

# Determinants of Consumer Choice for Online Travel Shopping Sites: A Confirmatory Analysis

Yu-Min Wang

**Abstract**—This study attempts to validate the consumer-oriented criteria list, developed by Wang et al. (2010), for selecting online travel shopping sites. Based on a sample of 985 respondents, confirmatory factor analysis was employed to test the factor structure and assess the reliability and validity of the list. The results support the list developed by Wang et al. (2010) and claim the list can be further used to analyze, explain, and understand consumer behaviors about online travel shopping.

**Keywords**—Online travel agency, online travel shopping sites, confirmatory analysis.

## I. INTRODUCTION

WITH the emergence of innovative Internet technologies and severe competitive pressure, an increasing number of businesses in travel agency industry have adopted the Internet as the marketing channels. They usually originated from offline (physical) travel agents, but now have an e-presence [1]. The managers of travel agencies should understand what determines consumer choice for online shopping sites. Steps can be taken to meet the consumer's requests and thereby increase the competitive advantages.

The purpose of this study is to validate the criteria list that determines consumer choice for online shopping sites developed by Wang et al. [2]. A new sample is collected from tourism buyers and confirmatory factor analysis (CFA) is performed to check upon the reliability, validity, and factor structure of the criteria list.

## II. DETERMINANTS OF CONSUMER CHOICE FOR ONLINE SHOPPING SITES

Wang et al. [2] devised a criteria list that determines consumer choice for hybrid travel agencies. They used principle components analysis with varimax rotation to purify the list in a sample of 150 travel consumers. Finally, three factors were derived and fourteen items were included in the criteria list. The scale was also tested to prove its reliability and validity. Table I shows the factors, items, and respective item descriptions.

Yu-Min Wang is with the Department of Information Management, National Chi Nan University, Taiwan (phone: +886-49-2910960; e-mail: ymwang@ncnu.edu.tw).

TABLE I  
CONSUMER CHOICE CRITERIA FOR ONLINE TRAVEL SHOPPING SITES

Factors	Items	Descriptions
Appraisal	A1. Corporate brand	The travel site has a good brand image.
	A2. Reputation	The travel site has a fine reputation.
	A3. Privacy policy	The travel site has a reliable privacy policy.
	A4. Credit	The travel site has nice credits.
	A5. Word-of-mouth	I will spread positive word-of-mouth about the travel site.
Web functionalities	W1. Personalization	The travel site has personalization features (e.g., personal purchase records and preferences).
	W2. One-stop shop function	The travel site has the one-stop shop function (i.e., support the complete purchase process)
	W3. Multimedia	The travel site has multimedia presentation type.
	W4. Multiple access methods	There are several ways to browse the travel site (e.g., PC, mobile phone)
	W5. Standard process	The operation and purchase procedure in the travel site is consistent.
Products and price	P1. Special promotions	The travel site usually offers special promotions.
	P2. Acceptable prices	The product price in the travel site is acceptable.
	P3. Product integrity	The products and services in the travel site are comprehensive
	P4. Meet the travel needs	The products and services in the travel site meet the needs of my journey.

(adapted from [2])

## III. METHOD

The 14-item questionnaires were distributed in the travel expositions. A five-point Likert scale was used as the response format for these 14 items with assigned values ranging from 1 = strongly agree to 5 = strongly disagree. A total of 985 usable responses were collected. Profiles of respondents are shown in Table II.

TABLE II  
SAMPLE PROFILE

Demographics	Frequency	Percent	Demographics	Frequency	Percent
<i>Gender</i>			<i>Age</i>		
Male	340	34.5	19 or below	17	1.7
Female	645	65.5	20-29	537	54.5
			30-39	362	36.8
			40-49	55	5.6
<i>Education level</i>			50 or above	14	1.4
High school	60	6.1			
College	113	11.5			
University	587	59.6			
Graduate	225	22.8			

CFA is more rigorous and systematic than EFA (Exploratory factor analysis) in the test of factor structure [3]. Therefore, this study used CFA to test the scale by Wang et al. [2]. The CFA measurement model was formulated based on the EFA results

by Wang et al. [2] as shown in Fig. 1. This model hypothesizes that the three first-order factors are correlated with each other, each item loads on a specific factor, and each item has an error term that is not explained by the factor. The AMOS 18.0 program was performed to assess the model.

