

The spatial mobility of rural tourism workforce: A case study from the micro analytical perspective

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ABSTRACT

The touristic movement has been focused generally while the spatial mobility of the tourism workforce was overlooked. To make up this research gap, the paper conducted in-depth interviews, questionnaire survey, and nonparticipatory observations with rural tourism employees at Baisha village in Zhejiang province, east China. It sought to analyze the demographic characteristics and explore the spatial mobility pattern of the tourism workforce. Although rural tourism plays an important role in job promotion in the study area, tourism employment was still partial to male, young, and low-skilled workforce, and its performance was overestimated in Chinese practice. Evidence on the watershed distance (12–20 km) of their spatial mobility was found based on the empirical analysis and statistics. Then, Push and Pull Model (PPM) was introduced to illustrate the mechanism behind this spatial mobility pattern. The Spatial Enclosure Effect was put up to deeply understand the spatial finiteness of rural tourism employment promotion, in order to help local make scientific decision on rural tourism. Finally, enlightenments of those findings were discussed under the backgrounds of rural revitalization program to improve the efficiency of rural tourism development in China. And applicability and limitation were also discussed deeply.

1. Introduction

Tourism has been emphasized worldwide due to its great contributions to employment promotion, economic increase, and regional coordinated development (The World Travel & Tourism Council, 2014). Thus, it was turned to boost the decaying countryside and narrow the unbalanced development gap between urban and rural areas (Gao & Wu, 2017). During China's reform and opening-up, much attention was put on the urbanization and industrialization. Meanwhile, large economic factors and developing resources flowed into urban areas, and the countryside progressively lagged far behind the cities (Liu & Wall, 2006). But now, this irrational policy and regulations have seriously gone against the moderately prosperous, sustainable, and fairer society (Su et al., 2019). As Chinese economy entering the stage of "new normal", slower but more sustainable economic development is needed

with new characteristics of labor demand, resource utilization, and industry structure (Li et al., 2018). How to achieve the integrated development of urban and rural areas and improve sustainable capacity of countryside are gaining more and more attention from Chinese governors, public or policy-makers.

Promoting mutual and interregional communication is one of the conspicuous advantages of tourism (Janta et al., 2011). Rural leisure and tourism activities could widely benefit interregional traffic connection, workforce mobility, capital investment, and achieve coordinated, sound development between urban and rural areas (Ladkin, 2011). Therefore, rural tourism has been considered as an efficient way to enhance rural development. Simultaneously, the rising of Nostalgia and rural leisure demand with the rapid urbanization, has also further triggered the rural tourism investment boom (Joppe, 2012). Thus, it has become an important and attractive field to revitalize rural economy, reduce

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poverty, improve infrastructure and create jobs for locals, especially providing opportunities for women and older people in China (UNWTO Annual Report, 2014), as Fig. 1 showed.

Actually, the tourism in rural areas, including traditional ancient towns, farm-specialized or landscaping villages, not only promotes the local development but also has a great influence on the residents, especially on their family income (such as income source, income structure, disposable and gross income) and daily commuting behavior (such as accessibility to work, time cost from home to workplace). Specifically, rural tourism has led to a tremendous change in local spatial pattern of workforce mobility (Domínguez-Mujica et al., 2011). It has not only enriched, and enlarged career choices, but also made the rural employment more diversified, and transferred regional labor mobility from dispersing and long-distance to agglomerative and localization.

Constantly, mobility in the tourism field has drawn lots of attention in existing research (Szivas et al., 2003). As Fig. 2 presented, scholars have built a multi-dimensional concept of tourism mobility. It not only describes tourist movement between generating region and destination region, but also includes tourism employees commuting mobility between their home and work (Xue et al., 2017). However, to the extent of authors' knowledge, the consumption-oriented study has led existing literature to focus on tourist mobility than tourism employees. A significant part of literature addressed mobility distance with tourism recreation value (including educational function) (Petroman et al., 2016), economic influence and sustainable development (Campón-Cerro et al., 2017; Eusébio et al., 2017; Su et al., 2019), traditional villages revitalization and community relationship (Gao & Wu, 2017; Jesus & Franco, 2016), destination image and regional strategy (Adeyinka-Ojo, 2018; Silva & Leal, 2015; Zhou, 2014).

As one of the important business operators, tourism employees pay a great attention to the industrial quality, efficiency and service. The related studies on employees' mobility obviously lag behind tourist mobility, and knowledge on their spatial mobility is insufficient (Baum et al., 2016). Even so, those existing related researches have only focused on individual behavior or motivation in the micro perspective, and we have little knowledge of characteristics and mechanism of employee mobility in macro spatial perspective. In addition, far too little attention has been paid to the macro or general mobility rule, spatial relationship and spill-over effects of tourism employee mobility (Liu & Wall, 2006). The lack of research on employees' mobility may cause misunderstanding on the labor mobility and their occupational choice information, which does harm to the sustainable development and social efficiency of tourism destination.

