenyang and Dalian are the first, Anshan, Benxi, Dandong, Jinzhou and Panjin are the second, Fushun, Yingkou, Fuxin, Liaoyang, Tieling, Chaoyang and Huludao are the third. We should strengthen the development and publicity of tourism resources.

1. Introduction

Since the reform and opening up, China has attached great importance to the development of inbound tourism, the level of development of inbound tourism has become an important indicator of regional tourism economic strength [1]. In order to fully understand the development of inbound tourism in Liaoning Province, this paper selects 14 major tourist source countries and 14 destination cities of Liaoning Province as research objects, according to the relevant data of Liaoning Statistical Yearbook (2008-2017). The development and composition of inbound tourism in Liaoning Province are analyzed by means of Excel software, and the inbound tourist market and destination market of Liaoning Province are clustered by SPSS23.0 software. The analysis is expected to provide reference for the development of inbound tourism in Liaoning Province.

2. Development of inbound Tourism Market in Liaoning Province

Liaoning Province, located in northeast China, is the northernmost coastal province in China. Liaoning is rich in tourism resources, Cultural heritage and numerous scenic spots. Liaoning is the birthplace of the Qing Dynasty, with The Imperial Palace in Shenyang and the architectural cultural relics of the Manchu imperial dynasty represented by the three mausoleums of the early Qing Dynasty. Liaoning natural scenery beautiful, Anshan Qianshan, Benxi Waterway, Dalian seaside and other national key scenic spots, attracting many foreign tourists to Liaoning sightseeing.

According to the statistical data of the inbound tourism market in Liaoning Province, using Excel software to draw the trend map of the number of inbound tourists and the foreign exchange income of tourism in Liaoning Province from 2007 to 2016 (figure 1). From figure 1, we can see, development
trend of inbound tourism and foreign exchange income in Liaoning Province from 2007 to 2016 shows a steady growth trend. The number of inbound tourists increased from 1.707 million in 2007 to 4.017 million in 2016, an increase of 135.3%. Starting in 2014, the number of inbound tourists changed to the number of inbound overnight tourists, so the tourism technology has emerged. The number of inbound tourists continued to grow modestly in 2014-2016, from 2.006 million in 2014 to 2.122 million in 2016.

International tourism revenues rose from $1.23 billion in 2007 to $3.48 billion in 2013, an increase of 182.9%, with steady growth since 2014, from $1.62 billion in 2014 to $1.74 billion in 2016. The above data show that Liaoning's inbound tourism industry has maintained a sustained and stable growth, which has contributed to the development of Liaoning's tourism industry.

3. Analysis on tourist Source structure of inbound Tourism in Liaoning Province

Table 1 shows that Japan has been the biggest destination for inbound tourism in Liaoning Province, and although it experienced negative growth in 2013, it has resumed its growth trend since 2015. Because of its proximity, Russia is the second largest inbound tourist country in Liaoning Province. The United States has always been the third largest source of inbound tourism in Liaoning. In the 14 major source countries, the number of inbound tourism has all achieved growth.

Table 1. Number of inbound tourists from major countries of origin in Liaoning Province, 2007-2016

| Guest country   | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Japan           | 607812| 708085| 869432| 1018917| 1072999| 1035389| 742632| 36241 | 531530| 550926|
| ThePhilippines  | 11282 | 14701 | 21446 | 21327 | 25659 | 28556 | 20541 | 20109 | 12430 | 12408 |
| Singapore       | 25557 | 36907 | 40618 | 51797 | 75938 | 95820 | 100024| 69701 | 37418 | 46053 |
| Thailand        | 6394  | 10285 | 9483  | 10725 | 16563 | 15390 | 13966 | 12546 | 12193 | 8992  |

Unit: person-times
4. Cluster Analysis of inbound Tourism Market in Liaoning Province

4.1. Cluster Analysis of inbound tourist Market in Liaoning Province

Clustering analysis is a method of classifying data based on their own information [2]. According to the inbound tourism data of Liaoning Province, X1 = Japan, X2 = Philippines, X3 = Singapore, X4 = Thailand, X5 = Indonesia, X6 = United States, X7 = Canada, X8 = UK, X9 = France, X10 = Germany, X11 = Italy, X12 = Russia, X13 = Australia, X14 = New Zealand, using SPSS23.0 software to carry out systematic cluster analysis, the main inbound tourist market in Liaoning Province cluster analysis pedigree map (Fig 2).

