

Assessing Inbound Tourists' Overall Satisfaction Using the Tourist Satisfaction Index

: A case study of Shenzhen, P.R. China

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Abstract— Compared with the extensive research on sector-level or overall destination tourist satisfaction index (TSI), similar research and empirical work in aggregating destination TSIs based on sectoral TSIs is rare. The purpose of this study is to evaluate inbound tourists' satisfaction with Shenzhen using a comprehensive tourist satisfaction index system, which could aggregate the overall TSI based on the sectoral TSIs. The model has been applied to six large datasets from different tourism-related sectors. The respondents are inbound tourists to Shenzhen from nine different source markets. Findings revealed that the sectors that require more intensive personal services such as hotels and shops did not do as well as those sectors with less intensive personal contacts such as transportation and attractions visited.

Keywords- Tourist; Tourist Satisfaction Index; Assess

I. INTRODUCTION

Tourist satisfaction is widely accepted as being of central importance to destination management organization and tourism-related sectors. High tourist satisfaction is likely to contribute benefit not only to tourism goods/service providers, but also local governments and residents. Thus much effort goes into establishing strategies and operating procedures which will lead to high satisfaction and to measuring satisfaction index of key product/service providers through benchmarking initiatives.

However, the limited application of assessing TSIs has been mainly confined to product/service-level, industry/sector-level and destination level. Aggregating overall destination TSIs based on industry/sector-level is rare, which against the nature of tourism industry and how tourists choose destination when deciding where to vacation. As an integrated system that consists of a number of sectors such as accommodation, catering, transportation, attractions, retail shops and tourism-related public sectors, tourism industry needs to be considered as a whole system. Moreover, tourists consider overall destinations when deciding where to vacation. Within a destination, many independent businesses as well as local government organizations all contribute to the visitor experience and post-purchase behavior in different ways. Benchmarking overall destination tourist satisfaction is therefore challenging since so many different elements contribute tourist satisfaction.

In the past, few were characterized as a continuous evaluation system that facilitates the assessment on both levels. This study aims to fill in this gap using a comprehensive tourist satisfaction index (so called Hong Kong PolyU TSI) system created by Haiyan Song etc.(2010), which could provide the specific elements of destination performance and contribution of different elements of these tourism related independent businesses to the overall tourist satisfaction with chosen destination. Although this system is viewed as innovative and comprehensive, still some concerns on the applicability to other source markets and other tourism related sectors are aroused. More empirical studies need to be done to address this question.

The empirical study will focus on Shenzhen, where tourism has been seen as one of the important economy drives and major economic pillars. The contribution of tourism to GDP is continually growing with the total revenue exceeding 2.7 billion US dollars in 2009 and the tourist satisfaction is fluctuating over the years. (Shenzhen Tourism Bureau, 2010) Therefore, to evaluate the satisfaction levels of different elements and the aggregated overall TSIs based on the sectoral TSIs is of practical importance for Shenzhen.

II. LITERATURE REVIEW

The clear importance of consumer satisfaction drives various companies and other organization to monitor to what extent their consumers are satisfied over time. A number of both national and international customer satisfaction barometers or indices have been developed for domestically purchased and consumed products and services in the last decades. Existing most often applied consumer satisfaction models include Swedish customer satisfaction barometer (SCSB) operating since 1989 (Fornell, 1992), the American customer satisfaction index (ACSI) operating since 1994 (Fornell et al. 1996), and the Norwegian customer satisfaction barometer since 1996 (Andreassen and Lindestad, 1998), which were modified and improved from time to time (Michael D. Johnson et al., 2001). It normally has five elements: expectation, perceived performance, disconfirmation, satisfaction and customer loyalty.

Although the SCSB and ACSI are quite well-developed, some modifications need to be made to satisfy the tourist destination on benchmarking TSIs. It's appropriate to assess the tourist satisfaction using a TSI model from a production point of view focusing on firms and businesses and the

firm's customer. At the same time, tourist considers the overall destination when making decision about vacation, which makes the former tourist satisfaction studies not enough. Tourism researchers have been interested in measuring both overall tourist satisfaction with a particular destination (e.g., Alegre and Gladera, 2006) and tourist satisfaction at specific service encounter level, such as accommodation, restaurants, attractions and retail shops (Haiyan Song et al. 2010). Although the tourist satisfaction research has gained increasing popularity at both levels, few viewed overall TSIs are aggregated based on different specific service/production. Therefore, the research finding would not be able to provide a clear guidance for destination governments and related businesses. Given the importance of the requirement on effective destination management policies and strategies, there is an urgent need to fill this gap.

