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Response Problems in a Vacation Panel Study

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This paper investigates response problems encountered in a panel study of travel behavior. Though the overall response rate to the three-wave panel study was acceptable (over 60%), three types of response problems were encountered: refusal, non-response, and attrition. In a follow-up phone survey, a sample of individuals from each problem response group was questioned about their study participation and travel behavior. Results indicate that those who outright refused any participation in the study were most different from panel respondents and other partial-respondents, in terms of travel behavior. This study reveals problems that leisure researchers must address to generate high participation and response in panel studies

KEYWORDS: *Survey research, longitudinal research, attrition, non-response, travel diary*

Introduction

As curiosity grows about the leisure experience *in-situ*, or as it unfolds in a particular time and place, so does recognition of the difficulties of studying leisure experiences in real time. One major challenge is maintaining a cooperative relationship with study participants over a span of time and through multiple requests for information. Unlike cross-sectional survey research where individuals are asked to share information once, *in-situ* research often uses panel survey methods that require the ongoing cooperation of study participants. Furthermore, in studies of leisure, recreation, and travel, these repeated requests for information coincide with that part of the individual's life that is otherwise free and unobligated. Yet the insights gained from *in-situ* leisure research argue for further development and application of suitable research methods (Csikszentmihalyi, 1990; Hammitt, 1980; Hull, Stewart, & Yi, 1992; Mazursky, 1989; Stewart, 1998; Stewart & Hull, 1996).

A panel study involves administering a survey instrument to the same people on two or more occasions (M. Hill, 1997). Survey administration may be pulsed at a predetermined time interval (i.e., every six months) or timed according to some process or behavior. In leisure behavior research, it appears that both multiphase (i.e., panel or repeated cross-section) and *in-situ*

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methods are gaining acceptance (c.f., *Journal of Leisure Research,* 30(4)). These methods can add a new dimension to our understanding of leisure behavior, but also require new techniques to keep respondents involved, and more systematic use of follow-up studies to understand the reasons that some choose to end their participation.

The purpose of this paper is: (1) to highlight the strengths and weaknesses of the panel method compared to other widely used data collection techniques (i.e., cross-sectional surveys), and (2) to present the results of a three-wave panel study and the follow-up investigation of response problems. A panel of travelers who expressed an interest in a Midwest destination was surveyed to assess their travel planning and information use behavior during a vacation. A panel design with measures taken a few months before a trip, a few weeks before a trip, and during a trip were used to compare how travel plans are made and carried out. Moreover, instruments and measures were used that allowed *in-situ* reporting so that current reports were obtained rather than recollected information subject to telescoping or recall biases. In addition to what was learned about behavior over the course of the vacation (c.f., Stewart & Vogt, 1999; Vogt & Stewart, 1998), a follow-up study was conducted with people who refused participation, those who did not return survey materials, and those who participated initially but then dropped out. These sub-groups of the panel were labeled refusal, nonresponse, and attrition. We sought to determine whether and how response problems affected the quality and reliability of our data, and to gain insights into why nonparticipation occurred.

Review of Literature

Most survey research by leisure behaviorists asks for information at only one time, either before, during, or after the leisure experience. Cross-sectional surveys are often used because of limited time and money. Data collection at one point in time, however, compromises the quality of information obtained. As time passes, people may forget or re-interpret what they experienced (recall bias). Backward and forward telescoping is also a problem with cross-sectional and panel surveys if too long a period of time has passed for the respondent to accurately place events within the timeframe (Kalton, Kasprzyk, & McMillen, 1989; Weisberg, Krosnick, & Bowen, 1996). These problems are especially likely when the information sought regards the changing nature of the experience over time. For example, Stewart and Hull (1992) showed that satisfaction measures taken during a hiking experience differed from measures taken after the experience. Further, they found immediate post hoc evaluation was more positive than delayed post hoc evaluations.

