

More About Handling/Reporting Results from Low Survey Response Rates (July 7, 2005)

Note: The following thread follows up, in an indirect way, a prior thread on low-response rate surveys that occurred between Xiaobing Cao and Willard Hom. Interested readers may want to browse those earlier comments that are also on this OCAIR website.

Bai Kang:

We recently did an alumni survey, sending the questionnaires to almost 8,000 alumni who graduated in the past 5 years (not a very wise thing to do to survey so many instead of doing a sampling). Until now, we have received around 450 responses, giving us only about a 6% response rate. Considering the 6% response rate, it is really very low and not acceptable, but when I look at the number of responses, 450 is not a bad number. But I guess we could at most get around 500 responses for this survey, for we have already done a second mailing as a follow-up. How I should report the responses, the response rate, as well as the number of responses? Do the 5% responses make any sense, considering such a low response rate? What would the number of responses (450-500) tell us about our students? Is it possible to generalize the results to all the alumni? Thank you very much, in advance, for your help.

Willard Hom:

To satisfy the ethic of full disclosure among researchers (administrators may disagree, you know), your standard reporting of survey results should include the following:

1. Definition of the sampling frame, survey administration mode, and sampling design (or the universe, if it was a census).
2. The response rate and the effective number of non-missing cases in the statistical results (like the item averages).
3. Any test(s) for nonresponse bias. (This is standard for research submitted to academic journals but more or less an option among studies reported only to internal administrative audiences.)
4. Possible explanations (or interpretations) for the low response rate and the risks of estimates based on the partial data. (Possible explanations require the researcher's knowledge of the study population, the survey process, and the survey environment, rather than expertise in statistical methods. Risks of estimates from partial data require the researcher's knowledge about statistical methods. In any case, it is important to address both issues in order to place what you have in the

proper context for decision-making.)

5. Response rates of comparable alumni surveys. (This item does not make your 6% response rate any more valid than before. However, the researcher should let report readers know that without a major effort, the standard alumni survey gets a low response rate. The researcher needs more resources to do a better job. If you don't inform readers of this point, some of them may mistakenly assume that the researcher was a bit sloppy or incompetent in running the survey.)
6. Suggestions on how the survey could be improved. (This is entirely optional. I mention it because this is how you can obtain more support for the next alumni survey, if you want to do one, and to indicate that you have thought about the project in a serious manner. At least the researcher will be prepared to answer a common question that pops up when administrators ask for higher response rates.)
7. Confidence intervals for item "means" or "proportions." (If the survey used a random sample, this is a recommended reporting item. If the survey did not use a random sample, or a probability sample, then don't report a confidence interval.)
8. A copy of the survey instrument itself or at least the wording of the survey items. (This is again optional for most reports, even technical ones. However, technical audiences tend to ask about the survey instrument or the question wording, and the researcher who includes the survey items in a report appendix will save himself/herself the labor of providing each requestor a separate copy. Inclusion of the survey will also make a technical report a better "stand-alone" document, an important issue for ease of use and for potential study replication.)

Many researchers include the above information in a technical report or working paper (meant for technical readers and for documentation of project quality and procedures). In reports designed for non-technical audiences, #2, #4, and #5 would be useful in the report body, and the other points could appear in footnotes or in a technical appendix. Executive summaries might only include #2 to maintain brevity. I generally recommend that researchers produce multiple reports to fit the needs of the different audiences.

Without knowing much about the nature of your nonresponse, people cannot infer much about the entire population from the 450 respondents. Realistically, the 450 respondents you got could be considered the "deviant" cases in the universe (which is a different way of interpreting the data, right?). The situation would be much different if you had a 60 or 70 percent response rate. The 30 or 40 percent who did not respond could be more easily labeled as the deviant cases and the respondents as the "norm" if you will. The best thing to try and do, regarding the interpretation of the 450 respondents, is to test for various types of selection bias (and thus nonresponse bias). If you can show that the small group of respondents closely resembles the large group of nonrespondents, at least on the measured traits in your dataset, then you have some basis (but not a conclusive one) for generalizing your results to the larger group.

Bai Kang:

I have a question about your #7, the confidence interval. Does confidence interval have something to do with the sampling error? Only with a random sample shall we report the confidence interval or sampling error?

Willard Hom:

Correct. Sampling theory allows one to estimate, only for random samples, a confidence interval (and there is more than type of CI, to be specific). Nonrandom samples (convenience samples) lack a theory by which a measure of reliability (which samplers call sampling error in survey work) can be calculated. Decades ago, a debate occurred over the value of quota samples that were not random (or probabilistic). A big criticism of quota sampling was that there was no legitimate measure for "quota sampling error"---an ironic but material drawback of nonrandom samples. So under strict statistical theory, people do not report CI's with data from nonrandom samples. Of course, researchers in political science and in economics have often reported confidence intervals for census results (in contrast to sample results) because of the specific interpretations they make and because of past practice.

Yingxia Cao, Doctoral Student Educational Administration & Policy Studies, SUNY at Albany:

I like your discussion and presentation very much. While preparing my dissertation on surveying Alumni's employment outcomes, I found the following two articles to be particularly helpful. The second one was recommended by Meihua [Zhai] in one listserv discussion. The citations and abstracts are as follows (probably you have read them many times, but I copy and paste them here just in case).

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1. Dey, E. L. (1997). "Working with Low Survey Response Rates: The Efficacy of Weighting Adjustments." Research in Higher Education **38**(2): 215 - 227.

National data show a continuing decline in the willingness of people to respond to surveys. This trend is troubling given the central role that survey research plays in collecting data for institutional research purposes. This paper examines the effectiveness of a weighting procedure described by Astin and Molm for adjusting survey results to correct for nonresponse bias. Using data from a Cooperative Institutional Research Program (CIRP) follow-up survey, the results

indicate that the weighting procedure is highly effective at reducing nonresponse bias in univariate distributions. The effectiveness of the weighting procedure in adjusting correlation and regression analyses is less clear. This may be due in part to the observation that even when individual variables are noticeably biased, their relationships with each other tend not to be.

2. Porter, S. (2004). "Raising Response Rates: What Works?" New Directions for Institutional Research (121): 5.

This chapter discusses the theoretical literature on why people choose to respond to a survey and reviews the latest empirical research on how survey administration and the characteristics of a survey affect response rates.