Context and question order effects on measures of satisfaction: the case of whitewater rafters in Taiwan

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Abstract
The study examines the existence of context and question order effects on satisfaction in relation to crowding. It is hypothesized that with the introduction of crowding and encounter questions between two general satisfaction measures, the second measure will be significantly lower than the first measure. Samples were taken on 35 randomly chosen days, deriving 2402 usable questionnaires. The following results were obtained. The level of satisfaction as assessed using the second measure was significantly lower than that using the first measure. Some 60 % of respondents did not express different levels of satisfaction in the two measures, while 7 % expressed increased satisfaction on the second measure, and 33 % expressed decreased satisfaction. The education level of those whose answers regarding satisfaction remained unchanged was significantly higher than that of the subjects whose answers changed. Furthermore, a high degree of crowding may influence the second satisfaction measure and thus reduced satisfaction levels. Two conclusions were drawn. First, both context and question order effects exist. Second, a weak correlation is identified between crowding and satisfaction. Implications and recommendations for practice and future research are mentioned and discussed.

Keywords: marketing, recreation, saliency effect, survey responses, visitor flow

1 Introduction
Maximizing user satisfaction is the ultimate goal of businesses or outdoor recreation providers. Marketers are eager to determine how satisfied their customers are, usually by asking a general satisfaction question or questions regarding satisfaction for varied products and services. Researchers generally identified surprising numbers of satisfied customers in their surveys (HSU 2002). These extremely positive results may prove misleading in the development of marketing and promotional strategies. Some researchers argued that overestimation of satisfied customers may occur because of cultural differences (Li et al. 2007a), displacement and rationalization coping behaviors (MANNING 1999), or the effect of survey context (SCHUMAN and PRESSER 1981).

Satisfaction and determinants of satisfaction are multi-dimensional and complex (MANNING 1999). When administered a survey asking about their satisfaction with a white-water rafting trip, a visitor may consider the rafting outfitter based on the different domains of service provided (e.g., equipment, facilities, services, life guards, etc.). The visitor may also consider their various experiences with the organization or the trip (e.g., crowding, conflicts with other rafters, fun with friends, scenic beauty, etc.). Research suggests that overall
judgment, namely general satisfaction with the organization, depends primarily on what comes to mind at the time of the judgment (TOURANGEAU and RASINSKI 1988). Restated, visitors may lack fixed and well-informed preferences in expressing their level of satisfaction in diverse contexts.

The measurement of satisfaction can be influenced by underlying context, including issues discussed, situations, information provided, survey question content, and respondent characteristics. Various response effects found in previous interview surveys (AYIDIYA and MCCLENDON 1990; TOURANGEAU et al. 2000) included question form, question order, wording, and context (HIPPLER and SCHWARZ 1987). The context effect describes response changes regarding question order, information provision, and item rotation in the survey instrument which in turn alter the context. ABRAMSON et al. (1987) concluded that even apparently minor changes in questionnaire content can markedly change responses to attitudinal questions. Therefore, it is important to understand the question order effect identifying as far as possible the items and contexts that invite such effects.

Question order effect refers to the way that the appearance of one question can affect the answers given to later ones (BABBIE 2004; RYAN 1995; TOURANGEAU and RASINSKI 1988). BRADBURN and MASON (1964) identified four question order effects. The saliency effect occurs when a series of questions examining a particular area in detail give greater salience to that area. The redundancy effect results from overlap in content between sections. The consistency effect concerns the influence of prior commitment to specific judgments on related types of judgments appearing in later sections. Finally, in particularly long interviews, the fatigue effect occurs and respondents might answer questions in the later part of the interview in a more perfunctory manner. Subsequently, a rapport effect was identified by ROSSI et al. (1983). This effect occurs because respondents may be nervous or hesitant initially but rapport builds as the questionnaire proceeds, resulting in fewer unanswered questions and more accurate responses. Previous research (MCFARLAND 1981; SCHUMAN and PRESSER 1981; SIGELMAN 1981) has indicated that question order has two potential effects. First, question order may influence respondent willingness to render an evaluation, whether positively or negatively. Second, question order may influence the balance between positive and negative assessments.