Longitudinal methods involve collecting multiple measures from either the same respondents or a similar set of respondents (Table 1). All of the longitudinal methods allow for the collection of more information from respondents thus providing more data points to track changes in attitudes

TABLE 1
Summary of Survey Designs

Method	Characteristics of Target Behavior	Sampling Interval (Time Elapsed Between Measures)	Data Structure	Problems
Experience sampling	Ephemeral, rapidly changing, or unfolding interaction between person and environment	Days, hours or minutes	Repeated measures of same sample over time	Once an observation is missed it cannot easily be reconstructed Sampling tends to be intrusive over a short time period
Short-duration panel study	Distinct occasion, outing, event, or trip	Days, weeks or months	Repeated measures of same sample over time	Sampling is somewhat intrusive, missed measures are difficult to compensate for, members drop out
Long-duration panel study	Slowly changing process or development	Years, decades	Repeated measures of same sample over time	Panel members drop out or are lost
Quasi-experimental design	Researcher can control some key aspect of experience or setting	Variable, depending on rate of change in process	Baseline measure for entire sample, then control and experimental group re-measures	Ethics and practical difficulties of controlling experiences or settings
Repeated measures cross-sectional design	Widely-shared experience, such as social change	Years	Comparable but distinct samples, measures repeated over time	Making samples comparable enough to establish generalizability

and/or behaviors. These data in turn provide trend analysis at a group or population level and, when a panel design is used, at an individual level. Longitudinal studies often require more time in the field, bigger budgets, and more sophisticated tracking and data analyses procedures. From the respondents' point-of-view, panel studies impose a greater burden than do cross-sectional studies.

In addition to the differences between methods highlighted in Table 1, the nature of errors in cross-sectional and longitudinal data is somewhat different. The quality or accuracy of longitudinal data can be measured and classified by decomposing the mean square error into two components—bias and variable error (Groves, 1989). Bias is found in all types of survey designs and expresses how the sample differs from the population. Variable error arises when repeated measures are not identical across waves of a longitudinal study (e.g., due to different interviewers) or when slightly different, rather than identical, samples are surveyed at each wave (e.g., due to attrition). If replication is not possible, the distinction between bias and variable error cannot be made.

Panel surveys are susceptible to both bias and variable error. The ongoing participation of respondents reduces variable error (or conversely, response problems contribute to variable error). Nonresponse error, one form of variable error, is a particularly serious problem in panel studies as the study progresses (Kalton et al., 1989). Like cross-sectional surveys, panel surveys are subject to nonresponse in the first wave which is caused by refusal or inability to participate. However, panels are then subject to additional nonresponse (i.e., attrition) that can occur at each successive wave of the study. As in cross-sectional survey research, missing data complicates the use and interpretation of statistical tests. Further, the researcher must spend time and money to uncover the reasons for nonresponse and the potential significance of nonresponse patterns. Perhaps most important in longitudinal studies is the permanent loss of the opportunity to collect data at the correct time, or in-situ (Stewart & Hull, 1996). This is especially problematic for travel studies, as the researcher cannot send the respondent back on vacation, and even if they could, the replacement experience would be different than the original trip (e.g., the respondents would have prior experience with destination). Thus, maintaining high response rates and knowing as much as possible about nonresponse must be a major focus of panel research.

Once data collection is complete, any response problems are handled using post-hoc checking with follow-up surveys and statistical testing. *Post-hoc* checking for bias attempts to determine whether the reasons for the nonresponse are somehow connected with the topic of study (Oppenheim, 1992). Duncan and Kalton (1987) suggest comparing the data from full participants with data collected from partial participants in an earlier wave of the study (i.e., one to which they did respond). This can help determine whether those who have dropped out differ on some key variables. However, the difficulty is reaching those who do not reply to the researcher's initial

request or to those who express interest initially but then stop responding sometime before the completion of the study. Miller (1991) suggests acquiring home and work addresses and reference names so one can investigate any apparent response problem. He goes on to suggest that researchers try to use a different communication format for follow-up work. For instance, if a person cannot be reached or does not respond by telephone, then mail or in-person contact should be used for follow-up communication.

