How to optimize tourism destination supply: A case in Shanghai from perspective of supplier and demand side perception

Huaju Xue, Chengjiang Fang

School of Tourism Management, Qinghai Normal University, Xining, China

Abstract: It is vital to assess the regional tourist supply capability by suppliers and demand groups. The supply side's evaluation of the regional supply capacity determines the direction of the supply investment in future, the demand side's evaluation indicates their satisfaction degree of the destination supply and also effects their revisit the tourism destination. Therefore, the assessment of the supply and demand sides is an important reference for the reform of destination supply side, which helps us find the shortage of the destination supply factors and optimize tourism destination supply promptly. This paper through investigating tourism supply and demand groups in Shanghai, used the survey data and constructed tourism supply optimization model, analyzed the current situation of tourism supply factors in Shanghai. Results showed that the environment of Shanghai should be improved first, including improving urban air and water quality, up-grading public sanitation and increasing urban green coverage. Other supply factors improved priority were information and marketing, we should improve the information consultation of scenic spots, increase the intensity of tourism promotion and provide more free travel publicity brochures.

1. Introduction

The nature of tourism supply side reform is to promote the coordinated development of tourism supply and demand system, optimize tourism destination supply factors, and improve tourism quality [1-2]. Nowdays, the theme of tourism supply side reform has been the research focus. Gunn [3], Mitchell [4], Yang [5] constructed tourism supply and demand system model, using the comprehensive evaluation method [6], factor analysis [7], coupling analysis method [8] to reveal tourism destination supply and demand coordination degree [9] and its development situation [10]. Destination supply perception between the supply and demand groups can provide an important reference for tourism supply structure adjustment [11-12], tourists work as the demand side, who experienced tourism supply directly, whose supply sensing results also directly affected their subsequent tourism behavior [13]. that is to say, they will revisit when satisfied, and they won’t be back when unsatisfied. Tourism enterprises were the main tourism supply providers, whose high or low evaluation on tourism supply will directly affect their investment and construction results of destination tourism supply. Therefore, the perception of destination supply between the supply and demand sides should be taken full account to make a scientific and reasonable regulation for the structure optimization of destination supply. In recent years, many researchers have paid more attention to the perception of destination supply between supply and demand groups [12-14]. However, how to judge the development order of supply factors and how to optimize the tourism destination supply factors, which are still lack of in-depth study.

Therefore, this article used the survey data of the perception of destination supply between inbound tourists and tourism enterprises in Shanghai in 2013, constructed tourism supply optimization model,
revealed the differences perception of supply factors between tourism supply and demand groups, then put forward countermeasures for optimizing tourism supply factors. we hope the paper provide reference for the development of global tourism of Shanghai.

2. Research methods

2.1. Questionnaire design and data sources

The content of the questionnaire included 6 aspects: tourism attraction, tourism facilities service, basic tourism support, environment, traffic, information and marketing. 35 items were included(Table 1). Likert scales (1-7 points) were used in the questionnaire options from "completely disagree" to "complete consent".

| Aspect                      | Index                                                      | Aspect                      | Index                                                      |
|-----------------------------|------------------------------------------------------------|-----------------------------|------------------------------------------------------------|
| Tourism Attraction          | Unique urban scenery                                       | Basic Tourism Support       | The level of economic development is relatively high       |
|                             | Tourist attractions are of higher value                    |                             | The development level of service industry is higher        |
|                             | The types of tourist attractions are diverse               |                             | Residents have higher level of Hospitality                 |
|                             | The scenic spots are beautiful                             |                             |                                                            |
| Tourism Facilities Service  | High quality of food and beverage service                  | Environment                 | The air quality of the city is good                         |
|                             | The quality of accommodation is high                       |                             | Urban water quality, adequate                              |
|                             | The service quality of tour guide is high                  |                             | Public environmental sanitation is good                     |
|                             | The quality of service in scenic spots is high             |                             | Urban green coverage rate is high                          |
|                             | The service quality of tourism shopping is high            |                             |                                                            |
|                             | The quality of tourism and entertainment services is high  |                             |                                                            |
|                             | Different levels of catering services                     |                             |                                                            |
|                             | Different levels of accommodation services                 |                             |                                                            |
|                             | Different places of recreation and entertainment           |                             |                                                            |
|                             | Different places of shopping                               |                             |                                                            |
|                             | Tourist logo and navigation information are convenient and effective |                             |                                                            |
| Traffic                     | City transportation is convenient and quick                |                             |                                                            |
|                             | Scenic traffic is convenient and quick                     |                             |                                                            |
|                             | Exterior traffic is convenient                             |                             |                                                            |
|                             | Perfect traffic facilities                                |                             |                                                            |
|                             |                                                           |                             |                                                            |

