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Briefing paper: Opt-in Online Surveys

Opt-in online surveys are completed by individuals who've been recruited to fill out questionnaires on the internet, usually in exchange for points redeemable for cash and gifts. Unlike probability samples, such as those used in good-quality telephone or face-to-face surveys, opt-in online surveys are based on non-probability or "convenience" samples. As such they operate outside the realm of inferential statistics, meaning there is no theoretical basis on which to conclude that they produce valid and reliable estimates of broader public attitudes or behavior.

Opt-in online surveys fall short in empirical testing as well as theoretically. A series of academic studies in the past decade have found inaccurate estimates, wide variability across providers and inconsistent relationships among variables in data produced using this method. (See, for example, Malhotra & Krosnick, 2007; Pasek & Krosnick, 2010; and Yeager et al., 2011.)

A task force of the American Association for Public Opinion Research (AAPOR) issued an 81-page white paper on opt-in online surveys in 2010. Its conclusions included the following:

"Researchers should avoid nonprobability online panels when one of the research objectives is to accurately estimate population values" (p. 5).

"The nonprobability character of volunteer online panels… violates the underlying principles of probability theory" (p. 8).

"There currently is no generally accepted theoretical basis from which to claim that survey results using samples from nonprobability online panels are projectable to the general population. Thus, claims of 'representativeness' should be avoided when using these sample sources" (p. 5).

"Empirical evaluations of online panels abroad and in the U.S. leave no doubt that those who choose to join online panels differ in important and nonignorable ways from those who do not" (p. 22).

"The reporting of a margin of sampling error associated with an opt-in or self-identified sample is misleading" (p. 81).

"In sum, the existing body of evidence shows that online surveys with nonprobability panels elicit systematically different results than probability sample surveys in a wide variety of attitudes and behaviors" (p. 37).

Others preceded AAPOR in these judgments. ABC News has rejected opt-in online surveys as "not airworthy" for more than a decade. The Associated Press, The Washington Post and The

New York Times, similarly, have adopted policies ruling out the reporting of opt-in online surveys as news, given the unreliability of the method.

Among independent academic researchers to have evaluated opt-in online panels in recent years, Yeager et al. (2011), comparing probability and opt-in data, found, "Probability samples, even ones without especially high response rates, yielded quite accurate results. In contrast, non-probability samples were not as accurate and were sometimes strikingly inaccurate" (p. 737).

Other researchers have reported similar results. At AAPOR's 2012 annual conference, Callegaro et al. reported compiling 45 academic papers and presentations evaluating opt-in online panels. Findings included substantial departures from benchmarks; high levels of variability in data from different opt-in panel providers; high levels of multiple-panel membership, with substantial differences among low- and higher-membership respondents; and a failure of weighting to correct variations in the data produced.

In one example of variability, Reg Baker, former president of Market Strategies International, reported in 2009 that a comparison study produced by a trade group, the Advertising Research Foundation, had found estimates of smoking prevalence that were similar across three probability samples but had as many as 14 percentage points of variation across 17 opt-in online panels. "In the end, the results we get for any given study are highly dependent (and mostly unpredictable) on the panel we use. This is not good news."

Problems also have been reported in another internet-based approach, a "crowdsourcing" service from Amazon called Mechanical Turk that offers researchers access to a panel of individuals who've signed up to participate in "human intelligence tasks," including but not limited to participating in surveys, in exchange for token payment. In a paper at the 2012 AAPOR conference, Michael Traugott of the University of Michigan reported very large discrepancies between Mechanical Turk and probability-sample data on variables including age, education, partisan affiliation, ideology and opinions on Barack Obama's birthplace. For instance, compared with probability-sample data from the American National Election Survey, Mechanical Turk participants were more than 20 percentage points more likely to identify themselves as Democrats, more than 18 points more apt to be liberals and more than 16 points more likely to say Obama definitely was born in the United States, in demographically weighted and unweighted data alike.

Even if not reliably representative, it has been suggested that opt-in online data can be used to evaluate trends over time and relationships among variables. However, in a study comparing probability and opt-in online data collected for the U.S. Census Bureau, Pasek and Krosnick (2010) found problems with that concept. They reported "systematic and often sizable differences between probability sample telephone data and non-probability sample Internet data in terms of demographic representativeness of the samples, the proportion of respondents reporting various opinions and behaviors, the predictors of intent to complete the Census form and actual completion of the form, changes over time in responses, and relations between variables" (p. 62).

Some users of opt-in online data have expressed concern about these issues. In a column in 2006, Kim Dedeker, head of consumer and market knowledge at Procter & Gamble, worried that such samples "do not adequately represent the market" and raised the question of "professional respondents." A presentation by an executive at ComScore that same year reported that, in the group of panels studied, 10 percent of participants accounted for 81 percent of survey responses, and 1 percent of participants accounted for 34 percent of responses.

Opt-in online panels often are marketed via claims that probability-sample surveys have been rendered unreliable by declining response rates. A wealth of independent research, however, has found response rates not to be a reliable indicator of data quality, apparently largely because of the random nature of nonresponse itself in terms of the variables under study. (See, for example, Curtin et al., 2000; Holbrook et al., 2008; Keeter, 2012; Keeter et al., 2000; 2006; Mariolis, 2001; 2002; Merkle & Edelman, 2002.)

Another common marketing approach for opt-in online samples is to promote the proximity of their pre-election candidate-preference estimates to election outcomes. Our view is that the often ill-disclosed modeling of "likely voters" in pre-election polls obviates their utility in data-quality analyses. Comparison of survey results to known, unmanipulated benchmarks is a far sounder approach, and, as noted, such studies have found opt-in online data to be less valid.

More generally, details on sampling, quality-control, weighting and data modeling in opt-in online research often are not made available, and results from these panels often are described as nationally representative within a known margin of sampling error, contrary to AAPOR's Code of Professional Ethics and Practices.

Opt-in online research has grown to become a multi-billion-dollar business, chiefly in the field of market research. In a 2009 interview, asked what the industry was thinking in its use of these samples, Laurence Gold, editor and publisher of *Inside Research*, said: "The industry is thinking fast and cheap."

Some market researchers indeed may be more interested in quickly produced, inexpensive data than in valid and reliable data. Our clients have other priorities. Unlike sellers of opt-in online surveys, we have no financial interest in any methodology. We seek simply to produce research in which we, and our clients, can be highly confident. Non-probability opt-in online data, in our judgment, does not clear that hurdle.

See also our briefing paper on social media and public opinion:
http://www.langerresearch.com/uploads/Langer_Research_Briefing_Paper-Social_Media_and_Public_Opinion.pdf

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