An Evolutionary Economic Geography Perspective on Types of Operation Development in West Lake, China

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Abstract: The types of operation play a key role in facilitating tourism consumption and economic development in a tourism destination. By adopting evolutionary economic geography theory, the paper analyzes the types of operation in West Lake Scenic Area from 1978 to 2013. First, an evolution process consisting of four stages is underpinned, and they are: the new establishment stage, the preliminary development stage, the speedup development stage, and the stabilized maturity stage. Specifically, the distinct characteristics associated with operation types are compared and evaluated at different stages throughout the process. The evolution trees are introduced to scrutinize types of operation development. The results of evolution trees demonstrate the substantial increase in both numbers and types. Second, by applying GIS spatial analysis, the paper also analyzes the spatial evolution characteristics on the types of operation, and the results unveil the co-existence of centripetal and centrifugal forces: the processes of spatial agglomeration and spatial dispersion. More specifically, we recognize the spatial process includes the emergence of node and concentration (1978–1995), the sparse distribution and intensity reduction (1996–2002), the patchy distribution and spatial agglomeration intensification (2003–2008), the dispersed distribution and core area agglomeration (2009–2013). Lastly, path dependence on resource endowment, government and market innovation, knowledge learning and spillover can reasonably explain the types of operation evolution. In conclusion, the evolutionary economic geography theories provide new theoretical and empirical perspectives for tourism policy analysis. At the same time, our comprehensive evidences impart more comprehensive insights and offer useful managerial and policy implications.

Keywords: types of operation; evolutionary economic geography; spatial process; West Lake, China

1 Introduction

The business landscape shaped by assorted types of operation greatly determines the prosperity of local tourism industry and how tourism revenue distributes into the local community. Tourism researchers are demonstrated intense research interests in understanding the antecedents and consequences types of operation development. Types of operation originated from Japan and was proposed in the 1960s (Xiao, 1994), which generally refers to the operation form of the retailing

enterprise and catering service industry (Zhao and Yu, 1996). In 1958, McNair put forward the wheel of retailing hypothesis. It intensified competition and increased cost after inducing many enterprises to follow. In 1966, Nielsen proposed the vacuum hypothesis, which explained the emergence of new retailing types of operation based on the preferential gap. In 1976, Davidson *et al*. jointly presented the retailing life cycle theory. They believed that like other types of products, different types of operation can be observed in retailing products from creation to extinction. The theories above explained the

motivation of the evolution of retailing types of operation. Chinese scholars' research mostly focuses on the evolution, formation mechanism, structure and performance effects on types of operation (Fang, 2001; Tao and Wei, 2002; Chen and Wang, 2005; Dai, 2006; Feng, 2008; Wei and Gao, 2009; Wei, 2011; Zhu, 2012). On the basis of these theories, some scholars creatively introduced types of operation into the tourism industry (CNTA, 2008; Wei, 2009). With the dramatically changing landscape of business operation typology in China, a growing body of tourism literature on types of operation has been witnessed. Yang and Sun (2001) highlighted the concept of types of operation in tourism study. Zou (2007) advanced types of operation theory. He considered that types of operation were created to strengthen tourism competitiveness. Yang and Wei (2009) thought types of operation belonged to the economic category, and raised the origin relations among types of operation, tourism and the tourism industry. Li *et al*. (2009) reviewed the related research on new types of operation in tourism development. Zhang (2010) discussed the concept, characteristics, classification and innovation pattern on types of operation. Guo (2011) illustrated the concept, the form of types of operation, and analyzed their development significance as well as their new evolution rule. Li *et al*. (2012) explored the conceptual model for types of operation pattern.

At present, China has been experiencing a gradual transition from a centrally planned economy to a market-oriented economy, and has achieved a prominent position in the tourism market over the last three decades. China has become one of the world's most popular tourist destinations. Much attention has been devoted to types of operation innovation for the transformation and upgrades of tourism industry in China. However, compared to an extensive literature on types of operation studies, fewer prior research efforts have been paid to examine types of operation development through an exploratory space-time analysis. In recent years, there is a new paradigm in economic geography, coined Evolutionary Economic Geography (EEG), focusing on how the spatial economy transforms itself through irreversible and dynamic processes over time. The application of EEG may offer new theoretical and empirical perspectives for tourism geographers to better understand the evolvement of operation types at different scales.

To fill in the research gap, we plan to investigate the evolvement of types of operation from an EEG perspective. Based on the data we collected from the West Lake Scenic Spot, we are able to understand the different stages in terms of types of operation portfolio housed. Moreover, we propose a new tool, the development evolution tree, which is able to efficiently underscored characteristics along the whole progress of evolvement.

2　Theoretical Underpinning of Evolutionary Economic Geography (EEG)

Since the late 1990s, EEG became increasingly popular in geography, regional sciences, urban planning, and sociology as an important research area. It is a science of studying the spatial activities of economic changes and the general rule that takes a dynamic, non-equilibrium point of view after incorporating the idea of dynamic evolution from evolutionary economics (Liu and Yin, 2005). By assimilating various insights from evolutionary economic, evolutionary economic geographers emphasized the destructive effect on innovation, history matters and the coevolution of technology-system, and believed that the economic change was the process of spatial variation of economic activities (Boschma and Lambooy, 1999; Martin and Sunley, 2006). EEG theories provided an additional set of explanatory framework to explain the main economics-related phenomenon, including spatial clustering and differences of regional growth by using evolutionary economics core concepts and methodology (Liu and Yin, 2006; Boschma and Frenken, 2006). Inheriting temporal and historical factors into the evolutionary economics, EEG fused the evolutionary economic and the economic geography. It borrowed firm heterogeneity, selection and heredity theory of evolutionary economics, optimized neoclassic and systematic analysis model in the economic geography by using the dynamic evolution analysis method (Li, 2011). The basic idea of EEG consists of the following three points: 1) the economy has been undergoing dynamic change; 2) economic development is an irreversible process, the economic subject behavior is influenced by the past; 3) innovation is the key driving force of its own change (Witt, 2003). According to definition of Boschma and Lambooy (1999), EEG explained the spatial evolution of enterprise, clustering, production/collaborative network, city and regional problems, particularly focuses on enterprise entry, exit, growth and

death (Boschma and Martin, 2010; Yan and An, 2013). It highlighted the impact on regional development causing by the technology and individual/entrepreneur system in a particular spatio-temporal condition (Miao and Zhang, 2012). Spatial evolution in EEG focused on the enterprise and industry in recent years. For example, the core concepts, such as 'learning', 'path dependence', 'selection' and 'innovation' become the basis of explaining industry evolution, cluster and diffusion (Antonelli, 2000; Caniëls, 2000; Breschi and Lissoni, 2001; McKelvey, 2004; Brenner, 2004; Werker and Athreye, 2004). Some scholars explored the concept and characteristics of 'path dependence' (David, 1985; Arthur, 1989; Liebowitz and Margolis, 1995; Sewell, 1996; Pierson, 2000; Sydow *et al*., 2005). Evolutionary economic geographers studied the spatial distribution of economic activities and analyzed the cluster dynamic evolution from a viewpoint of evolution (Boschma and Frenken, 2009; Li *et al*., 2012). Klepper (2007) and Garnsey and Heffernan (2007) confirmed the existence of industrial cluster conditions based on generalized Darwinism.