2. Literature review

2.1. Workforce mobility in space

Workforce is one of the vitally important economic factors in regional development, and mobility is the distinctive basic behavior for

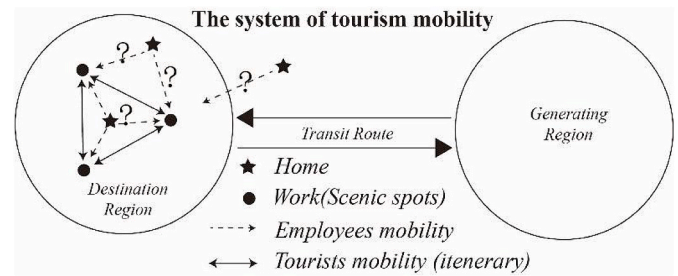


Fig. 2. The system of tourism mobility. Note: the basic framework of tourist mobility between destination and generating regions based on Leiper (1974).

them commuting between home and work (Szivas et al., 2003). Widely believed that workforce moves in space mostly in pace with job opportunities. According to existing research findings, regional industry greatly impacts local workforce condition and employment structure (e.g. gender rate, education background, age hierarchy et al.), as different industry has its own workforce requirement (Silva & Leal, 2015). Such as, mining is occupied by men while education is inclined to women. Industrial workforce requirement characteristics result in the inter-regional different employment structure (Mikael et al., 2018). Generally speaking, in the developing regions, the traditional industry dominates economy development and physical labor mainly takes up local employment structure. However, in the developed regions, the tertiary and manufacturing industry can offer lots of job opportunities, and their employees might consist of young, female, and educated people. It eventually causes demographic differences and interregional labor mobility.

Along with an increasing and enlarging attention on employee mobility, scholars have been attracted by the employment structure and migratory patterns gradually. They have proposed various methods and investigated factors influencing their movements, to accurately measure the similarity of workforce mobility trajectories, and ultimately leading to a better understanding of employees' profiles. Domínguez-Mujica et al. (2011) analyzed the tourist-residential development and the migratory patterns of the Balearic and the Canary Islands, and found that tourist-residential processes created common features: a higher social heterogeneity and residential segregation. Encouraged by new technology in geographic information and big data, the workforce spatial mobility pattern has also been studied, promoting a precise research on employee flows. Researchers have used GPS and social sensing to uncover and understand the spatiotemporal and semantic aspects of workforce mobility (Ferreira et al., 2020; Zheng et al., 2019). Some important spatial characteristics, such as spatial proximity of tourism employee mobility, have been found, enriching knowledge on workforce mobility in space.

What is more, the influences of employee mobility were also studied on local transportation, interregional communication, knowledge diffusion and innovation. Studies have proved that employee mobility budget has effect on transportation, human resource management



Fig. 1. Rural tourism makes a great influence on local livelihood in China. Note: a: Village lane was improved for rural tourism; b: An old native was telling the history of her ancient cultural village to visitors and she could earn 20 CNY from every group of tourists; c: Local elderly women showed the traditional agricultural activity *Shai Qiu* (晒秋, airing grain or farm product in sunny autumn day); d: traditional agricultural lifestyle in Chinese rural areas and it has been gradually changed into b and c.

(Zijlstra & Vanoutrive, 2018), and firm innovation output (Braunerhjelm et al., 2020), and promotes inter-organizational network (Collet & Hedström, 2013). Those results have made a great contribution to our study on the spatial pattern of rural tourism employees mobility from home and workplace.

2.2. Tourism employee mobility

As a labor-intensive industry, tourism creates many job opportunities and causes workforce movement (Baum et al., 2016). A significant body of literature focused on tourism employment and labor mobility. Influencing factors and mutual effects of tourism employee mobility were the popular topics and widely discussed in the existing research.

To elaborate on tourism mobility, scholars firstly explored the influencing factors on tourism employee mobility. Roles of occupation and business opportunity in tourism employee mobility have been mostly explored in the present literature. And they prove to be basic factors in bringing tourism workforce flow (Joppe, 2012; Ladkin, 2011). Relationships between gender wage inequality, public transport and labor mobility in the hospitality sector, racial identity, residential mobility, and the local context, also drew researchers' much attention (Bernardi, 2018; Campos-Soria et al., 2015; Salvati, 2020; Sumpter, 2011). Some researcher has concluded that host natural and cultural features (environmental dimension), and innovation capabilities and specialization patterns also play a positive role in attracting tourism workforce inflow (Romão & Neuts, 2017). In case studies, cultural familiarity, spatial proximity, convenient transportation, and knowledge diffusion and innovation were introduced to explain industrial spatial agglomeration in tourism labor market mobility (Braunerhjelm et al., 2020; KimYoo et al., 2021). Furthermore, several researches have proved that tourism employment experience may affect employees' migrating life. Janta et al. (2011), for instance, argued that tourism employment and workplace experiences provide migrant access to multiple social networks, which subsequently supports the improvement of foreign workers' social and cultural competencies. Solnet (2014) presented a three-dimensional (person-location, person-job and person-organizational) eight cell model to effectively explain and predict an employee's fit with a work environment, and found that location was frequently deemed as a determining factor in tourism manpower planning. Sun and Zhang (2015) discussed the boundaries among different ethnic groups, which was made and maintained by cultural values and the ecology of tourist industry, through the intergroup interaction brought by mobility in rural tourism host community. In addition, the employability skill deficits were also studied to develop a framework for employability skills in rural hospitality and tourism destinations (Adeyinka-Ojo, 2018). And practical recruitment strategies were studied to attract the next generation of hospitality talent and tourism sustainable development (Goh & Okumus, 2020; Robinson et al., 2019).