Depending on the outcome of the follow-up study, analysis and reporting can be altered to minimize the effects of response problems. If a researcher knows from experience or through follow-up work that response groups are likely to differ systematically (Brown, 1984), data can be adjusted through statistical weighting or be reported separately for full and partial participants (D. Hill, 1997; Groves, 1989). Missing data can also be imputed from previous wave data or from those who have responded [c.f., Duncan & Kalton (1987) for a more complete description of these procedures].

Research Questions

Based on past research and a review of the literature, the following research questions guided this follow-up study of response problems in a panel study:

1. What reasons will individuals give for not fully participating in this panel study of travel behavior?
2. How does planning and travel behavior differ between those who fully participated in the panel study compared to those who attrited?

Study Procedures

The Panel Study

Data for this paper came from a larger research study that investigated how travel parties planned vacations and implemented their plans. Unlike classic conversion studies, which also sample information requesters and investigate information use, this study was intended to focus on the planning and problem solving aspects of vacation behavior. Little has been done to investigate how people cope with the tremendous uncertainty and constantly changing circumstances of travel (Stewart & Vogt, 1999). Understanding more about the timing and purpose of information use was also intended to improve the delivery timing and design of travel information.

A panel study was used so that planning and travel behavior could be measured over several waves, which allowed us to study change over time using the same individuals. Survey materials were distributed according to the travel dates provided by respondents and were designed so that anticipation, pre-trip, travel to- and on-site behaviors could be measured *in-situ,* or as they occurred. Some examples include asking how much time was spent reading and studying the travel information provided by the destination, the

certainty of actually taking the trip, and the type and quantity of information sources used each day. A cross-sectional survey would not have allowed us to match and compare plans with actual behaviors, and recall bias would have been likely had post-hoc measures been used.

The study population was individuals, couples, and families who planned a vacation and actually took the vacation they planned. The tourism, convention and visitors bureau (CVB) of a popular U.S. destination was contacted, and they agreed to provide a population to study. The CVB agreed to include postcard surveys with information packets mailed to individuals who requested vacation information. The sampling plan consisted of two time periods (9 weeks in summer, 4 weeks in fall) during which two random days were chosen in each week, and 300 postcards were included in outgoing mailings each day. This sampling rate represented 16 percent of the information packets mailed by the CVB during the sampling period. Using these procedures, 7,000 postcards were inserted into outgoing information packets during the summer and fall of 1994 (Table 2). Given the large volume of fulfillment that this CVB does, they could not provide a list of the names and addresses to which this survey was sent.

At all stages of their vacation (i.e., the Clawson & Knetch (1966) model of anticipation, travel to, on-site, travel home, and recollection), the individuals sampled could be lost because they either did not make plans (i.e., spontaneous behavior involving little or no information search) and/or they did not take the trip as intended. Given the short duration of this panel study, the possibility of replacing panel members or finding a substitute respondent (e.g., family member) was precluded. Therefore, we focused instead on understanding why people attrited and how that attrition might affect study results.

Wave one used a survey instrument that was a non-personalized letter printed on colored card stock paper, which invited information requesters to participate in the study. Respondents were asked to complete a postcard that was detachable from this letter. The postcard posed six questions about their interest in and experience with the vacation destination, requested name and address, and asked whether they were interested in participating in pre-trip and on-trip surveys (the second and third waves of the panel study). The postcards were stamped and self-addressed for return to the researchers and made no mention of any incentives.

These postcards were returned during the summer, fall, and winter of 1994, logged into a spreadsheet, and then sorted by willingness to participate further and by expected departure date. Approximately 15 percent of the postcards were returned (n = 1049) leaving 5,951 not returned. To be included in the panel study, respondents needed to plan to travel before February of 1995 and the postcard had to be received at least three weeks before their departure date. Postcard respondents who agreed to participate and planned to travel during the eight month study period (n = 636) were mailed a pre-trip survey and a diary survey two to three weeks before their estimated departure date. The package respondents were sent included a

