

THE IMPACT OF CONTACT TYPE ON WEB SURVEY RESPONSE RATES

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Web surveys are becoming increasingly popular, as reflected in the growing research on web survey methodology (e.g., Couper 2000; Couper, Traugott, and Lamias 2001; Crawford, Couper, and Lamias 2001; Dillman and Bowker 2001; Dillman et al. 1998; Tourangeau, Couper, and Steiger 2001). Despite this spate of recent research, it is still not entirely clear if the techniques used to increase response rates in paper and telephone surveys will directly translate to web surveys. Yet understanding which techniques increase response rates in web surveys is increasingly important. Researchers are faced with decreasing response rates in surveys (Smith 1995; Steeh 1981), as well as increased competition with marketers and spammers on the Internet, for the cooperation of respondents (one recent study predicts that by 2006 e-mail users will receive over 1,400 spam messages per year [Tynan 2002]). Without such knowledge, web surveys may become less useful as a tool for survey research.

Previous research on web surveys has focused on such areas as coverage and sampling error, effects of multiple follow-ups, controlling survey access, and survey appearance. Very little research has been conducted on how the process by which members of the sample are contacted affects the probability of response. In our review of the literature, we did not discover any studies examining aspects of the e-mail contact, with the exception of a study by Cook, Heath, and Thompson (2000). The meta-analysis of 68 web surveys by those researchers indicates that personalized contacts have a positive impact on response rates.

This paucity of research is in direct contrast to the rich literature on method of contact in paper and telephone surveys (e.g., Dillman 2000). Factors such as the approach technique of the interviewer, the appearance of the survey envelope, the salutation of the survey cover letter, the interviewer script, and the content of the cover letter are all correlated with survey response rates. What we now need is a similar body of research describing how aspects of the initial and follow-up contacts in electronic surveys affect survey response.

Without a deeper understanding of the contact and response process, researchers may use techniques that are time-consuming and ineffective.

Using a web survey of high school students, we investigated the impact of characteristics of the e-mail contact on response rates, varying such attributes as personalization of salutation, e-mail address, job title and office of sender, statements of deadlines, and statements of selectivity. Our results indicate that some of the tactics used to increase response rates in paper surveys may not directly translate to the electronic realm.

Data and Methodology

DATA

The study is based on a web survey of high school students who had contacted a selective liberal arts college for information but who had not applied for admission to the college. The survey asked over 50 questions about perceptions of the college and reasons for not applying to the college. The salience of this survey is low, as evidenced by the 15 percent response rate in a similar version of the survey administered 1 year previously. After 189 incorrect e-mail addresses were removed through a software program that checks the validity of each e-mail address on the e-mail server, the remaining sample size was 12,433.

All students in the sample were sent an initial e-mail, and nonrespondents were sent up to two follow-up e-mails. Each e-mail contained a unique URL that automatically logged the student into the survey. The final response rate for the survey was 14.8 percent.

METHODOLOGY

In order to test the effects of personalization, authority, and scarcity in e-mail contacts, we developed two experiments. Both experiments test the effects of various components of the e-mail request on survey participation. We look at both the click-through rate and the response rate, where the click-through rate is defined as the percentage of respondents viewing the first page of the survey but not submitting any results (as determined by the log files from the server). Students were randomly assigned to groups in both experiments.

EXPERIMENT I

The first experiment was a $2 \times 2 \times 2 \times 2$ design that tested the impact of personalization and the authority of the survey administrator. The e-mail contact was varied in four areas: (1) the e-mail salutation was either personal (e.g., Dear Jane) or impersonal (Dear Student); (2) the e-mail address of the

sender was either personal (e.g., jsmith@institution.edu) or impersonal (surveyresearch@institution.edu); (3) the authority of the e-mail signatory as reflected by job title was either high (director) or low (administrative assistant); and (4) the profile of the requesting office was either high (Office of Admission) or low (Office of Institutional Research).

The first two factors were chosen to mirror personalization techniques used in paper surveys. Using the respondent's name in the salutation is a proven technique for increasing response rates in mail surveys (Dillman 2000; Yammarino, Skinner, and Childers 1991; Yu and Cooper 1983). Similarly, the use of postage stamps applied by hand rather than metered postage has also been shown to increase response rates (Fox, Crask, and Kim 1988; Heberlein and Baumgartner 1978; Yammarino, Skinner, and Childers 1991). Although e-mails obviously do not require postage, one of the external attributes of an e-mail that recipients can see before they open the e-mail is the e-mail address of the sender. We altered the sender's e-mail address so that e-mails appeared to come from either a specific person or an organization.