LACY (2001) further contended that the order effect arises on a dynamic manner particularly when answering a series of questions, in which case a respondent switches off the constraints imposed by their beliefs regarding the status quo (such as crowding and encounter norms) and switches on the constraints imposed by their responses to previous questions. LACY (2001) thus emphasized that public expression of contingent, conditional or constrained preferences and response instability results from apparently trivial changes in question order or wording. Similarly, LODGE et al. (1989), ZALLER (1992), and ZALLER and FELDMAN (1992) argued that the question order effect is an impression-driven process in which responses to questions are influenced by the cognitive or affective considerations evoked by earlier survey questions. They contended that personal preferences tend not to be fixed or well-informed.

Question order frequently influences survey responses, with mixed results (BIJARASON and JONSSON 2005; SUDMAN and BRADBURN 1974; SCHUMAN and PRESSER 1981; WILLITS and KE 1995). However, few studies have investigated the effect of question order on measuring satisfaction (SCHUL and SCHIFF 1993). Although recreation researchers are concerned with methodological issues in measuring crowding-related norms in outdoor recreation (HALL and ROGGENBUCK 2002; HALL et al. 1996; MANNING and FREIMUND 2004; MANNING et al. 2002), few have examined the effects of context and question order on satisfaction in relation to crowding which has been defined as the negative evaluations of individuals regarding density or encounters (SCHMIDT and KEATING 1979). Theoretically,
crowding negatively influences the recreation experience itself, and then influences satisfaction (PATTERSON and HAMMITT 1990). It is important to clarify why most visitors tend to express high levels of satisfaction, otherwise inaccurate information may be provided regarding visitor flow management. This study thus examines whether context and question order affect visitor satisfaction regarding crowding in a whitewater rafting context. The crowding and encounter questions introduced in this study are actually behavioral indices of the general satisfaction question. Asking these questions can give respondents concrete, behavioral references to assist them in answering general satisfaction questions.

Two hypotheses were proposed. First, this study hypothesizes that following the introduction of a series of crowding and encounter questions between two general satisfaction measures, the second measure will be significantly lower than the first measure. Restated, the second measure of satisfaction may increase, decrease, or remain unchanged depending on the effects of context and question order. Specifically, the majority of the respondents may see their level of satisfaction remain unchanged owing to the “consistency effect.” Respondents thus need to feel consistent in their answers, or at least appear so. Besides, the influence of crowding and encounter questions can be counterbalanced by a “redundancy effect” in which respondents encounter questions that are sufficiently similar to wonder whether they have been asked the same question two or more times. Furthermore, a number of respondents may have reduced satisfaction because of crowding, and may encounter questions that enhance the saliency of the negative evaluations of their trips, thus providing an opportunity to re-evaluate their level of satisfaction, or because rapport building may help visitors achieve more realistic or accurate answers. Finally, some respondents may increase their level of satisfaction due to a “fatigue effect” resulting from the combination of the long rafting trip and the fairly long questionnaire.

Second, this study hypothesizes that minimally educated respondents will be more susceptible to context and question order effects than more educated respondents. Previous studies demonstrated that the magnitude of question order effects, if they occur, can vary as a function of respondent demographics. For example, minimally educated respondents may be more susceptible to order effects than the more educated (BENTON and DALY 1991; McFARLAND 1981; SUDDAM and BRADBURN 1974). SCHUMAN and PRESSER (1981) hypothesized that more educated respondents might be less likely to display all types of response effects, and suspected that such individuals might more easily grasp the general point of a question and be less easily affected by emotional language. They also suspected that those with relatively little formal education might be more influenced by the inclusion or omission of particular response options, the working of the question, and its response format. NARAYAN and KROSNICK (1996) conducted a meta-analysis and found that lower education was associated with question order effects based on the norm of reciprocity and consistent with the notion that some of these response effects may result from satisfaction. Although SCHUMAN and PRESSER (1981) challenged the fact that respondent educational levels did not appear to be a pervasive and systematic moderator of susceptibility to response effects and that better-educated respondents sometimes showed stronger effects. The second hypothesis was proposed based on the finding of HSU (2002) that a negative correlation exists between education and satisfaction in a Taiwanese whitewater rafting context.
2 Method

2.1 Study site, subjects and sampling

Hsiukulan River, located in eastern Taiwan is the most popular whitewater rafting site in Taiwan. The 23 kilometer rafting trip usually takes 4 to 5 hours and traverses a variety of rapids. Seven commercial rafting outfitters host approximately 80000 visitors each year, primarily during the peak season from June to October. The average daily use level is approximately 3000 and 300 during the peak and low seasons, respectively (East Coast National Scenic Area Administration Taiwan 2006). The outfitters were confused by a study conducted in 2000 which indicated visitors rated their satisfaction as 4 (being satisfied) on a 5-point Likert scale (HSU 2002). Consequently, a more sophisticated research design examining the context and question order effect on measures of satisfaction in relation to crowding was conducted the following year.