From figure 2, we can see that in 2007-2016, Liaoning inbound tourist market can be divided into three categories, Japan is the first, Russia is the second, and other countries are the third. From cluster analysis, it can be seen that Japan is the primary target market of inbound tourism in Liaoning Province, and measures should be taken to consolidate this most important market. Russia is the secondary target market of inbound tourism in Liaoning Province, and is a potential tourist market, which should be actively developed. The United States, Germany, Singapore and other countries are the third class markets of inbound tourism in Liaoning Province.

| Country   | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Indonesia | 7470  | 11346 | 13219 | 14486 | 16275 | 18005 | 18069 | 14926 | 16859 | 18882 |
| America   | 47959 | 63346 | 77118 | 118961| 119775| 117337| 122329| 55857 | 64289 | 67910 |
| Canada    | 14817 | 18297 | 21283 | 27374 | 29143 | 33629 | 34437 | 30889 | 29050 | 21666 |
| Britain   | 20899 | 34614 | 41504 | 55666 | 59156 | 47153 | 49747 | 35742 | 31956 | 25109 |
| France    | 12998 | 17671 | 16678 | 22617 | 25970 | 32384 | 34115 | 20986 | 19810 | 18791 |
| Germany   | 26538 | 34106 | 34398 | 37634 | 41400 | 49736 | 57598 | 49022 | 49045 | 52871 |
| Italy     | 8959  | 10162 | 10475 | 10811 | 13879 | 20378 | 20158 | 10655 | 11521 | 12457 |
| Russia    | 122308| 132801| 159078| 216104| 224800| 276869 | 323372| 170418| 202173| 224550|
| Australia | 12294 | 14980 | 18303 | 21471 | 26869 | 35315 | 35408  | 28668 | 27969 | 20715 |
| New Zealand|3148  | 4691  | 4626  | 6771  | 9213  | 14669 | 16223 | 16181 | 17337 | 18574 |

Note: Starting from 2014, the number of inbound tourists in Liaoning has been changed to the number of inbound overnight tourists.
4.2. Cluster Analysis of inbound tourist destination Market in Liaoning Province

According to relevant data, X1 = Shenyang, X2 = Dalian, X3 = Anshan, X4 = Fushun, X5 = Benxi, X6 = Dandong, X7 = Jinzhou, X8 = Yingkou, X9 = Fuxin, X10 = Liaoyang, X11 = Panjin, X12 = Tieling, X13 = Chaoyang, X14 = Huludao [3]. By using SPSS23.0 software, the cluster analysis pedigree of inbound tourist destination market in Liaoning Province is obtained (Fig. 3).

From figure 3, we can see that in 2007-2016, Liaoning's inbound tourist destination market can be divided into three categories, Shenyang and Dalian as the first category, Shenyang is the capital of Liaoning Province, with Shenyang The Imperial Palace, Zhang Shuai Fu and other Manchu and modern historical sites. Dalian is a special city in China with beautiful seaside scenery. These two cities have unique advantages in developing inbound tourism. Anshan, Benxi, Dandong, Jinzhou and Panjin are the second category. Fushun, Yingkou, Fuxin, Liaoyang, Tieling, Chaoyang and Huludao are the third largest category. Economic development is relatively backward, the development of tourism resources needs to be strengthened.
Fig 3. Pedigree of cluster analysis of inbound tourist destination market in Liaoning Province, 2007-2016.

5. Conclusion

5.1. The inbound tourism industry of Liaoning Province has maintained a steady growth, which has greatly promoted the development of Liaoning Province’s tourism industry.

5.2. The results of cluster analysis show that the main tourist market of Liaoning Province is divided into three categories: Japan is the first, Russia is the second, and other countries are the third; Liaoning Province’s inbound tourist destination market is divided into three categories, Shenyang and Dalian as the first category, Anshan, Benxi, Dandong, Jinzhou and Panjin as the second category, Fushun, Yingkou, Fuxin, Liaoyang, Tieling, Chaoyang and Huludao as the third category. We should strengthen the development and publicity of tourism resources.

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