As we discussed before, the consumer satisfaction models and framework could provide a useful guideline for developing a TSI system which is suitable to assess tourist satisfaction. For example, Haiyan Song et al. (2010) developed the Hong Kong PolyU TSI to monitor the changes of tourist satisfaction on both levels which take the dynamic nation of tourism satisfaction into the consideration. Industry/sector-level TSIs are first estimated via a sound theoretical framework similar to ACSI, and then aggregated to overall destination satisfaction based on the sectoral-level satisfaction. This weighting aggregation scheme of TSI adopted by Haiyan Song et al. (2010) is quite innovative for consuming goods and service and free-of-charge public services which a tourist will encounter during the visit. Such framework is more comprehensive because it applies a two stage approach and establishes the linkage between two levels of satisfaction.

However, this framework needs more empirical research to test its general applicability. The paper aims to evaluate the TSIs with Shenzhen using Hong Kong PolyU TSI on both sectoral-level and destination-level.

III. METHODOLOGY

A. TSI model development

The overall TSI is derived from an innovative aggregation scheme which is part of a two-stage Hong Kong PolyU TSI framework. This framework is able to synthesize the service performance metrics horizontally and vertically across tourism-related sectors in order to visualize their contribution to the performance of the destination as a whole.

The framework starts with the evaluation of TSI at the sectoral level based on the ACSI which has been applied to general consumer satisfaction evaluations as well as in tourism and travel research. The satisfaction index of major tourism related sectors including accommodation, restaurants, transportation, attractions, retail shops and public services (e.g., customs and information services) is derived separately based on this consumer satisfaction index model.

After the calculation of sectoral TSIs, the overall TSI is aggregated based on the sectoral TSIs, including attraction (A), hotel (H), restaurant (R), retail shops (S), transportation (T) and tourist related public service sector (I). In the

aggregation step, the weights are determined not by the relevant sales percentages from a production-based viewpoint like in Sweden and USA where the SCSB and ACSI are adopted to assess CSI. It's not appropriate because of lots of free-of-charge public services involved in tourists perceptions. The weights are calculated based on a second order confirmatory measurement model (see figure 1). In this model, the overall TSI is formed by their satisfaction towards individual sectors, each measured by the three observed variables (overall satisfaction, "TS1" comparison with expectation, "TS2", and comparison with ideal, "TS3") as shown in Figure 1. The factor loadings, so called weights, indicate the contributions of the sectoral satisfaction to the overall satisfaction.

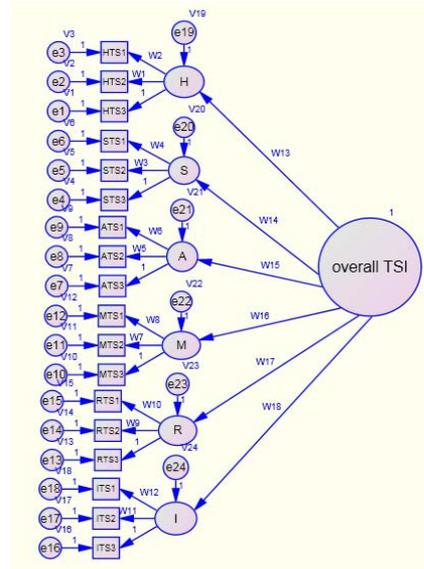


Figure 1. confirmatory measurement model of overall TSI

B. Questionair design

Both the SCSB and ACSI use survey responses of the firm's customers to estimate a firm-level CSI model. The paper also calculates sectoral level TSIs based on the respondents from the interviewer.

The questionnaire was composed of 7 parts: tourist characteristics, perceived performance, assessed value, expectation, tourist satisfaction, tourist complaints and loyalty. Different from many tourist satisfaction researches where direct measurement was adopted, in this study the tourist satisfaction is measured as latent variable associated with 3 indicators: overall satisfaction, confirmation of expectations and comparison with ideal. It's more scientific because recent consumer satisfaction studies conclude that satisfaction is a theoretical construct or a latent variable, which cannot be measured directly, as with attitude and emotion (Fornell, 1992). The survey questions relating to their indicators use 11-point rating scales from 0 for poor to 10 for excellent. The 11-point scales are commonly used in CSI surveys (Chan et al., 2003).

C. Sampling and data collection

The framework has been applied to six large datasets representing different tourism-related service sectors in Shenzhen. A two-stage quota sampling method was employed to obtain a representative sample of inbound tourists from 9 source markets. The survey data was collected at (i) popular tourist sites (Happy Valley, Windows of the World, Splendid China etc.), (ii) ferry terminals, (iii) hotels, (iv) checking points and (v) transport interchanges over a month period in July 2010. 3953 valid questionnaires were obtained covering six sectors across nine source markets to fulfill the study's objectives.