Secondly, local tourism may benefit from labor mobility due to various, sustainable development and social-relationship promotion (Vaugeois & Rollins, 2007). Especially, entrepreneurial mobility was more significant to tourism destinations. Carson and Carson (2018) found that international immigrants as tourism entrepreneurs, contributed to the local rural tourism and stimulated knowledge exchanges and innovation spillover. Zhou et al. (2017) has also proved that immigrants can help early-stage tourism destinations seek external capital, and mobility was influenced by institutional support, community openness, and personal social networks. While the outward entrepreneurial migrants allow for a replenishment of the depleted relationship capital with family and friends back home, it can boost immigrant to visit their home place (McCann et al., 2010). Rural tourism employment cannot only make a great contribution to poverty alleviation and improve local livelihood, but also cultivates positive approach to live and promote the sustainability of rural development (Iorio & Corsale, 2010; Su et al., 2019).

2.3. Research gap and study design

Although some research has been carried out on employee mobility, few studies exist which adequately covers tourism employees' spatial mobility characteristics and rules. For example, the spatial proximity of tourism workforce mobility has been found, but how far do they move and how the related factors influencing employee distance, all should be studied further.

Consequently, to fill the research gap, this paper focused on groups of rural tourism employees at Baisha village in Zhejiang province, east China, to identify their demographic characteristics and learn their spatial mobility pattern and mechanism based on in-depth interviews, questionnaire responses, and non-participatory observations. The findings looked forward to helping local governor optimize local rural tourism spatial pattern as it experiencing a rapid development, and boost rural revitalization strategy. The paper was set out as follows. Section 3 outlined the study area and samples. Section 4 presented the findings of rural tourism employee spatial mobility. Finally, Section 5 concludes and discusses the implications of the study.

3. Study area and samples

3.1. Study area and rural tourism development

In recent years, tourism is rising in Chinese rural areas (Li et al., 2018). Especially, rural tourism in Zhejiang province, east China (Fig. 3), is listed as a leading position (Li et al., 2016). The study area, Baisha village, is one of the earliest developed and most representative rural tourism destinations, located in northern Hangzhou, the capital of Zhejiang (Fig. 3).

Local records showed that rural tourism in Baisha village started in the later 1990s. As a mountainous area, villagers were mostly engaged in logging and forest farming (such as hickory nut, bamboo shoots) before rural tourism developed. Judging from the environmental damage and ecologic pressure, those primitive industries resulted in unsustainable economic structure. During the past 30 years, strong consumption has driven rapid local tourism growth steadily. As an environmentally friendly industry, rural tourism also offered locals the opportunity to approach sustainable development. Rural tourism development in the study area with its employment condition was analyzed based on the Butler's tourist area cycle of evolution (see Table 1).

According to our field interview data, more than 90% of families and 75% of villagers take part in tourism business. An estimated 1/3 occupations of surrounding villagers were offered by tourism industry in 2018. At the same time, Baisha village received 0.28 million people and earned more than 60 million CNY with more than 6000 beds in 170 *Nongjiale* (农家乐, rural tourism homestays). Meanwhile, with tourism or leisure activities developing and part time jobs being created, workforce and labor were attracted to Baisha village, taking increasing tendency in Table 1.

3.2. Study methods and demographic characteristics of samples

To learn rural tourism workforce mobility, we conducted in-depth interviews with 446 employees of 167 homestays in two stages, respectively on September 25–30, 2017, and June 14–19, 2018. Specifically, interviewees were selected at random in the first semi-structured period, when interviewers tried to talk with rural tourism employees door-to-door in study area. While the second round interview was designed to selective employees working in particular homestays, such as the oldest, the largest or the most popular ones, or equipped with long career time, to underline and makeup research data on typical samples. The interview mainly included samples' career time, commuting transport, home place, and working motivation. Then, this paper analyzed the demographic characteristics of samples from the perspective of gender, age, education and working experience. Table 2