In tourism destination evolution research, Mulan and Robert (2013) advocated combining path dependence and coevolution to analyze the tourist area development. Fan and Li (2009) introduced EEG to tourism studies by analyzing core concept and its correlation with tourism. Papatheodorou (2004) put forward a new tourism evolutionary model from EEG. In China, great progress has been made on EEG in the analysis of spatial clustering (Fan and Qin, 2005; Zhu *et al*., 2013), industrial cluster (Miao and Wei, 2009; Fan and Li, 2009; Liu *et al*., 2011; Wang *et al*., 2013), industrial structural and industrial district evolution (Ma *et al*., 2011; Ma *et al*., 2013). However, EEG is still in its infancy stage in tourism research. Some researchers absorbed evolutionary thought and paid close attention to the research on the general application of concepts, which provided theoretical instruction for the exploration development in tourism area (Fan and Li, 2009), but lacked sound empirical support with rigorous analysis (Fan and Li, 2009).

Based on the aforementioned argument, it is therefore reasonable to build up conceptual and theoretical links between EEG and tourism area (Fig. 1). The theoretical framework for the tourism based on the EEG describes overall changes in tourism areas over time, including the interaction process and the influential factors. The evolutionary process in tourism areas is not only a result of a process of types of operation evolution, but also may influence its further evolution in a dynamic way. It is important that understanding path creation and path dependence are two aspects of the same regional processes. The emergence of a tourism area is not only due to historical matters and random events, but also depends on initial conditions, including preexisting natural and cultural resources, which lead to path dependence and eventually become locked in through a self-reinforcing process. Path dependence reflects the inertial trajectory of a tourism area. Tourism actors will make efforts to adjust to changes either by introducing new attractions or regenerating traditional attractions. In the theoretical framework, the factors associated with relatively changes within a tourism area are considered, such as the path innovation, coevolution and knowledge learning. Path innovation changes the path dependent trajectory of the tourism area through policy intervention, market demand and technological innovation. Coevolution can be useful to explain the evolution of tourism areas, which can be regarded as a coevolutionary process of a wide range of tourism sectors. Tourism area is a complicated system containing all kinds of elements with various products, sectors and institutions and their mutual interactions. Knowledge learning is accepted as an important driver, and the evolutionary processes also build on knowledge learning and exchanges which tend to be geographically bounded at the regional level.

3 Data Sources and Methods

3.1 Research area

West Lake Scenic Area, a UNESCO's World Heritage site, is located in Hangzhou, Zhejiang Province. The scenic area was approved for the 'national 5A scenic spot' by the National Tourism Administration on May 8, 2007, and was designated as a world heritage site in 2011. There were a total of 2.45 million visitors in 2002, and as of 2013, it attracted 26.51 million. Benefiting from this, the agritourism and leisure industry developed rapidly, annual totally received 5.1 million visitors. West Lake longjing tea production was 127.3 t, contributing to a total output was 96.83 million yuan (RMB). The scenic area has a total of 1221 tourism enterprises and related enterprises.
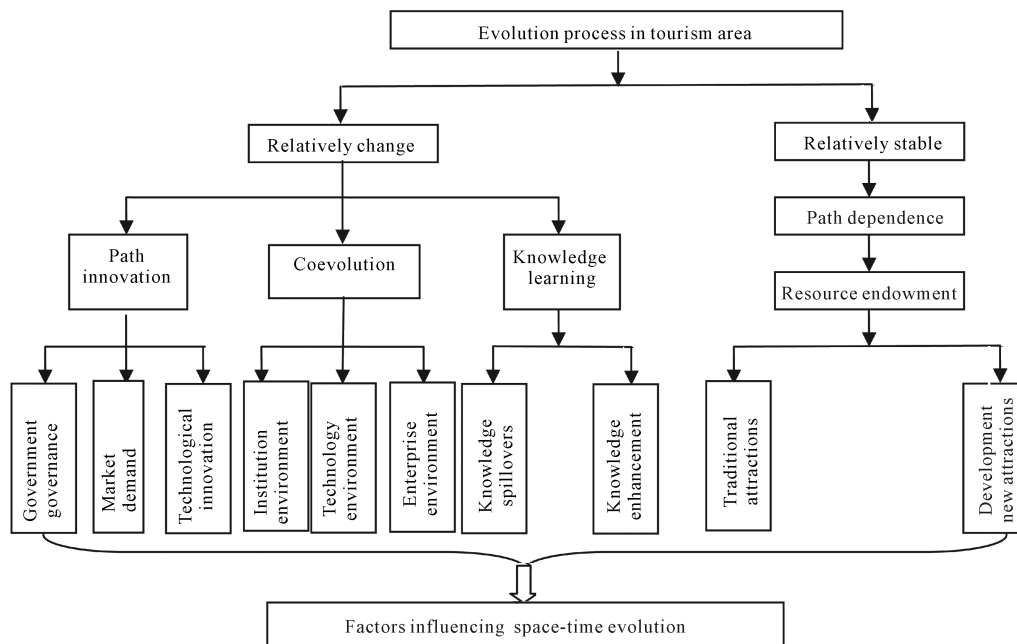
Evolution process in tourism area

Relatively change

Relatively stable

Path innovation

Coevolution

Knowledge learning

Path dependence

Resource endowment

Government governance

Market demand

Technological innovation

Institution environment

Technology environment

Enterprise environment

Knowledge spillovers

Knowledge enhancement

Traditional attractions

Development new attractions

Factors influencing space-time evolution

Fig. 1   Theoretical framework for tourism based on Evolutionary Economic Geography (EEG)

In this paper, we uses division of scenic area derived from 'West Lake Scenic Area Master Plan (2002–2020)' as study area scope, which involves North Mountain Scenic Area, Botanical Garden Scenic Area, Lake Scenic Area, Lingzhu Scenic Area, Longjing Tiger-running Scenic Area, Wushan Scenic Area, Phoenix Mountain Scenic Area, Wuyun Scenic Area, and Qianjiang Scenic Area.

