Research Brief Series #8: Research on "Professional Respondents" in Nonprobability Panels: A Comparison of Probability and Nonprobability Panels

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Data Quality and Representation Concerns Among Nonprobability Panelists Compared to Probability Panelists: The Case of Professional Respondents

Nonprobability (opt-in, convenience) panels offer survey researchers low-cost samples that can be interviewed quickly. However, due to the lack of a proper sampling frame and a sampling process from the entire target population, nonprobability panels are not able to represent their studied targeted population and generalize their survey findings to the entire population. Additionally, existing research, now spanning dozens of peer-reviewed papers, has consistently found lower data quality as measured by bias in survey estimates among nonprobability panelists compared to probability panelists.

For example, research finds that nonprobability panelists exhibit higher levels of survey straight-lining (Cornesse and Blom 2020) and speeding (Greszki et al. 2014). In addition, there is evidence of meaningful differences in demographics, attitudes and behaviors between nonprobability panelists and the U.S. general population,

including lower levels of political knowledge and engagement and higher levels of political extremism among nonprobability panelists (Hillygus et al. 2014). Research has also found different motivations for survey participation among nonprobability panelists, specifically a motivation for monetary incentive as opposed to interest in the survey topic (Cornesse and Blom 2020; Keusch et al. 2014). In general, the Center for Panel Survey Sciences recommends the use of probability panelists to mitigate the data quality concerns observed among nonprobability panelists.

While there are many reasons for the bias found within nonprobability panels, we focus here on data quality due to "over participation" of nonprobability panelists due to some panelists belonging to multiple panels and in general participating in a large number of surveys relative to a typical probability panelist. There are many nonprobability panels available, and respondents are able to join multiple nonprobability panels due to their opt-in nature, thus creating significant "panel overlap." Such nonprobability panelists are often referred to as "professional respondents." Further, past research has shown a lack of representativeness (Kennedy et al. 2016; Craig et al. 2013; Ipeirotis 2010) and lack of reproducibility (Callegaro et al. 2014) among nonprobability panelists due to their high panel participation.

Multiple Panel Membership & Survey Taking Frequency Differences Between Probability and Nonprobability Panelists

To better understand differences between probability and nonprobability panelists, the Center conducted two surveys—the first with a mixed probability and nonprobability sample and the second with a probability sample only. The objective of the first survey was to quantify the frequency of survey taking by sample type as an indicator of data quality. The survey was administered in 2022 to 3,331 AmeriSpeak® probability panelists and 5,855 nonprobability panelists. Panelists were invited to complete a 20-minute questionnaire about life experiences that included the question: "How many surveys have you completed in the past 30 days?" As shown in Table 1, nonprobability panelists reported taking 3 times more surveys than probability panelists (nonprobability median=10; probability median=3). On average, nonprobability panelists reported taking more than five surveys per week whereas probability panelists reported a little over one a week.

Table 1. Surveys taken in past 30 days by panel type (self-report)
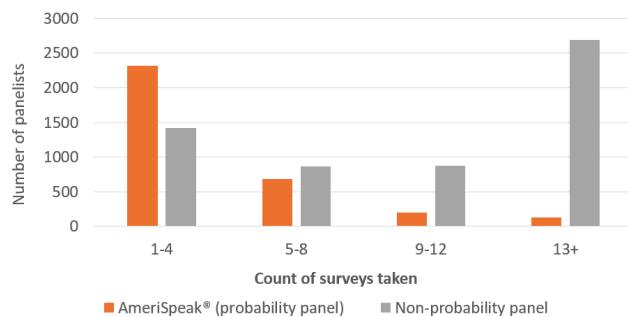
The objective of the second survey was to better understand multiple panel membership among probability panelists and compare responses to panel overlap estimates for nonprobability panelists. The survey was administered in 2020 to 10,183 AmeriSpeak® probability panelists. As shown in Table 2, nonprobability panelists

reported being a member of multiple panels 2-3 times more than AmeriSpeak® probability panelists.[1]

Table 2. Average number of panel memberships by panel type
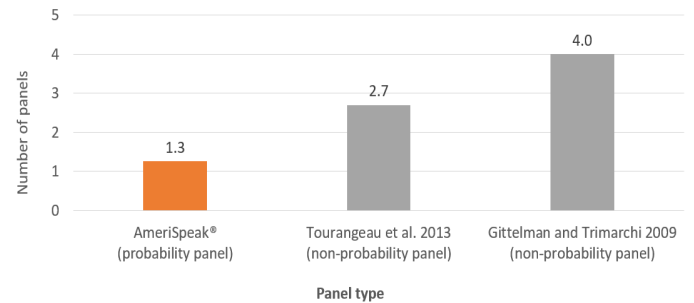
The Center's Perspective

Existing research demonstrates that data quality is an important consideration when weighing sample type, including concerns as to sample representativeness and quality of survey responses with nonprobability panelists. The Center's research into this topic corroborates concerns from the survey literature. Our surveys found that nonprobability panelists were more likely than probability panelists to belong to multiple panels and participated in more surveys on average, providing new empirical insight into the behavior of nonprobability "professional respondents."

Our overall recommendation is that probability panelists exceed nonprobability panelists across multiple dimensions of data quality. For some studies, nonprobability panels can be integrated with probability panels to gain certain efficiencies in data collection and improvements in representation of low-incidence populations. However, nonprobability panelists should not be considered a simple replacement for probability panelists. Panel researchers should work collaboratively with their client partners in selecting the appropriate sample type in a way that balances project scope with scientific rigor.

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[1]Based on Tourangeau et al 2013; Hillygus et al. 2014, and Gittelman and Trimarchi 2009

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