Visitors to the Hsiukulan River were surveyed from July 2001 to June 2002. Because a simple random sample of all visitors was not practical for on-site surveys, the study randomly selected 35 sampling days during a 12 month-period, including 21 weekend days and 14 weekdays. Data were gathered from seven outfitter resting areas by four or six trained interviewers who approached visitors after they had completed their raft trip. A systematic random selection approach was adopted: that is, at each site, every third visitor was asked to complete the on-site questionnaire to maintain a random selection manner (SALANT and DILLMAN 1994). Most respondents exhibited willingness to participate in the survey, with the exception of the senior group, and had no difficulty in responding to any questions. Only a very small portion of respondents reacted when confronted with an identical satisfaction question shortly after the first one. This may occur because most respondents are in a hurry to reach their next destination on schedule. Of 2841 administered questionnaires, 439 subjects did not respond to either the first or second satisfaction question. Thus 2402 usable surveys were returned, representing a net response rate of 84 percent.

2.2 Research design and instrument

The survey instrument asked the respondents to reply to three sets of questions: a) travel characteristics, motivation and the first general satisfaction question; b) crowding, encounter norms and the second general satisfaction question; and c) the socioeconomic characteristics. The general satisfaction question first appeared on the first page of the questionnaire, and was repeated on the second page, directly following ten crowding and encounter questions (Table 1). The respondents were asked to rate their general satisfaction in response to the question. “Please indicate your level of satisfaction with today’s rafting trip,” using a Likert scale ranging from 1, indicating very dissatisfied to 5, indicating very satisfied.

Then the respondents were asked to rate their level of crowding for encountering boats and other rafters. A nine point Likert scale was used, ranging from 1 to 2 which indicated not at all crowded, 3 to 4 indicating somewhat crowded, 5 indicating average crowded, 6 to 7 indicating crowded, and 8 to 9 indicating very crowded, as recommended by MANNING (1999) and widely used by crowding researchers. Before the second measure of general satisfaction question, the respondents were also asked to indicate the maximum number of boats and people they can tolerate, and actual boats and people encountered.

For analytical purposes, the sample was divided into decreased satisfaction, unchanged satisfaction, and increased satisfaction groups. The decreased satisfaction group contained those whose second satisfaction score was lower than the first score; the increased satisfaction
group contained subjects for whom the reverse applied, and the unchanged group contained those with consistent levels of satisfaction.

This study has several important limitations that need to be addressed. First, this study did not use an experimental design and did not include any control group. Second, the study employed an on-site survey which is more susceptible to question order effects than other administration modes owing to time constraints or contextual situations (AYIDIYA and MCCLENDON 1990). Third, the satisfaction question was presented in general terms rather than as multiple questions regarding product and service domains. Fourth, the crowding and encounter questions sought negative evaluations of rafters of their experiences, rather than positive experiences such as fun with friends or their enjoyment of nature. Finally, most respondents were group rafters who participated in package tours and tended to answer questions in a rush due to constraint of time and group itinerary.

Table 1. Examples of crowding and encounter questions.
Note: Questions 6 to 10 are identical to 1 to 5, except for measuring crowding and encounters of other rafters other than boats.

1. Did you feel crowded when you were rafting on the river?
   1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 → 9
   not at all somewhat average crowded crowded crowded crowded

2. Does the number of boats you envisioned or encountered on the river make a difference to your rafting experience?
   1. Make a difference  2. Make no difference
   Please continue if answer 1, otherwise skip to question 5

3. Please indicate the maximum number of boats you can tolerate you envisioned?
   _____boats, _____not sure

4. Please indicate the maximum number of boats you can tolerate around you?
   _____boats, _____not sure

5. Actually, how many boats you envisioned today? _____boats;
   How many you encountered today? _____boats

3 Results

The respondent demographic profile indicated an even distribution of student and non-student responses, each accounted for 50% of respondents. Most respondents were female (56%). The age distribution demonstrated that 20- to 29-year-olds comprised 67% of respondents, and those aged 40 years and older just 3.8%. Most respondents (80%) were college graduates. The majority of respondents were first time rafters (77%).