3.2   Data

The main task of this study is to explore the evolutionary process and its mechanism, taking West Lake Scenic Area as an example. To accomplish this aim, we collected the complete tourism-related enterprises data to conduct a longitudinal analysis. The second-hand data from West Lake Hangzhou Scenic Area Management Committee used in this study includes: Hangzhou City Yellow Pages (1995; 2002; 2008; 2013), Hangzhou Yearbook (1987–2013), West Lake Local Chronicles (1995), Hangzhou Statistical Yearbook (1995–2014), The Hangzhou Economic Census Data (2004; 2008), and Basic Data Set on West Lake Scenic Area Master Plan (1987) ,West Lake Scenic Area Master Plan (2002–2020), West Lake Cultural Landscape of Hangzhou for Declared World Cultural Heritage (2010). The comprehensive data sources we collected represent a

valuable source of information for understanding the temporal and spatial changes of types of operation.

In order to further gain insights main types of operation into tourism business, we make an face-to-face survey though questionnaire on May 12–19, 2013, including enterprises' names, address, postal code, main types of operation, nature, *etc*.

3.3   Methods

The data set is coded and arranged using SPSS, a powerful statistical analysis tool. The compiled dataset includes types of tourism business databases in 1995, 2002, 2008 and 2013. According to different enterprises' operational characteristics, types of tourism business are divided into catering, accommodation, shopping, the entertainment as well as the relevant tertiary industry and other industry.

In order to achieve a more comprehensive understanding of tourism area evolution, this paper uses GIS spatial analysis methods to geocode the enterprises address information with Hangzhou City Traffic vector map. The data set is stored in Geographical Information System (GIS), which is used for spatial analysis and mapping. With the center of enterprises' address as the origin of coordinate system, *X* and *Y* coordinates of each enterprise is measured. Geostatistical processing is

conducted by using the ArcGIS 10.0 software. Analyzing geographic dimension of spatial patterns of tourism area could help us better understand the characteristics of its distribution and transition, and enable us to derive knowledge for managing and marketing the research area. Furthermore, the historical analysis method is used to analyze the evolutionary process of tourism area. Comparison analysis was conducted among these different tourism sectors.

4　Results

4.1　Development stages

The paper analyzed the spatio-temporal evolution process on types of operation in West Lake Scenic Area from 1995 to 2013.

4.1.1　New establishment stage (1978–1995)

At the beginning of 1980s, the Hangzhou municipal government initiated a new construction project for tourism development in West Lake Scenic Area in order to reset up the destination image as a national city with tourism excellence. During this period, the area implemented the project on demolition of illegal buildings to recover and rebuild scenic spots with authentic environment. Types of operation gradually developed. In 1995, there were a total of 272 enterprises in West Lake Scenic Area (Table 1). Among them, the tourism enterprises accounted for 65.93%, which indicated that tourism industry got recovery during this period.

The proportion of 'catering', 'accommodation', 'shopping', 'entertainment' elements was 29.1%, 10.7%, 17.3%, 8.8% respectively. The 'catering' accounted for highest proportion, followed by 'shopping'. The relevant tertiary industry and other industry accounted for 34.2%. However, due to the pursuit of economic interests, historical reasons and the continuous development of primary and secondary industry, these enterprises mainly focused on secondary industry, causing partial destruction of cultural relics and historic sites, especially due to t renewal in the old city area without protection consciousness.

4.1.2　Preliminary development stage (1996–2002)

In this stage, after being aware of the destruction problems, the Hangzhou municipal government gradually strengthened the power of conservation and protection, and implemented the 'Transition of secondary industry into tertiary industry' strategy. In 2002, there were 191

enterprises in West Lake Scenic Area (Table 1). Types of tourism business gradually were innovated, but dominant industry was still 'catering', followed by 'shopping'. Compared to the previous stage, the share of 'entertainment' business types declined.

The proportion of 'catering', 'accommodation', 'shopping', 'entertainment' elements was 22.0%, 11.5%, 13.1%, 4.7% respectively. The number of enterprises reduces by 81 from 1995; however, the operation type became diversified. The catering service enterprises like snack bars, teahouses, villas, guest houses appeared. Particularly in the late 1990s, the development of mountainous area around West Lake Scenic Area attracted many visitors to take part in climbing hills for tea and other leisure activities. In 2002, the Meijiawu Village Cultural Leisure Tourism Program further promoted new types of operation, such as leisure teahouse. The number of enterprises from relevant tertiary industry had also increased, whereas the number of the other sectors significantly decreased.

4.1.3　Speedup development stage (2003–2008)

In this stage, the change of tourism business types was heavily affected by the dual forces of government and market, which promoted the tourism industry to the in-depth development. The government's West Lake Scenic Area Master Plan and the 'Vacating the cage to change the birds' policy jointly accelerated the scenic area spatial replacement. In 2008, the enterprises in West Lake Scenic Area reached 824. Compared to 2002, the number was increased by 633. The substantial growth of teahouses, catering enterprises mainly became the leading types of operation.

The 'catering', 'accommodation', 'shopping', 'entertainment' elements accounted for 72.0%, 7.8%, 3.9%, 4.7% of the total number of tourism business respectively. The relevant tertiary industry accounted for 11.7%. Especially, the other industry completely disappeared. The tourism industry gradually became the leader in the scenic area. Since 2003, the establishment of Meijiawu village cultural leisure tourism area promoted the tea industry development, and caused leisure teahouses rapid increasing. On September 1, 2005, 'West Lake Scenic Area Master Plan (2002–2020)', approved by the Ministry of Construction department, was the first national authorized tourism master plan in history. This plan emphasized promoting tourism development, unified the scenery resources protection

and the tourism development, and improves the efficiency in tourism economics. In 2007, the approval of 'national 5A scenic spot' further made efforts on its spatial integration of scattered elements previously poorly organized. Meanwhile, the market segments and capital investments are taken into consideration, and the traditional industry was gradually replaced by the gourmet shops, holiday villages, tourism commodity shops, specialty shops, lounge bar and other types of operation.

