Analysis on the inbound tourist source market in Fujian Province

YU Tong
He Yuan Polytechnic, He Yuan, Guangdong, China
email: 86282557@qq.com

Abstract. The paper analyzes the development and structure of inbound tourism in Fujian Province by Excel software and conducts the cluster analysis on the inbound tourism market by SPSS 23.0 software based on the inbound tourism data of Fujian Province from 2006 to 2015. The results show: the rapid development of inbound tourism in Fujian Province and the diversified inbound tourist source countries indicate the stability of inbound tourism market; the inbound tourist source market in Fujian Province can be divided into four categories according to the cluster analysis, and tourists from the United States, Japan, Malaysia, and Singapore are the key of inbound tourism in Fujian Province.

1 Introduction
Inbound tourism is one of the three major tourism markets in China and also an important hallmark of the tourism development level. In order to fully understand the development of inbound tourism in Fujian Province, the paper selects 12 major inbound tourist source countries as the research object, including Japan, the Philippines, Singapore, Thailand, Indonesia, Malaysia, the United States, Canada, Britain, France, Germany and Australia, analyzes the development and structure of inbound tourism in Fujian Province according to the data of "Fujian Statistical Yearbook" (2007-2016) and Excel software and conducts the cluster analysis on the inbound tourism market by SPSS 23.0 software, which may provide the basis for the development of inbound tourism in Fujian Province.

2 Analyses on the Inbound Tourism Market Development in Fujian Province
Situated on the southeast China coast, Fujian Province is between economically-developed Yangtze River Delta and the Pearl River Delta and separated by a strait from Taiwan, the developed province in China. For foreign tourists, Fujian is a paradise rich in tourism resources, abounding with many places of historical and cultural interests, and beautiful scenic spots.

The paper plots Changing Trends of Inbound Tourists and Tourism Foreign Exchange Revenue in Fujian Province from 2006 to 2015(Figure 1) by using Excel software and according to the statistics of inbound tourism market in Fujian Province, which indicates that they both represent the growth trend. The number of inbound tourists in 2008 and 2009 shows slight declinedue to the financial crisis, but increases again in 2010, increasing from 791.2 thousand in 2006 to 2142.8 thousand in 2015 and with the growth rate of 171.21%. International tourism foreign exchange shows a continuous upward trend, representing from $ 1.471 billion in 2006 to $ 5.561 billion in 2015 and an increase of 278.04%. The above data show that the rapid development of inbound tourism in Fujian Province greatly promotes the tourism in Fujian Province.
3 Analyses on the Inbound Tourist Source Market Structure in Fujian Province

Asian countries are closer to China and relatively have more inbound tourists because the number of tourists is mainly related to the distance to the source countries, while few from Europe and the United States. The total number of inbound tourists from six countries in Asia is 969.4 thousand in 2015 according to table 1, accounting for 62.14% of the total number of sample countries and with obvious advantages; while the total number of tourists not from Asian countries is 590.7 thousand, accounting for only 37.86%.

According to table 1, it can be seen that Malaysia has surpassed Japan and the United States and become the largest tourist country in Fujian Province in 2015, growing rapidly from 80.7 thousand in 2006 to 319 thousand in 2015, an increase of 295.29%. The United States is the second largest source country of inbound tourism in Fujian Province, showing an upward trend and growing from 141.4 thousand in 2006 to 285.5 thousand in 2015, an increase of 101.91% in ten years. While Japan, as the third largest source country grows stably from 176.5 thousand in 2006 to 258.9 thousand in 2015 and an increase of 46.69%. The number of inbound tourists in 12 sample countries all grows, and Australia has the fastest speed with an increase of 410.22%, while the slowest is Thailand, only an increase of 15.83%. It is noteworthy that although the number of inbound tourists from Europe and the United States and Oceania countries is small, the rapid growth in the past decade has surpasses most Asian countries.