Table 2 showed that the second satisfaction measure was significantly lower than the first satisfaction measure (M = 3.75 and M = 4.06, respectively, p ≤ 0.01). On average, respondent satisfaction decreased after the crowding and encounter questions were asked. Therefore, hypothesis one was supported.
Table 2. Two measures of satisfaction.
\(^1\) Likert scale, 1 being very dissatisfied, 5 being very satisfied. ** denotes \(p\)-value \(\leq 0.01\).

<table>
<thead>
<tr>
<th>Satisfaction</th>
<th>Satisfaction(^1) (n, %)</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>First satisfaction measure</td>
<td>15 (0.6)</td>
<td>54 (2.2)</td>
<td>438 (18.2)</td>
<td>1168 (48.6)</td>
</tr>
<tr>
<td>Second satisfaction measure</td>
<td>27 (1.1)</td>
<td>56 (2.3)</td>
<td>672 (28.0)</td>
<td>1372 (57.1)</td>
</tr>
</tbody>
</table>

The correlation analyses revealed a negative correlation between the first and second satisfaction measures and crowding. The correlation between satisfaction and crowding was weak but significant (Table 3). However, the correlation between second satisfaction measure and crowding turned stronger than the correlation between first satisfaction measure and crowding.

Table 3. Correlation analysis of satisfaction and crowding.
** denotes \(p \leq 0.01\) (two tailed)

<table>
<thead>
<tr>
<th>Satisfaction</th>
<th>Crowding to boats</th>
<th>Crowding to people</th>
</tr>
</thead>
<tbody>
<tr>
<td>First measure</td>
<td>(-0.082**) ((R^2 = 0.006))</td>
<td>(-0.088**) ((R^2 = 0.007))</td>
</tr>
<tr>
<td>Second measure</td>
<td>(-0.129**) ((R^2 = 0.016))</td>
<td>(-0.153**) ((R^2 = 0.023))</td>
</tr>
</tbody>
</table>

Of all the subjects, 1432 maintained unchanged level of satisfaction (60%), whereas 172 increased (7%) and 798 decreased (33%) their level of satisfaction (Table 4). MANOVA tests revealed that the decreased satisfaction group had highest level of satisfaction the first measure (\(M = 4.58\)), the unchanged group had medium level (\(M = 3.9\)), and the increased group had the lowest level (\(M = 2.9\)), the differences among the groups all being significant (\(F = 560.87, p = .000\)). The second satisfaction measure obtained different results to the first measure, with the increased group scoring highest in satisfaction and the decreased group scoring lowest (\(M = 3.97, 3.90, 3.44\), respectively, \(F = 123.86, p = .000\)).

Table 4. MANOVA tests on types of satisfaction change.
Note: Wilk’s Lambda = 0.156 (\(p\)-value < 0.000). The number in parentheses represents the ranking of satisfaction score with 1 being the highest, 3 the lowest.

<table>
<thead>
<tr>
<th>Satisfaction/crowding</th>
<th>Type of satisfaction change</th>
<th>(N = 798)</th>
<th>(N = 1432)</th>
<th>(N = 172)</th>
<th>(F)</th>
<th>(p)-value</th>
<th>Post Hoc test (Scheffe)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First measure satisfaction</td>
<td>Decrease</td>
<td>4.58 (1)</td>
<td>3.90 (2)</td>
<td>2.90 (3)</td>
<td>560.87</td>
<td>0.000</td>
<td>1 &gt; 2 &gt; 3</td>
</tr>
<tr>
<td>Second measure satisfaction</td>
<td>Decrease</td>
<td>3.44 (3)</td>
<td>3.90 (2)</td>
<td>3.97 (1)</td>
<td>123.86</td>
<td>0.000</td>
<td>1 &gt; 3 ; 2 &gt; 3</td>
</tr>
<tr>
<td>Crowding to boats</td>
<td>Decrease</td>
<td>3.77 (1)</td>
<td>3.65 (2)</td>
<td>3.36 (3)</td>
<td>3.44</td>
<td>0.032</td>
<td>1 &gt; 3</td>
</tr>
<tr>
<td>Crowding to people</td>
<td>Decrease</td>
<td>4.50 (1)</td>
<td>4.23 (2)</td>
<td>4.14 (3)</td>
<td>4.91</td>
<td>0.007</td>
<td>1 &gt; 2</td>
</tr>
</tbody>
</table>