4.1.4 Stabilized maturity stage (2009–2013)

Along with the shift of industrial structure in Hangzhou City, types of operation development were promoted rapidly in West Lake Scenic Area. In 2013, the proportion of business in the tertiary industry in Hangzhou City reached 52.9%. Correspondingly, the number of these enterprises in West Lake Scenic Area reached 1221, with an increase of 397 from 2008. The 'catering',

'accommodation', 'shopping', 'entertainment' types accounted for 57.6%, 11.0%, 14.3%, 3.8% respectively. The relevant types in the tertiary industry accounted for 13.3%. The share of 'catering' still occupied the largest, whereas the share 'accommodation' and 'shopping' types greatly changed, especially the proportion of tourism specialty shops was up to 12.0%. However, the share of 'accommodation' type had also fallen. In this stage, the governance capability is improved in scenic areas, and it implemented the scenic protection policy in a more aggressive and continuous way. Systematic innovation, technological innovation, and management innovation were impelled, focusing on knowledge learning, enterprise's location choice and types of operation innovation. These innovations also provided harmonious environment for various types of operation development in West Lake Scenic Area.

Table 1   Types of operation in West Lake Scenic Area

Element	Type of operation	1995		2002		2008		2013	
		Number	percent (%)	Number	percent (%)	Number	percent (%)	Number	percent (%)
Catering	Restaurant	78	28.7	29	15.2	78	9.5	103	8.4
	Catering enterprise	0	0	2	1.0	51	6.2	80	6.6
	Pastry shops	0	0	2	1.0	38	4.6	23	1.9
	Specialty restaurant	0	0	0	0	0	0	18	1.5
	Café	1	0.4	2	1.0	7	0.9	17	1.4
	Teahouse, beverage store	0	0	7	3.7	416	50.5	462	37.8
	Others	0	0	0	0	3	0.4	0	0
Accommodation	Hotel	13	4.8	4	2.1	21	2.6	72	5.9
	Hostel	16	5.9	5	2.6	27	3.3	41	3.4
	Resort	0	0	6	3.1	15	1.8	19	1.6
	Guest house	0	0	7	3.7	1	0.1	2	0.2
Shopping	Specialty store	16	5.9	0	0	17	2.1	147	12.0
	Gifts shop	0	0	0	0	11	1.3	0	0
	Department store, mansion	20	7.4	11	5.8	0	0	6	0.5
	Specialty store	0	0	2	1.0	0	0	0	0
	Liquor store, grocery	11	4.0	12	6.3	4	0.5	19	1.6
	antique, gold and silver articles shop	0	0	0	0	0	0	3	0.2
Entertainment	Club	0	0	4	2.1	0	0	0	0
	Night club, KTV	24	8.8	5	2.6	21	2.6	9	0.7
	Bar	0	0	0	0	18	2.2	3	0.2
	Cultural museum	0	0	0	0	0	0	35	2.9
Relevant tertiary industry	Tertiary industry	53	19.5	68	35.6	96	11.7	162	13.3
Other industry	Other industry	40	14.7	25	13.1	0	0	0	0

4.2   Development evolution tree

Based on the four development stages discussed above, the paper draws the development evolution tree to provide a more intuitive understanding on types of operation changes in the research area. It can be seen as types of operation growth process. From 1995 to 2013, the number of enterprises increased considerably and steadily with an only slight declining in 2002. Types of operation clustered apparently, and the leading types of operation switched from restaurants to leisure teahouses. The product forms, modes of business operation and organization form were more diversified, and types of operation tended to be stable. Up till 2013, there were more than 1200 enterprises in West Lake Scenic Area. As indicated in the development evolution tree, if types of operation were a tree trunk, the tree trunk grew the branch, and the branch grew sub-branch unceasingly. From 1995 to 2013, the tree of types of operation varied from sparse to dense, from simple to complex with increasing branch. In general, the secondary branch was relatively stable, but third-level branch was growing, and gradually generated the guest houses, resorts, teahouses, pastry shops, catering service companies and other specialty catering shops, tourism specialty shops, gifts shops, antique, public artistic cultural museum and others as sub branches. But sub-branches disappeared also, such as other industry sub-branches, *etc*. Overall, the evolution tree of types of operation grew lushly, and its type and number gradually increased in West Lake Scenic Area (Fig. 2).

4.3   Spatial evolution characteristics

We further analyze the spatial evolution of types of operation by GIS spatial analysis methods to better understand the evolvement from a spatial perspective. Spatial evolution characteristics are as follows.

4.3.1   Emergence of node and concentration

From China's Reform and Opening up (1978) to 1995, the tourism industry had gradually recovered in West Lake Scenic Area, which attracted lots of local residents and tourists. The tourism development further attracted investment and promoted types of operation development. The spatial distribution of types of operation was surrounded by the lake. In 1995, types of operation took on a node distribution, but its cluster remained weak (Fig. 3), The tourism enterprises were scattered and patchy distribution was mostly on the main roads. These

enterprises were mainly located along roads such as the South Mountain Road, Huancheng West Road, North Mountain Road and Shuguang Road. At the same time, there existed dotted distribution in Lingzhu Scenic Area, Longjing Tiger-running Scenic Area, and Phoenix Mountain Scenic Area.

4.3.2   Sparse distribution and intensity reduction

From 1996 to 2002, types of operation were slowdown. In order to protect the scenic area, the government renewed the scenic spots, moved shops or limited types of operation development, and led to a reduction of 81 enterprises reduced (Fig. 4). However, compared with the situation as of 1995, the overall layout had not significant change. The spatial distribution was mainly concentrated in Lake Scenic Area, North Mountain Scenic Area and Wushan Scenic Area. In 1996 and 2002, more than 90% tourism enterprises mainly concentrated in these regions. However, business types surrounded on the main roads in the scenic area decreased by 2002. The intensity slowed down along South Mountain Road, Hubin Road, Huangcheng West Road, and North Mountain Road from 1996. The relevant tertiary industry and other industry relatively displayed dot distribution.