TABLE 2
Sampling Frame

Wave 1 Initial Contact (Pre-trip Stage)	Wave 2 Pre-trip Survey	Wave 3 Diary or During Vacation Survey	Follow-up Nonresponse Study
Responded, willing to participate, and trip during study timeframe (n = 636)	Returned pre-trip survey (n = 397)—62% response rate	Returned diary (n = 296)—47% response rate from 636 sample or 75% from 397 sample	N/A
N/A	Didn't return pre-trip survey (n = 239)—called "Nonresponse Group"	N/A	Studied sample of Nonresponse Group (n = 56)
N/A		Didn't return diary (n = 101)—called "Attrition Group"	Studied sample of Attrition Group (n = 25)
Responded, willing to participate, but travelling outside study time frame (n = 321)	N/A	N/A	N/A
Responded but unwilling to participate (n = 92) called "Refusal Group"	N/A	N/A	Studied sample of Refusal Group (n = 25)
Never heard from (n = 5951)	N/A	N/A	(Names and addresses were not available)
Total = 7,000	Total = 636	Total = 397	Total = 106

personalized letter, pre-trip survey, diary survey, two prepaid envelopes, and a refrigerator magnet as a small incentive. As a further incentive, the cover letter stated that respondents were eligible to win a free two-day trip to the study destination.

Respondents were instructed to complete the 11 page pre-trip survey upon receipt (i.e., before leaving for their trip), and two pages of the diary *en-route* to the destination, one page daily for up to four days, and one page after the trip. In total, 397 pre-trip surveys and 296 diaries were returned.

As anticipated, some respondents were lost from the study. These individuals were grouped by response problem: (1) *Refusal,* those who returned the postcard survey but were unwilling to participate further (N = 92); (2) *Non-response,* those who indicated a willingness to participate in the pre-trip

and diary surveys but failed to return either instrument ($N = 239$); and (3) *Attrition,* those who returned the postcard and pre-trip survey, but not the diary ($N = 101$).

The Follow-up Study

After the three waves were completed, a follow-up study was conducted on the response problem groups. Since these individuals did not cooperate fully with mail-back survey procedures, we used a telephone survey to reach them (as suggested by Groves, 1989). Phonefiche, US West Databank, and ProPhone databases were used to obtain phone numbers based on name and address information obtained on the postcard survey. The sample size for this telephone survey was calculated based on a formula provided by Groves (1989, p. 168). With a 62 percent response rate for the pre-trip survey, Groves' formula recommends sampling 15 percent of the original sample size ($n = 636$) or 95 individuals. The sample ($n = 95$) was weighted based on the relative size of the three attrition groups ($N = 432$) to arrive at the number of individuals in each response problem group. To ensure an adequate number of respondents, 178 names and phone numbers were provided to the phone interviewers. One hundred and six successful interviews were completed in late winter of 1995 (Table 2) producing 25 people for the Refusal Group, 56 for the Nonresponse Group, and 25 for the Attrition Group. Additional interviews were unsuccessful for a variety of reasons, with 30 individuals not found at the provided phone number; 18 who refused to be interviewed; 18 who were contacted but unavailable; 4 individuals who denied receiving the surveys; and 2 individuals who claimed they had returned the surveys. The average interview length was eight minutes and was conducted by trained phone surveyors at a large university.

For the larger study, we customized the measures and surveys to the event and phenomena unfolding (i.e., trip planning and vacation experience). Questions used in the nonresponse phone survey were a subset of questions asked on the pre-trip and diary surveys to allow evaluation of the potential for error caused by nonresponse. In keeping with Cialdini's (1984) recommendations for encouraging responses, some phone measures were simplified (i.e., from a "check all that apply" format to a "yes/no" format). These changes also made the phone survey more manageable. The phone survey also included a series of questions about the subject's recent trip to the destination, if applicable, or the reasons they did not travel to the destination. All respondents were asked "yes/no" questions regarding their reasons for not returning the pre-trip or diary survey, and were given the opportunity to state additional reasons for not completing the study.

Frequency distributions, cross-tabulations, and chi-square statistical tests were used to evaluate similarities and differences between the three groups studied in the nonresponse phone survey. When matching data were available, comparisons also were made between main study respondents and follow-up study respondents to see whether travel behaviors differed.

