IDENTIFY THE KEY CRITERIA TO SELECT ONLINE TRAVEL AGENCIES FOR HOT SPRING HOTELS

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Abstract - With the rapid development of internet, online travel agencies (OTAs) become vital roles. When facing various OTAs, hotels need to make decisions to choose optimal OTAs. However, there is a lack of published paper in this field. In this paper, we identify the key criteria to select OTAs for hot spring hotels by the fuzzy Delphi method. The results will be useful for managers to select OTAs more effective.

Index Terms - Fuzzy Delphi method, hot spring hotel, online travel agencies (OTAs).

I. INTRODUCTION

Nowadays, the information and communication technology is highly developed. The hospitality industry has rapidly adopted e-commerce to conduct business by the internet. OTAs are the new approach of hotels distribution channels [1]. E-commerce developed rapidly and open online marketing channels. Hotels create their websites to supply online services [2]. However, for small or medium sized hotels, to run a website is difficult due to the low visit volume [3]. The birth of OTAs solves this problem for these hotels. OTAs help to introduce new consumers to hotels [4].

Jetske [1] point out that the importance of OTAs has increased dramatically in the past couple years. OTAs placed offers on the same website to help guests to compare hotels and prices. That makes bookings fast and easy. Hotels can efficiently sell rooms through OTAs. Moreover, OTAs is a vital marketing approach to advertise the hotels and to enhance their brand awareness. When facing various OTAs, hotels need to know which channels are more effective and also make right decisions to choose OTAs. In this paper, we try to identify the key criteria to select OTAs for hot spring hotels by the fuzzy Delphi method. In this paper, we firstly review past studies about OTAs evaluation or selection. Next, the fuzzy Delphi method is described. The fuzzy Delphi method within the context of identifying the important criteria to select OTAs for hot spring hotels is present in Section 4. The conclusion is in Section 5.

II. LITERATURE REVIEW: OTAS EVALUATION OR SELECTION

OTAs provide customers with information about the hotels, prices, and compare hotels. Hotels pay the intermediary fee per booked room [1]. Past studies about OTAs evaluation or selection, Kim et al. [5] investigated the crucial attributes of OTAs in the perception of the customers. Based on 311 respondents, Park et al. [6] proposed a model for measuring the quality web site and willingness to use OTAs for travel planning. Respondents are undergraduate students, graduate students, university employees, and local residents.

Ku and Fan [7] evaluated factors in selecting OTAs for room products from 131 customers' viewpoint by analytic hierarchy process (AHP). Chiou et al. [8] construct a strategic Web site evaluation framework for an online travel agency (OTA) from the internal perspective. Bernardo et al. [9] measure e-service quality of OTAs.

The respondents are consumers of online travel agencies. Lee et al. [10] examined the significance of website serviceability of OTAs from 283 users. The questionnaire of the fuzzy Delphi method is based on a review of the relevant literatures mentioned above and in-depth interviews with managers of hot spring hotels.

III. MATH

The Delphi method is a forecasting method that used to generate a professional consensus for complex topics without requiring large samples [11]. It includes a survey conducted in 2 or more rounds. After each round, the outcomes are provided from the previous round so that experts can alter or maintain their original comments.

The experts are not required to meet because the questionnaire survey is conducted anonymously [12]. However, the Delphi method has been criticized for low convergence, the long process of interrogation and more execution cost. Therefore, several scholars [13]-[16] have improved the Delphi method in a fuzzy environment. Kuo and Chen [17] described that when collecting group decision, the fuzzy Delphi method can consider every expert's opinion and achieve the consensus.

The time of investigation and the consumption of cost are reduced. Chao and Kao [18] pointed out that the fuzzy Delphi method can save time and reduce the number of surveys. We adopt the fuzzy Delphi method in this paper to figure out the vital selection criteria for OTAs.

IV. APPLICATION

By interviewing managers of hot spring hotels and reviewing studies about OTAs evaluation or selection, we collect the selection criteria. Questionnaires on the basis of Likert 9 point scale are collected from 35 senior managers to get their opinions about the significance of the selection criteria.

To express the consensus of the experts' evaluation value of each criterion, the geometric mean is used. We employ specialized EXCEL software to process the data provided by the experts. The geometric mean value of each criterion is showing in Table 1.

$$L_G = \left(L_1 \times L_2 \times \cdots \times L_n \right)^{1/n} \quad (1)$$

where L_i denotes significance rating of the selection criteria by i-th expert (i=1, 2,..., n). L_G = geometric mean value.

CONCLUSION

OTAs have become increasingly significant in hotel industry because of their popularity. How to choose OTAs is a vital issue for hotels. In this paper, we try to identify the key criteria to select OTAs for hot spring hotels by the fuzzy Delphi method.

According to 35 senior managers' opinions, the ranking of the selection criteria is Information protection about credit card, Information protection about person, Reputation, Reliable system, Product quality, Information protection about online shopping behavior, Ease of online transaction, Order status inquiry, Quick response to customer, Speed of the website, Ease of use, Useful information, Promotion campaign, Customized offering, Booking flexibility, Commission fee, Product assortment, Popularity, Product search, Booking all travel services in one transaction, Relevant information, Number of users, Product variety, Multimedia information, Fun to browse the site, Finding low fares.