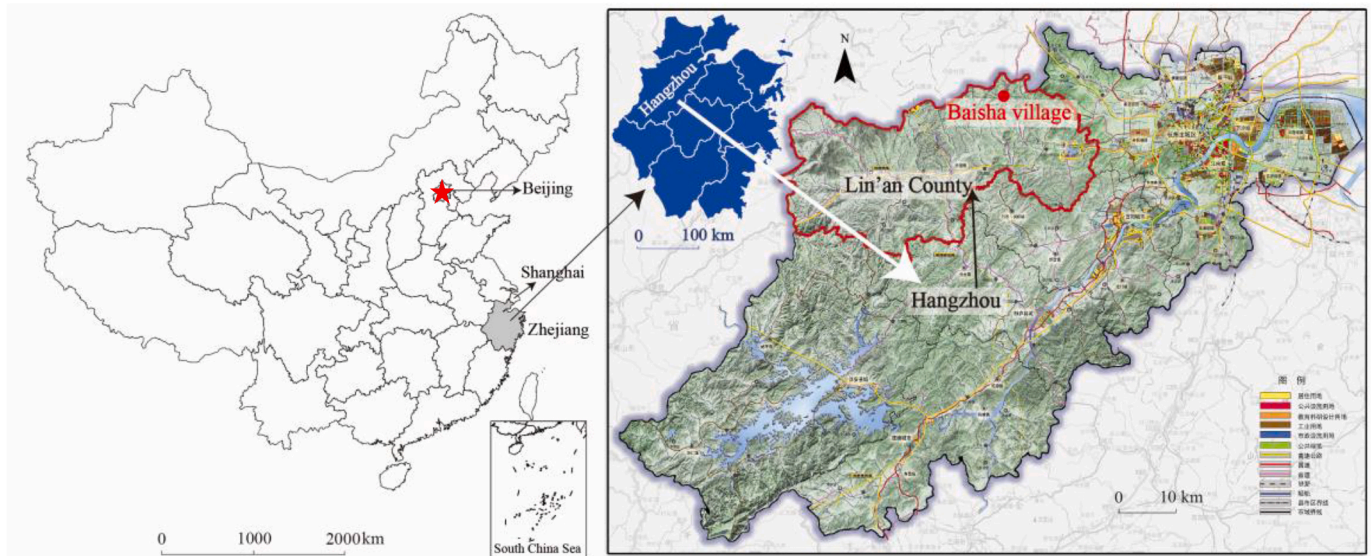


Fig. 3. The location of study area. Note: Map of Hangzhou sourced from the “Regional Master Plan Outline of Taihuyuan Town (2011–2025)”.

presented the demographic description and basic employment condition of the investigation.

As rural tourism has developed rapidly in China, there are several demographic characteristics of employees reflected outstandingly in Table 2. Statistic results showed that employees were well-proportioned while male presented advantages over female in gender. However, samples varied substantially in terms of age characteristics, with 25.8% under 25, 40.6% between 25 and 35, 15.4% between 35 and 45, and 18.2% above 50. Concerning education levels, rural tourism employees in study area were 48.4% of respondents finishing middle school, and the percentages of vocational school, junior college and degree were 32.5%, 15.0% and 4.1% respectively.

Besides, lots of interviewees obviously lacked work experience or professional background. As shown in Table 2, 42.3% of employees worked in their occupations less than 1 year, 21.5% between 1 and 3, 13.7% between 3 and 5, just 22.5% longer than 5. And tourism occupation was the only job for 63.2% of interviewees, main job for 34.9%, secondary job for 1.9%. In theory, rural tourism is believed for its promotion on women, old, and low skilled employment and it is the main income channel to local low-skilled villagers. However, it doesn't perform well and is overestimated in Chinese practice. Compared with international rural tourism, results in Table 2 showed apparent differences between samples and international cases varying from gender and the role that rural tourism played in residents' employment. Based on the rural tourism development context, these differences reflected regional differences in rural tourism development concept, direction, and level.

Firstly, rural tourism's contribution to promoting female and elderly employment in China was weaker than the international tendency. In terms of gender ratio, female employees in study area (34.1%) presented a low proportion compared with the international cases, especially lower than Kinabalu National Park (72.4%). Of the samples, most of employees (66.4%) were under 35, while there were 31.8% and 50.4% employees in Vancouver Island and Kinabalu National Park among this age group, respectively. Regarding to the elderly employees (45 or older), it was 18.2% in study area, 47.8% in Somerset and Coventry and 23.4% in Kinabalu National Park. The distinctive differences present the efficiency gap of rural tourism. On the one hand, it may be closely related to the rural tourism development stage. As rural tourism in Baisha village has transferred to the consolidation stage, its development focused on the destination construction and tourism resource development, and more male and labor workforce were employed.

While, in the UK and Malaysia, more female and elderly were employed in rural tourism and paid more. On the other hand, rural tourism was adopted to fit their workforce situations, the aging society in UK and inadequate job opportunities in Malaysia. Secondly, employees in study area have less vocational skills than the international rural tourism destination level. Although the proportion of the younger employees of study area was much larger than the UK and Malaysia, in terms of educational background, a lower proportion of samples have vocational technical education and higher education (51.6%), especially a relatively lower proportion have college degree (4.1%). The proportion of vocational technical education and higher education were 68.9% and 74.5%, and college education proportion were 25.2% and 9.7%, respectively in Somerset-Coventry and Kinabalu National Park. It shows that the majority of international employees in the field of rural tourism have formal qualification. Thirdly, the ratio of professional employees in Baisha village was obvious lower than the international level and the job-hopping rate was in a high condition. As shown in Table 2, the proportion of employees taking rural tourism as the only job was about 63.2%, main job 34.9% and secondary job 1.9%, while they were 82.3%, 10.1%, and 5.1% respectively in Somerset and Coventry, UK. At the same time, employees' work experience condition reflected the high job-hopping rate in Baisha village. For the majority of the samples, they worked less than 1 year (42.3%) or 1–3 years (21.5%), and only a small proportion (36.2%) worked more than 3 years. Undoubtedly, high job-hopping rate was not favorable to the improvement of employees' skills and led to their less work experiences than the international level.

4. Results

4.1. What: spatial pattern of rural tourism employee mobility in study area

Tourism mobility can be classified into two hierarchies in space, namely inter-regional (generating-destination) mobility and inner-regional (destination) mobility, as Fig. 2 showed. While inner-regional mobility included touristic movement among scenic spots and employees commuting between home and work, the economy theory has regarded the flowing characteristic and mobility rule of employees as an economic factor. The inner-regional tourism mobility has also been studied mostly focused on tourists' travel pattern.