The third and fourth factors were altered to reflect varying aspects of the survey sponsor within the university. Previous research on the impact of sponsorship demonstrates that surveys from governmental and academic organizations tend to have higher response rates (Fox, Crask, and Kim 1988; Goyder 1987; Heberlein and Baumgartner 1978). In part, this is thought to occur due to perceived differences in legitimacy between government and academic researchers and commercial organizations (Groves, Cialdini, and Couper 1992).

We test this concept in two ways. First, the job title of the individual conducting the survey was given both a high and a low form (director vs. administrative assistant). Given that "people are more likely to comply with a request if it comes from a properly constituted authority" (Groves, Cialdini, and Couper 1992, p. 482), we expected that students would be more likely to comply with a request from a director. Second, the office conducting the survey was listed in the e-mails as either a high-profile office, the Office of Admission, or a low-profile office, the Office of Institutional Research. Because the students' past contacts were solely with the Office of Admission, their perception should have been that the Office of Admission would have more legitimate authority to request information about why students chose not to apply, resulting in a higher response rate for the students in this group.

Admittedly, the differences in sponsorship between the two offices are not as large as between academic and commercial sponsors. But, in most circumstances, research ethics constrain a researcher to accurately report their organization; in other words, organizational sponsorship is not an attribute that can be readily altered. Aspects of the organization, such as the office of origin, however, can be easily (and, in many instances, ethically) altered. This last factor tests one way to alter sponsorship within an organization.

Finally, e-mails in Experiment 1 had no mention of a survey deadline or a

statement about the selectivity of participation. The e-mails in Experiment 2 were altered in this regard.

EXPERIMENT 2

The second experiment tested the impact of perceived scarcity of survey participation on survey responses, using a 2×4 design. Specifically, we varied the inclusion of a selectivity statement and a participation deadline in our e-mail contacts with survey participants.

In general, people have a tendency to view scarce opportunities as more valuable than common opportunities. In terms of survey research, statements suggesting that only a few people have been selected to participate should elicit higher response rates (Groves, Cialdini, and Couper 1992). To indicate selectivity of participation, a statement about being part of a select group asked to take part in the survey (“You are one of a small group of students who have been randomly selected to provide feedback about our institution”) was either included or excluded from e-mail contacts requesting survey participation.

Similarly, giving respondents a deadline should also increase participation, as the time frame for participation is limited. The literature is mixed as to whether deadlines increase response rates in mail questionnaires (e.g., Fox, Crask, and Kim 1988; Roberts, McCrory, and Forthofer 1978; Yammarino, Skinner, and Childers 1991; Yu and Cooper 1983). For the deadline factor, a statement of the last possible day to participate in the survey (“The website will be closed at midnight on Friday, February 22, 2002”) was either included or excluded from e-mail contacts.

We used four different groups to test the impact of the deadline statement. Students in the no deadline condition were never informed of the survey closing date. The second group only had a deadline statement in the third and final e-mail contact. The third group was informed of the deadline in the second and third e-mail contacts, and the fourth group was informed of the closing date in all three e-mail contacts. All e-mail contacts in Experiment 2 included a personal salutation, originated from a personal source e-mail address, and were signed by an individual with a high-authority title in the low-authority office.

Results

EXPERIMENT 1

The overall click-through rate for Experiment 1 was 20.3 percent, and the response rate for this experiment was 13.6 percent. To test the effects of the personalization of the e-mail salutation, personalization of the e-mail source

