

# Globalizing world inbound tourism flows tourism essay

[Sport & Tourism](#)



**ASSIGN  
BUSTER**

\n[[toc title="Table of Contents"](#)]\n

\n \t

1. [Exploratory Spatial Data Analysis](#) \n \t
2. [Spatial surface](#) \n \t
3. [Space-time covariance matrix](#) \n \t
4. [Global Spatial Association of Inbound Tourism Flows](#) \n \t
5. [Local Spatial Association of Inbound Tourism Flows](#) \n \t
6. [Temporal Stability of Inbound Tourism Flows](#) \n \t
7. [Surface Visualization for Inbound Tourism Flows](#) \n \t
8. [Space-Time Covariance Matrix of Inbound Tourism Flows](#) \n

\n[/toc]\n \nINTRODUCTIONIn a rapidly globalizing world, inbound tourism flows play a key role in facilitating international trade and economic development. The tourism industry ranks among the largest industries in the world. The economic development of the globe is also increasingly linked to tourism development and particularly to the volumes of tourist arrivals (Song and Witt, 2000; Song et al., 2009). China has been experiencing a gradual transition from a command economy to a market-oriented economy, and has achieved a prominent position in the inbound tourism market over the last three decades. China has become one of the world’s most popular tourist destinations. International tourist arrivals in China increased from 1. 8 million in 1978, the starting year of ‘ opening-up’ policy, to 126. 47 million in 2009, at an annual growth rate of more than 17. 80 percent (Figure 1). In 1982, Chinese government recognized tourism as an important driving force of economic growth; in 1986, China started to expand its tourism industry as a part of its national plan for economic development by improving

<https://assignbuster.com/globalizing-world-inbound-tourism-flows-tourism-essay/>

infrastructure and service facilities for inbound tourism. The latest stage in this progress towards an open economy was marked by China's entry to the World Trade Organization in November 2001. Although there were occasional severe declines in international tourist arrivals because of political, economic and social events such as the Tiananmen Square Incident in 1989, Asian Financial Crisis (AFC) in 1998, the Severe Acute Respiratory Syndrome (SARS) epidemic outbreak in 2003, and Global Financial Crisis in 2008, China's inbound tourism bounced back up rapidly. Despite significant growth in China's inbound tourism, tourism has not developed equally across the country because of the large geographical dimension, diversity of development conditions and variety in tourism resources. There are significant inequalities in the distribution of inbound tourism flows between inland and coastal regions (Figure 2). In 2000, measured by total inbound tourism arrivals, Eastern, Central, and Western cities accounted for 66.20%, 12.13%, and 21.67% respectively of total visits. In 2009, 74.47% of total inbound tourism arrivals destined for Eastern cities of China. Western cities got a portion of under 13%. At the same time, the unevenness of inbound tourism arrivals among cities has also been increasingly intensified. From 2000 to 2009, Eastern cities and Central cities enjoyed average the growth rates of 15% and 11.51% respectively, while Western cities saw the growth rate as low as 7.69% over the same period. Inbound tourist activities have been heavily concentrated at the coastal gateways. Many inland cities possess natural advantages that could have formed a basis for regional competitiveness in the presence of other necessary conditions, but have experienced difficulties in competing with the popular coastal gateways.