To learn the spatial mobility of rural tourism employees in study area, our paper analyzed their spatial pattern based on ind-epth

Table 1
The development of rural tourism in study area and its employment condition.

Development stage	Time	Description	Scale of Employees
Exploration	Later 1990s	As hiking and traveling visitors occasionally appeared in the village, residents might guest them with local traditional food and accommodation because of kindness and hospitality. Travelers then initiatively afforded hosts little money as reward or gave suggestion to operating rural tourism to improve local life. Generally, rural tourism as a new business and livelihood was learnt by villagers. A few scattered and simple rural tourism homestays emerged and tried to receive rural travelers seasonally.	Very few (0.5–1%) local villagers run rural tourism in part time.
Involvement	2000–2005	The development of scenic spot “headstreams of Taihu Lake” inspired rural tourism in the study area. Rural tourism homestays, as the most affected directly and early, were planned and built near the scenic spot along the main road almost immediately to satisfy tourists’ leisure, catering and lodging demand. At the same time, successful and beneficial rural tourism homestays also attracted and encouraged more and more villagers to take part in this new business. As a result, rural tourism in study area expanded rapidly, and more residents involved it.	5–10% residents run tourism business and few in surrounding villages were employed.
Development	2006–2010	Rural tourism became an attractive recreational activity and local citizen swarm into study area to enjoy leisure time. The increasing rural visitors encouraged local rural tourism to further develop, and then more supporting infrastructure and ecological investments were conducted to serve rural tourism. Meanwhile, the number of rural tourism homestays increased to 142 and can provide 4000 beds for visitors in the end of 2010. Half residents and more than 200 employees worked in rural tourism. It became an important livelihood and made a	With rural tourism developing, more than 200 (30% to all) employees migrated to get a job.

Table 1 (continued)

Development stage	Time	Description	Scale of Employees
Consolidation	After 2011	Under the consumption-oriented environment, experience expectation of rural tourism visitors increased with their scale expansion. Study area made efforts in tourism infrastructure construction, employees training, image advertising to improve its various, high-quality and unique rural experience. Gradually it has grown into a noted rural tourism destination. This tendency deeply impacted local tourism industrial development and attracted a large of regional villagers flowing into this area. Huge changes in local labor mobility and employment structure have been made.	About 37% local residents and 63% employees flowed into rural tourism.

Table 2
Demographic of samples and its comparative with international cases.

Demographic	Category	Frequency	Study Area	Somerset and Coventry, UK	Kinabalu National Park, Sabah, Malaysia
<i>Gender</i>	<i>male</i>	314	65.9%	34.6% ~42.4%	27.6%
	<i>female</i>	152	34.1%	53.6% ~64.6%	72.4%
<i>Age</i>	<i>under 25</i>	115	25.8%	15.2%	27.6%
	<i>25~35</i>	181	40.6%	16.6%	22.8%
	<i>35~45</i>	69	15.4%	20.4%	26.2%
	<i>45 or older</i>	81	18.2%	47.8%	23.4%
<i>Education</i>	<i>junior school</i>	216	48.4%	31.1%	25.5%
	<i>middle school</i>				
	<i>vocational school</i>	145	32.5%	43.7%	51.0%
	<i>junior college</i>	67	15.0%		13.8%
	<i>college degree</i>	18	4.1%	25.2%	9.7%
<i>Role</i>	<i>only job</i>	201	63.2%	82.3%	-
	<i>main job</i>	156	34.9%	10.1%	-
	<i>secondary job</i>	89	1.9%	5.1%	-
	<i>others</i>	0	0.0%	2.5%	-
<i>Working experience</i>	<i>5 or longer</i>	100	22.5%	-	-
	<i>3~5years</i>	61	13.7%	-	-
	<i>1~3years</i>	96	21.5%	-	-
	<i>less than 1 year</i>	189	42.3%	-	-

Note: the international sample data of Somerset and Coventry, UK is from Szivas et al. (2003) and Kinabalu National Park, Sabah, Malaysia from Jaafar et al. (2015).

interview statistics. The study collected and calculated employees' location data about their home and distance to workplace. It showed that rural tourism employees clustered along S205, the main road linking the study area with the county, an important job original place. The curve of employee ratio was drawn, differentiating on the distance to Baisha village in Fig. 4. It showed that with the increasing distance, employee ratio showed the decreased tendency, and there were four important nodes, including 4 km, 8 km, 12 km, and 16 km, which indicated the critical transformations of the employee ratio curve. About 50% of employees clustered within 4 km, and when the radius enlarged to 16 km, there were more than 90% employees. The area along the local main traffic line and 4–16 km far from rural tourism destination was the crowded rural tourism workforce mobility zone.

