



Panel sampling in health research

Author

Chauvenet, Alienor, Buckley, Ralf, Hague, Leah, Fleming, Chris, Brough, Paula

Published

2020

Journal Title

Lancet Psychiatry

Version

Accepted Manuscript (AM)

DOI

[10.1016/S2215-0366\(20\)30358-8](https://doi.org/10.1016/S2215-0366(20)30358-8)

Downloaded from

<http://hdl.handle.net/10072/402028>

Griffith Research Online

<https://research-repository.griffith.edu.au>

Panel sampling in health research.

Pierce et al.^{1,2} identify the importance of sampling in studying mental health effects of COVID-19. We suggest this applies broadly. We used a commercial organization to survey mental health for ~20,000 respondents.³ We specified sampling quotas for gender, age, income, and location, cross-checked using demographic and socioeconomic data from the survey. Our questionnaires included psychological scales used in clinical practice, such as Kessler, Warwick-Edinburgh, and General Health Questionnaire.³ We found that 53-58% of our sample scored as mentally unhealthy on these scales, cf. 13% nationally. Of those scoring as unhealthy, 45-49% did not seek medical treatment; of those seeking treatment, 24% were scored healthy. Allowing for this, the commercial panel overrepresented mentally unhealthy respondents by ~2.5x. We corrected this bias by repeated (1000x) random subsampling.

These results indicate that self-selected commercial survey panels are biased to mentally unhealthy or unhappy individuals. Surveys on physical or social health may risk invalid results, if they omit mental health measures and bias correction. Commercial survey organizations operate through networks of subcontractors who hold customer contact lists. Individuals self-select to take part, for a small financial incentive. This creates bias towards people who are in difficult financial circumstances, and hence under mental stress. That may include members of high-income households, who nonetheless lack individual access to cash. Panel turnover is high, 75% in 6 months, 97% in 12: panels provide emergency income only.

Commercial survey organizations are used very widely in health, economics, and social science research. National representativeness has been tested for political variables,⁴ but the bias towards mentally unhealthy and unhappy respondents has not been reported previously. It is now easy to target precise population segments using social media, but difficult to obtain random representative population samples. Where long-term representative panels are unavailable, research using commercial survey panels should therefore include psychological scales and corresponding bias correction.

Alienor Chauvenet, *Ralf Buckley, Leah Hague, Chris Fleming, Paula Brough.
r.buckley@griffith.edu.au. Griffith University, Australia 4222 (AC, RB, LH, CF, PB).

1. Pierce M, McManus S, Jessop C, et al. Says who? The significance of sampling in mental health surveys during COVID-19. *Lancet Psychiatry*, 2020; **20**: 30237.
2. Pierce M, Hope H, Ford T, et al. Mental health before and during the COVID-19 pandemic: a longitudinal probability sample survey of the UK population. *Lancet Psychiatry*, 2020; **20**: 30308.
3. Buckley R, Brough P, Hague L, et al. Economic value of protected areas via visitor mental health. *Nat. Comm.*, 2019; **10**: 5005.
4. Boas TC, Christenson DP, Glick DM. Recruiting large online samples in the United States and India: Facebook, Mechanical Turk, and Qualtrics. *Pol. Sci. Res. Meth.*, 2020; **8**: 232-250.