LITERATURE REVIEW Tourism involves the movement of people through time and space. Tourism researchers are increasingly interested in tourism flows in terms of nature, pattern and intensity (Burton, 1995; Mitchell, 1979; Pearce, 1995; Perdue & Gustke, 1985; Smith, 1989; Uysal, Fesenmaier & O'Leary, 1994). Studies had examined the measurement of spatial variation (Keogh, 1984), tourist spatial distribution (Oppermann, 1994; Seaton & Palmer, 1997; Jansen-Verbeke, Myriam, 1995), change in spatial distribution of visitation (Hudman, 1989) and tourist movement patterns (Lew and Mckercher, 2006; Mckercher and Lau, 2008). With the rapid growth and spatial unbalanced development of tourism industry in China, especially the inbound tourism boom, a growing body of literature on Chinese inbound tourism has been published. Some research was carried out from a number of different aspects. Richter (1983), Oudiette (1990), Sofield et al. (1998), Zhang et al. (1999), and Zhang et al. (2002) examined tourism policies and their performance in inbound tourism in China. Zhang et al. (2000) explained the main stages of inbound tourism development in China. The tourism-demand model has prevailed in the literature as a modeling framework to estimate the inbound tourism flows (Li et al., 2005; Song and Li, 2008). Jeffrey & Xie (1995), Kulendran & Shan (2002), Witt & Turner (2002), Christine & Grace (2005), Song & Fei (2007), and Zhang & Zhang (2011) adopted econometric models to investigate inbound tourism in China. One of the main fields in tourism geography research is to investigate tourism flows from spatial viewpoint (Pearce, 1995). In terms of the theoretical framework of tourism spatial patterns, Mansfeld (1990) provided an overview of major research perspectives on the topic. Many researchers have studied tourism

flows at different scales. At national level, Bowden (2003) used correspondence analysis to outline the spatial pattern of inbound flows in China from different origin countries. At provincial level, Ma and Li (2001) studied regional disparity of inbound tourist distribution with the spatial analysis method. Zhu and Wu (2005) used the data of major cities and provinces to explain tourism size distribution on the scale of province and single city in China. Liu et al. (2010) adopted Social Network method for analyzing inbound flows. Li et al. (2012) calculated Regional Dominance Indexes of Chinese inbound tourism flows of 31 provinces of China's mainland. Chen et al. (2011) analyzed the features and evolution of size distribution and its interior structure of inbound tourism in China. From the point of view the inter-provincial, inter-regional and intra-regional disparity, Chen and Huang (2006) used Theil coefficient to measure temporal changes of the disparity in Chinese inbound tourism. Zhang et al. (2005) used factor analysis to show the basic character of domestic tourist flows distribution. Compared to a large body of tourism flow studies, less prior research has been conducted examining spatial dependence between destinations. Further, theoretical analyses in previous studies were based primarily on time-series data, using standard parametric and non-parametric statistical tools (Yan et al. 2011). While studies on tourism demand from a time series analytic perspective have received much attention, spatial research on tourism demand has remained very limited. In two of the most recent and comprehensive reviews on tourism demand modeling and forecasting, Li et al. (2005) and Song and Li (2008) even failed to identify any substantial studies using spatial methods. studies in economics and in geography are

largely separated from each other, with the former focusing on time and the latter emphasizing space. Spatial analysis is statistically important because it can enhance the inference accuracy, and at the same time reduce estimate bias by considering spatial proximity and dependence. According to Tobler's (1979) First Law of Geography, 'everything is related to everything else, but near things are more related than distant things'. Spatial dependence is usually described by spatial autocorrelation. Furthermore, tourism flows has a temporal dimension. It is not clear whether and how the spatial effects of dependence and heterogeneity might hold in a dynamic context, which is important to local tourism policy making. To fill this gap, the temporal and spatial patterns of tourism flows change between destinations are investigated in this research. The literature review also shows that the focus of these studies was mainly at the national or provincial level and there were few city-level studies. Geographical scales of tourism flows reflect the level and functional arrangement of a spatial problem. Therefore, scales determine the approach used in a research and affect its outcome. Working with spatial data means to always consider the scale because the scale affects the observation. The scale also influences the representation of objects (point or polygon). Therefore, it is important to emphasize that this paper focuses on the city scale. The existing empirical spatial analysis of tourism flows in China is still greatly inadequate. Although spatial analysis in the above studies have generated in-depth visualization and provided a summary of complex spatial patterns, the temporal effects are largely ignored. Many traditional methods lack of high-quality accuracy and/or proven validity of data used, which is usually caused by unavailability of

