

# How reducing Nonresponse Rates shape survey outcomes\*

Findings from a National Telephone Survey

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## 1 Introduction

Contemporary opinion polls face widespread skepticism regarding their representativeness, with concerns ranging from declining response rates to potential biases related to socio-political factors. Scholars and practitioners express dismay over these issues, while liberals fear the underrepresentation of the marginalized. Moreover, conservatives are suggested to be more reluctant in responding to polls, particularly those perceived as biased. From a methodological standpoint, the pressure for timely results makes achieving high response rates difficult, and is also responsible for the nonrandom selection methods from households, for example choosing respondents from amongst those at home when the interviewer calls. Despite expectations that low response rates and nonrandom methods may result in unrepresentative respondent pools, scientific evidence on these issues remains limited. Nonresponse error, known to be a function of both response rates and differences between respondents and nonrespondents, underscores the need for a nuanced understanding of the potential biases introduced in these time-constrained polling scenarios.

To discuss this phenomena in conjunction with the the non-response rate aspect of the editorial “Special Virtual Issue on Nonresponse Rates and Nonresponse Adjustments” (Academic, n.d.) with the “Consequences of reducing Nonresponse in a National Telephone Survey” (Keeter et al. 2000), the statistical programming language R (R Core Team 2023) with libraries `tidyverse` and `ggplot2` (Wickham 2016) have been utilised.

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\*Code and data are available at: <https://github.com/SEHB2012/Nonresponsebias>

## 2 The National Telephone Survey

To assess the impact of low response rates and nonrandom within-household selection methods, Keeter et Al. undertook an experiment in which identical questionnaires were administered by the same survey firm in two different studies: one using “Rigorous” procedures; the other “Standard” procedures.

The Standard survey was conducted over 5 days with 1000 interviews, every number being called a minimum of 5 times, with one follow up call. The response rate at the end was recorded to be 36%.

The Rigorous Study began at the same time but took 8 days, employing a more exhaustive effort to locate and interview individuals difficult to reach in a short time frame, and those reluctant to participate. Households were sent an advance letter with a \$2 bill, and the response rate was 60.6%.

The questionnaire included a wide range of topics often found on opinion polls of the U.S. public. A special effort was made to include items on which we might expect to find differences between amenable and reluctant respondents and between the easy to reach and those who are more difficult to contact (Demaio 1980),(Goyder 1987).

These topics included:

- 34 Political and social opinion items
- 5 Electoral behavior measures
- 8 Media use items
- 3 Knowledge items
- 11 Social integration measures (seven objective and four subjective);
- 4 Crime-related items
- 4 Items about polling
- 23 Demographic characteristics
- 4 Interviewer ratings of the respondent.

## 3 Results of the Survey

The results of the survey showed that there was no significant difference amongst the results of the Standard and Rigorous Surveys. Out of the 91 questions asked, only 14 were significantly different, with a p value o less than 0.05 between the two. The following graph reflects the absolute value in differences in percentage points between the two surveys. As is reflected, they differ on average by 3.01 points(weighted mean), which is quite small.

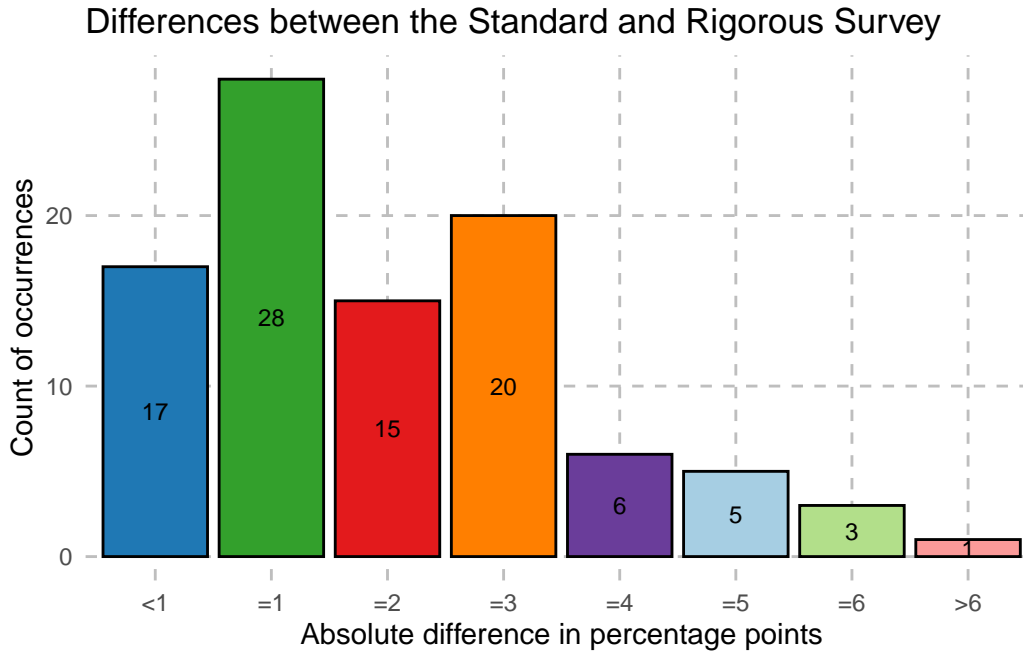


Figure 1: Differences in percentage points between Standard and Rigorous Surveys

## 4 Additional Insights

One aspect the paper discusses after the results are prevailing beliefs about citizens uninterested in politics and current events, who may choose to decline to participate (Brehm 1993). Following this reasoning, one might expect that a survey targeting more hesitant respondents would offer a more accurate portrayal of public opinion, potentially reflecting lower overall voter participation, news engagement, and political knowledge. However, the Rigorous and Standard 5-day studies generally exhibited no substantial differences across these dimensions. Both surveys showed similar percentages regarding activities such as reading newspapers, listening to radio and TV news, knowledge of specific political events, and participation in the 1996 elections. Notably, even the Rigorous survey, which had slightly more computer and Internet users, showed differences that narrowly missed statistical significance.

Secondly, willingness to participate in surveys is plausibly related to social integration. On the one hand, people low on social integration tend to be less trusting of others, which might discourage participation in surveys. On the other hand, people high on social integration may engage in many more activities and thus either have less time to participate in surveys or spend less time at home and thus be harder to contact. Based on a comparison of the Standard 5-day and Rigorous surveys, neither theory—at least as stated in these forms—receives much support.

## 5 Conclusion

In conclusion, the insights gleaned from this paper on survey participation and its various dimensions contribute valuable perspectives to the broader discourse on nonresponse rates discussed in the editorial “Special Virtual Issue on Nonresponse Rates and Nonresponse Adjustments” (Academic, n.d.). The National Telephone Survey paper could be instrumental in stimulating research on which conditions and for which metrics do variations in nonresponse rates indicate divergent nonresponse errors.

## References

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