Results

Reasons for Response Problems

Members of the three response problem groups gave many reasons for not participating fully in the study. The most common reason was that they *did not travel to the destination* and concluded that completing the surveys was not appropriate. Overall, 39 percent ($n = 41$) of those surveyed gave this reason, and it was given by 60 percent of those in the Refusal Group, 29 percent of the Nonresponse Group and 40 percent of the Attrition Group. When asked why they did not travel to this destination that they had requested travel information, many reasons were provided, with none clearly dominant. Reasons for not making the trip included: *illness* (15%) *not enough money* (15%), *just unable to go* (15%), *delayed to some future date* (13%), *not enough time right now* (10%), *selected another destination or type of trip* (10%), *family obligations interfered with plans* (5%), and *an assortment of other unique reasons* (17%).

Those who did travel to the destination but did not complete the study gave a variety of reasons for dropping out of the research study. In a question where multiple responses were allowed, the reason most frequently given was feeling like there was *not enough time to complete the surveys* (Table 3). Specifically, 80 percent of the respondents in the Refusal Group, slightly more than three-quarters of Nonresponse Group, and slightly over one-half of the Attrition Group mentioned not enough time as a reason for dropping out of the study. Other reasons given by more than half the members of each group were: *not interested in participating* (Refusal Group), and *forgot to bring the diary along on the trip* (Nonresponse Group). Fewer than half of respondents said they *misplaced the diary* or *never participate in survey studies.* Many respondents volunteered a reason not listed. Examples of these responses, by group, include:

TABLE 3
Reasons for Response Problems for Those Who Traveled[a]

Reasons[a]	Refusal ($n = 10$)	Nonresponse ($n = 36$)	Attrition ($n = 15$)	Overall ($n = 61$)
No time	80%	78%	53%	69%
Forgot diary	—[b]	61%	47%	49%[c]
Not interested	67%	36%	27%	36%
Variety of reasons	20%	25%	13%	21%
Misplace diary	—[b]	33%	21%	29%[c]
Never participate in surveys	40%	19%	13%	20%

[a]Multiple answers allowed.

[b]Members of Refusal Group were never sent a survey or diary because they initially refused to participate.

[c]Percent calculated on only nonresponse and attrition group size.

"My opinion would not help anyone." (Refusal Group member)

"I think part of it was, I got tired of filling it out and part of it was confusing, especially on the 1 to 7 scales, I got confused on some of the wording." (Attrition Group member)

"It just seemed, I started it and then I got looking at it and I thought it was going to take all night and then the next thing you know it was a week or two weeks and I thought it is too late now." (Attrition Group member).

"Procrastination. I am just lazy." (Nonresponse Group member).

The most common volunteered response was that the *survey arrived after they departed for the trip.* While an effort was made to deliver materials well before the trip, the mailing time for the pre-trip and diary was based on the respondent's estimated travel dates which may have changed for some travelers.

Differences in Planning and Travel Behaviors Among Response Problem Groups

The three response groups (n = 106) differed in planning and some travel behaviors. Significant between-group differences are summarized in Table 4. Members of the Refusal Group were less inclined to plan any trip in advance (54%), than were members of the other groups. Members of the Refusal Group were also much less likely to actually take a trip to this destination for which they requested travel information than were members of the Nonresponse or Attrition Groups.

Those individuals who traveled to the destination (n = 65) were asked about their trip. As with planning strategies and propensity to take a vacation,

TABLE 4
Trip Characteristics by Response Groups

Trip Characteristic	Response Group: Refusal (n = 25)	Nonresponse (n = 56)	Attrition (n = 25)	Significance Test
Plan entire trip in advance	54%	86%	83%	X^2 = 10.0, df = 2, $p < .01$
Visited destination	40%	71%	60%	X^2 = 7.2, df = 2, $p < .05$
	Visited Destination: (n = 10)	(n = 40)	(n = 15)	
Avg. length of stay (days)	3.2	5.0	5.3	F = .8, ns
Stayed overnight	80%	90%	93%	X^2 = 1.2, df = 2, ns
Avg. number of information sources used[a]	4.0	4.8	5.5	F = 1.8, ns
Avg. satisfaction with stay[b]	6.1	6.2	6.6	F = .7, ns

[a]Out of nine possible information sources.

