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ABSTRACT

The study investigates the contextual cues which affect response rates of online surveys and bias the results. An experimental design on the response rates and survey results of the visitors to a tourist destination demonstrated that the researcher's identity and the sponsorship would influence the response rates, and the combined arrangement may increase the response rates up to 45%. Due to the amount of spamming online and consumers' hectic lifestyle, the credibility of solicitation messages is of paramount importance. The mention of the destination in the solicitation message will draw certain type of visitors to respond.

Keywords: *online survey, response rates, survey bias, visitor surveys.*

INTRODUCTION

Marketers frequently use online studies to assess the effectiveness of marketing campaigns, including the field of tourism (Burke & Gitelson, 1990; Woodside, 1990; Pratt et al., 2010). With the wide adoption of the Internet among consumers, more and more researchers are conducting surveys online. Compared to the paper-and-pencil survey method, web-based survey administration is faster, easier, more flexible, and can save costs tremendously (Dillman, 2007; Tierney, 2000). However, many problems plague online surveys: they usually have low response rates; their representativeness is in question; many times the results are biased (Hwang & Fesenmaier, 2004; Pan, 2010). Many times response rates are confounded with biases in results: increasing response rates may bias the conversion rates when measuring advertising effectiveness of a destination marketing campaign (Woodside & Dubelaar, 2003). Other studies also found that the internet respondents are more likely to be younger and better educated (Best et al., 2001; Ross et al., 2003). Thus, researchers need to investigate the validity of the results from online surveys, and find ways to increase response rates and correct the biases.

This study follows up the research of Woodside and Dubelaar (2003) and aims to test the effects of contextual cues in the solicitation message on response rates and survey results of online market studies. Specifically, the study employs three contextual cues – researcher's identity, sponsorship of the study, and incentive type (in a lottery drawing format) – and manipulated these factors in a 2x2x2 experimental design to address the questions on how these contextual cues influence response rates and bias the results.

CONCEPTUAL BACKGROUND

The advantages of online surveys over traditional mail survey are numerous: they do not involve the cost of printing, folding, envelope stuffing, postage, and sometimes data entry effort; they allow researchers to develop more interactive survey content and richer format (Dillman, 2007; Schaefer & Dillman, 1998). Furthermore, in online survey setting, respondents have been found to be more responsive to open-ended questions (Schaefer & Dillman, 1998) and sensitive inquires (Link & Mokdad, 2005; Wang et al., 2005).

However, online surveys generate many methodological concerns to researchers, primarily on response rate, representativeness, and technological uncertainty (Pan, 2010). Existing literature to date suggests that online surveys usually generate lower response rates than mail surveys (Best et al., 2001; Leece et al., 2004; Sheehan and McMillan 1999; Fricker and Schonlau, 2002). With the fast growth of internet population and dramatic increase of the amount of emails, particularly junk emails, people receive on a daily basis, the response rates of online surveys have been declining over time and will continue to do so (Sheehan, 2001). Previous studies suggest that many factors may improve the response rates of online surveys, for example, to increase the instances of contact, personalized contact, pre-contact with respondents, to generate email solicitations that are distinguished from spam emails (Sheehan & McMillan, 1999), shorter questionnaires, and vouchers or lotteries (Deutskens, Ruyter, Wetzels, & Oosterveld, 2004). Pan (2010) reported that most respondents tended to respond as soon as they received the email solicitations, and the best time to send out the surveys would be early morning hours in the respondents' local time to catch up the peak periods of survey return in the daytime and early night.

The representativeness problem of the respondents and various factors may influence the results of responses. Internet is still not accessible to the entire population in the U.S. and anywhere in the world, and the internet respondents tend to be younger and better educated (Best et al., 2001; Ross et al., 2003). Failure to complete an online survey due to the lack of computer expertise of certain respondents, as well as the self-selecting nature of online respondents, generate further coverage biases of online surveys (Hwang & Fesenmaier, 2004; Pan, 2010). Although some studies argued that the sample bias in the content of responses is minimum (Best et al., 2001), and internet started to mirror the general population (Kehoe, Pitkow, & Morton, 1997), the representativeness problem of the online survey method still remain (Best et al., 2001; Couper, 2000; Pan, 2010).

To date, scarce research has been conducted to examine specific factors that may influence the online survey response rate and the validity of the results. No experimental study exists to test the interaction between response rates and result biases. In this study, three contextual cues in email solicitations – researcher identity, sponsorship, and incentive type – are included to address their effects.

METHODOLOGY

To investigate the influence of contextual cues in the solicitation messages on response rates and survey results, the researchers designed a between-subjects, fixed effect factorial study with three factors (Campbell, Stanley, & Gage, 1969). These factors are: two different researchers, researcher A from a regional university in City C versus researcher B from a national university; two different sponsors, one from City C convention visitors bureau <CVB> versus one from an international academy of tourism and hospitality; and two incentives for lottery drawing, one hotel in City C versus one unspecified hotel from one of the eight Southeast cities listed in this study (SE Incentive). The eight cities are: Asheville, NC, Atlanta, GA, Charleston, SC, Hilton Head, SC, Myrtle Beach, SC, Savannah, GA, St. Augustine, FL, and

Wilmington, NC. All first conditions of the three factors include the name of the specified city, City C. This resulted in a 2x2x2 full factorial design with eight different cells (Table 1).