4.3.3   Patchy distribution and spatial agglomeration intensification

In the period of rapid tourism development (Fig. 5), the rapid agglomeration of tourism enterprises emerged. Particularly in 2007, the West Lake Scenic Area was awarded 'national 5A scenic spot'. The rapid tourism development and the construction led by the government in the scenic area greatly shape the co-location pattern of relevant tourism enterprises. Interestingly, we observe a patchy distribution of business operation types in 2008 over the research area. Four clusters can be highlighted: the eastern region, the northern region, the core lake scenic area and the central scenic area. By 2013, two patchy areas appear in the west of Wuyun Scenic Area. Types of operation tended to distribute on main roads in the hot tourism area, forming a typical line of cluster and gradually into a cycle. The tourism enterprises began to relatively concentrate in Hefang Street, North Mountain Road, Huancheng West Road. And then, cluster distribution was along Shuguang Road, Lingzhu Road, Tianzhu Road, Longjing Road, Tiger-running Road, Manjuelong Road and Yuhuang Mountain Road in West Lake Scenic Area. In the south-west of Wuyun Scenic Area, the distribution of
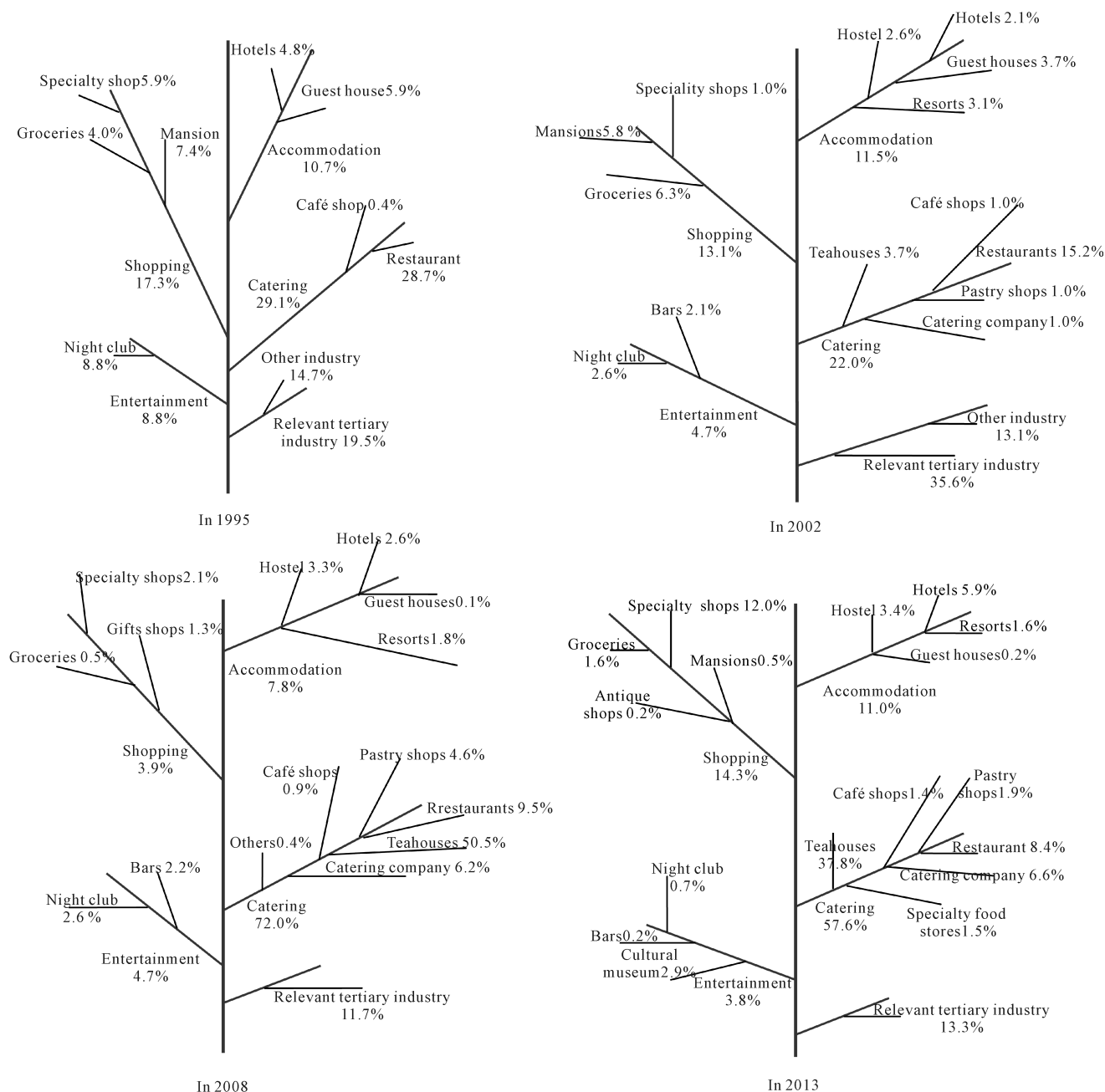
Fig. 2   Development evolution tree on business types in West Lake Scenic Area

types of operation ranged from dots in 1995 to cluster along the Yunqi Road and Zhijiang Road. Although the diffusing scope on types of operation expanded gradually, the degree of agglomeration also constantly enhanced. The agglomeration displayed stably from the diachronic analysis. The relevant tertiary industry and other industry still remained the dot distribution.

4.3.4   Dispersed distribution and core area agglomeration increasing

The spatial distribution of business operation initially demonstrated scatter characteristic with subtle agglomeration, and small-scale agglomeration decentralized before 2008. In 1995 and 2002, it gradually formed a clear patchy concentration around lake, along the main roads. Business location changed from dot dispersion to patchy clusters with spreading to the west of scenic area. In 2013, the numbers of enterprises increased dramatically. The agglomeration proliferated around the centre of scenic area. The overall layout of enterprises shaped in scattered pattern (Fig. 6). However, according to the

statistical data, chemical industry, agriculture and other companies gradually disappeared. The relevant tertiary industry was relatively stable, showing scatter distribution.

4.4 Factors influencing evolution

EEG applies the core concepts of the evolutionary economics (such as novelty, diversity, inheritance) to explain the evolution process and mechanism of the economic landscape, and emphasized the importance of history. It explores how process of path creation and path dependence interacts to shape the economic spatial evolution (Li *et al*., 2012). EEG is particularly helpful to
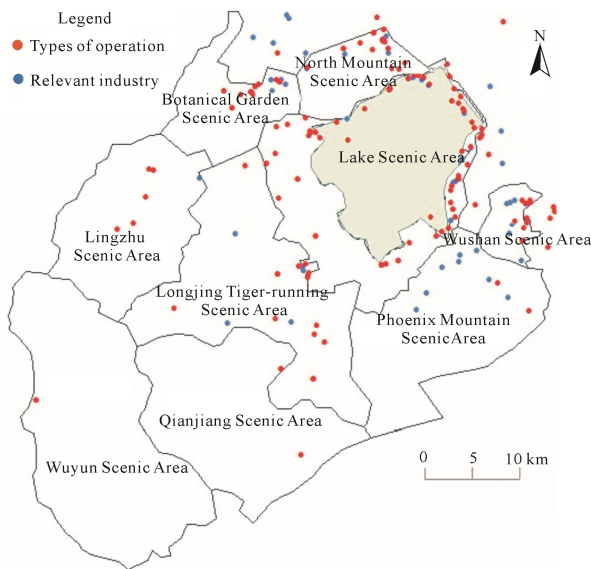