The spatial pattern of rural tourism workforce distribution presented a distinctively layering structure in study area (see Fig. 5). Especially, there was a watershed at the rural-urban fringe areas, about 20 km away from the study area which was the boundary of the farthest employees and their spatial mobility range. And most of the rural tourism workforces come from areas between destination and this watershed. It also illustrated the spatial finiteness of rural tourism employment promotion, like its unfair benefits for women and elders. That was to say rural tourism spatial spillover influence exerted within the region of watershed. Generally, rural tourism can be emphasized to promote the widely rural areas, but spatial finiteness was contradictory to this original intention. In fact, rural tourism spillover showed a clear scope around the destination. Hence, it is necessary to learn the reasons for employee mobility and the mechanism behind its spatial layering pattern in order to clearly understand the rules of employee mobility in Chinese rural tourism, narrow the rural tourism employee research gap and make contributions to regional sustainable development.

4.2. Why: reasons for employee mobility and layering distance

Labor mobility was intimately bound up with the local tourism development, which was widely studied and fully illustrated in the existing literatures. Its layering spatial pattern was formed for local complicated social, industrial and economic factors. To explicitly explain the mechanism of employee mobility and layering distance pattern in study area, the paper introduced Push and Pull Model (PPM) systemizing the mobility process and identifying critical factors in it.

PPM built a comprehensive framework (presented as Fig. 5) to understand the mechanism of employee mobility and layering distance pattern based on the empirical study. Basically, PPM laid an important foundation for local employment environment that it made a great influence on workforce mobility. However, the mismatched impact-power of push and pull factors caused various job choices for local workforce, especially in different spatial distances. With workforce close to urban areas, attraction on rural tourism employment for them may decrease in layering structure. There were two important mobility distances, the most efficient (12 km) and max (20 km) radius, for workforce according to employee ratio in rural tourism.

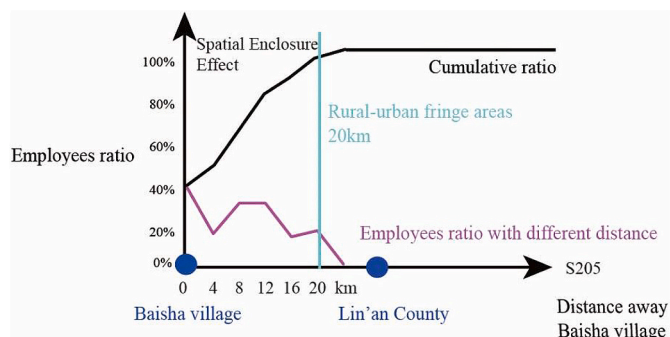


Fig. 4. The spatial pattern of employee ratio in Baisha village.

Empirical interview results showed that from the perspective of pull, convenient transport (S205) was the most vital factor promoting employment mobility as the mountainous geographic environment (Ramsey & Malcolm, 2018). In the view of push, undeveloped industrial economy and rare occupations were the top two reasons for workforce taking part in rural tourism business. Firstly, convenient transport bridged and guaranteed mobility efficiency between their work and home for workforce. Specifically, affected by the local hilly geographic environment, most villages were inclined to settle along the main road where can make their lives much easier. Benefited from this convenient commuting condition, the workforce was much willing to seek jobs relying heavily on S205. Thus, employment mobility in study area and their spatial pattern mostly depended on this local primary road.

Secondly, inadequate employment opportunities in the rural-urban fringe area compelled residents to seek jobs in rural tourism destination. Although it was located next to urban area, its industrial infrastructure and economy development, by contrast, lagged behind. So there were not enough jobs for local workforce and surplus labor. At the same time, rural tourism development in study area offered them lots of full and part-time occupations. In addition, the increasing rural tourists and high labor demand created plenty of employment opportunities in study area, which help low-skilled and jobless residents (such as women, elderly residents) make a living.

As those critical pull and push factors created a heterogeneous and competitive employment environment, workforce made their profitable choice to rural or urban jobs. Local rural tourism employment environment and profitable choice of workforce have constructed the framework of employee mobility in study areas.

Besides, workforce social relationship also played an important role in their spatial mobility pattern (Chen, 2017). Affected by Chinese traditional culture, rural villages have complex social relationships and they can affect residents' job choice and mobility direction or distance. Residents' friendship or kinship may recommend them to work in tourism destination and build a complicated *Guanxi* network affecting employee mobility. Eventually, it built its spatial pattern of rural tourism employment in study area.

4.3. How: Watershed and spatial enclosure effect of employee mobility

Empirical statistics have found evidence that workforce who lived ranging 12–20 km away from attractions, was most interested in rural tourism, and the rural-urban fringe areas may build the mobility boundary of local rural tourism employees. It meant this strip zone (12–20 km) played a role of the Watershed on rural tourism employee mobility. The employment promotion of rural tourism would be enclosed within ranges from rural tourism destination to the rural-urban fringe area (20 km). This finding may enrich knowledge about tourism mobility and local development.

Taking the spatial pattern and watershed distance of rural tourism employee mobility in study area into consideration, Spatial Enclosure Effect was put up to illustrate the modality of local rural tourism workforce mobility. It can clearly show the spatial watershed distance and theoretically convey information on the spatial finiteness of rural tourism employment promotion. Explanations in Fig. 5 have explored the mobility mechanism and its critical factors in rural tourism employees. PPM employment environment caused rural tourism workforce movement divided in 12–20 km away from attractions as the watershed zone was between the most efficient radius (12 km) and rural-urban fringe areas (20 km).