spatial and temporal datasets at the city level. As a result, despite the proliferation of research on tourism flows, a fundamental feature of the tourism phenomenon, over the past few decades, little attention has been paid to the spatial and temporal analysis. Furthermore, the uneven growth in inbound tourism flows and the potential to exacerbate regional inequalities in China have not been noted and addressed in research and policy-making process. At the same time, because of language barrier, there have been limited publications in foreign languages on the subject. Given inbound tourism development in China, its immense economic significance and possible negative consequences of spatial inequalities, it is a surprising negligence in the literature that the emergence and growth of inbound tourism flows in China's cities have not been studied in detail. This paper aims to fill the gap and explore the inbound tourism flows at the city level. First, as a supplement to the existing empirical literature, this paper attempts to provide insights into the temporal and spatial patterns of inbound tourism flows in China's cities over the time period of 2000-2009 by applying exploratory data analysis. Second, this paper also tries to further the understanding of the role played by spatial and temporal effects in inbound tourism arrivals growth. In short, insight provided by this paper has profound implications for infrastructure planning, transportation improvement, tourism product development, and regional economic growth, and for ameliorating of possible regional inequalities and managing social, environmental, and cultural impacts of tourism. The rest of the paper is structured as follows. Section ' Data' discusses the data used and provides descriptive statistics. Section ' Methodology' presents the methodology.

Section ' Results' analyses the empirical results. Some concluding comments and Limitations are presented at the end of this paper. DATA Systematic data released by the Chinese statistical authorities from 2000 to 2009 have provided a solid base for the exploratory space-time analysis in this study. Starting from 2000, China's State Statistical Bureau has been publishing detailed statistical data annually for all officially designated cities in the country in China Statistical Yearbook for Regional Economy. These officially released data on China's cities are not free of discrepancy and errors. They need to be used with extra caution and cross-checked with other sources. Nevertheless, these systematic data represent a valuable source of information for understanding the temporal and spatial changes that inbound tourism flows have undergone since 2000. Our database consists of annual data of the number of inbound tourists to China's cities from China Statistical Yearbook for Regional Economy from 2000 to 2009. This study focuses on all the cities of officially recognized urban status in mainland China. The data set is stored in Geographical Information System (GIS), which is used for spatial analysis and mapping. The vertical and horizontal coordinates are measured. The compiled dataset includes 10-year inbound tourism flows data of these 343 cities. METHODOLOGY

## **Exploratory Spatial Data Analysis**

In recent years, there is a growing recognition of the importance of space in many socioeconomic processes (Goodchild and Anselin, 2000). Analyzing geographic dimension of spatial patterns of tourism flows could help us understand the characteristics of its distribution and transition, and enable us to derive knowledge for managing and marketing tourism in China.



Hence, the paper applies techniques of exploratory spatial data analysis (ESDA). ESDA is a set of methods aiming to describe and visualize geographical distributions, to detect atypical localizations or spatial outliers, to identify patterns of spatial association, and to indicate forms of spatial heterogeneity (Haining, 1990). These techniques serve to describe spatial distribution (clusters or dispersions) in terms of spatial association patterns such as global spatial association and local spatial association. In order to examine spatial clustering of inbound tourism flows, this paper employs Global Moran's I as a measure of spatial autocorrelation (Anselin, 1995). In particular,  $I$  where  $n$  equals the number of the observed cities,  $w(i, j)$  denotes the weight between locations  $i$  and  $j$ ;  $x_i$  and  $x_j$ , the values at locations  $i$  and  $j$ ;  $s_0$ , sum of all the elements in the spatial weights matrix, where each unit is connected to a set of neighboring units. In addition,  $\bar{x}$  refers to the average level over all locations of the variable. Moran's I is useful as a global test that may suggest randomness or non-randomness in the overall spatial pattern of tourism flows over the observed years in China but does not indicate where the clusters are located or what type of spatial autocorrelation is occurring spatially. Therefore, the local indicator of spatial autocorrelation (LISA) is applied as an indicator of local spatial association (Andresen, 2009; Hare & Barcus, 2007). Local spatial autocorrelation  $I_i$ , as defined by Anselin (1995), is given by  $I_i = \frac{(x_i - \bar{x}) \sum_j w_{ij} (x_j - \bar{x})}{s_0 (x_i - \bar{x})^2}$  where, analogous to global Moran's I, the observations  $x_i$  and  $x_j$  are deviations from the mean. For easy interpretation,  $w_{ij}$  is the row-standardized contiguity matrix. The analyses are conducted using GeoDa (Anselin et al., 2006), a stand-alone software package that provides exploratory spatial data analysis functions. At the