We gave off 1300 questionnaires totally from May 31 to June 19th in 2013 in Shanghai, including 700 samples of inbound tourists, 600 samples of tourism enterprises, took back 1136 valid samples, got 87.3% effective rate. we examined the reliability and validity of the samples, Cronbach's Alpha
coefficient of inbound tourists and tourism enterprises samples were 0.936 and 0.935, "deleted Cronbach's Alpha value" of inbound tourists and tourism enterprises samples respectively were in the range of 0.932-0.934 and 0.932-0.934, which meant the data with high reliability and validity.

2.2. Research method
The paper used modified IPA analysis method to construct tourism supply optimization model[15]. The inbound tourists lied in horizontal axis as demand side, tourism enterprises lied in vertical axis as supply side, the crossing line is the mean line of the perception points of supply and demand sides(Figure.1). Among them, the first quadrant is high double evaluation of the supply and demand sides, the corresponding countermeasures are to Keep trying; The second quadrant is high evaluation of supplier side while low demand side evaluation, and the suggestion is key improvement; The third quadrant is both low evaluation of the supply and demand sides, and the suggestion is low priority improvement; The fourth quadrant for the demand side of high evaluation, while the supply side evaluation is low, the corresponding recommendations is going with the flow.

![Figure 1. Optimization model of tourism supply](image)

3. Results and Discussion

3.1. Perception difference between supply and demand
SPSS19.0 was used to test the difference of mean between the indexes of supplier and demand side. There were significant differences between the 21 variables, such as Unique urban scenery, Tourist attractions are of higher value, The service quality of tour guide is high, The types of tourist attractions are diverse, The scenic spots are beautiful, The quality of service in scenic spots is high, The service quality of tourism shopping is high, Different levels of catering services, Different levels of accommodation services, Different places of shopping, Tourist logo and navigation information are convenient and effective, Scenic spot, information consultation, perfect, City transportation is convenient and quick, Residents have higher level of Hospitality, Perfect Internet service, English travel information is easy to obtain, Perfect mobile communications services, International exhibitions are rich and varied, Urban water adequate, The air quality of the city is good, Public environmental sanitation is good and so on. But there was no significant difference between the other 14 variables.

3.2. Shanghai tourism Supply optimization
There were all supply factors distribution in the four quadrants(Figure 2). The first quadrant showed higher supply and demand perception evaluation, includes transportation, tourism facilities, and tourism service support, which means those items can be kept trying.
The second quadrant consisted of marketing and information, inbound tourists' perception of information and marketing (4.97) was lower than that of employees in tourism enterprises (5.29), it showed Shanghai tourism employees thought they had put enough in the marketing and information, but in fact there was still unable to meet the demand of inbound tourists.

The third quadrant was the environment. Both the supply and demand sides gave a low evaluation on the environment. As a matter of fact, the haze weather in China especially in the eastern region has become a threat to public safety in recent years, thus damaged tourists physical and mental health[16]. Therefore, tourist environment should be improved priority.

The fourth quadrant was tourist attraction, the perception of inbound tourists in this quadrant was higher than that of tourism enterprises, As a result, the supply target for the quadrant was going with the flow.

![Optimization model of tourism supply in Shanghai](image)

**Figure 2.** Optimization model of tourism supply in Shanghai

### 4. Conclusion

We used IPA analysis method to analyze shanghai tourism supply factors through investigation inbound tourists and tourism employees for their perception. This research obtained the following conclusions:

1. Supply perception of supply and demand sides was an important reference for optimizing the structure of tourism destination supply. There were differences in supply perception between the supply and demand sides in Shanghai. Which mainly displayed in information and marketing, and tourist attraction. Inbound tourists had low perception of information and marketing supply, while employees in tourism enterprises had high evaluation. The tourism attraction was high in inbound tourists evaluation, and low in the perception of tourism employees.

