The Tasmania Project Reopening Survey

Technical Report

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Contents

Introduction 3

The Tasmania Project research 3

The Tasmania Project Reopening Survey methodology 4

- Topics 4
- Population and sample 5
- Data collection characteristics 5
- Weighting 6

Benchmarking study 7

Survey experiment to assess representation bias 8

Introduction

This technical report covers the methodological aspects of the 6th general survey of The Tasmania Project (TTP6) – the Reopening Survey, conducted between 10 February and 2 March 2022.

Besides describing the sample, data collection characteristics, and post-survey adjustment approach, it provides additional insight into the quality of data collected in TTP6 survey (a benchmarking analysis) and compares the representation of two TTP6 subsamples ("social media" and "panel sample" respondents).

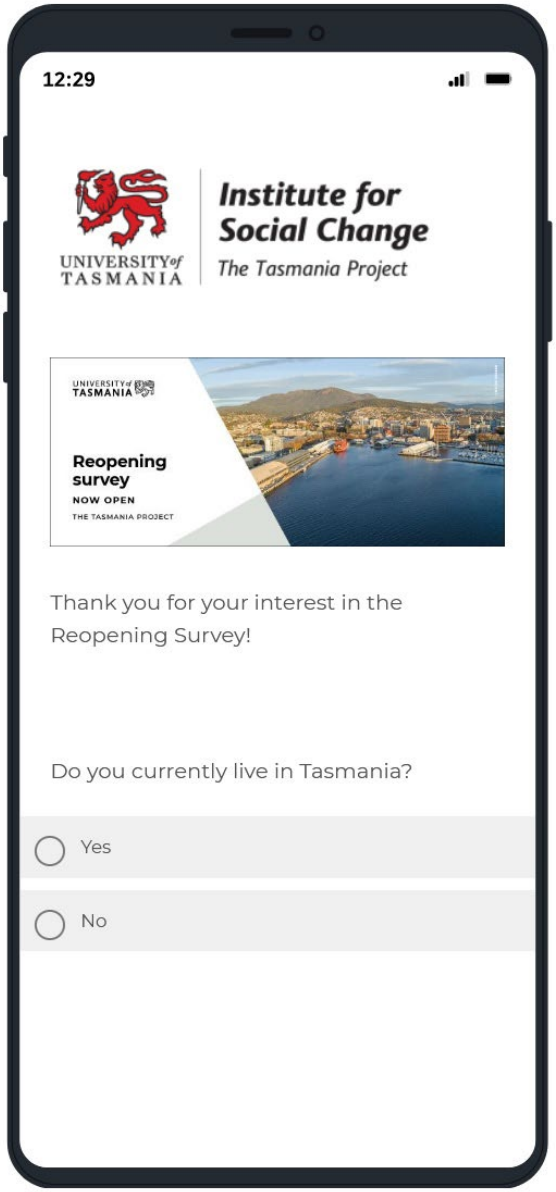
The Tasmania Project research

The Tasmania Project uses surveys and interviews to understand what Tasmanian residents need and want through the pandemic and in the long term, and to make that information quickly available to those making decisions now and for the future. It was established by the Institute for Social Change (ISC) at the University of Tasmania (UTAS) to give Tasmanians a voice and to gather important information that can support good decisions made by and for the community.

Since April 2020, there have been 13 The Tasmania Project surveys, conducted in different COVID and post-COVID recovery stages, including lockdown, three easing stages, borders closed, borders opening, COVID safe, and borders reopening stages. Besides the six general surveys, the ISC conducted seven other surveys focused on narrower and targeted topics as part of The Tasmania Project (TTP), including on food, housing, creative and cultural industries, borders and community health, wellbeing, work and young people's voices. The 6th general survey/Reopening Survey – was conducted about 2 months after Tasmania had fully reopened its border to mainland Australia for the first time since the start of the pandemic (as well as the start of The Tasmania Project).