To summarize, respondent satisfaction changed after responding to crowding and encounter questions. For the decreased satisfaction group, their first measure of satisfaction was higher than the second measure of satisfaction. Meanwhile, for the increased satisfaction group, the reverse applied. MANOVA tests on satisfaction change and crowding demonstrated that level of crowding was highest for the decreased group (\(M = 3.77\) and 4.50), average for the
unchanged group (M = 3.65 and 4.32), and lowest for the increased group (M = 3.36 and 4.14). These results may indicate that high degree of crowding influenced the second satisfaction measure and thus reduced satisfaction levels. This phenomenon proved that placing the crowding and encounter questions between two general satisfaction questions negatively impacted the satisfaction ratings.

Chi-square tests revealed that demographic and travel-related variables such as gender, age, occupation, residence, income, group size, past experience, peak or off seasons did not differ significantly in terms of type of satisfaction change, with the exception of education (Table 5, $\chi^2 = 10.457, p = .033$). The education level of subjects whose answers regarding satisfaction changed (either increased or decreased) was significantly lower than for those whose answers did not change. Restated, respondents with little education were more susceptible to question order effect than those with more education, consistent with the literature (NARAYAN and KROSNICK 1996). Thus, hypothesis two was supported.

Table 5. Chi-square tests on satisfaction change type based on levels of education.

<table>
<thead>
<tr>
<th>Variable</th>
<th>decrease (n, %)</th>
<th>unchanged (n, %)</th>
<th>increase (n, %)</th>
<th>Total (n)</th>
<th>$\chi^2$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ Junior high</td>
<td>20(36.4)</td>
<td>28(50.9)</td>
<td>7(12.7)</td>
<td>55</td>
<td>10.457</td>
<td>0.033*</td>
</tr>
<tr>
<td>High school</td>
<td>144(37.1)</td>
<td>210(54.1)</td>
<td>34(8.8)</td>
<td>388</td>
<td>10.457</td>
<td>0.033*</td>
</tr>
<tr>
<td>College and up</td>
<td>629(32.3)</td>
<td>1188(61.1)</td>
<td>128(6.6)</td>
<td>1945</td>
<td>10.457</td>
<td>0.033*</td>
</tr>
</tbody>
</table>

4 Discussion and conclusion

This study reaches two main conclusions. First, both context and question order effects exist. However, the interpretation of these effects appears difficult because the study did not employ an experimental design. These effects may occur for reasons other than context and question order, for example wording, the general satisfaction question content and the format and respondent characteristics. Such effects may also occur as a result of other satisfaction variables such as facility development, lifeguard attitude, food and beverage, weather, water volume, physical environment, social contexts, personal crowding norms, conflict between groups, etc. Such effects may also occur because the data were collected on-site or because of the extremely long queue for bathing facilities at the end of the trip. However, the existence of context and question order effects coincides the finding of LACY (2001) that the public express contingent, conditional and constrained preferences, and that response instability results from apparently trivial changes in the order of questions. Furthermore, LODGE et al. (1989) and ZALLER (1992) argued that question order effect is an impression-driven process in which responses are influenced by the cognitive or affective considerations evoked by earlier questions in a survey. Consequently, this study suggests that question order should be carefully planned. Furthermore, although satisfaction level remained unchanged in the case of 60% of respondents, it increased in 7% and decreased in 33%. These effects may result from the mixture of saliency, consistency, fatigue, redundancy, and rapport effects. However, the actual type and magnitude of the question order effect is unknown. Future studies are necessary to distinguish the type and size of the question order effect, and such studies can be beneficial in terms of both practical application and future research.