Table 1. Experiment 1: Interactions of Personalization and Authority Conditions

	Sponsorship Low-Profile Office		Sponsorship High-Profile Office	
	Source E-mail Address, Office	Source E-mail Address, Person	Source E-mail Address, Office	Source E-mail Address, Person
Click-through rates (%):				
Title of signatory, low:				
Salutation: impersonal	20.7	20.2	20.0	21.5
Salutation: personal	20.3	21.0	19.8	22.5
Title of signatory, high:				
Salutation, impersonal	19.4	19.7	15.6	20.8
Salutation, personal	19.3	20.5	21.4	22.3
Response rates (%):				
Title of signatory, low:				
Salutation, impersonal	13.1	12.3	13.4	15.5
Salutation, personal	13.7	14.4	12.8	16.1
Title of signatory, high:				
Salutation, impersonal	13.8	13.1	9.6	12.7
Salutation, personal	14.1	13.7	13.7	15.5
Sample sizes:				
Title of signatory, low:				
Salutation, impersonal	536	544	536	534
Salutation, personal	541	582	540	546
Title of signatory, high:				
Salutation, impersonal	537	549	544	558
Salutation, personal	519	533	527	547

NOTE.—Click-through rates: $\chi^2(15) = 16.13$, $p = .37$; response rates: $\chi^2(15) = 12.49$, $p = .64$.

address, authority of signatory, and sponsorship of requesting office on survey click-through and response rates, a chi-square test of independence was conducted for both dependent measures.

As seen in table 1, the click-through and survey response rates did not differ significantly ($p < .05$) across the four factors ($\chi^2(15) = 16.13$, $p = .37$, and $\chi^2(15) = 12.49$, $p = .64$, respectively). That is, click-through and survey response rates did not differ if the e-mail salutation was personal or impersonal, if the e-mail came from a personal or impersonal e-mail address, if the authority of the signatory was high or low, or if the request was sponsored by a high- or a low-profile office. Thus, the techniques thought to increase

response rates in traditional nonelectronic surveys did not appear to translate to our administration of this web-based survey using e-mail contacts.

EXPERIMENT 2

The overall click-through and survey response rates for Experiment 2 were 23.7 percent and 17.5 percent, respectively. Click-through and response rates are presented in table 2. An examination of the rates in the top half of the table shows that the click-through and response rates for the three levels of the deadline condition (deadline in all e-mails, deadline in the first and second e-mails, and deadline in the third e-mail) do not appear to differ from one another within each selectivity condition. A series of chi-square tests of independence confirmed that the click-through and response rates for the three levels of the deadline condition did not differ from one another within each selectivity condition. Therefore, we combined these groups to form a general deadline condition (i.e., anyone who received the statement about the survey closing date). The rates for the general deadline group are listed in the bottom of table 2.

Chi-square analyses revealed that click-through and response rates differed across the (collapsed) deadline and selectivity conditions ($p < .001$). As seen in table 2, these effects appear to be driven by the larger click-through and response rates achieved when both a deadline and selectivity statement were included in our e-mail. The effects of the deadline statement in the absence of a selectivity statement on click-through (20.5 percent vs. 20.7) and response rates (13.7 vs. 14.6 percent) were small and not significant at the .05 level. Similarly, the effects of the selectivity statement in the absence of a deadline on click-through (20.5 percent vs. 21.3 percent) and response rates (13.7 percent vs. 17.5 percent) were also not statistically significant. In contrast, the inclusion of both a deadline and a selectivity statement in our e-mail contacts significantly increased both rates over the rates of the three other experimental levels combined ($\chi^2(1) = 35.2$, $p < .001$, and $\chi^2(1) = 27.9$, $p < .001$, respectively). Inclusion of both a deadline and a selectivity statement in our e-mail increased click-through rates by 8.3 percentage points and response rates by 7.6 percentage points as compared with groups without these conditions.

Deadline and selectivity statements both appear to relay the scarcity of the opportunity for survey participation to potential respondents. It may be that, on their own, these statements do not relay sufficient information about the scarcity of participation. When paired together, however, these statements may provide enough information to surpass the threshold required for the potential respondent to realize the scarcity of their opportunity to participate and thus significantly increase click-through and response rates.