The insights from those TTP surveys (as well as from qualitative interviews) have been summarised in more than 50 reports that have informed the decisions of a number of government agencies in response to the pandemic. This is a technical report for the Reopening Survey (TTP6) and the following reports based on TTP6 data:

- *Life in an open-bordered Tasmania*
- *Volunteering during COVID-19: attitudes and behaviours (upcoming)*
- *Entering Year 3 of the pandemic: COVID-19 and flu vaccination intention* (upcoming)
- *Attitudes and adherence to restrictions throughout the pandemic* (upcoming)
- *A light at the end of the tunnel? Feelings about the future of the pandemic and wellbeing* (upcoming)



The Tasmania Project Reopening Survey methodology

Topics

In the TTP Reopening Survey, we asked Tasmanians about their attitudes, opinions, and behaviours related to different aspects of their lives after the Tasmanian border fully reopened on 15 December 2021. The TTP6 questionnaire included the following sections and topics:

- Reopening: *feeling of safety, seeing a health professional, and changed behaviour after border reopening*
- Schools and vaccinations: *having COVID-19, vaccination status (respondent, children), and childcare arrangements*
- COVID and restrictions: *attitudes towards COVID-19 in general, restrictions, testing, and safe behaviours*
- Current and future wellbeing: *importance of wellbeing dimensions, satisfaction with wellbeing, and COVID-19 affected perceptions of good life*
- Volunteering: *volunteering trends, changes to volunteering due to COVID-19, reasons for not volunteering*
- Socio-demographic section
- Motivation to participate in TTP surveys

Population and sample

Population. The population is defined as adult Tasmanian residents. Only those who were 18 years of age or older and lived in Tasmania at the time of data collection could participate in The Tasmania Project surveys.

Sample. The Tasmania Project uses a volunteer sample of adult Tasmanian residents. Over time, more than 4,500 Tasmanians have registered their interest to participate in TTP surveys and provided their email address. This sample is also known as "the panel sample". In the Reopening survey, 980 participants (or 48.0%) were from "the panel sample". The other 52.0% of the final TTP6 sample (or 1,063 respondents) were not invited directly via email by the ISC research team but rather through alternative internet channels. That cross-sectional sample is also known as "the social media sample". Both samples were combined into the final TTP6 sample (n=2,043).

Response. Out of 4,500 member of "the panel sample" who had provided their email address, 980 completed or partially completed the TTP6 questionnaire. That corresponds to a sample yield of 21.8%. However, as we do not have information on how many adult Tasmanians saw an invitation to participate in TTP6 survey, sample yield cannot be calculated for the "social media" sample. Of 2,043 respondents from the final sample, 1,940 completed the full questionnaire and 103 partially completed the questionnaire (i.e. responded to 60% or more questions).

Data collection characteristics

Survey mode. The online mode has been used in all TTP Surveys for data collection. For the first time since the start of the project, Qualtrics was used as a data collection tool (previously, questionnaires were programmed in SurveyMonkey).

Data collection period. The Reopening Survey data collection started on 10 February 2022 (see Figure 1 for the timeline). The data collection period was between 8 and 11 weeks after the Tasmanian border fully reopened to the Australian mainland. The invitation to participate in the survey was first published on the social media (Instagram), on 10 February. On 11 February, the panel sample was sent an email invitation with a link to the survey. The survey was closed on 2 March 2022, after a total of three weeks of data collection.

