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Service quality improving effects and recreational benefits for sports tourism—A case study

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Abstract

Service quality is one of many crucial items for sport event participants. Using Sun Moon Lake Swimming Carnival Event as an example, this study measures the perception of service quality for various participant groups and their associated recreational benefits from the demand model. Three service quality clusters, interaction and information, physical facility improving, and program and outcome, were extracted. Later, the contingent behavior method was used to measure the hypothetical benefits from service quality improvements. This study's findings discover that the amenity of Sun Moon Lake and its surroundings at current status is not sufficient to make participants come back. Findings show that an improvement in the service quality of sports program and the outcome will result in an NT$85.78 million consumer surplus gain, with the facility improvement producing a gain of NT$72.90 million arising simply from the event in each year. Therefore, recreation managers may find it justifiable to improve an event's service quality in this regard.

Keywords

contingent behavior model, service quality, sports tourism, travel cost method

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Sports and tourism are among the world's most popular leisure experiences and have grown rapidly in the last 20 years (Heydarzadeh, 2007; Ritchie and Adair, 2004). As the sports tourism sector belongs to the service industry, sports tourists' experiences are largely influenced by the services provided (Baker and Crompton, 2000; Kouzechian, 2014). This sector creates about US$800 billion globally in revenue every year (Esfahani et al., 2010).

MacKay and Crompton (1988) define service quality as "the difference between what is expected from each of the service dimensions and what a consumer perceives he or she receives from them." A customer with a positive perception from a given service is likely to report a higher satisfaction level and to develop loyalty from the service received (Lee et al., 2007).

To measure service quality, Parasuraman et al. (1985, 1988) develop a gap model SERVQUAL (Service Quality) with five dimensions: reliability, responsiveness, empathy, assurance, and tangibles. However, SERVQUAL is not fit for use on outdoor services (Kouthouris and Alexandris, 2005). Therefore, Ko and Pastore (2005) develop Scale of Service Quality for Recreational Sports , which comprises program quality, interaction quality, outcome quality, and physical environment quality. Shonk and Chelladurai (2008) further modify the service quality of sports tourism in the dimensions of access quality, accommodation quality, venue quality, and contest quality.

Bhat (2003) suggests combining current and hypothetical data when measuring consumer benefits from the quality improvement standpoint in order to increase the reliability of the results. Following the aforementioned literature, this study combines the questionnaires from Ko and Pastore (2005) and Shonk and Chelladurai (2008) to measure service quality and integrates contingent behavior approach into travel cost method (TCM) to estimate the effects of quality improvement for the 2012 Sun Moon Lake Swimming Carnival Event.

Located in central Taiwan, Sun Moon Lake is a famous attraction for its natural scenery and is the country's largest body of water. Since 1983, Sun Moon Lake Swimming Carnival Event has taken place annually, with the participants increasing from over 10,000 in 1996 to 23,000 in 2015. This event was certified as the biggest activity in swimming by the International Olympic Committee in 1995 and was listed in the International Swimming Hall of Fame Headlines in 2002.

The main contributions of this study can be divided into two parts. First, we categorize service quality for sports tourism into five factorial dimensions and rearrange all participants into three groups; therefore, the event manager could set up various strategies by specific demographic groups. Second, calculating various service quality improvement effects and recreational benefits will provide the event manager with a better idea about the specific improvements for a sporting event.

Data collection and estimation

The study's survey was conducted on-site on September 16, 2012. Five hundred event participants were randomly selected, and 464 completed responses were obtained, yielding a response rate of 92.8%. The answer to each question from participants' experience was given on a five-point Likert-type scale with 5 representing *Strongly agree*. At the end of the survey, participants were asked how many times they have come to this event. A hypothetical question was also asked concerning how many times in the future they would return if one particular dimension of service quality has improved.

Shaw (1988) develops on-site Poisson model to correct truncated and endogenously stratified issues. Therefore, this study includes the random-effect Poisson model with dummies, which

account for the heterogeneity among individuals and structural changes in the demand for different service quality improvements.

Similar to Lienhoop and Ansmann (2011) and Whitehead et al. (2000), the likelihood function for the on-site Poisson is written as

$$\ln \mu_{it} = \alpha_t + \beta_t \mathrm{COST}_{it} + \delta_t \mathrm{SCOST}_{it} + \varphi_t \mathrm{INCOME}_{it} + \gamma_t \mathrm{OTHERS}_{it} + a_2 D_s + u_i, \quad (1)$$

where μ denotes travel frequency of tourists; COST denotes travel costs, including immediate transportation costs, round-trip travel time from their home to the destination and the time spent on-site; SCOST denotes the travel cost to an alternative site, with Kenting, Pingtung County in south Taiwan, utilized by most respondents; INCOME is monthly income; OTHERS represents the clusters of service quality; GENDER, MARITAL, and EDU are socioeconomic variables; D_s represents the various choices for quality improvement s; u_i denotes the random effect for respondent i; and t is equal to 1 when the current level of service quality is used, while it equals 2 when its hypothetical improvement is used.

