

Sequence Effect on Satisfaction Regarding Perceived Crowding: Whitewater Rafters in Taiwan

Chih-Peng Fang¹ & Yi-Chung Hsu²

¹Taiwan Hospitality & Tourism College, Taiwan
jpfang@tth.edu.tw

²National Dong Hwa University, Taiwan
ychsu@mail.ndhu.edu.tw

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Introduction

The correlation between perceived crowding and satisfaction tends to be weak (Manning, 1999). Questionnaire design, such as information provided or the question sequence can affect respondents' level of satisfaction (Manning et al., 2002; Schul & Schiff 1993). Most studies seldom indicated the sequence of questions regarding perceived crowding and satisfaction. Thus, this study examined whether question sequence affected on satisfaction with regard to perceived crowding.

Methods

The study population comprised whitewater rafters on the HsiuKulan river in eastern Taiwan between July 2001 and June 2002. Thirty-five sampling days were randomly selected. Questionnaires were distributed on-site. Respondents were aided by trained interviewers. As a result, 2,402 valid questionnaires were obtained. The satisfaction question appeared first on the first page of the questionnaire. On the second page, directly following the question regarding perceived crowding, the question regarding satisfaction was asked again. A 5-point Likert scale was used for measuring satisfaction, ranging from 1 not at all satisfied to 5 very satisfied. Perceived crowding was measured by using a 9-point scale, ranging from 1 not at all crowded to 9 very crowded.

Results

The results were as follows:

- (1) The level of satisfaction for the second measure was significantly lower than for the first measure ($M = 3.75$ vs. $M = 4.06$, $p < .01$).
- (2) Of all subjects, 60% did not change their answers, whereas 7% increased and 33% decreased their level of satisfaction.
- (3) The education level of those whose answers for satisfaction did not change was significantly higher than that of subjects whose answers changed.
- (4) Table 1 shows that perceived crowding for those whose level of satisfaction decrease was highest, whereas perceived crowding for those whose level of satisfaction increase was the lowest. Thus a high degree of perceived crowding resulted in the decreased satisfaction levels.

Conclusion

Two conclusions were drawn: First, the correlation between satisfaction and crowding is weak, consistent with literature. Second, respondents may over- or under-estimate their satisfaction level—the crowding question combined with the second satisfaction question gave respondents an opportunity to re-evaluate their satisfaction level. Analytical results and conclusions have implications for outdoor recreation and satisfaction researchers, suggesting that two satisfaction questions and an intervening variable design deserve methodological attention in the future.

Table 1: Effect on satisfaction based on satisfaction change type using ANOVA test.

Satisfaction change Satisfaction Perceived crowding	Satisfaction decrease (<u>M</u> , n)	Satisfaction unchanged (<u>M</u> , n)	Satisfaction increase (<u>M</u> , n)	F	P
Level of satisfaction (1st measure)	4.58 (798)	3.90 (1432)	2.90 (172)	560.87	0.000***
Level of satisfaction (2nd measure)	3.44 (798)	3.90 (1432)	3.97 (172)	123.86	0.000***
Perceived crowding on boats	3.77 (798)	3.65 (1432)	3.36 (172)	3.44	0.032*
Perceived crowding on people	4.50 (798)	4.23 (1432)	4.14 (172)	4.91	0.007**

* p < 0.05, ** p < 0.01, *** p < 0.001

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