

## RESPONDERS VS. NON-RESPONDERS TO A MAIL SURVEY: ARE THEY DIFFERENT?

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**Abstract:** One of the major methods of data collection used in both formative and outcome evaluations and descriptive studies is the survey method. With survey methods, the issues of generalizability and representativeness of the data are crucial, particularly when response rates are low. A common survey method is the use of mailed questionnaires. However, even when care is taken to select potential respondents randomly, the validity of the responses depends on the willingness of all sectors of the population to respond. In most instances, no effort is made to follow up individuals who do not respond, to ensure that they do not differ on substantive issues from individuals who have responded. The authors describe the process of following up university students who chose not to respond to a mail survey of their life-styles and drug-use patterns, and a comparison of this group with a group of students who did respond to the initial request.

**Résumé:** Le sondage est l'une des méthodes principales de prélèvement de données utilisée dans les évaluations formatives et résultantes ainsi que dans les études descriptives. Dans le sondage, les caractéristiques généralisatrices et représentatives des données sont capitales. L'envoi par la poste de questionnaires est une méthode de sondage fréquente. Cependant, même lorsque l'on s'applique à choisir au hasard des répondants potentiels, la validité des réponses dépend de la bonne volonté à répondre de tous les secteurs de la population. Dans la plupart des cas, il n'y a pas de suivi auprès des personnes qui n'ont pas répondu pour s'assurer que leurs opinions sur les questions importantes ne diffèrent pas de celles des répondants. Les auteurs décrivent le processus du suivi d'étudiants universitaires qui ont choisi de ne pas répondre à un sondage reçu par la poste et portant sur leur style de vie et leur comportement vis-à-vis des drogues. Ils décrivent aussi une comparaison entre ce groupe et un groupe d'étudiants qui a répondu au premier sondage.

Surveys, by their very nature, are designed to allow researchers to make inferences about a population by measuring a representative sample of this population. Typically, the sample is assumed to be representative of the population because some form of random selection was used. This can take the form of either complete random sampling or, when possible and appropriate, stratified random sampling. In the case of mail surveys, random sampling may ensure that the initial sample selected is representative of the population, but it does not ensure that the final sample, composed of individuals who returned the survey, is representative of the initial sample, much less the entire population of interest.

Of the three traditional methods used to collect data with randomly selected samples—personal interview, telephone interview, and mail survey—it is generally conceded that the mail survey, although the least expensive technique, has the lowest return rate. Goyder (1985), in a review of methodology textbooks, found the expected mailed questionnaire response rate to range from 30% to 70%, with an average or acceptable rate of around 50%. Estimated response rates on personal interviews ranged from 70% to 95%, with rates in the 80% range common in the 1980s. However, Hochstim (1967) found that the three strategies were comparable in terms of response rate but differed widely in costs. Pederson, Baskerville, Ashley, and Lefcoe (1985) compared mail questionnaires and telephone interviews when collecting data on attitudes toward restriction of cigarette smoking, and found response rates were similar and costs favored telephone interviews. However, the sample was fairly small and lived locally. The authors concluded that decisions about which data-collection technique to use should consider the specific issues of interest and the target population. This conclusion appears to be based on the assumption that certain issues and certain populations may lend themselves to one type of method as opposed to another. For example, in the overall study from which the data for this article are drawn, the sample size and location of the target population precluded the use of any technique but the mail survey.

In order to increase response rates, researchers have utilized call-back procedures, mail reminders, and even telephone reminders in an attempt to have outstanding surveys returned. However, even these procedures do not result in 100% return rates, and leave open the question of how truly representative those who choose to respond to a survey are of the entire population of interest. In other words, are people who respond to a survey different, on the variables of interest, from those who choose not to respond?

Before we can attach much credibility to survey results, and before we can recommend programs and policies on the basis of these outcomes, we must be reasonably sure that the findings are representative of the entire population and not just of the sample of individuals who have chosen to respond to the request. For example, a mail survey of physicians' smoking habits done in 1968 (Burgess & Tierney, 1970) yielded an initial response rate of 70.7%. Although this is a relatively large return rate, it was found not to be representative of the entire population. Follow-up surveys of nonrespondents found that 77% of smokers responded to the survey compared to 90% of the nonsmokers. The authors surmised that the rate of quitting smoking among physicians since the early 1950s had been higher than existing data would suggest because the response rates to similar surveys had been rising over the years.

Our purpose in this article is to address the issue of potential responder/nonresponder differences and in this way to address the validity of mail surveys as a data-collection technique. In this instance, the samples consisted of university students who were sent a mail survey that asked them to report specifically on their use of alcohol and other drugs and generally on their life-styles. Students who responded without any reminders within one month of the survey being mailed constituted one sample. The second sample was made up of those students who did not respond initially, but were convinced to do so after a telephone call by a member of the research team. The message stressed the importance of the survey generally and their responses specifically. This telephone call took place about two months after the initial survey was sent out.

## METHOD

In order to assess the patterns of drug use and the prevalence and frequency of other life-style behaviors among Ontario's university students, 13,200 students representing four universities were sent copies of a self-report survey instrument and were asked to complete and return them anonymously. The locations and sizes of the universities ensured diversity in terms of the types of students represented in the sample, and across the geographic regions of the province. In selecting the individual respondents, a stratified random sampling technique was used to increase the likelihood of representativeness. Thus, appropriate proportions of students were selected randomly within each year of school at each university. Of the 13,200 questionnaires sent out, 186 were returned as undeliverable. A total of 4,911 usable surveys were returned within the first month, representing a return rate of 37.7%. It should be noted that students were not given any incentives to complete the

survey, and were asked to return the completed survey by inter-university transit, a system that does not incur postage charges but is not as accessible as the public postal system.