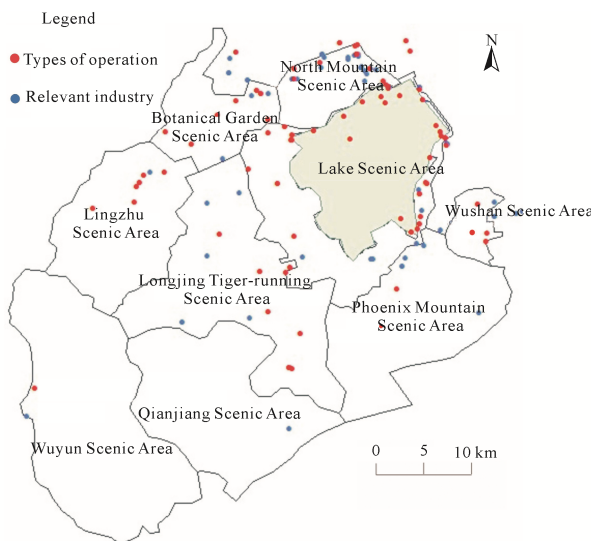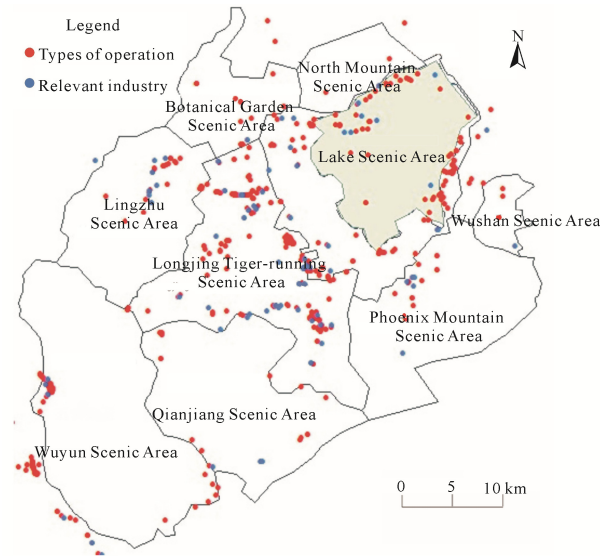**Fig. 5** Distribution of types of operation in West Lake Scenic Area in 2008

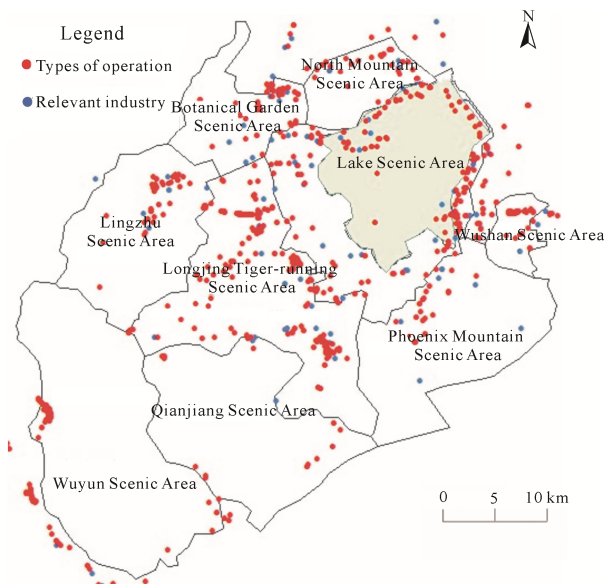**Fig. 3** Distribution of types of operation in West Lake Scenic Area in 1995

Fig. 6 Distribution of types of operation in West Lake Scenic Area in 2013

unveil the factors influencing types of operation evolution in West Lake Scenic Area. The formation, development and change of types of operation were interaction game results affected by environmental and historical factors (Fig. 7). Types of operation development were dynamic evolution process, which were influenced by its unique tourism resources, geographical conditions, historical and cultural background. In addition, the evolution in the scenic area was largely stimulated by various predetermined factors (policy changes, historical events, local factors, *etc*.).
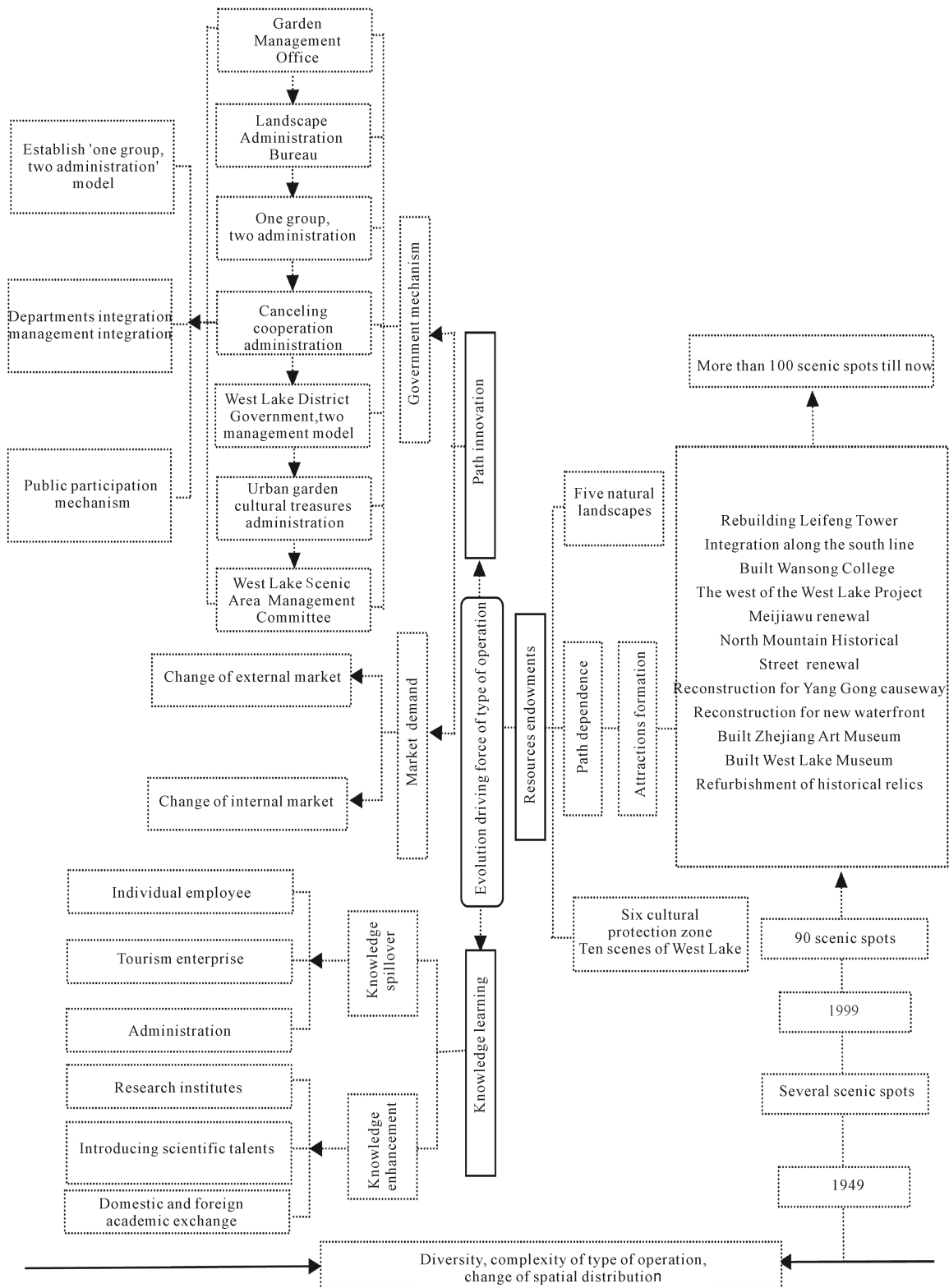