Figure 1 Changing Trends of Inbound Tourists and Tourism Foreign Exchange Revenue in Fujian Province from 2006 to 2015
Tourism geographers utilize geographic concentration index (G) to quantitatively analyze the geographical origin and spatial distribution of tourists and reflect the concentration of tourist market distribution, which can be expressed as the mathematical formula:  

$$G = 100 \times \sqrt{\sum_{i=1}^{n} \left( \frac{x_i}{T} \right)^2}$$  (1)  

$$G_0 = 100 \times \sqrt{\frac{1}{n}}$$  (2)  

G is the geographic concentration index and G_0 is the most stable geographic concentration index. In formula (1), X_i means the number of tourists from the i source country, T is the total number of tourists of the destination, and n is the total number of the main source countries. When the G value is smaller and closer to G_0, it indicates that the decentralized source country is conducive to tourism development.  

This paper calculates the geographic concentration index G and G_0 of the main tourist source countries in Fujian Province from 2006 to 2015 respectively by Excel software and formula (1) and (2), selects n=12 and plots Geographic Concentration Index Variation of Inbound Tourist Source Market From 2006 to 2015 in Fujian Province (Figure 2).
Geographic concentration index of inbound tourism market in Fujian has been decreasing according to Figure 2 and close to $G_0$ in 2012, which shows the decentralized inbound tourist source countries and diversified tourism market can be conducive to the stability of the inbound tourism market.

4 Cluster Analysis of Inbound Tourism Market in Fujian Province

Cluster analysis is a method to classify data based on data information, which is divided into three methods in the SPSS software: system clustering, fast clustering and two-stage clustering. This paper adopts system clustering by SPSS23.0 software, assuming $X_1 = $ Japan, $X_2 = $ the Philippines, $X_3 = $ Singapore, $X_4 = $ Thailand, $X_5 = $ Indonesia, $X_6 = $ Malaysia, $X_7 = $ United States, $X_8 = $ Canada, $X_9 = $ Britain, $X_{10} = $ France, $X_{11} = $ Germany, $X_{12} = $ Australia and obtains Cluster Analysis Dendrogram of Inbound Tourism Market in Fujian (figure 3).

According to figure 3, it shows 12 major inbound tourist source countries can be divided into four categories from 2006 to 2015: the first category is the United States, the second is Japan, the third is Malaysia and Singapore and the fourth includes Britain, Germany, Australia, the Philippines, Canada, Indonesia, Thailand and France. So the United States, Japan, Malaysia and Singapore are the key cities of inbound tourism in Fujian Province. The United States and Japan have been the first and second largest tourist country in Fujian Province, but the growth rate slows down in recent years, so it is necessary to take measures to consolidate the market. There are many overseas Chinese in Malaysia and Singapore that have increased many tourists in recent years, so the two markets with great potentials should be actively developed. Although fewer inbound tourists are from Europe and the United States and Oceania countries, its development is fast and we should actively strengthen and expand the markets.

![Cluster Analysis Dendrogram of Inbound Tourism Market in Fujian Province from 2006 to 2015](image)

5 Conclusions

Inbound tourism industry in Fujian province represents the rapid development and the decentralized inbound tourist’s source countries indicates the stable development of inbound tourism market.
Major inbound tourist source countries can be divided into four categories from 2006 to 2015 according to the cluster analysis: the first category is the United States, the second is Japan, the third is Malaysia and Singapore and the fourth includes Britain, Germany, Australia, the Philippines, Canada, Indonesia, Thailand and France. Therefore, the United States, Japan, Malaysia and Singapore are the key cities of inbound tourism in Fujian Province.

References:
[1] Ma Yaofeng, Li Tianshun, Liu Xinping, A Study on the Flowing Pattern of Tourists to China, (China Higher Education Press, China 2001).
[2] Yu Tong, Research on Market Space Changing about Guangdong Source Tourists, Journal of Huizhou University (social science), Vol.34 (2014), and pp. 36-40.
[3] Zhang Wentong, Dong Wei, Advanced Tutorial of SPSS Statistical Analysis (Higher Education Press, China 2013), pp.287.