same time, spatial markov chain can be used to explore how tourism flows evolve by considering both individual cities and geographic neighbors using Space-Time Analysis of Regional Systems (STARS), which is an open source package designed for analysis of areal data measured over time. This is accomplished through the integration of markov chains with some recent developments in local spatial statistics. This integration also provides a number of new metrics for characterization of spatial growth dynamics (Rey, 2001).

### **Spatial surface**

To further investigate three-dimensional (3D) spatial structure of inbound tourism flows, geostatistical processing is conducted by using the software of ArcGIS9.0 and Golden Software Surfer 8.0. Several interpolation methods can be used in Surfer to create the surface. This paper chooses Kriging method, which is one of the most commonly used geostatistical techniques to generate interpolated surfaces. With the center of cities as the origin of coordinate system, X and Y coordinates of each city is measured, and Z coordinate consequently refers to the value of inbound tourist arrivals. After the fore-mentioned sample points are input into the software of ArcGIS, the method of Inverse Distance Weighting (IDW) is first adopted to produce grid data by interpolation in Surfer 8.0. A 3D surface map is then obtained.

### **Space-time covariance matrix**

Spatial dynamics can also be summarized using graph theory. This type of interaction is useful for uncovering correlations that may not be obvious with traditional ESDA techniques (Rey and Ye, 2010). Space-time correlation is

adopted. This method displays temporal dynamics of tourism flows by integrating a spatial component. The covariance structure of tourism flows is portrayed as links between centroids of cities. Covariance matrix is a matrix of variances and co-variances between dynamics of tourism flows of cities. Covariance provides a measure of strength of the correlation between two sets of tourism flows. This pairwise temporal covariance between two sets of tourism flows can be represented geographically using network approach (Rey and Janikas, 2006; Ye and Carroll, 2011). Cities that have shared borders are connected by edges (covariance links) between their centroids. Line style, color, and thickness of covariance links are determined by strength of the temporal covariance between two contiguous spatial units.

## RESULTS

### **Global Spatial Association of Inbound Tourism Flows**

The values of Global Moran's I over time reveal the trend and changing direction and magnitude of spatial association and agglomeration. If tourist arrivals in nearby cities are similar, Moran's I will be large and positive. The opposite is also true. Table 1 depicts the general trend of global spatial dependence level over time. Global Moran's I increased almost consistently from 2000 to 2009. The values of Moran's I are statistically significant in all the years. Significant tourism flows agglomeration has been witnessed. This city-level tourism flows agglomeration in China has been reinforced substantially since 2000.

## Local Spatial Association of Inbound Tourism Flows

Contrast to the global indicator, local indicator of spatial autocorrelation (LISA) considers spatial proximity for each city, which can help to identify hot spots of tourism flows. The LISA significance map is created by incorporating information about whether local spatial patterns are significant or not. In this analysis, significance of LISA is determined by benchmarking observed statistics against a reference distribution generated by using 999 random permutations. Specifically, the LISA map shows the types of spatial relations between a city unit and its neighboring units, which allows us to visualize five types of local spatial associations between the observed units and their neighbors, each being located in a quadrant of the scatter plot. Therefore, each city can be characterized by one of the following associations: (1) high-high (HH), indicating a clustering of high inbound tourist arrivals around a city of a high value (positive spatial autocorrelation); (2) high-low (HL), indicating that low values are adjacent to a city of high inbound tourist arrivals (negative association); (3) low-low (LL), indicating clustering of low values of inbound tourist arrivals around a city of a low value (positive association); (4) low-high (LH), indicating that high values are adjacent to a city of low inbound tourist arrivals (negative association); and (5) not-significant (NS), indicating no spatial autocorrelation is detected by the LISA statistics. The results of the LISA statistics for tourism flows are shown in Figure 3. Under the significant level, the maps are dominated by LL-type and HH-type cities. The local spatial differential feature are mainly low-low (LL) type for a large proportion. LL clusters are mostly observed in middle and western China. Although both regions possess natural advantages and a