Table 2. Experiment 2: Interactions of Deadline and Selectivity Conditions

Deadline Statement	Click-Through Rates			Response Rates			<i>N</i>		
	Selectivity Statement			Selectivity Statement			Selectivity Statement		
	No	Yes	All	No	Yes	All	No	Yes	All
Specific deadline condition:									
No deadline	20.5	21.3	20.9	13.7	17.5	15.7	533	559	1,092
Deadline in e-mail 3	21.2	29.9	25.4	15.7	21.4	18.5	543	519	1,062
Deadline in e-mails 2 and 3	19.7	29.7	24.7	12.5	20.8	16.6	529	539	1,068
Deadline in e-mails 1, 2, and 3	21.3	26.7	24.0	15.6	21.9	18.7	540	531	1,071
All	20.7	26.8		14.4	20.3		2,145	2,148	4,293
Test statistic	$\chi^2(7) = 37.58, p < .001$			$\chi^2(7) = 33.84, p < .001$					
General deadline condition:									
No deadline	20.5	21.3	20.9	13.7	17.5	15.7	533	559	1,092
Deadline in at least one e-mail	20.7	28.8	24.7	14.6	21.3	17.9	1,612	1,589	3,201
All	20.7	26.8	23.7	14.4	20.3	17.5	2,145	2,148	4,293
Test statistic	$\chi^2(3) = 31.20, p < .001$			$\chi^2(3) = 35.29, p < .001$					

NOTE.—E-mails in Experiment 2 had a personal source e-mail address, used the participant's name in the salutation, were from the low-authority office, and the title of signatory was high.

Discussion

Using a web survey sent to over 12,000 high school students, we investigated the impact of altering the e-mail contact to understand the effects of personalization, sponsorship, and scarcity on web survey response. In contrast to research on paper surveys, personalization of the e-mail contact, whether through personalized greetings or a personal e-mail address, appears to have little impact on response rates. Authority of the survey sponsor also appears to have minimal impact, although in this case the null finding could be due to the fact that both survey sponsors were from a university.

In a separate experiment, statements of scarcity did have a positive impact on response rates. Inclusion of a statement telling the respondent that they had been selected as part of a small group to participate, together with the inclusion of a deadline when the survey website would be shut down, raised response rates almost 8 percentage points. While not overwhelming, such an increase is noteworthy given that it was the result of only slight changes to the text of the e-mail message.

It is interesting that there was a substantial drop-off between the click-through rates and the response rates. A substantial proportion of respondents clicked on the hyperlink to the survey and viewed the first page but did not fill out and submit the survey. In part, this could be due to the appearance of the survey. Researchers have shown, for example, that web survey appearance can cause a statistically significant impact on response rates (Dillman et al. 1998). Another possible cause is the low salience of the survey. Because these students were nonapplicants to the institution, they had little reason to respond. Once respondents clicked through and could read the survey, many may have simply lost interest in participating.

A limitation of the study is the sample used in the analyses. High school students who consider applying to an elite college are more likely to be technologically savvy than members of the general population. They are also more likely to use e-mail and to use it more often as compared with the general population. As such, they probably receive a greater amount of unsolicited e-mail and thus may be more sensitive to, and skeptical of, unsolicited e-mail. Further research in this area is needed to understand how aspects of the e-mail contact affect response rates among various populations.

It is also important to emphasize that the study used a true electronic survey, with all contacts with respondents via e-mail. Many studies use a mixed mode, where a web survey is combined with mail and telephone efforts aimed at nonrespondents. The personalization techniques tested here may have an effect in such studies given the different modes.

Why does personalization of the contact appear to have little effect on the probability of survey response? The answer, we believe, lies in the nature of e-mails and today's Internet. Spam has become a ubiquitous feature of the

web, and many people are used to receiving countless unwanted e-mails from marketers.

More important, alterations to e-mails are easily made, and spammers take advantage of this. Spammers can easily alter the e-mail address of origin or the signature of the sender, as well as use bulk e-mail merging to personalize salutations. Recipients are quite used to receiving such spam e-mails and thus discount such alterations. Simply put, because these features are so easy to change, any such feature is no longer credible with e-mail users. But it is still difficult to change the credibility of the message itself. Messages of scarcity may be more believable, especially when coming from an institution of higher education, and they may be more effective in raising response rates.

As spam continues to increase, annoyance with unsolicited e-mails will increase. Survey researchers using the Internet will continually have to refine their techniques in order to achieve a good response rate. It will become increasingly important for survey researchers to distinguish themselves from spammers and to do so in creative ways. For example, one experiment in a postal survey found that inclusion of a statement that reminders will be sent to nonrespondents increased the response rates by 10 percentage points (Green 1996). Such statements might prove even more effective in web surveys as e-mail users grow increasingly frustrated with unwanted e-mails. More research is needed into the effect of contact type on web survey response rates, and such research must be continually updated as use of the Internet changes.

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