At the same time, this watershed was mostly affected by the basic economic geography principles, occupation attraction decaying with the commuting distance increasing for workforce. Despite convenient transport enhanced local workforce commuting conditions, boring and long-distance jobs cannot persuade laborers to travel to work. Therefore, mobility radius <12 km became the most active areas for rural tourism employee mobility. And the transition zone from 12 km to rural-urban

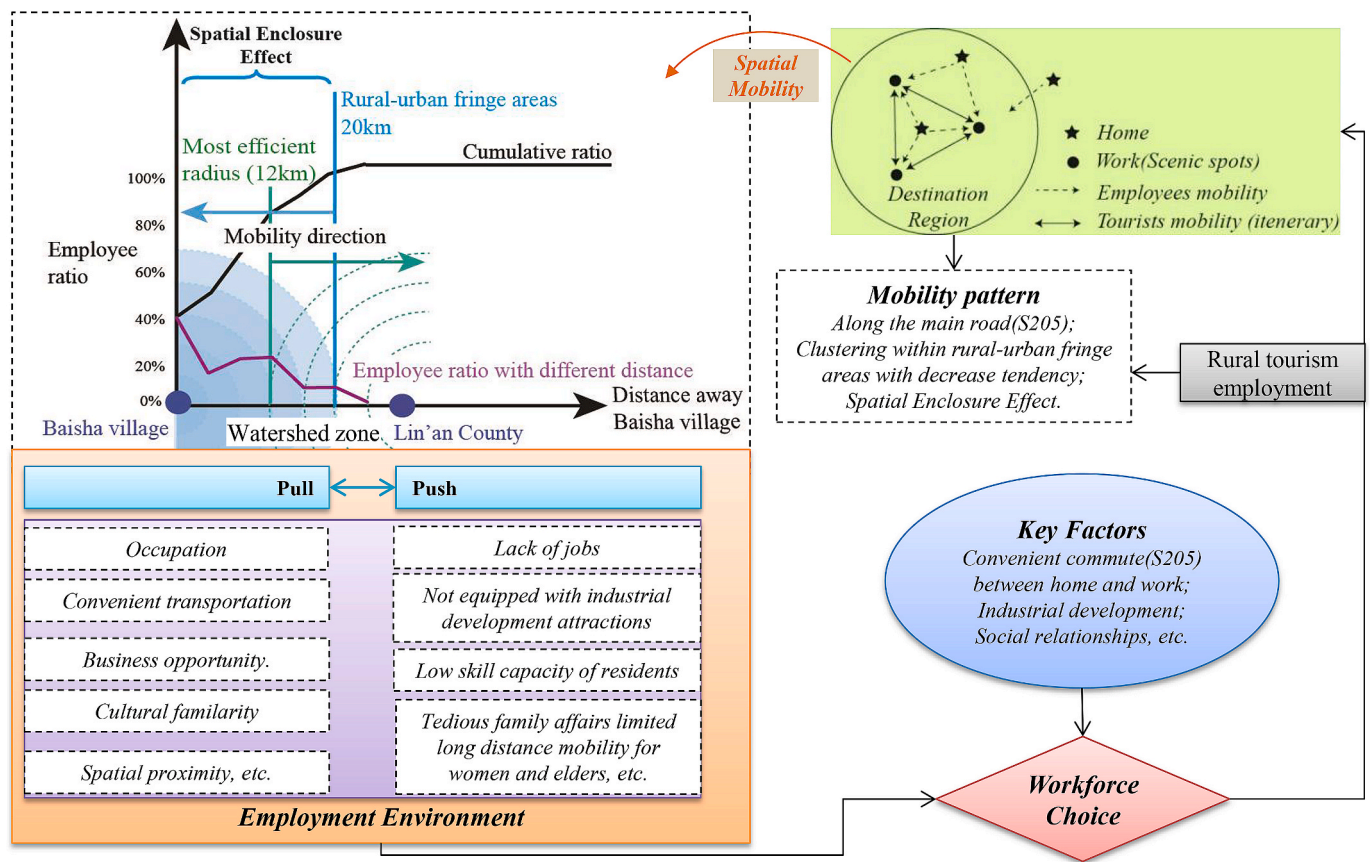


Fig. 5. Explanation of employee mobility mechanism.

fringe areas has turned into the Watershed zone, while Spatial Enclosure Effect illustrated this mobility feature of workforce in rural tourism. Limitation on rural tourism in employment promotion was also stressed as its radius lying within 20 km.

This spatial mobility pattern, on the one hand, can reflect rural tourism workforce commuting behaviors. On the other hand, it shows local employment and socioeconomic environment. Employee mobility was closely related to transport, social relationship, job opportunity and work cost, and its spatial activity may be restricted within a certain range, like the spatial frontier of rural tourism workforce barely reaching the rural-urban fringe areas.

Spatial Enclosure Effect has not only made up the research gap on tourism mobility in destination region, but it also made contributions to enrich labor and mobility geography. With the popularity of tourism and the coming of the Mobility Age, it can provide a new perspective to learn tourism mobility. It figured out employee mobility influencing factors, such as geographic environment, transport line, jobs availability, residents' skills, and helped researchers comprehensively understand rural tourism employment in the rural-urban fringe areas with the push and pull model. In practice, it can enlighten reasonable plan for rural tourism development based on the local pattern of rural labor to promote employment furthest.

