Probability-Based Panel Performance Compared to Other Survey Modes: More Evidence from Australia

Social Research Centre

Anna Lethborg | Social Research Centre
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Acknowledgement of country

I would like to acknowledge the Wurundjeri people, the traditional custodians of the land where the Social Research Centre is based.

I pay my respect to their elders, and recognise that Australia always was, and always will be, Aboriginal land.

Study acknowledgments

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Context

- 6th largest country in the world
- Population comparatively small
- Concentrated in capital cities
- F2F is expensive (so is CATI)

- No geographical data for RDD mobiles
- Can send SMS for research purposes
- Scam texts have doubled in a year
- Our main telecoms provider had a data breach

Study context

2015

We conducted the Online Panels Benchmarking Study (OPBS)

(Lavrakas et al. 2022, Pennay et al. 2018)

1. To provide a relative comparison of methods and improve practices
2. To see if conditions were suitable for a probability-based panel in Australia

– The probability-based methods provided higher quality estimates than the non-prob panels

2016

We established Australia's first probability-based online panel (Kaczmirek et al. 2019)

Life in Australia

Be heard | Be represented

2022

1. How does our panel compare
2. Can we stand by our claims

Study design

Study purpose

Australian Comparative Study of Survey Methods (ACSSM)

- Compares 5 survey methods for general population surveys
  - Contemporary and emerging
  - Probability and non-probability based
  - Interviewer-administered and self-completion modes

AIM: To explore the price and credibility gap between probability and non-probability based methods

Study methods

	Life in Australia™	Computer-assisted telephone interviewing (CATI)	Non-probability panels	Video-assisted live interviewing (VALI)	SMS push-to-web (SMS P2W)
Frame	Probability panel	Mobile RDD	4 non-prob panels	Probability panel	Mobile RDD
Comp mode	Online / CATI	CATI	Online	VALI	Online
Incentive	$10 AUD incentive		Panel rewards	$10 AUD incentive	$10 AUD incentive
Base	n = 582	n = 803	n = 850-891	n = 601	n = 586

Study results

Sample profile (unweighted)

Difference from benchmarks for primary demographic variables included in the weighting solution (%):

Weighting variables	Life in Australia™	CATI	Panel 1	Panel 2	Panel 3	Panel 4
Adults in HH	6.74	5.11	3.36	6.45	3.76	3.14
Age[7]	5.27	4.00	1.20	4.25	3.22	1.40
Education[5]	7.28	5.48	4.30	3.86	4.65	4.49
Gender	6.43	0.57	0.11	6.18	0.15	2.76
Geography	0.85	0.99	1.04	1.18	1.51	1.08
LOTE	12.52	11.24	12.67	14.70	12.02	12.73
Average	**6.53**	**4.56**	**3.78**	**6.10**	**4.22**	**4.27**

- Unweighted profile is influenced by quotas and sampling approach

Bias assessment

- The questionnaire used items for which **high-quality benchmarks** were available across **a range of domains**
- Bias assessment involved calculating the average difference from benchmarks for **secondary demographic** and **substantive** items.
- Principles behind item selection included:
  - High quality **benchmark** data available
  - Exclude **weighting** variables
  - Exclude highly **correlated** variables
  - Exclude **scale components**
- All arms used the **same weighting** scheme

Bias assessment – Secondary demographics (weighted %)

	Life in Australia™	CATI	Panel 1	Panel 2	Panel 3	Panel 4
Country of birth	1.75	1.97	5.10	2.18	0.42	3.83
Number of children	0.57	0.57	0.74	1.24	1.24	1.15
Marital status	3.76	1.00	2.12	2.95	3.50	2.33
Received age pension	1.83	0.58	4.11	4.70	2.74	2.34
Income	3.62	2.92	2.02	1.23	2.11	2.30
Labor force status	1.64	3.02	7.40	5.18	2.22	3.91

Bias assessment – Secondary demos (weighted %)

Life in Australia™

2.20

CATI

1.68

- Life in Australia™ performs well after weighting
- Variation evident across non-prob panels

Panel 1

3.58

Panel 2

2.91

Panel 3

2.04

Panel 4

2.64

Panel av. 2.79

Bias assessment – Substantive variables

- Physical activity status
- Smoking status
- Drinking frequency
- General health status
- Long-term health conditions
- Mental health status (K6)
- Provided unpaid care
- Experience of discrimination
- Perception of trust
- Life satisfaction
- Attitude towards multiculturalism
- Frequency of feeling rushed
- Voting preferences

Bias assessment – Substantive (weighted %)

Life in Australia™

5.62

CATI

5.80

- Life in Australia™ is closest to estimates
- CATI close second
- All but one of the non-prob panels not far behind

Panel 1

8.14

Panel 2

6.38

Panel 3

6.31

Panel 4

6.58

Panel av. 6.85

Bias assessment – Overall (weighted %)

Life in Australia™

4.54

CATI

4.50

- Life in Australia™ and CATI perform best and are very similar
- Panel performance is variable

Panel 1

6.70

Panel 2

5.28

Panel 3

4.96

Panel 4

5.34

Panel av. 5.57

Relative price difference (ratios)