Table 1
Three Factors and Eight Cells

Researcher A, CVB Sponsor, City C Incentive	Researcher B, CVB Sponsor, City C Incentive
Researcher A, CVB Sponsor, SE Incentive	Researcher B, CVB Sponsor, SE Incentive
Researcher A, Academy Sponsor, City C Incentive	Researcher B, Academy Sponsor, City C Incentive
Researcher A, Academy Sponsor, SE Incentive	Researcher B, Academy Sponsor, SE Incentive

The experimental design adopted an online market study for the website visitors who opted to receive email alerts from City C (one of the eight cities) Convention and Visitors Bureau (CVB) website. Adopting the recommendations by Woodside and Dubelaar (2003), the researchers did not remind the respondents that they had joined the email alert from the CVB website. In total, 17,415 active email addresses were randomly selected from all the visitors who opted to receive email alerts from City C's CVB website. The researchers designed eight different survey forms on SurveyMonkey.com and eight different corresponding email solicitation messages. The 17,415 email addresses were equally and randomly assigned to one of the eight cells (one cell has one email less). Most of the content of the solicitation emails was the same other than the statement of the three variable factors: Researcher, Sponsor, and Incentive. A custom script sent out the email messages and corresponding links to the email respondents. The first wave of email solicitations were distributed on September 7, 2010 with a customized computer script. Two days after the first wave of solicitation emails, the script sent one follow-up wave of solicitations to those email addresses which had not responded (Pan, 2010). The "continuum-of-resistance" model argues that the respondents who require multiple solicitations for a response more closely resemble those nonrespondents, since those people would be nonrespondents if the final wave of solicitation had not been sent out (Filion 1976). Thus, in order to validate the results of the first two waves of responses, the researchers conducted the third wave of email solicitation about two months after the first and second waves. A total number of 1,600 email addresses were randomly selected from the non-respondents after the second solicitation emails, with 200 emails in each cell.

RESULTS AND DISCUSSION

After the two waves of email solicitations, 1,257 completed questionnaires were received at the end of one month's period for all eight cells. One month after the third wave of solicitation, 71 surveys were returned. For the first two waves, the overall response rate is 7.2%. However, the response rates in eight cells vary, from 5.9% to 9.0% (Table 2). Multiple Chi-square tests show that Researcher and Sponsor both have significant impact to the response rate (significant at 0.001 level), but not the Incentive type. A logistic regression shows that there are no interaction effects between those three factors. Researcher B from the national university can garner 21.5% more responses than Researcher A from the regional university. Furthermore, City C's CVB as the sponsor organization generates 14.8% increase comparing to the national academy sponsor. Combining the two factors of Researcher and Sponsor, the response rate could increase up to 39.3%.

Table 2
Response Rates in Eight Cells

Researcher			Incentive City C	SE	Average
Researcher B	Sponsor	Academy	7.4%	7.3%	7.4%
		CVB	9.0%	7.9%	8.5%
	Average		8.2%	7.6%	7.9%
Researcher A	Sponsor	Academy	5.9%	6.3%	6.1%
		CVB	7.3%	6.7%	7.0%
	Average		6.6%	6.5%	6.5%

A past study indicates that the visitors with prior visitation experience to City C may be more likely to response to the surveys (Woodside & Dubelaar, 2003). A logistic regression on the prediction of being one of past visitors to City C on the three factors does not yield any significant result at 0.1 level. Thus, the visitation rates are not affected by the three contextual cues. Chi Square tests or ANOVA were employed on the following dependent variables with the three factors: age, income, education, marital status, driving distance between the respondent's residence to City C, total number cities among the eight ever visited, total number of cities among the eight visited in the past six months, number of adults in the trip, length of stay, purpose of trip, and satisfaction with the most recent trip. The results reveal that most variables are not significant, except two significant relationships. The type of incentive mentioned in the survey had significant relationship with the length of stay in respondents' most recent trip (significant at 0.01 level). When the incentive lottery award is the hotel stay in City C, the respondents are likely to be those who stayed shorter time in their most recent trip (Table 3). This is possibly due to the fact that City C is a sightseeing city instead of a vacation destination, thus awarding City C as the incentive would attract more sightseeing visitors who usually stay for a short time. In addition, the mere mention of City C in any of the three factors influences the ratio of married versus non-married (single/divorced/widowed) respondents who are willing to answer the survey. The more often City C is mentioned in the researcher's affiliation, the incentive, and the sponsorship, the more non-married respondents appear in the results (Table 4). The results reveal that more non-married respondents fill out the survey as City C is mentioned more often in the solicitation emails. City C has been named one of most romantic cities in the United States by Travel+Leisure magazine, which is possibly the reason why non-married respondents are likely to respond due to the subtle indication of romantic encounters.

Table 3
Incentive Type and the Length of Stay

Incentive	Mean*	N
City C Incentive	4.14	608
SE Incentive	4.63	594
Total	4.38	1202

*F=4.401, p=0.043

Table 4
The Mention of City C and Marital Status of Respondents

Times City C Mentioned	Non-Married	Married	Total	Percent of Non-married
0	19	114	133	14.3%
1	76	322	398	19.1%
2	105	304	409	25.7%
3	48	98	146	32.9%
Total	248	838	1086	

* Chi-square =8.893, p = 0.0002

CONCLUSION

The results show that the response rates are low with an average around 7%. In the solicitation message, different researchers and sponsors will influence response rates, and the destination mentioned will affect the type of visitors responding to the survey. With a researcher from a national-level university and a familiar sponsor, the response rate could increase up to a combined effect of 39.3%. The mention of a specific destination will attract the certain type of visitors, who are interested in that destination, to respond, thus, biases the results. Online surveys should adopt a credible researcher and familiar sponsor to conduct the survey, and refrain from mentioning the name of a specific destination. Phone interviews with consented visitors and online panels could be valid alternatives to conduct market surveys to obtain a sufficient sample size.

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