D. Calculation of TSI

A components-based approach known as partial least square is used to estimate the sectoral-level models using the Smart PLS software program (Ringle, Wende, & Will, 2005). Using the model-implied weights ($\omega_{\eta_{31}}, \omega_{\eta_{32}}, \omega_{\eta_{33}}$), and the three satisfaction indicator's mean values ($\bar{y}_{31}, \bar{y}_{32}, \bar{y}_{33}$), the formula of sectoral-level TSI(Sub-TSI) is as follows:

$$\text{Sub-TSI} = \frac{\omega_{31} \bar{y}_{31} + \omega_{32} \bar{y}_{32} + \omega_{33} \bar{y}_{33}}{\omega_{31} + \omega_{32} + \omega_{33}} \times 10 \quad (1)$$

Subsequently the overall tourist satisfaction index is aggregated based on the six sectoral tourist satisfaction indexes using the factor loadings of sectoral satisfaction to overall satisfaction (i.e., $\gamma_1, \gamma_2, \gamma_3, \gamma_4, \gamma_5, \gamma_6$) determined from Figure 1 as the weights. The calculation of the overall tourist satisfaction index is given in the following equation.

$$\text{Overall TSI} = \frac{\sum_{i=1}^m \gamma_i \text{Sub-TSI}_i}{\sum_{i=1}^m \gamma_i} \quad (2)$$

IV. FINDINGS AND RESULTS

Details of the sample are presented in Table 1. The sample of respondents was evenly divided in terms of gender, 50.2% male and 49.8% female. Senior respondents were represented with the lowest value, 3.3%. The younger age group (16-25) represented the highest percent of sample (52.6).

TABLE I. DETAILS ABOUT SAMPLE (N=3953)

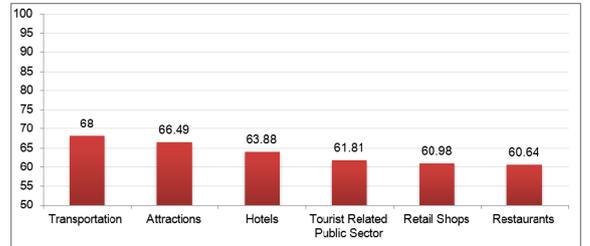
Sample	%	Sample	%
Sex		Visiting Times	
Male	50.2	never	29.1
Female	49.8	1-3 times	31.6
Age		4-6 times	10.2
16-25	52.6	7-9 times	5.1
26-35	23.8	10 times or more	24.1

Sample	%	Sample	%
36-45	14.9	Monthly household Income	
46-55	5.4	Less than US\$1000	47.9
56+	3.3	US\$1000-2999	28.3
Education		US\$300-4999	9.5
No formal education	2.3	US\$5000-6999	5.5
Primary school	2.5	US\$7000 or more	8.8
High school	32.2	Type of travel mode	
College/University	56.2	Package tour	16
Postgraduate	6.8	Independent traveller	84

A. Computed Sectoral-level TSIs with Shenzhen

Six Sub TSIs were computed based on Equation (1) and the overall TSI was then aggregated based on Equation (2). The outcome is reasonable simple to interpret as it is set to a 0-100 scale with complex model estimation.

Among the six tourist related sectors, including attractions, restaurants, hotels, transportations, retail shops and tourist related public sectors, tourists were most satisfied with the transportation sector (68), followed by the attractions with an index score of 66.49. (for details, see figure2). All the index scores are in the midway between 60 to 70 points. The hotel sector received the index score of 63.88. The tourist related public sectors are ranked fourth with an overall index score of 61.81. With the index scores around 60, the retail shops and restaurants are ranked at the lower end. The overall indexes for these two sectors are 60.98 and 60.64, respectively.



E Overall Tourist Satisfaction Index by Sector

Figure 2. Sub-TSI of 6 tourist related sectors

B. Computed Overall TSIs with Shenzhen

Given the sectoral tourist satisfaction indexes presented previously, the calculated Shenzhen tourist satisfaction index (Shenzhen TSI) is **63.487**. The Shenzhen TSI represents the overall tourist satisfaction with Shenzhen as a destination based on tourists' satisfaction with the attractions, hotels, tourist related public sectors, restaurants, retail shops, and transportation sectors.

As shown in the pie diagram below (figure 3), the weights of the six sectors are fairly close to each other ranging from 15% (hotels) to 18% (retail shops and tourist related public sector). This suggests that the retail shop

sector and tourist related public sectors contribute the most to tourists' overall satisfaction, and the hotels contribute the least. However, the differences between the contributions are small.