The changes in consumer surplus arising from the service quality improvement can be measured as

$$\Delta \mathrm{CS} = \frac{x'}{\beta'} - \frac{x}{\beta}, \quad (2)$$

where β denotes the coefficient of the price, x is the number of trips, and $'$ denotes the hypothetical quality improvement.

Results

Empirical results and analysis attributes of service quality

This study conducts factor analysis using a principal component method with a varimax rotation procedure to categorize 19 service quality items into five main factorial dimensions: interaction quality, outcome quality, facility quality, program quality, and information quality. Each dimension accounts for, respectively, 34.92% (0.85), 10.14% (0.79), 8.07% (0.78), 6.37% (0.75), and 5.29% (0.75) of total variance, and each reliability is shown in parentheses. With Ward's hierarchical method, we further rearrange all participants into three clusters: cluster I, "interaction and information"; cluster II, "physical facility improvement"; and cluster III, "program and outcome." All five dimensions are significantly different across the clusters on the basis of the critical values of the F-test (Table 1).

The biggest market segment is cluster III, which accounts for 45.26% of the total sample, while the second one is cluster II at 31.47%. To reveal the benefits to the participants, this study chooses cluster II, physical facility, and cluster III, program and outcome, as two hypothetical scenarios of service quality improvements for further analysis.

Recreational benefits for service quality improvement

Table 2 presents the TCM results with various scenarios. Model A is the baseline, a pure observed behavior model, without the consideration of service quality improvements. Model B considers the hypothetical scenario that the service quality at the facility has improved, D1, while model C considers when the service quality of the program and outcome has improved, D2. In all models, the coefficients of GENDER, MARITAL, and EDU are significant. Participants who are male,

Table 1. Result of cluster analysis for participant perceptions of service quality.

	Cluster I	Cluster II	Cluster III		Scheffe test		
	$n = 108$	$n = 146$	$n = 210$	*F*-test	I–II	I–III	II–III
Interaction quality	4.39[a]	3.84	4.38	65.17***	***	–	***
Outcome quality	3.78	4.04	4.50	78.93***	***	***	***
Facility quality	3.12	3.06	4.08	180.45***	–	***	***
Program quality	4.37	3.56	4.43	141.48***	***	–	***
Information quality	4.10	3.84	3.98	4.62***	**	–	–
Cluster name	Interaction and information cluster	Physical facility improving cluster	Program and outcome cluster				

[a]The average score calculated by the five-point Likert-type scale.
**At 5% significant level.
***At 1% significant level.

Table 2. Parameter estimates for the travel cost model.

Variable	Model A	Model B	Model C
INT	2.5527 (3.114)	1.5615 (3.264)	1.4671 (2.978)
COST	−0.0005 (−5.480)***	−0.0003 (−5.945)***	−0.0003 (−6.376)***
SCOST	0.0001 (1.788)*	0.0001 (1.744)*	0.0001 (2.069)**
GENDER	0.5520 (5.182)***	0.3446 (5.896)***	0.3423 (5.975)***
MARITAL	0.6633 (7.585)***	0.4140 (8.687)***	0.4021 (8.544)***
EDU	−0.0983 (−7.782)***	−0.0652 (−8.787)***	−0.0674 (−9.102)***
INCOME	−0.1090 (−1.220)	−0.0727 (−1.427)	−0.0720 (−1.432)
CLUSTER1	0.0809 (0.896)	0.0570 (1.085)	0.0474 (0.917)
CLUSTER2	−0.3828 (−4.167)***	−0.2198 (−4.331)***	−0.2207 (−4.430)***
D1	_	0.8638 (8.569)***	_
D2	_	_	0.9846 (5.523)***
μ	−0.3562 (−3.482)***	−8.2980 (−2.818)***	−11.241 (−2.145)**
Log likelihood function	−1157	−2237	−2209
χ^2	269***	463***	381***
Sample size	464	928	928

Note: t values are given in parentheses.
*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

married, and less educated are more likely to attend this swimming event. The variable CLUSTER2 is negatively statistically significant, which indicates that participants in the cluster of facility take fewer trips to the event compared to those in the cluster of program and outcome. Therefore, these results show that participants with less education are more influenced by the event layout, accessibility of surrounding areas, parking, and so on, while older attendees pay more

Table 3. Recreational benefits and service quality effects.