[b]Scale where 1=not at all satisfied to 7=extremely satisfied

those in the Refusal Group were different from the other groups. In general, they stayed a shorter time (M = 3.2 days) than other study participants (M = 5.0 days) and used fewer information sources during their trip (M = 4.0 sources vs. M = 4.8 for Nonresponse Group and M = 5.5 for Attrition Group). None of the differences were significant at the $p < .05$ level, however, the small size of the Refusal Group, which appears to be different from the other groups, limited the statistical power of the significance tests.

Differences Between Panel Study Respondents and Follow-up Study Respondents

Final analyses compared the planning and travel behavior of respondents who participated in the main panel study (labeled respondents) and respondents who participated in the follow-up study (labeled nonrespondents). An exception to this labeling is that those in the Attrition Group who provided pre-trip responses in the main study are included as "respondents" only in pre-trip data reporting. As shown in Table 5, panel members (respondents) and those surveyed in the follow-up study (nonrespondents) were fairly similar with regard to planning vacations, reading information packets they had requested, and planned length of stay. The two groups differed, however, on the length of time spent reading the informa-

TABLE 5
Selected Trip Characteristics of Respondents and Non-respondents

Trip Characteristic	Respondents[a]	Non-respondents[b]
Pre-trip Survey	(n = 370)	(n = 81)
Planned trip before departure	78%	76%
Read information packet	98%	93%[c]
Length of time reading	101 minutes	54 minutes[c]
Certainty of visiting destination	83% extremely certain	41% extremely certain[c]
Diary Survey	(n = 286)	(n = 65)
Brought information packet on trip	89%	84%[d]
Helpfulness of information packet[e]	84% very helpful	48% very helpful
Difficulty of getting around destination[f]	4.6	3.7
Satisfaction with vacation	55% very satisfied	54% very satisfied

[a]Includes main study respondents, plus pre-trip data from only attrition group as they responded to that part of the main study.
[b]Pre-trip survey includes the refusal and non-response groups from response problem study, and for the diary survey all three groups from response problem study.
[c]Only those who *did not* visit the destination were asked this question (n = 31).
[d]Only those who *did* visit the destination were asked this question (n = 61)
[e]Respondents rated helpfulness en-route to destination; non-respondents rated helpfulness after their trip
[f]Rated on 7-point scale ranging from 1 = very easy to 7 = very difficult

tion and the certainty of taking the trip. The panel study respondents spent almost twice as long reading the information packet before their trip, and over twice as many panelists were extremely certain about taking the vacation, compared to partial and non-respondents.

During the vacation, almost all of those surveyed in the main and follow-up study brought along the travel information packet they had requested (see Table 5). All study participants were also similar with regard to the satisfaction derived from their vacation, with over 50 percent rating the vacation as "very satisfying." Almost all of the respondents in the panel study (84%) found the travel information received at home to be very helpful, while less than 50 percent of the follow-up study participants rated the information very helpful. Even though panelists indicated they read the travel information guide at home, they reported more difficulty in getting around the destination, in comparison to the follow-up study groups that spent less time reading the information packet.

Discussion

The reasons associated with response problems among those surveyed in this follow-up study are consistent with those discussed in the general literature on longitudinal survey research. The most common reason given for failing to return the survey (i.e., those in Nonresponse Group) was that the planned trip was not taken. This corresponds to Miller's (1991) "no longer meeting conditions for participation in the study." It is not a result of attitudinal factors or survey instrument design; it is an artifact of the sampling design. Because there is no way to know for certain who will be traveling to a destination, especially a destination such as the one studied where many lodging and transportation options are available without reservations, there is no way to choose a sampling frame that excludes potential non-travelers. One defining characteristic of leisure behavior generally, and vacation travel in particular, is that it is a matter of private discretion. If one needs to change travel plans, then travel plans can be changed.

