A Primer on Survey Response Rate

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Introduction

The issue of survey response rate has begun to receive renewed attention from the academy for at least three major reasons. First, only within the last ten to fifteen years have survey experts begun to adopt standardized definitions of 'response rate' (cf. American Association for Public Opinion Research, 2000 and Lynn, Beerten, Laiho & Martin, 2001). Second, scholarly journals are beginning to enforce policies that preclude survey-based research studies from being considered for publication if they do not report response rates using standardized definitions, do not report a response rate acceptable to journal editors, or both. Finally, as survey research begins to rely less heavily on traditional paper-based instruments and begins to use Web-based instruments with greater frequency, researchers are working to adopt survey administration techniques that maximize the size of Web survey response rates (cf. Perkins, 2011) because Web-based surveys tend to have lower response rates than comparable paper-based surveys (Kaplowitz, Hadlock & Levine, 2004 and Fraze, et. al., 2003).

In this white paper, I address the following basic questions:

1. What is a response rate?
2. Why does response rate matter?
3. What is an 'acceptable' or 'desirable' response rate?

This paper is intended for a general audience of social science researchers with a basic background in survey research methods. For detailed guidance on survey research, I recommend the following introductory texts:

- Don A. Dillman, *Mail and Internet Surveys: The Tailored Design Method*
- Floyd J. Fowler, *Survey Research Methods*

See the References section, below, for complete bibliographic information on these texts. Also, note that the strategy one follows in recruiting and soliciting a survey sample is at least as important as the response rate of that sample. Consult the references cited above for more information on survey sampling.

What is a response rate?

At its simplest, the concept of response rate refers to the percentage of individuals who responded to a survey that was administered to them. If 100 people were asked to complete a survey and 60 did so, the basic response rate would be 60%.

The literature on survey research, however, indicates that more variables can be involved in calculating response rates than simply the number of responses divided by the number of individuals approached with the survey. How, for example, should researchers account for respondents who only partially completed a survey? If a survey was administered by snail mail, how should the researcher handle surveys returned by the postal service because the addressee was no longer at that address? If a survey was administered in person by a researcher going door-to-door in a residential area, should cases where no one answered the door be treated differently from cases where a person answered the door but declined to participate in the survey? What if the person answering the door was willing to respond to the survey but he or she did not meet the criteria to be included in the survey sample? These and other examples in the literature illustrate the practical complexities that can underlie the seemingly simple calculation of response rate.

It was only in the late 1990's that a number of professional organizations and research groups began to develop and disseminate standardized guidelines for defining and calculating response rates (Lynn, Beerten, Laiho, & Martin, 2001). In the United States, the American Association for Public Opinion Research (AAPOR) has developed a series of guidelines that appear to have become generally accepted among many survey research experts in the U.S. Now in its seventh edition, the AAPOR's publication *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys* (the American Association for Public Opinion Research, 2011) has been cited as a standard for the conduct and reporting of survey research by social science journal editors (Johnson & Owens, 2003) and by the U.S. Office of Management and Budget (OMB), which provides survey research guidelines to U.S. federal agencies (U.S. Office of Management and Budget, 2006).

Consult the AAPOR's *Standard Definitions* for detailed information regarding calculation of response rates. I will note here that among the variables the AAPOR calls upon survey researchers to consider when calculating and reporting response rates are:

1. How many surveys were fully completed versus how many were only partially completed? (This applies in cases where a study design calls for all items to be completed by all respondents.)
2. How many surveys were not completed because the respondent could not be contacted?
3. How many respondents refused to participate in the survey research?
4. How many respondents agreed to participate but were ineligible? (E.g., a survey of current teachers in school district might discover that a survey inadvertently was completed by a para-educator or some other individual not in the target sample frame.)

For the purposes of this white paper, all references to 'response rate' will refer to the simple calculation of number of responses divided by number of individuals approached to take the survey. This is because the empirical studies I cite commonly use this simple definition for response rate, in some cases because they predate the AAPOR standards and in other cases because the researchers simply did not consider any approach to calculating response rate beyond the basic one .

In summary – at its simplest level, response rate refers to the number of survey responses divided by number of individuals to whom the survey was administered, but other variables can come into play that make the calculation of response rate more complex.

Why does response rate matter?