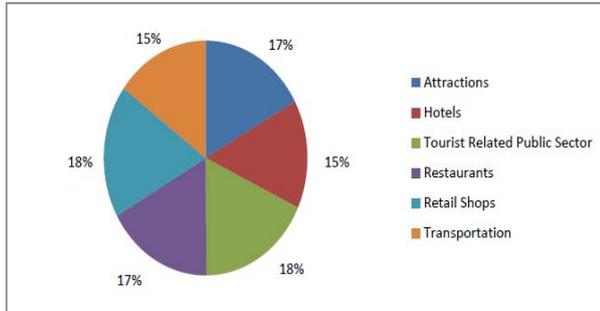


Figure 3. Shenzhen TSI weights

C. Key dimensions

Table 2 presents the overall mean scores of the remaining dimensions in the model across source markets by sector. Comparatively, the restaurants and retail shops have the lowest mean values for the majority of the dimensions. The transportation sector has the highest mean values for most of the dimensions followed by the other sectors. This pattern can also be seen from the overall tourist satisfaction indexes by sector, where the transportation sector stands out from the rest and the restaurants and retail shops have the lowest ranking. Although, all the mean values are positive, there is still room for improvement, especially concerning the restaurants and retail shops for almost all the dimensions.

TABLE II. MEAN VALUES FOR KEY DIMENSIONS

	Expectation	Perceived Performance	Gap	Assessed Value	Complaints	Loyalty
Attractions	7.10	6.96	0.14	6.61	2.85	6.34
Hotels	6.95	6.87	0.08	6.80	2.67	6.08
Tourist Related Public sector	6.57	6.44	0.13	6.19	3.49	6.06
Restaurants	6.53	6.43	-0.1	6.39	2.86	5.71
Retail Shops	6.57	6.46	0.11	6.19	3.34	5.58
Transportation	6.85	6.94	0.09	7.02	2.82	7.07

In terms of expectations the respondents have the lowest expectations for the retail shops and restaurants. They have the highest expectations for the attractions, which are closely followed by the remaining sectors. The respondents evaluated the perceived performance of the attraction sector as the highest, then the transportation and hotels.

Interesting is the gap between the dimensions of perceived performance and expectations. All gaps are negative except transportation, suggesting that the Shenzhen tourism-related sectors all perform below tourists' expectations. The largest gap can be found in the attraction sector (-0.14); this figure indicates that the perceived performance of attraction sector upset the tourists' expectations the most. For the attraction providers, they need to pay more attention to understand how to improve the performance with high expectation, which means over promise and under delivery in some situation should avoid.

D. Reliability and validity of the model

The reliability analysis was conducted to test the level of internal consistency for the measurements of all the reflective constructs. The indicators of the reflective constructs (satisfaction, perceived performance, expectation, assessed value) are reliable because all the standardized indicator loadings for all six sectors are positive and significant (0.79 to 0.99).

With regard to the significance of the estimated path coefficients, the majorities of the t-values are significant and support the hypothesized paths. In addition, most of the estimated path coefficients are well above 0.3 or close to it. But the expectations to assessed value and tourist satisfaction are not significant in most cases and need deeper research.

V. CONCLUSION

The conclusion from the cross-sector tourist satisfaction index comparison is that, the sectors that require more intensive personal services such as hotels and shops did not do as well as those sectors with less intensive personal contacts such as transportation and attractions visited.

This study propose the Hong Kong PolyU TSI can be helpful to assess tourist satisfaction indexes for individual tourism sectors which combined are used to estimate an overall destination satisfaction index. The results have important practical implications on Shenzhen tourism managements. It addresses areas of competitive performance where it is less strong and why tourists less satisfied with individual sectors. It also could illustrate the difference between the main source markets on satisfaction and the indicators. The overall satisfaction of tourists visiting Shenzhen is influenced by their experience with tourist related public sectors and retail shops most. All these information is of great importance for decision makers in both public and private sectors to improve the competitiveness of the Shenzhen tourism industries.

One criticism of this method of destination satisfaction measurement is the individual tourism related sectors involved in the aggregation process. Further research should focus on whether these 6 sectors could represent the real overall destination experience. The sub-TSI model based on ACSI also should be modified on the constructs and paths. Some hypothesized paths are not supported by the estimated path coefficients in both Hong Kong and Shenzhen studies, including characteristics to performance, satisfaction and assessed value, expectation to assessed value and satisfaction as well. Further research should focus on creative responses

to these criticisms in future revision to the model and research methods.

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