2. The optimization order of tourist supply factors in Shanghai was to improve environment first, including improving urban air and water quality, improving public environmental sanitation and increasing urban green coverage. In the supply of information and marketing, priority should be given to improve the information consultation in scenic spots, launch powerful tourism promotion, and provide more free travel publicity materials. Secondly, the key supply factors included improving internet services and mobile communication services, providing more English tourism information, attractive tourist festivals and exhibitions of various international exhibitions.
Acknowledgments
This work was financially supported by Qinghai province "thousand person plan" top talent training project, Foundation of "CHUNHUI PLAN" Scientific Research Plan Project from China's Ministry of Education (S2016026), National Natural Science Foundation of China (41271158), Qinghai Philosophy and Social Science Foundation (15024).

References
[1] SHENG Yan-chao, On the Evolution of the Optimization of Tourism Industrial Structure to the Contribution of Economic Growth of Regional Tourism. Tourism Tribune, 2012, 27(10):11-19.
[2] XUE Huaju, BI Lifang, FANG Chengjiang, TANG Zhongxia, Research on the Relationship between Tourism Supply and Demand of Destination Tourism under Supply-side Reform. Journal of the Hebei Academy of Science, 2017, 34(4):66 72.
[3] Gunn, C A, Turgut Var. Tourism Planning: Basics Concepts Cases (4th ed.). New York: Routledge, 2002:136.
[4] Mitchell L. Research on the Geography of Tourism, Travel: A Handbook for Managers and Researchers, Ritchie and Goeld(eds). New York: John Wiley&sons, 1987:191.
[5] Yang Xinjun, Dou Wenzhang. Tourism Functional System: an Analysis on its Structure and Components. Human Geography, 1998, 12:37 41.
[6] Zi Tang. An integrated approach to evaluating the coupling coordination between tourism and the environment. Tourism Management, 2015, 46:11 19.
[7] Henry T, Bomi K, Ronnie J Y, et al. Examining the hotel room supply and demand in Las Vegas: A simultaneous equations model. Hospitality Management, 2006, 25:517 524.
[8] FANG Shiqiao, MA Yaofeng, LI Tianshun, LI Junyi. An analysis on scenic spots and tourist information flow coupling of Xi’an based on search engine Baidu. Journal of Arid Land Resources and Environment, 2012, 190:194.
[9] MA Yaofeng; LIU Junsheng. Review of domestic and international tourism coupling based on the supply and demand perspective. Journal of Shanghai Normal University (Natural Science Edition), 2014, 42:76 84.
[10] GAO Nan; MA Yao-feng; Zhang Chun-hui. Spatio-temporal Differences of Coupling between Tourism Industry and Regional Economy in China Silk Road Economic Belt. Economic Management, 2015, 37:111 120.
[11] MA Bo. An Early Warning and Prevention on “Wave Phenomenon” in China's Tourism Industry. Tourism Tribune, 2011, 26:12 17.
[12] LIU Junsheng, MA Yaofeng. Evaluation and difference analysis on inbound tourists and local resident perception for tourism supply in Beijing. Resources Science, 2016, 38:1476 1490.
[13] BAI Kai, MA Yaofeng, LI Tianshun, SUN Tianyu. An Association Study on Tourists' Cognition, Perceived Value and Behavior Intention Based on Structural Equation Model(SEM): A Case Study of Inbound Tourists in Xi’an City. Acta Geographica Sinica, 2010, 65:244 255.
[14] HUANG Yan-ling, LUO Sheng-feng, DING Pei-yi. Study on the Development of Tourism Public Service under the Perspective of Demand and Supply. Tourism Tribune, 2010, 25:70 76.
[15] Martilla J A, James JC. Importance-performance analysis. Journal of Marketing, 1977, 41:77 79.
[16] http://www.stats-sh.gov.cn/html/sjfb/201402/267416.html.