Regarding mail surveys with response rates less than 20%, Fowler (2002) argued that a sampling strategy that might produce a representative sample if the response rate was relatively high could instead produce an unrepresentative sample if the response rate was low. Fowler stated:

> In such instances, the final sample has little relationship to the original sampling process; those responding are essentially self-selected. It is very unlikely that such procedures will provide any credible statistics about the

> characteristics of the population [being surveyed] as a whole (pp. 41-42).

A survey sample that is unrepresentative of the population being surveyed can introduce bias into the resulting survey data. A National Science Foundation (2011) publication described how bias resulting from a low response rate could affect the quality of data gathered by a survey:

> Response rates are often used as a measure of the quality of survey data because non-response is often not random. For example, the U.S. Census Bureau finds that single-person households have a much higher "not at home" rate—and therefore a lower response rate—than multi-person households. This type of nonrandom non-response could skew sample data and lead to under-representation of certain groups unless efforts are made to include these respondents. Therefore, researchers take declines in response rates seriously because in general, the higher the response rates, the more reliable the results (p. 7).

Concerns about survey data biased by low response rates are expressed frequently in the literature on survey research. Mariolis' (2001) discussion of this topic is representative: "Higher response rates… do indicate less of a potential for bias from non-response… Other things equal, higher response rates are better than lower response rates" (p. 8). Mariolis goes on to caution, however, that:

> "Other things" are rarely equal [and] any single indicator of data accuracy is only one of many different imperfect indicators… There are many different specific causes of non-sampling, including nonresponse, error in surveys.

Further, a new line of research into survey nonresponse has begun to provide empirical evidence that survey nonresponse *when random* appears not to have a major impact on bias (cf. Curtin, Presser & Singer, 2000 and Keeter, et. al., 2000). For example, in a widely-cited meta-analysis published in 2006, Groves acknowledged that "current rules of thumb of good survey practice dictate striving for a high response rate as an indicator of the quality of all survey estimates" (p. 670). His meta-analysis found, however, that:

> Assembly of [survey-related] methodological studies whose designs permit estimation of nonresponse bias shows that empirically there is no simple relationship between nonresponse rates and nonresponse biases. That is, research results comport with the assertion that covariances between survey variables and response propensities are highly variable across items within a survey, survey conditions, and populations. Hence, there is little empirical support for the notion that low response rate surveys de facto produce estimates with high nonresponse bias (p. 670).

In summary – the contemporary literature on survey research generally views higher response rates as useful for reducing the possibility of nonresponse bias, but some new research suggests that the influence of low response rates on bias may be less straightforward than has been the assumption among researchers.

What is an 'acceptable' or 'desirable' response rate?

Fowler (2002, p. 42) stated that "There is no agreed-upon standard for a minimum acceptable response rate." For example, the American Educational Research Association (AERA), a major scholarly association and journal publisher focusing on education research, has published extensive guidelines for the reporting of education-related social science research (American Educational Research Association, 2006). Yet, as detailed as these guidelines are, they do not mention a minimum or nominally acceptable response rate for survey research. In a study of major survey research-related professional associations from around the world, Lynn, Beerten, Laiho & Martin (2001, p. 2) found that three of 14 associations had guidelines on calculating and reporting response rates.

When Johnson & Owens (2003) surveyed the editors of 18 prominent social science journals, they found that, of the ten editors who participated in Johnson & Owens' study, three editors' journals had published policies regarding the reporting of survey response rates. (Of those three, two had adopted the AAPOR standards). None of the editors reported requiring that studies have a minimum response

rate in order to be considered for publication. When Johnson & Owens solicited further information, however, they learned the following:

> [One editor] did report that despite the absence of a formal policy, [his/her] journal did expect "at least a 60% response rate with rare exceptions." Several editors noted that they make such judgments on a case-by-case basis. For example, in noting that there is no minimum threshold in place, one editor indicated that "reviewers will note response rate as one of the evaluative criteria and it will contribute to a decision on publication." The editor of another journal agreed, adding that "in most instances, 20% is too low, and 80% is a de facto standard, but there is a considerable gray area. Part of the decision rests on how well the investigators characterize the non-responders (pp. 129-130)……

If scholarly associations do not, at least as of yet, suggest a minimum response rate, and if journal editors do not publish minimum response rate standards for their own journals, researchers are left without a clear universal standard to follow. Because of this, it is helpful to consult the extant research into response rates.