The first limitation of this study is that the 35 senior managers are from Beitou and Jiaoxi district in Taiwan. Moreover, larger samples may bring more explanatory power. As to the future research directions, researchers can establish the hierarchy structure for selecting the optimal OTAs based on this paper. Then, apply multiple criteria decision making methods to help a real case to select optimal OTAs. For example, researches can firstly use the decision making trial and evaluation laboratory (DEMATEL) to identify the causal relationships among the selection criteria. On the basis of the interdependent relations among the selection criteria, analytic network process (ANP) is utilized for ranking OTAs.

REFERENCES

[1] van de Logt. Jetske, "The Impact of Online Travel Agencies," Haaga-Helia University of Applied Sciences, Helsinki, Finland. 2017.

[2] X. Guo, L. Ling, and Z. Gao, "Optimal pricing strategy for hotels when online travel agencies use customer cash backs: A game-theoretic approach," Journal of Revenue and Pricing Management, vol. 15, pp. 66-77, 2016.

[3] L. Ling, X. Guo, and L. Liang, "Optimal pricing strategy of a small or medium-sized hotel in cooperation with a web site," Journal of China Tourism Research, vol. 7, no. 1, pp. 20-41, 2011.

[4] Y. W. Chang, P. Y. Hsu, and Y. C. Lan, "Cooperation and competition between online travel agencies and hotels," Tourism Management, vol. 71, pp. 187-196, 2019.

[5] D. J. Kim, W. G. Kim, and J. S. Han, "A perceptual mapping of online travel agencies and preference attributes," Tourism Management, vol. 28, pp. 591-603, 2007.

[6] Y. A. Park, U. Gretzel, and E. Sirakaya-Turk, "Measuring web site quality for online travel agencies," Journal of Travel & Tourism Marketing, vol. 23, no. 1, pp. 15-30, 2007.

[7] E. C. S. Ku and Y. W. Fan, "The decision making in selecting online travel agencies: An application of Analytic Hierarchy Process," Journal of Travel & Tourism Marketing, vol. 26, pp. 482-493, 2009.

[8] W. C. Chiou, C. C. Lin, and C. Perng, "A strategic website evaluation of online travel agencies," Tourism Management, vol. 32, pp. 1463-1473, 2011.

[9] M. Bernardo, F. Marimon, and M. del M. Alonso-Almeida, "Functional quality and hedonic quality: A study of the dimensions of e-service quality in online travel agencies," Information & Management, vol. 49, pp. 342-347, 2012.

[10] K. W. Lee, H. Han, and J. Hwang, "Developing a matrix for assessing serviceability of U.S. online travel agency websites," Social Behavior and Personality, vol. 45, no. 1, pp. 115-126, 2017.

[11] A. Hartman, "Reaching consensus using the Delphi technique," Educational Leadership, vol. 38, pp. 495-497, 1981.

[12] G. Rowe, G. Wright, and F. Bolger, "Delphi: A reevaluation of research and theory," Technological Forecasting and Social Change, vol. 39, pp. 235-251, 1991.

[13] T. J. Murray, L. L. Pipino, and J. P. Gigch, "A pilot study of fuzzy set modification of Delphi," Human Systems Management, vol. 5, pp. 76-80, 1985.

[14] A. Ishikawa, M. Amagasa, T. Shiga, G. Tomizawa, R. Tatsuta, and H. Mieno, "The max-min Delphi method and fuzzy Delphi method via fuzzy integration," Fuzzy Sets and Systems, vol. 55, pp. 241-253, 1993.

[15] T. H. Hsu and T. H. Yang, "Application of fuzzy analytic hierarchy process in the selection of advertising media," Journal of Management and Systems, vol. 7, pp. 19-40, 2000.

[16] Z. Ma, C. Shao, S. Ma, and Z. Ye, "Constructing road safety performance indicators using Fuzzy Delphi Method and Grey Delphi Method," Expert Systems with Applications, vol. 38, pp. 1509-1514, 2011.

[17] Y. F. Kuo and P. C. Chen, "Construction performance appraisal indicators for mobility of the service industries using fuzzy Delphi method," Expert Systems with Applications, vol. 35, pp. 1930-1939, 2008.

[18] C. C. Chao and K. T. Kao, "Selection of strategic cargo alliance by airlines," Journal of Air Transport Management, vol. 43, pp. 29-36, 2015.

Table 1. The geometric mean value of the selection criteria for OTAs

The selection criteria for OTAs	Geometric mean value
Information protection about credit card	6.8778
Information protection about person	6.7389
Reputation	6.7280
Reliable system	6.6396
Product quality	6.5291
Information protection about online shopping behavior	6.4898
Ease of online transaction	6.4047
Order status inquiry	6.3258
Quick response to customer	6.2995
Speed of the website	6.2003
Ease of use	6.1645
Useful information	6.1424
Promotion campaign	6.1069
Customized offering	6.0317
Booking flexibility	5.9168
Intermediary fee	5.8921
Product assortment	5.8861
Popularity	5.8675
Product search	5.8358
Booking all travel services in one transaction	5.7048
Relevant information	5.6921
Number of users	5.6883
Product variety	5.6417
Multimedia information	5.5393
Fun to browse the site	5.4953
Finding low fares	5.3223

★★★