Value (1000 NT$)	Model A (1)	Model B (2)	Model C (3)
Recreational benefits (average)	5.67	9.10	8.59
Incremental effect of quality improvement: (column (2) or (3) − column (1))	–	3.43	2.92
Total incremental effects (NT$)	–	85,775	72,900
Total recreational benefits (NT$)	141,700	227,457	214,600

attention on the progress of self-challenge and finishing the race. These results are similar to previous studies such as by Snipes and Ingram (2007). Participants also plan to come to the event more times when service quality has improved. Moreover, participants in the cluster of facility plan to come more times with improvement in this regard.

Consumer surplus is obtained from equation (2). For model A, the consumer surplus for an average participant is NT$5668 (US$188.93).[1] From models B and C, an increase in the service quality of facility raises consumer surplus by NT$9,099 (US$303.30) per person, while an increase in the service quality of outcome raises consumer surplus by NT$8584 (US$286.10) per person. With 25,000 event participants in 2012, the findings note that total consumer surplus could have increased by NT$85.78 million if the service quality of the facility is improved, while a gain of NT$72.90 million could occur if the quality of program and outcome is improved (Table 3).

Conclusion

This study combines the observed behavior from people's actual trips with the contingent behavior from their answers to hypothetical questions of service quality improvements. The amenity of Sun Moon Lake and its surroundings helps make this scenic area a focal point of tourism in Taiwan. The original intention of hosting Sun Moon Lake Swimming Carnival Event is to attract more tourists. The results show that the service quality of the facility is currently relatively low. Participants noted that they would attend the swimming event more often if the service quality improves. Fortunately, the benefit from the improvement in this respect is high and may justify making the necessary changes. Not only would event participants tend to revisit the site after any improvement, but other new tourists may want to come and experience the area as well. Since event participants were surveyed directly on-site, the authority may take results to improve the service quality of the facility. For example, for the event day, the event manager should consider offering a temporary parking space, provide a regular shuttle bus around the lake, and set up more temporary changing tents and showering area. In the long run, the local authority needs to have better traffic signs in the area and connect local tourism and natural resource information with the various events.

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Note

1. The average exchange rate of US$ to NT$ is US$1:NT$30 in 2012.

References

Baker DA and Crompton JL (2000) Quality, satisfaction behavioral intentions. *Annals of Tourism Research* 27(3): 785–804.

Bhat MG (2003) Application of non-market valuation to the Florida Keys Marine reserve management. *Journal of Environment Management* 67(4): 315–325.

Esfahani M, Honarvar A, Honari H, et al. (2010) Determining important elements in quality of sport tourism packages in Iran. *Journal of Harakat* 4: 5–26.

Heydarzadeh K (2007) *Sport Tourism*. Tehran: Organization of Trade Promotion of Iran.

Ko JY and Pastore D (2005) A hierarchical model of service quality for the recreational sport industry. *Sport Marketing Quarterly* 14: 84–97.

Kouthouris C and Alexandris K (2005) Can service quality predict customer satisfaction and behavioral intentions in the sport tourism industry? An application of the SERVQUAL model in an outdoors setting. *Journal of Sport Tourism* 10(2): 101–111.

Kouzechian H (2014) The correlates of service quality in sport tourism: A case study. *Journal of Research in Applied Sciences* 1(6): 125–129.

Lee J, Graefe AR and Burn RC (2007) Examining the antecedents of destination loyalty in a forest setting. *Leisure Science* 29: 463–481.

Lienhoop N and Ansmann T (2011) Valuing water level changes in reservoirs using two stated preference approaches: An exploration of validity. *Ecological Economics* 70(7): 1250–1258.

MacKay KJ and Crompton JL (1988) Conceptual model of consumer evaluation of recreation service quality. *Leisure Studies* 7: 41–49.

Parasuraman A, Zeithaml VA and Berry LL (1985) A conceptual model of service quality and its implications for future research. *Journal of Marketing* 49: 41–50.

Parasuraman A, Zeithaml VA and Berry LL (1988) SERVQUAL: A multiple-item scale for measuring consumers perceptions of service quality. *Journal of Retailing* 64(1): 22–37.

Ritchie BW and Adair D (2004) Sport tourism: An introduction and overview. In: Ritchie BW and Adair D (eds) *Sport Tourism: Interrelationships, Impacts and Issues*. Tonawanda: Channel View Publications, pp. 1–29.

Shaw D (1988) On-site samples' regression: Problem of non-negative integers, truncation and endogenous stratification. *Journal of Econometrics* 37(2): 211–223.

Shonk DJ and Chelladurai P (2008) Service quality, satisfaction, and intent to return in event sport tourism. *Journal of Sport Management* 22: 587–602.

Snipes LR and Ingram R (2007) Motivators of collegiate sport attendance: A comparison across demographic groups. *Innovative Marketing* 3(2): 65–74.

Whitehead JC, Haab TC and Huang JC (2000) Measuring recreation benefits of quality improvements with revealed and stated behaviour data. *Resource and Energy Economics* 22(4): 339–254.