Fowler (2002) stated that "The Office of Management and Budget of the [U.S.] federal government, which reviews surveys done under contract to the government, generally asks that procedures be likely to yield a response rate in excess of 75%" (p. 42). For context, consider that the last two U.S. Census surveys, which employed thousands of staff and had budgets in the billions of U.S. dollars, had achieved response rates of 74% for 2010 and 67% for 2000 (see Table 1).

Table 1: Response Rates for a Selection of Survey Studies

Survey Sample or Purpose	Mode of Survey	Response Rate[1]	Reference
U. S. Office of Management & Budget standards for surveys by government contractors	N/a[2]	75%	Fowler, 2002
U. S. 2010 Census	Mail	74%	U. S. Census Bureau (n.d.)
U. S. 2000 Census	Mail	67%	U. S. Census Bureau (2011)
Agri-science teachers	Web	43%[3]	Fraze, et. al., 2003
Set of Supersurvey.com surveys	Web	33%	Hamilton, 1999
Undergraduate college students	Web	21%[3]	Kaplowitz, Hadlock & Levine, 2004

Notes:

1. Recall that 'response rate' can be calculated differently by different researchers. The response rate listed here is the 'final' or 'average' response rate as reported by the source.
2. Fowler does not specify the survey mode(s) considered acceptable by the U. S. OMB.
3. This study administered both mail and Internet surveys. The response rate listed here is for Internet surveys completed by respondents contacted exclusively via email.

The remaining three sources listed on Table 1 focus specifically on Web-based surveys. These studies are not meant to be representative of survey research in general, nor do I contend that they are comparable to one another. (For instance, the sample sizes among the three surveys range from nearly 17,000 college students in the case of Kaplowitz, Hadlock & Levine to 119 surveys – not respondents – in the case of the Hamilton study.) Rather, I cite these three studies because they explicitly reported response rates and used Web-based survey instruments – a mode of survey administration that is being used with increasing frequency by researchers (Dillman, 2002).

All three of these Web survey studies had response rates lower than the mail survey research conducted by the U.S. Census. As I have stated, I do not mean for the studies listed in Table 1 to be compared to one another, but the lower response rates among the Web survey studies illustrate a finding that appears to recur regularly in the literature on survey research – Web-based surveys tend to have lower average response rates than surveys administered via other modes, such as in person or by telephone (cf. Dillman, 2000). Experimental studies where researchers administered the exact same survey via different modes have likewise found that non-Web surveys tend to have higher response rates (Kaplowitz, Hadlock & Levine, 2004 and Fraze, et. al., 2003).

In a 2007 research report, The University of Texas at Austin Center for Teaching and Learning, citing references in the fields of psychology, sociology, and communication, developed a table listing response rates reported for different survey studies according to the mode of the survey. That table is partially reproduced here as Table 2:

Table 2: Response rate by survey mode

Suvey Mode	**Response Rate**
In person	80-85% good
Phone	80% good
Mail	50% adequate, 60% good, 70% very good
Email	40% average, 50% good, 60% very good
Online	30% average

Although this University of Texas report was not an exhaustive analysis of response rate, it is noteworthy that other research – such as Hamilton (1999) – has found that Web-based ('online') surveys average a response rate in the range of 30%.

In summary – neither the literature on survey research nor major research associations nor scholarly journals have produced a universally agreed-upon figure to describe an ideal or even a minimally acceptable survey response rate. Extant research, however, indicates that U.S. government surveys are expected to have a response rate of at least 75%, which appears to be comparable to very good

response rates for paper-based surveys administered via snail mail. Web-based surveys appear to average response rates well below 75%.

Conclusion

A National Science Foundation (NSF) special report stated:

> The future of surveys as a reliable means to measure trends is in doubt. The response rates for surveys have been declining... People today seem more likely to say no to a survey taker due to the sheer quantity of requests for their attention, the possibility that a survey may be a sales pitch in disguise, disinterest in the topic or an unwillingness to give honest and thoughtful answers. Telephone sales pitches and phony or biased surveys have also taken a toll on people's willingness to participate in legitimate, scientific surveys (National Science Foundation, 2011, p. 7).

Despite the challenges faced by survey researchers, however, an adequate response rate is important in that it can help reduce the possibility of a biased sample. Further, scholarly publications and/or funding agencies may also factor response rates into their evaluations of scholarly articles or grant proposals. Thus, it is imperative that researchers conducting survey research understand the response rates for which they should aim not only because larger response rates can strengthen their research but also because reviewers, journal editors, and funders may include response rate as a criterion when they evaluate one's scholarly work.

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