large variety of tourism attractions, which cannot be matched by other regions in China, they have experienced difficulties in drawing inbound tourists, mainly because of weak economic foundations and transportation infrastructure. The LISA cluster maps also show that the distribution of HH clusters is locally concentrated in metropolitan areas during the period of 2000–2009. Three hot-spot areas remained significant over the time: the Beijing-Tianjin cluster, the Yangtze River Delta cluster, and the Pearl River Delta cluster. Over the years, there are minor changes in the HH clusters. The Fujian coast cluster was significant in 2005. In data for 2009, five hot-spot areas were discovered. They are the Shandong Peninsula cluster, the Fujian coast cluster, along with the three main ones mentioned above. All these HH clusters are located in the east coastal region of China which has experienced the rapidest economic growth since the introduction of economic reforms and the opening up policy in 1978. Favorable geographical location, good economic foundation, developed transportation system, resources endowment, the coastal development strategy of the government and the foreign investment are all important factors. As a result, the coastal region has attracted the majority of inbound tourists. By contrast, LH and HL clusters are mainly observed around or in cities of middle China.

### **Temporal Stability of Inbound Tourism Flows**

Table 2, which reveals that China has undergone more significant transitions in local Markov matrix (the column is for earlier time), can be used to test negative or positive influence of geographic neighbors upon a city. There are sixteen possible transitions, including four types of intra-class transitions and 12 types of inter-class transitions. The number of transitions can be counted

<https://assignbuster.com/globalizing-world-inbound-tourism-flows-tourism-essay/>

across the four classes of a Moran scatter plot over time. For instance, the probability value in LL-HH position of Table 2 indicates that 0.1% of transitions are considered as inter-class movement from Low-Low section to High-High section over the time. 0.1% represents the possibility of a city with low tourist arrivals moving up to a higher one with high neighbors. Four types of intra-class transitions are significant. The largest one (LL-LL) is 0.962. The other two types have values of 0.915(HH-HH) and 0.858(HL-HL). The smallest one (LH-LH) is 0.827. But the values are much lower for 12 types of inter-class transitions. From a spatial perspective, examining the frequency of 16 different types of transitions that occur in a system over a period of time may provide informative insights on relative instability of the inbound tourism flows in China's cities. China has relatively distinct clusters of cities with similar growth trends of tourism flows. A LISA significance map is generated, on which the city with significant LISA values and influential observations (hot spots) are identified. This paper also adopts a temporal stability mapping of hot spots by overlaying hot spots in 2000, 2005, and 2009, which extends Anselin's LISA significance map into a temporal context (Figure 4). Six categories of temporal hot-spot stability are identified in Figure 4. If a city remains as a hot spot of tourism flows in all the three years (2000, 2005, and 2009), it is identified as "1, 1, 1". A city is labeled as "0, 1, 1", if it is a hot spot in 2005 and 2009. Likewise, the label of "0, 0, 0" suggests that the corresponding region has never been a hot spot in these years. 29 cities have been hot-spots of tourism flows among the six categories. However, Western China and Middle China except for Huangshan

city have not been any types of hot spots over the years. The temporal stabilities verify similarity in spatial distribution of the hot spots over time.