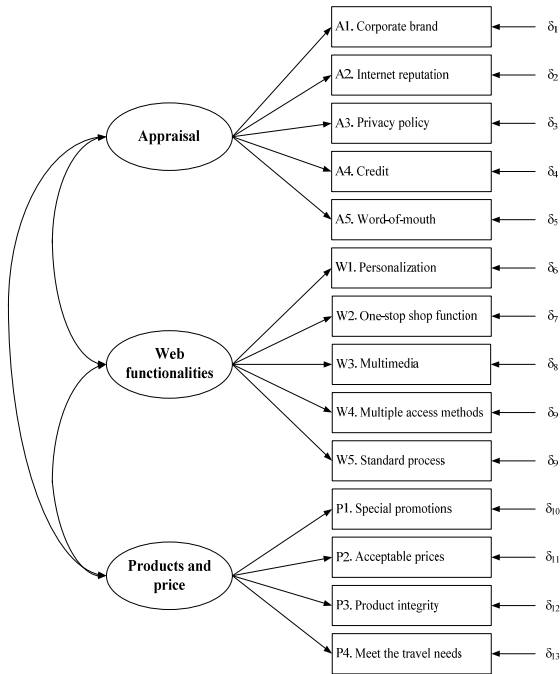


Fig. 1 The CFA Measurement Model

IV. RESULTS

A. Model-data Fit

Because no one standard was universally accepted to judge the model adequacy, multiple indices were used. Since  $\chi^2$  the value is sensitive to sample size, the following seven fit indices were used: ratio of  $\chi^2$  to degrees of freedom ( $\chi^2 / df$ ), Goodness of fit (GFI), Adjusted goodness of fit (AGFI), Normed fit index (NFI), Comparative fit index (CFI), Non-normed fit index (NNFI), and Root mean square residual (RMSR). The criteria of the goodness-of-fit indices were based on Hair et al. [4]. As shown in Table III, all indices suggest a good fit between the hypothesized model and observed data.

TABLE III  
GOODNESS-OF-FIT INDICES FOR THE MEASUREMENT MODEL

Fit indices	The model	Recommended values
$\chi^2 / df$	4.86	2-5
GFI	0.95	$\geq 0.9$
AGFI	0.93	$\geq 0.9$
NFI	0.95	$\geq 0.9$
CFI	0.96	$\geq 0.9$
NNFI	0.95	$\geq 0.9$
RMSR	0.04	$< 0.05$

B. Reliability and Validity

Standardized factor loadings, construct reliability (CR), and average variance extracted (AVE) are the components for convergent validity.

Standardized factor loading should be 0.5 or higher, and the t-value associated with each of the factor loading should exceed the critical value (2.58) at  $p < 0.01$  significance level [4-5]. As shown in Table IV, all standardized factor loadings are above 0.5 and all t tests were significant at  $p < 0.01$ . High construct reliability demonstrates that internal consistency exists. That is, the items consistently measure the hypothesized latent construct. As shown in Table V, all construct reliabilities (i.e. 0.88, 0.87, and 0.83) exceeds the recommended level of 0.7. AVE represents how much of the item variance arises from the construct. Table V shows that all AVEs are above 0.5.

TABLE IV  
STANDARDIZED PARAMETER ESTIMATES

Item	Standardized factor loading	t value
A1. Corporate brand	0.77	na
A2. Internet reputation	0.75	23.86
A3. Privacy policy	0.71	22.36
A4. Credit	0.80	25.53
A5. Word-of-mouth	0.82	26.14
W1. Personalization	0.73	na
W2. One-stop shop function	0.80	23.48
W3. Multimedia	0.75	22.06
W4. Multiple access methods	0.75	22.01
W5. Standard process	0.73	21.58
P1. Special promotions	0.70	na
P2. Acceptable prices	0.63	17.65
P3. Product integrity	0.81	22.12
P4. Meet the travel needs	0.81	22.03

na Not estimated when loading set to fix value (i.e., 1.0)

TABLE V  
CONSTRUCT RELIABILITY AND AVERAGE VARIANCE EXTRACTED

Factor	CR	AVE
Appraisal	0.88	0.59
Web functionalities	0.87	0.57
Products and price	0.83	0.55

The discriminant validity is tested by comparing AVE for any two factors with the squared correlation of these two factors. All AVEs in Table v are greater than the corresponding inter-factor squared correlations in Table VI. Therefore, this shows support for discriminant validity.

TABLE VI  
SQUARED CORRELATION MATRIX

Factor	Appraisal	Web functionalities	Products and price
Appraisal	1		
Web functionalities	0.35	1	
Products and price	0.42	0.37	1

V. CONCLUSION

This study verified and supported the criteria list that determines consumer choice for online shopping sites

developed by Wang et al. [2] on a large sample using confirmatory factor analysis. The results demonstrate that the consumer criteria are multifaceted consisting of three factors: Appraisal, Web functionalities, and Products & price. The criteria list gives practitioners the insight they need to beware what is extremely important to their customers. The criteria list also provides a standardized measure for academics to analyze and understand consumer perceptions of online shopping sites selection.

#### ACKNOWLEDGMENT

The author is grateful for the partial financial support from the National Chi Nan University in Taiwan under the grants 101T1101 and the help of Mr. Hsiao C.-L in data collection.

#### REFERENCES

- [1] 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.
- [2] Y. M. Wang, S. H. Cheng, C. L. Hsiao, "Analyzing the critical factors affecting consumer selection of online travel agencies from the dual-channel viewpoint," in *2010 International Conference on Innovation & Management*.
- [3] W. J. Doll, W. Xia, and G. Torkezadeh, "A confirmatory factor analysis of the end-user computing satisfaction instrument," *MIS Quarterly*, vol. 18, no.4, pp. 453-461, 1994.
- [4] J. F. Hair, W. C. Black, B. J. Babin, and R. E. Anderson, *Multivariate Data Analysis*, Pearson. 7th ed, 2010.
- [5] Y. Yoon, D. Gursoy, and J. S. Chen, "Validating a tourism development theory with structural equation modeling," *Tourism Management*, vol. 22, pp. 363-372, 2001.