The second conclusion is that a weak correlation was identified between crowding and satisfaction. This study identified crowding as a critical variable associated with visitor satisfaction, and found a weak correlation between the first and second satisfaction measures and crowding, consistent with the literature. For example, MANNING (1999) found
only a weak or even no correlation between crowding and satisfaction. Similarly, DAWSON and WATSON (2000) examined density, crowding, and satisfaction relationship and found that crowding exerted little influence on satisfaction. Recently, the studies of Li et al. (2007a) and Li et al. (2007b, in press) in Los Angeles and Hong Kong showed similar relationships between crowding and satisfaction. Additionally, although the correlation between the second satisfaction measure and crowding was higher, it remained weak. To determine why this is the case it seems necessary to seek alternative explanations for the weak correlation between crowding and satisfaction in order to gain knowledge that can be applied for both theoretical and managerial purposes. However, the relationships among use level, crowding and satisfaction can be complex as MANNING (1999: 99) proposed expanding the simple bivariate satisfaction model into a more comprehensive model. The expanded crowding model shows inter-group contact affects crowding, as does the interpretation of such contact. Crowding norms are based on personal characteristics of visitors, as well as the characteristics of those encountered, and situational variables negatively influence the point at which contacts are evaluated (HAMMITT and PATTERSON 1993). Crowding thus affects overall satisfaction, but theoretically is just one among many variables to do so. Moreover, the relationship between crowding and satisfaction depends on measurement techniques (STEWART and HULL 1992). Finally, feelings of crowding can displace some users, resulting in their satisfaction not being measured, or some users may simply redefine the type of recreation opportunities they have experienced (ROBERTSON and REGULA 1994). The expanded crowding model of MANNING (1999) explains why a weak and significant correlation exists between crowding and satisfaction. Besides the model of Manning it is suggested that future studies should employ a marketing satisfaction model (AUH et al. 2003; JOHNSON and GUSTAFSSON 2000) which considers the benefits of product or service attributes, user satisfaction, and subsequent behavioral intentions or behaviors, including loyalty and actual repurchase. Such an effort may help explain the weak relationship between crowding and satisfaction.

The study findings have implications for planning and management. First, this study shows that the second measure of satisfaction is lower compared to the first one. This study contends that the introduction of crowding and encounter questions between two general satisfaction questions is preferable in a whitewater rafting context. Approximately 40% of respondents exhibited altered satisfaction levels. Although this study did not examine the reasons for respondents changing their answers, it can be posited that a context and question order effect exists and causes respondents to over- or under-estimate their satisfaction level. Theoretically, the results imply that people may lack fixed and well-informed preferences (satisfaction), that attitudes and information can be accessed via an impression-driven process (LODGE et al. 1989; ZALLER 1992; ZALLER and FELDMAN 1992). Consequently, the combination of the crowding and encounter questions and the second satisfaction question provided respondents with an opportunity to re-evaluate their cognitive state that could result in fewer unanswered questions and more accurate responses (ROSSI et al. 1983). However, whether the second measure of satisfaction is more accurate requires more investigations. Second, practitioners must understand the tendency of visitors to over-estimate their satisfaction level in response to questioning. Management thus should take care when dealing with customer feedback. Consequently, it is recommended that such context and question order design is necessary in measuring visitor satisfaction. Third, the study results revealed that educational level moderates context and question order effects in measurement of satisfaction. Since less educated respondents are more susceptible to the question order effect, outdoor recreation managers should exercise caution in satisfaction measurement if the majority of their clientele are less-educated, and question order effects should be a concern whenever surveys are applied.
Results of this study have significant implications for future research: 1) conducting experiments involving two or more treatments since the present study applies the same treatment to every respondent, 2) comparing on-site and mail survey to determine their susceptibility to question order effects, something that is especially important given that AYIDIYA and MCCLENDON (1990) stressed that on-site interviews are more susceptible to question order effects than other administration modes owing to time constraints or contextual situations, 3) examining whether visitor satisfaction is increased with the introduction of a positive scenario between two general satisfaction questions, because in the present study, 33% of respondents exhibited reduced satisfaction as a result of the inclusion of negative crowding and encounter questions, 4) substituting current narrative crowding and encounter questions involving a series of crowding photos, because MANNING et al. (1999) proposed that visual presentations of crowding photos may be more valid than numerical approaches, particularly in high density use areas like whitewater rafting, 5) conducting longitudinal research to further examine over-time effects of satisfaction regarding crowding. CONVERSE (1964) identified significant temporal instability. Notably, it is expected that the status quo or individual perceptions of it are unchanged, not only in relation to issues (crowding and encounters) under considerations but also with regard to any related issues (social contexts and situational variables such as the provided facilities and services). In a changing world, survey responses are also likely to change, though changes in survey responses will not necessarily reveal changes in preferences.

5 References


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