This survey uncovered some significant issues related to attitudes about survey participation. The reluctance to commit time to a multi-wave survey suggests the need to use better or different incentives, and to tailor those incentives to the method being used. For example, longitudinal study attrition could be countered through use of a new incentive for each successive survey returned, with the value of the incentive increasing for later returns.

Differences between the response groups are most obvious when those who refused further participation are compared to members of the other two response problem groups. Refusers were less likely than others to plan vacations in advance, less likely to take a trip, and averaged shorter stays at the destination. The other two groups, non-response and attrition, were similar to one another, indicating an absence of bias. When main study panelists are compared to all three follow-up study response problem groups, there is

little notable difference among the groups, except for the certainty of taking a trip and the time spent reading travel information at home.

Conclusions

Conducting nonresponse checks in conjunction with surveys is a widely recommended practice. However, time and money constraints and loss of interest often lead survey researchers to stick with main study results and forego any follow-up. In some cases, this is a justifiable decision As Christiansen (1982) points out, if a population is homogeneous, then studying more of the same people does not necessarily change the findings. When possible compromises in data quality are apparent, however, non-response studies are recommended. Further, follow-up studies can uncover some interesting features of the study population. Some of the reasons for nonresponse are generic, but some reasons are probably specific to the way in which a researcher designs a study and constructs a survey instrument.

In this study, we were concerned with planning behavior, which turned out to be the basis for the majority of the non-response. Understanding the interaction between planned behavior and external constraints on behavior was central to the study's purpose, yet the group that had the most difficulty coping with external constraints—those who canceled their trips—were the same ones who did not respond to the survey. Our sample represented relatively successful trip planners. The follow-up study highlighted the need to better understand those who were not successful, as well as the need to tailor or create methods for reaching and retaining them. Just as leisure behavior studies have found that perceived time constraints are a prominent barrier to activity participation, results here show that the same problem can limit participation in studies of leisure behavior. As researchers we need to be cognizant of the time commitments we ask of survey respondents. Seventy percent of the people (average over the three groups) we contacted who traveled to the destination did not participate because they thought the study required more time than they were willing to commit.

Survey research methods involve a tradeoff between recall error and attrition bias (D. Hill, 1997). A researcher must decide which problem is most critical and target those problems with appropriate methods. Leisure behavior research seems to be moving toward reducing recall error, with the popularity of *in-situ,* multiphase, and experience sampling research. To mediate attrition bias, we need to improve our means of maintaining communication and contact techniques with respondents. The use of e-mail is one possible way that researchers can more effectively and efficiently keep in touch and exchange information. As individuals maintain the same e-mail address even when their residence changes, this communication technique has the potential to reduce nonresponse, particularly attrition in panel studies. Unlike an agency or business, academic researchers tend not to have the high value incentives (at a low cost) necessary to gain and maintain partici-

pation. Partnerships, like we had with the convention and visitors bureau, will be needed to offer attractive incentives.

Some limitations of the study's design and results should be noted. The results are not directly applicable to any population other than that which was the basis for our panel survey. However, some of the reasons given for response problems are plausible in other leisure studies as well. Second, the length of time which transpired between (1) receiving a travel information packet requested and returning a postcard to the researchers, and (2) participating in the phone attrition study, was approximately nine months. For some individuals, the receipt of the information packet and the vacation to the destination could have been separated by as much as seven months. Other individuals may have planned their trip for the month after they received a call for the non-response phone survey. The timing of measurements in a multi-step study such as this is quite difficult to gauge, because travel plans are subject to change. In this study, the time allowed to pass between contacts may have been too long for some individuals (i.e., experiences occur sooner rather than later) and not long enough for others (i.e., planned experiences not yet executed).

Response problems such as attrition in a panel study or experimental design may produce errors in data and waste resources (Groves, 1989). Follow-up studies have two goals: a methodological goal to minimize errors and associated costs; and an analytical goal to understand the magnitude and pattern of the error (see D. Hill, 1997 for further discussion on determining whether statistical adjustments are needed to obtain unbiased estimates). From a methodological perspective, this study points to the importance of timing the measurement waves to best match *in-situ* behaviors and encouraging response despite a change in travel plans.

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