Fig. 4 Distribution of types of operation in West Lake Scenic Area in 2002

Fig. 7 Factors influencing business type evolution in West Lake Scenic Area

4.4.1 Foundation of evolution: path dependence on resources endowments

Benefiting from its unique natural resources endowments and historical background, West Lake Scenic Area possesses high quality natural esthetics and high history value. The tourism expansion over the last decade leads to a significant increase in the number of tourism enterprises, notably with an average annual growth rate of 8.7% from 1995 to 2013 spreading to the west of scenic area. According to the landscape characteristics in the scenic area, it can serve tourists with different types of demand. Accordingly, tourism enterprises featured their unique historical culture elements, which made them take on local path dependence. According to analysis of business operation types from 1995 to 2013, the selection of types of operation was the result of inheritance, including spatial evolution inheritance and diffusion through spatial spillover effect. Numerous subsidiaries companies established near the parent companies in the scenic area, and finally formed enterprises clusters. Meantime, the other industry gradually disappeared due to market deselection. Therefore, the resource endowments, historical and cultural value determined types of operation development and distribution patterns to a large extent.

4.4.2 Fundamental impetus of evolution: government policy and market innovation

EEG studies on enterprises emphasizes that the economic activities (for example, institutional innovation, technological innovation, etc.) have an impact on the economic spatio-temporal structure. 'Novelty' is the core concept of EEG and 'innovation' is vital factor and impetus of economic change (Liu and Yin, 2005). We found that business operation types in the research area were relatively stable over time. Path dependence leaded to a slow change to the distribution pattern on types of operation. But historical factors, such as wildcard events, could cause path destruction and path innovation. On one hand, the 'novelty' or 'variation', was caused by the scenic area and government department managers' efforts for creating good decision-making mechanism and managerial structure reform. On the other hand, it might due to 'accidentally appearing' or 'interruption', such as the approval of national 5A scenic spots in 2007, the designation for world heritage sites in 2011, and so on. When the local government put forward the rectification and reform in the research area,

some local residents were backlash at first. It was government departments' guidance that gradually made types of operation toward a better structured, diversified and market-oriented landscape. At first, its unique resource endowments helped types of operation form initial development path. But it was truly the government institutional innovation, market mechanisms innovation and occasional events that brought about the remarkable change on types of operation.

First of all, in government management system, the Hangzhou municipal party committee and the municipal government adjusted management structure in the scenic areas in September, 2002. It established the Hangzhou West Lake Scenic Area management committee and Hangzhou botanical garden cultural relic bureau implemented the policy of 'one group, two management models'. More specifically, the government entrusted the streets, communities and villages in the scenic area to participate in administrative committee management so that the committee functions like a local the government. It was also known that this 'departments integration, management integration' was pioneering in Chinese state-owned scenic areas. Simultaneously, in the '12th Five-Year Plan' in West Lake, ecology civilization construction and the environmental protection plan perfected public participating mechanism and strengthened public supervision. The government also improved the transparency of policy decision making, encouraged public participation, and ensured the public's right to know, to participate and to supervise. By building social platform for the government, experts, citizens, companies and media communication, it can realize interactive communication among the social groups. Government intervention and management system creation fundamentally promoted the innovation of business operation types. Compared with 1995, types of operation had decreased slightly in 2002, which partly resulted from strengthening commercial service outlets management by Hangzhou government department. For instance, the construction of commercial service facilities in the scenic area must be approved by relevant government departments. The location, business areas, industrial classification about commercial service facilities needed further approval, and illegal buildings were dismantled according to zoning restrictions.

Second, under the background of ticket price rising in majority national scenic areas, 'the West Lake model'

become a model to discourage this national trend. The ticket fare was canceled and visitors can enter free of charge. Moreover, Types of Operation Upgrading Plan in West Lake Scenic Area announced on April 3, 2014, and it was the first types of operation plan in Chinese national scenic areas. The historical events influence the landscape of business operation types as well, such as the launching of 'entering west in West Lake scenic area' project, approval of national 5A scenic spots in 2007 and the world heritage enlistment. The government guidance, market- oriented business development, and the scenic area plan implementation greatly strengthened 'path creation' over the research period. At the same time, 'sudden change' also plays a role. The evolutionary economists believed that economy itself was a dynamic, irreversible system and a system with self-transformation caused by novelty creation and influence. It was economic subject creation (individual and enterprises) and market creation that drove the evolution and adaptation on types of operation (Miao and Wei, 2009).

4.4.3   *Driving force of evolution: knowledge learning and spillover*

In the learning and innovation process, there was much more tacits (Jia, 2002). The distinct local cultures lay the social basis, create and overflow by knowledge in diffusion and cluster process of the enterprises (Li *et al.*, 2012). The long-term prosperity, the constant development and enterprises innovation in the scenic area were largely the consequence of interaction among local tradition, market demand, internal and external knowledge.