## **Surface Visualization for Inbound Tourism Flows**

Tourism flows at the city level are interpolated to produce a continuous grid flow layer covering China. Tourism flows 3D surfaces are then created based on the grid layers over the time (Figure 5). Inbound tourism flows distribute unevenly among regions. This trend has been reinforced and deepened since 2000. Western cities have constantly had lower tourist arrivals than the rest of China. This is evident across time horizon of this study. The spatial inequalities has the pattern of " the East more dense than the West, the South more dense than the North", which has remained virtually unchanged with even polarizing in the direction of " south-north" since 2000. Spatial inequalities might be attributed to a few factors, such as economic conditions, transportation system, city function, tourism resources and boundary port. There simultaneously exist two opposite patterns of spatial agglomeration and spatial dispersion. China has seen the emergence of three tourism flows centers in the three metropolitan areas along the coastal region in Eastern China, namely, Beijing-Tianjin cluster, the Yangtze River Delta cluster, and the Pearl River Delta cluster. The intensity of spatial agglomeration had become stronger from 2000 to 2009. At the same time, smaller peaks of tourism flows centers developed around the main cities and spread towards surrounding cities, indicating spatial dispersion and overspill effect over the time. These smaller centers are cities of Chongqing-Chengdu, Xiamen, Guilin, Kunming-Lijiang, Qingdao, and so on.

## Space-Time Covariance Matrix of Inbound Tourism Flows

In Figure 6, line style, color, and thickness of covariance links connecting polygons' centroids are determined by strength of the temporal covariance between two contiguous cities. Solid black lines represent positive correlation while dotted blue lines indicate negative correlation. Thin lines indicate weak temporal linkages. The strong temporal correlation (thicker solid lines) can be viewed as having some similar growth mechanisms of tourism flows while thinner solid/ dotted segments indicate some types of isolation. 890 links of the space-time network are visualized. Among the 890 links, 134 links have negative correlation, which is about 15.06% of all the links. Hence, tourism flows in China demonstrate strong regional integration over years. Solid black lines ( $0.9 \leq \text{correlation of tourism flows} \leq 1$ ) reveal all strong positive links between neighboring cities. All these 269 links form ten spatial clusters. The largest one is located in a region formed by a body of cities of provinces of Hebei, Shandong, Zhejiang, Jiangxi, Anhui, and Jiangsu, and Inner Mongolia Autonomous Region as well as Beijing, Tianjin and Shanghai city. Other nine spatial clusters are consisted of top tourist cities and common tourist cities. Spatial clusters of top tourist cities include Shenyang-Dalian, Baotou- Huhehaote, Jinlin-Changchun-Haebin, Xian-Yanan-Taiyuan, Zhengzhou-Luoyang-Kaifeng, Changsha-Chongqing-Chengdou, Fuzhou-Quanzhou-Shamen, Guangzhou-Zhongshan-Shenzhen, and Guilin-Nanling. Thin black lines ( $0.5 \leq \text{correlation of tourism flows} \leq 0.9$ ) represent all the medium positive links between neighboring cities. These 251 links form 20 spatial clusters. Correlation of tourism flows over time that is larger than 0 and smaller than 0.5 denotes the weak positive links between



neighboring cities. The correlation that is larger than -0.5 and smaller than 0 indicates the weak negative links between neighboring cities. The correlation that is larger than -1.0 and smaller than -0.5 denotes the medium negative links between neighboring cities. It is worth noticing that these 15 links form eight spatial clusters.

**CONCLUSION** This paper provides a new approach to research in tourism flows studies by drawing on some recently developed methods of exploratory space-time data analysis, and it also facilitates the adoption and use of spatial statistics by other tourism researchers. In this paper, after summarizing Chinese inbound tourism growth and reviewing past literature on inbound tourism flows in China, some weaknesses associated with tourism flows studies have been identified. This paper adds to existing research by empirically studying both the spatial and temporal aspects of inbound tourism flows patterns at the city level. Particularly, by bringing the space-time perspective to the understanding of inbound tourism flows dynamics, this paper yields several noteworthy findings. First, ESDA reveals complicated spatial interaction among inbound tourism flows over years. In general, significant city-level agglomeration in China has been greatly reinforced since 2000. The global Moran's I statistics demonstrates the existence of significant positive spatial autocorrelation, which suggests that the city with a large number of tourist arrivals has a propensity to be geographically located close to other cities with large numbers of tourist arrivals. Moreover, the values of Moran's I are statistically significant in all the years. Second, the LISA statistics manifest any significant spatial variation of inbound tourism flows. LISA cluster maps are dominated by LL-type and HH-type cities. Furthermore, various types of hot spots,