In an attempt to determine the representativeness of the responding students (i.e., are they indeed the same as those who did not respond), students at two of the universities had, as part of their questionnaire packages, a coded card that they were asked to return under separate cover, also through the interuniversity transit system. The number on this card corresponded to the assigned number for each student. In this way responders were tracked without their individual questionnaires being identifiable. Lists of nonresponders in both universities were kept, and 50 students from each list were randomly selected for follow-up. Students from these lists were contacted by telephone, asked whether they recalled receiving the original survey, and asked whether they would fill out a new survey that we would send to them. If a telephone number for a student was incorrect, this student was replaced on the random list by another nonresponder. Calls were made until 50 students in each university agreed to fill out a new questionnaire. Very few students whom we contacted (approximately 5%) refused to accommodate our request that they complete a new survey. It is important to note that nearly all students contacted (approximately 80–85%) remembered receiving the original package, and indicated that they had not returned it for a variety of reasons—they had lost it, forgotten about it, hadn't gotten around to it, and so on.

In order to determine whether responders were quantitatively different from nonresponders, comparisons were made between nonresponders (i.e., those who returned completed surveys after the telephone follow-up and sending out of the second survey instrument) and a randomly selected sample of responders (i.e., those students who returned completed surveys without a telephone follow-up).

Of the 100 students contacted by telephone who agreed to complete the survey, 74 students actually did so. Comparisons were made between these students and a randomly selected sample of 74 students drawn from the total sample of returned surveys (i.e., 37 students from each of the two universities participating in this phase of the study).<sup>1</sup> These responders were selected using the `SAMPLE` command in `SPSSX` (1986), Version 2.0. Comparisons were based on independent *t*-tests for the interval and ratio data and chi-square analyses for the nominal and ordinal data. All computations were done using the above version of `SPSSX`.

## RESULTS

The results will be discussed in general terms for the three major categories described in the survey instrument: *personal information*, *lifestyle information* and *drug-use patterns*.

### Personal Information

This section included 13 variables documenting gender, age, racial and religious background, year of university and grade average, marital status, place of residence, and major field of study. There were no significant differences between responders and nonresponders on any of these variables.

### Life-style Information

This section was comprised of two parts. In the first part students reported the frequency with which they had engaged in eight potentially addictive behaviors in the past year: shopping sprees, sexual activity, gambling, beginning a new love relationship, dieting, overeating, engaging in bulimic behaviors, and using alcohol to reduce stress. These behaviors have been found to be present in individuals who manifest problems of excess. Again, there were no significant differences between the two groups on this series of measures.

In the second part of this section, students reported on the frequency and recency of experiencing 20 possible consequences of problem behaviors associated with inappropriate alcohol use (derived from Engs, 1977).<sup>2</sup> Each consequence was analyzed separately; of the 20 chi-square comparisons, five significant differences between responders and nonresponders were found.

Nonresponders reported experiencing hangovers more often and more recently than responders ( $\chi^2 = 12.35, df = 4, p < .05$ ). However, responders reported they had become nauseated and had vomited from drinking more often and more recently than nonresponders ( $\chi^2 = 11.95, df = 4, p < .05$ ). Individuals in the nonresponder sample felt they might have had a greater problem with their drinking in the past year and in their lifetime compared to individuals in the responder sample ( $\chi^2 = 12.49, df = 4, p < .05$ ). In addition, damaging property or engaging in other similar behavior after drinking occurred with less frequency overall in the responder sample than in the nonresponder sample ( $\chi^2 = 10.08, df = 4, p < .05$ ).

## Drug-Use Patterns

In this section students reported their usual quantity and frequency of consumption of beer, wine, and spirits. From these data a quantity/frequency measure for weekly total alcohol consumption was computed. Students also reported their patterns of use for tobacco, cannabis, barbiturates, heroin, methamphetamines, cocaine, stimulants, "look-alike" drugs, tranquilizers, LSD, hallucinogens, and anabolic steroids. No significant differences in alcohol or drug use were found between the responders and nonresponders. That is, on all 20 variables that assessed either frequency or quantity of use, nonresponders and responders reported similar amounts and frequencies of use.

## CONCLUSION

Although some differences between the two samples were found, they were relatively few given the number of comparisons made. In addition, the 5 differences found did not exhibit a consistent pattern in that responders experienced more problems in two of the areas. This suggests that, rather than being the result of systematic differences between responders and nonresponders, these differences were probably artificial. Although it is possible that the 26 students who did not respond to the telephone solicitation, after agreeing to do so, are different from everyone else, we believe that the primary difference is in their willingness to complete questionnaires and not in any substantive domains. Thus, the results of the present study suggest that university students who respond to a mail survey are not different from those students who choose not to respond. On a topic as sensitive as alcohol and drug use and their consequences, students appeared to be willing to report their behaviors accurately. Mail surveys would thus seem to be a reasonable vehicle for the collection of information, and one should not be overly concerned with the relatively low response rate of under 50% that one typically finds with mail surveys. To the extent that the initial sample chosen is representative of the entire population of interest, the responses that one receives through a mail solicitation are likely to be representative as well.

## NOTES

1. To be certain that there were no gender differences between responders and nonresponders, the data were also analyzed comparing male responders with male nonresponders and female responders with female nonresponders. Only one significant difference was found. Females in the responder group reported consuming more spirits per occasion ( $x=3.73$  drinks) than did females in the non-responder group ( $x=2.86$  drinks,  $t=2.00$ ,  $p<.05$ ).
2. The 5 response categories used in this section were: *at least once during the past two months, and at least one additional time during the past year; at least once in the past two months, but not during the rest of the year; not during the past two months, but at least once during the past year; has happened at least once in my life, but not during the past year; has not happened to me.*

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