First of all, the long traditional culture and the stable social network provided sound conditions for the tourism enterprises to develop in West Lake Scenic Area. The historical and cultural knowledge not only are rooted in the enterprises routines, but also may spread from one enterprise to another, namely knowledge spillover, which also promote types of operation evolution.

Second, 'learning' plays an important role in economic landscape evolution. The government, non-governmental organizations and academic professionals constantly learned from outside and introduced useful knowledge to types of operation. As a result, knowledge was assimilated for innovation. Since ancient times, Hangzhou's tea culture is prevalent in West Lake Scenic Area. In January 2002, after rounds of discussions with academic professionals, Meijiawu village cultural tourism program, proposed by Zhejiang Urban and Rural Planning and Design Institute, had been confirmed and implemented. This program laid the foundation for rapid leisure teahouses development. In 2008, the number of teahouses increased by 409 with an annual average growth rate of 97.5%, from a number of seven in 2002. In recent years, funds allocated by Hangzhou Government on research and experimental development were equivalent to 2.95% of GDP. Hangzhou City introduced 50 post-doctoral research associates, 7500 foreign talents for ongoing academic exchanges. Thus, it was obvious that, comparing with local knowledge, external knowledge was introduced and absorbed by research institutes. With the growth of the tourism industry, non-governmental organizations, the academic talents and scientific research institutions were playing together to create an environment that nurtures innovation. For academic talents and experts, they can play a 'catalyst' role in technology innovation and system innovation, and promoted the 'novelty creation' (Miao and Zhang, 2012). They can also promote rapid knowledge creation and dissemination. The new types of operation were generated by connecting with exterior technology. It can be concluded that 'learning' was critical 'catalyst' for improving types of operation development in West Lake. Learning and knowledge creation were a key part in enterprises agglomeration as well as tourism sustainable development.

5   Conclusions

This paper provides an EEG perspective for types of operation research. There are four stages on types of operation development in West Lake. During the new construction stage, types of operation distributed on the road in major scenic spots. With tourism industry development, the number of tourism enterprises increased dramatically, and its annual average growth rate was 8.7%. Types of operation also continued to be diversification, but in total, they were still relatively stable. The 'catering', 'accommodation' element occupied dominantly, then the 'shopping' element. Other industry vanished gradually due to 'path lock-ins', and replaced by new tourism enterprises. In the slowdown developing stage, the accommodation accounted for 28.7%, which was in the highest proportion. In the rapid developing stage, although its numbers fell down, the new types of

operation enriched gradually. The dominant types of operation still were 'catering' element, then 'shopping' element. In the stable mature stage, the dominant types of tourism business were still 'catering', but the percentage of shops increased. The type of tourism business was shaped by the dual forces of government and the market. The direction of development plan and the impetus of government policy 'vacating the cage to change the bird' accelerated spatial replacement in the scenic area.

In the aspect of spatial distribution, there simultaneously exist spatial agglomeration and spatial dispersion. The spatial process includes: the emergence of node and concentration (1978–1995), the sparse distribution and intensity declining (1996–2002), the patchy distribution and spatial agglomeration strengthened (2003–2008), the dispersed distribution and core area agglomeration (2009–2013). Starting from the initial stage of Reform and Opening up to 1995, types of operation recovered gradually in West Lake Scenic Area, and tourism enterprises appeared gradually as nodes distribution and mainly located along roads. Tourism enterprises clustered apparently and diffused by spreading east and entering west in West Lake. From 1995 to 2002, types of operation were slowdown. The spatial distribution was mainly concentrated in the Lake Scenic Area, the North Mountain Scenic Area and the Wushan Scenic Area. In the period of rapid tourism development, tourism enterprises emerged rapid agglomeration. The spatial agglomeration distribution could be divided into the eastern region, the northern region, the core lake scenic area and the central scenic area. Although the diffuse scope on types of operation expanded gradually, the degree of agglomeration also constantly enhanced. The agglomeration proliferated around the centre of scenic area. The overall layout of enterprises shaped in scattered pattern.

In the aspect of driving force, path dependence on the resource endowment, government and market innovation, knowledge learning and spillover explain the driving factors for types of operation evolution in West Lake. The basis of types of operation evolution in West Lake was the path dependence on resources endowments. Its fundamental driving force was path innovation of government and market. Learning was the impetus of evolution. But various random factors (for example, historical great event, location), the market and government management system innovation, the effects of 'novelty' unceasingly leaded types of operation to diffuse and cluster. As noted above, the favorable system environment promoted the company derivation as well as the cluster mechanism. Therefore, the market mechanism and government system innovation were the fundamental driving force in scenic area. Learning and knowledge spillovers fostered the self-enhancement effect of agglomerative economies. Enterprises attract new other enterprises located in the same area (Arthur, 1990). Companies' knowledge developed through learning which can make enterprises better adapt to changes of environment. Based on inheriting traditional culture, types of operation unceasingly introduced the knowledge. Meanwhile, through social networks and the labor movement, the knowledge spillover continuously occurred from a company to another.

In conclusion, the evolutionary economic geography provides new perspectives to better understand the changing landscape of business operation types within a scenic area. EEG has emerged in the last decade as a powerful theoretical paradigm and has led to an improved understanding of long-term evolvement of spatial configuration change. Our empirical evidences offer useful insights and policy implications in scenic area. These results enable the tourism-oriented governmental agencies, as well as the tourism industry professionals, to better understand the changes of tourism-related enterprises in China's scenic areas. It is suggested that governmental agencies and travel organizations need to monitor the changes of tourism-related enterprises 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. Those efforts and developments make the great integration of enterprises, capital and projects possible, and it is important to boost the service industry by improving tourism industry. At the same time, the tourism industry development requires tactic coordination with the tourism resources preservation, and the ecological environment protection in West Lake. This finding complements current literature on China's tourism-related enterprises development and has important implications for types of operation adjustments in scenic area.

Some limitations of the study should be noted. First, exogenous changes are caused by factors beyond the control of scenic area. For example, changes in fashion

and consumer tastes could not be further considered. Second, along with urbanization and urban sprawl, there is still little knowledge how this trend shapes the business landscape West Lake Scenic Area. Therefore, we recommend further research efforts on how does knowledge move from one tourism enterprise as it interacts with another enterprise and how is that knowledge replicated within the receiving enterprise. In addition, the non resource-based path dependence of the tourism area should be fully examined. Finally, it is suggested that further qualitative and quantitative studies should focus on the investigation of potential factors contributing to evolution process.

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