

Investigating the Trend in Survey Nonresponse Rate Across Different Survey Modes*

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February 6, 2024

The primary motivation of sampling is to acquire precise and ideally timely estimates of key survey outcomes while balancing the cost of time and the input of resources. Sampling a limited number of units rather than conducting a full census in achieving this goal is not only efficient but practical. Surveys are usually planned out with significant considerations to gain control over and aim to minimize potential measurement and sampling errors, for instance, through pretested questionnaires or probability sample design. However, the execution phase of conducting a survey often will face more complexities. One common challenge in surveys is missing data from sampled units. This is referred to as unit nonresponse when a sampled unit does not contribute any data, or as item nonresponse when there is no response to some survey questions. Nonresponse when happening at complete random unrelated to the key survey variable is less worrying to researchers and can be more straightforwardly addressed. However, this is seldom the case. To address the issue of nonresponse, statisticians seek to adjust both the data collection methods to minimize its occurrence and improve statistical corrections to the estimates based on respondent data. Effective remediation requires understanding the nature of survey response mechanism. Several studies have examined the trends in response rates over time and across different modes of data collection [Williams and Brick (2018)](Daikeler, Bošnjak, and Lozar Manfreda 2020)(Dutwin and Buskirk 2021). These allow us to recognize the pattern of survey response rates and provide guidance for effective survey design and survey mode selection.

Among different modes of surveys face-to-face household surveys deliver relatively high response levels compared to telephone surveys (Williams and Brick 2018). In the United States, Williams & Brick researched into the topic of nonresponse specifically in face-to-face surveys since the year of 2000. They observed consistent rise in nonresponse rates continuing a long-standing trend, although there are periods marked by relatively stable rates. They collected data from industry, government bodies, private entities, and academic institutions, and investigated both cross-sectional and longitudinal surveys. Additionally, the paper delves into the contribution of refusals and noncontacts to the overall nonresponse. They found that refusals

*Code and data are available at: <https://github.com/MelanieNiu/Mini-essay-5b.git>

remain the primary reason for nonresponse, but noncontact is also on the rise, indicating both participant reluctances and increased barriers to contact. Different from the common anticipation Williams & Bricks suggested that the increased attempts to contact participants may not remediate the rising nonresponse rate. They also speculate that increased effort may paradoxically be fueling an increase in refusals

The same trend of declining response rates in telephone surveys is also reported by Dutwin and Buskirk (Dutwin and Buskirk 2021). To examine the extent of lowered response rate on data quality, they utilized a collection of surveys gathered between 1996-2015 and assessed bias of cross-tabulations of key demographic variables. They found that despite the declining response rate, there has been a slight increase in bias over two decades. Interestingly the bias is observed to decrease between 1996-2015. The traditional weighting methods are shown to effectively reduce bias. Once weighted, telephone survey samples demonstrate data quality comparable to unweighted, in-person data with higher response rates. Dutwin and Buskirk also noted that the inclusion of cellphone interview data seems to have a positive impact on mediating bias. A limitation of the study is that key variables of interest in research studies may not only be confined to demographic variables. Nonetheless the study offered valuable insight into the validity of employing telephone and cellphone interviews during survey design (Dutwin and Buskirk 2021).

Daikeler et al. (Daikeler, Bošnjak, and Lozar Manfreda 2020) examined the same topic yet from a different angle by reviewing if response rates from web surveys yield less response when compared to other survey methods according to public beliefs. They replicated and expanded upon a meta-analysis conducted in 2008, where web surveys were shown to generate 11% less response rate than other survey modes based on 45 experimental comparisons. Their study confirmed that despite increasing internet availability and participant usage, they did not translate to increased willingness to participate in web surveys. These findings carry significant implications for web survey methodology and operations. The researchers recommended that to minimize the disparity between response rates in web surveys and those in other survey modes, survey designers can refrain from notifying participants about web surveys and opting instead for email solicitation along with one to two contact attempts.

Together, these three studies affirm that the decline in response rates is evident across different survey modes in United States with the mode of web survey generating the least response rates comparing with other modes such as telephone and face-to-face surveys. These studies provided guidance in the decisions of survey mode choices and also suggest avenues for future research: whether the patterns identified in certain countries, for instance, United States, can be extrapolated to other countries. In addition, it would be interesting to investigate the changes in response rates in face-to-face and web surveys can lead to similar impact on biases which could potentially be rectified through conventional weighting adjustments.

References

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