concentrated on metropolitan areas during the period 2000–2009, are identified over time. This phenomenon is considered as a result from combination of favorable geographical location, good economic conditions, developed transportation system, resources endowment, preferential strategy of the government as well as the foreign investment. Third, local markov matrix has shown significant transitions with negative or positive influence of geographic neighbors upon a city. 16 different types of transitions provide informative insights on relative stability of inbound tourism flows in China's cities. Besides, China has distinct clusters of cities with similar tourism flow growth trends. In temporal stability mapping of hot spots, six categories of temporal hot spot stability are identified. The temporal stabilities verify similarity in spatial distribution of the hot spots over time. Fourth, 3D surface is created to visualize tourism flows. The spatial inequalities has the pattern of " the east more dense than the west, the south more dense than the north". There simultaneously exist spatial agglomeration and spatial dispersion. The intensity of spatial agglomeration has become stronger. At the same time, smaller peaks of tourism flows centers developed around the main cities and spread towards surrounding cities. These potential tourism flows centers have gradually emerged and grown larger. Furthermore, the paper emphasizes the concept that tourism flows growth has a temporal dimension. Space-time covariance matrix uncovers correlation that may not be obvious with traditional ESDA techniques. In the space-time network, 890 links are identified and visualized. 269 links forming ten spatial clusters represent strong positive correlation. 134 links are negative correlation, which is about 15.06% of all

links. Hence, tourism flows in China has demonstrated strong regional integration over years. To conclude, our comprehensive evidences offer deeper insights and have important policy implications. These enable the tourism-oriented governmental agencies, as well as the tourism industry professionals, to better understand the changes of inbound tourism flows in China's cities and relevant tourism partners/competitors for cities. It is suggested that governmental agencies and travel organizations need to monitor the changes of travel propensity at the city level and in time succession, assess tourism policies more accurately and make appropriate adjustment, so that they will be able to provide more efficient tourism management and planning strategies. Findings from this paper may also shed some light on how tourism transportation should be organized. The main spatial pattern of directional bias of tourist flow launching from the west to the east, may help explain the hub-and-spoke function of Beijing, Shanghai and Guangdong in China's railway and highway passenger transportation networks. The polarized spatial pattern of tourist distribution implies that the effect of tourism flow on one city spreads over to neighboring cities. Policy makers, therefore, have to focus more on the behavior of a city's tourist distribution because this will benefit neighboring cities. This finding complements current literature on China's urban tourist development and has important implications for regional tourism cooperation. Further regional cooperation calls for the delimitation of the regionalism and administrative bulwark.

#### LIMITATIONS AND FUTURE RESEARCH

Some limitations of the study should be noted. First, due to the data constraints, inbound tourists could not be further disaggregated into

international tourists and tourists from Hong Kong, Macau, and Taiwan. As international tourists and those from the non-mainland areas of China tend to make different destination choices, separate spatial and temporal patterns of these two flows may be necessary. Second, tourism flows for different purposes tend to be different. If the disaggregated tourism flows for different purposes are investigated, more specific policy suggestions could be provided. Further research can also examine the movement patterns of multiple segments, be they defined demographically, psychographically, motivationally or by special interest. Finally, as the main purpose of this research was to detect if temporal and spatial effects were significant in tourism flows, no effort has been examined determinants of tourism flows. It is suggested that further qualitative and quantitative studies should focus on the investigation of potential factors contributing to geographic neighborhood effect.