5. Conclusion and discussion

Touristic movement has been widely studied while the spatial mobility of tourism employees was overlooked. The paper deeply investigated the rural tourism workforce in China and analyzed their spatial mobility characteristics and patterns in a micro perspective. It broadened our knowledge in rural tourism workforce and enriched the theoretical systems of tourism mobility.

Besides, this paper revealed a watershed zone (12–20 km) from rural

tourism destination to the local rural-urban fringe area along the main commuting road based on empirical interview statistics. The mechanism of employee mobility in Chinese rural tourism and the spatial mobility pattern can attribute to the Spatial Enclosure Effect of employment promotion. This objective understanding in rural tourism positive meaning for local development may help governors, investors and villagers plan rural tourism precisely and efficiently. And it makes a great theoretical contribution to tourism mobility. On the one hand, Spatial Enclosure Effect reveals the spatial pattern on rural tourism employee mobility in the mountainous area. It present the law of tourism workforce movement distance and motivation in Butler's tourist area cycle of consolidation stage, and in developed areas, which can actually enrich our knowledge on rural tourism workforce spatial mobility. However, with rural tourism and social economy evolution, rural tourism workforce spatial mobility may present a dynamic development characteristic. Nowadays, the Chinese economy has entered the "new normal" stage after a substantial period of double-digit high-speed growth. Rural tourism is considered as an important way to transit into the "new normal" economy. So far, about 280 billion CNY was invested in rural tourism and returned nearly 600 billion CNY in 2016 in China. Nevertheless, the employment structure and efficiency were unreasonable or low compared with international development. Especially, the promotion of female and elderly employment did not reach the public and government's expectation. Better employment structure and vocational train on employees should be enhanced, and tourism employee movement in different destination development stage and social-economic background could also be deeply explored from the perspective of Evolutionary Economic Geography.

On the other hand, it illustrates the applicability and limitation of rural tourism spatial spillover effects in employment promotion and local development, which enlightens our study and policy design to rural area and rural tourism sustainable development. Spatial structure of

employment has shown that rural tourism can only offer jobs within 20 km and the spatial enclosure effect even imposes restrictions on rural tourism recruitment. It means that regional rural tourism should be developed intensively. Due to the new normal and rural revitalization economy environment, rural tourism was stressed widely. So the problem of how to make the spatial structure of rural tourism clear and rational, was an important task to its sustainable development and rural economy. Thus, rural tourism spatial pattern in practice should be planned to form a rational layout to exert rural tourism effect on regional development. Benefited from the policy of rural revitalization in China, rural tourism has been emphasized and invested. It is time to pay attention to the spatial layout of rural tourism to exert its employment promotion function to the utmost degree. Undoubtedly, tourism is an essential generator for creating jobs (Ladkin, 2011). In the future, tourism in study area should lay out based on transportation pattern to plan and optimize new rural tourism. It may take transport links' advantages and offer occupations as many as possible, based on the spatial enclosure effect of rural tourism and employment attraction frontier in the rural-urban fringe areas.

What's more, those beneficial findings and discussions offer feasible advices to rural tourism development. Firstly, talent attraction can be taken to help local destination improve its rural tourism development and achieve efficient and reasonable workforce movement based on Spatial Enclosure Effect. Especially, rural tourism entrepreneurial migrants not only bring new and creative development upon local rural tourism, but also connect regional rural tourism to the outside world fundamentally. Generally, their advanced management, operation, and development ideas can create and enrich a vigorous environment for rural tourism production upgrade. In other words, with the development and rising of rural tourism workforce, job opportunity generates attraction to the nearby workforce, and the employment scale has broadened for residents. Secondly, with the popularity of rural tourism, its sustainable development should be stressed to promote service quality and management efficiency by raising vocational skills, creating education opportunities, offering jobs to the old, and reducing poverty. According to the comparative results, the weaknesses of rural tourism in China lay in employment structure which cannot guarantee sustainable rural development. To improve the development efficiency and competitiveness of rural tourism, on the one hand, elderly and female labor may be encouraged to operate rural tourism; on the other hand, regular vocational and specialized training or tutors should be offered to improve employees' practical knowledge. Thirdly, our findings can explain rural tourism workforce mobility pattern in China, and it may be different from other countries. As comparative results presented above, there were differences in rural tourism between China, and the UK or Malaysia. It has inspired us to take comparative and comprehensive research to find more mobility rules in tourism workforce mobility, and International cooperation can help Chinese rural tourism development in the global view and perspective. Especially, international employees' management and training may benefit the local unreasonable and low vocational employment structure. Meanwhile, international cooperation can bring Chinese rural tourism a new development model, and competition of international and local rural tourism may also encourage local operators to develop creative and attractive products. Moreover, China has vast rural areas, and it can be built to the international investment destination. International research cooperation can enlarge the financing channels and help wide rural fund capital to develop and design the creative and steering rural tourism attractions. International cooperation can help international tourists and investors learn more about Chinese rural society, and promote global communication between China and outside. Thus, it can also improve the image of Chinese rural areas to propagandize its rural development achievement. Last but not least, international research cooperation promotes sustainable development of Chinese rural tourism.

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Author statement

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