Life in Australia™

1.0

CATI

3.9

- Compared to Life in Australia™
  - CATI is considerably more expensive
  - Non-prob panels are at least half the price

Panel 1

0.3

Panel 2

0.3

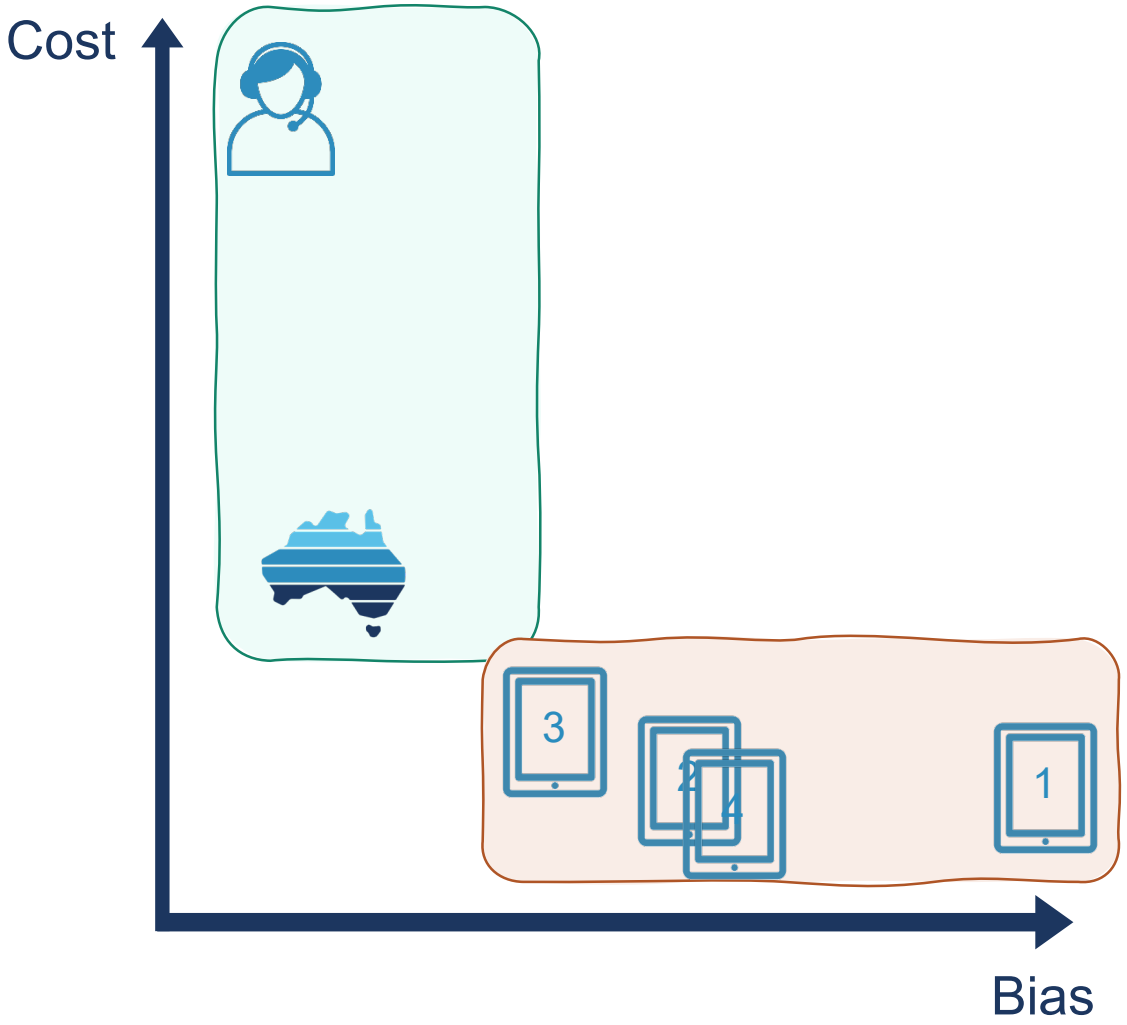
Panel 3

0.5

Panel 4

0.2

Where does that leave us?



- Life in Australia™ performs well overall
  - Low bias
  - Moderate cost
- Probability-based
  - Closer to benchmarks
  - More expensive
- Non-probability based
  - Better sample profile does not translate into less biased estimates
  - Substantial difference between non-prob panels

Watch this space

- Still plenty more analysis to be done and presented

- **AAPOR** – ACSSM overview and VALI

- **Social Research Centre Client Workshop** – Agenda to be decided

- **ESRA** – SMS push-to-web and VALI, ACSSM overview

- **Australian Evaluation Society Conference** – Agenda to be decided

- **Statistical Society Conference** – Blending calibration and weighting, sample selection

Thank you

anna.lethborg@srcentre.com.au

References

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- Lavrakas, Paul J., Darren Pennay, Dina Neiger and Benjamin Phillips. 2022. 'Comparing Probability-Based Surveys and Nonprobability Online Panel Surveys in Australia: A Total Survey Error Perspective.' *Survey Research Methods* 16(2):241–66.
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