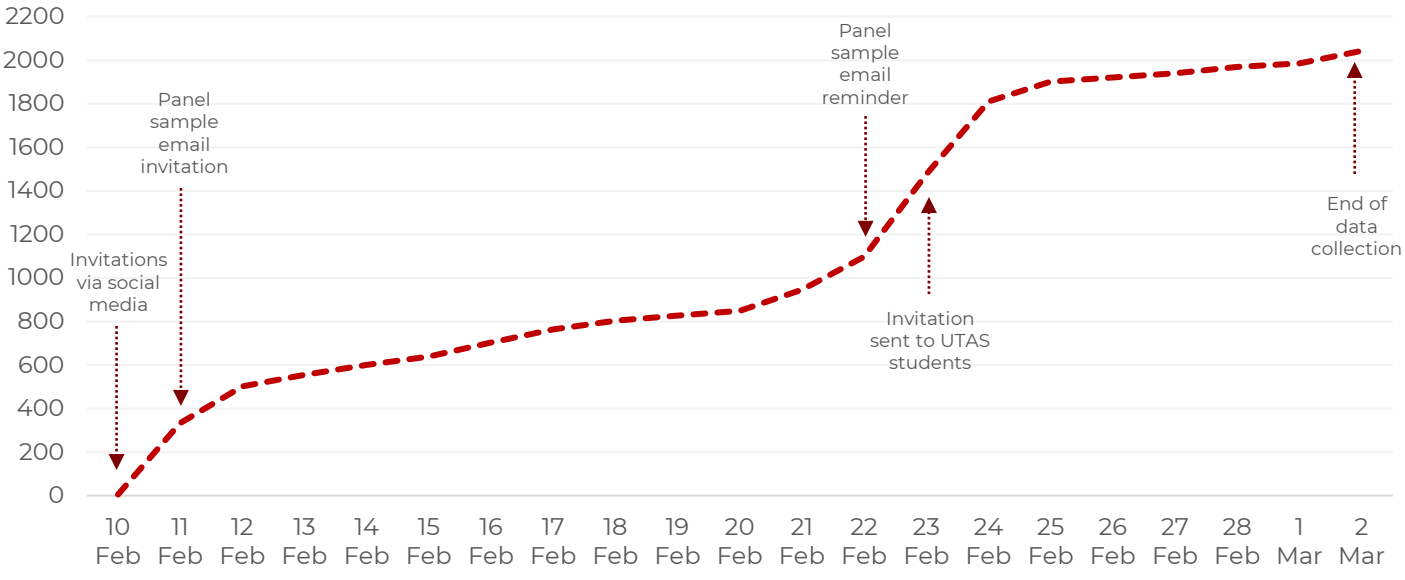


Figure 1: TTP6 completed questionnaires by data collection date and events (cumulative)

Recruitment channels. The "panel" sample has been gradually recruited since the start of The Tasmania Project, i.e. since April 2020. The study has been advertised across social media (including Instagram, Twitter, Facebook), and on the University and the ISC websites. At the start of the project, various other media, such as three major newspapers, digital media, commercial radio stations and television, were also used to recruit survey participants. Prior to TTP6 data collection, the "panel" sample consisted of roughly 4,500 adult Tasmanians who had provided their email address. They were invited to participate in the Reopening Survey via email by the University of Tasmania.

To recruit new respondents who had not pre-registered their interest to participate in TTP research, the Reopening Survey was advertised across social media. The University Tasmania team also shared a link to the questionnaire with their students.

Response maximisation. To collect survey data from a large sample, as well as to include a wide range of Tasmanian population subgroups, we used a range of different channels, including mailing lists and social media. Also, the panel sample was sent an email reminder on 22 February 2022.

Questionnaire completion time. The median completion time was 21 minutes for those respondents who completed the full questionnaire (i.e. about 95% of the final sample). Respondents from the panel sample needed more time (median time: 22 minutes and 15 seconds) than respondents from the social media sample (median time: 19 minutes) to complete the questionnaire.

Weighting

In TTP6 sample, Tasmanian respondents were more likely to be female, 45 years of age or older, more educated, and born in Australia (compared to Australian Census 2016 figures).

For the sample to better reflect the Tasmanian adult population and to improve sample validity, the Reopening Survey data were weighted (adjusted post-survey).

We used raking, also known as iterative proportional fitting, as a form of calibration. We balanced the sample based on carefully selected weighting covariates (see Benchmarking study, page 7-8, for more information). In the end, data were weighted by sex (male, female), age group (6 categories), education (degree, diploma/certificate, high school), and country of birth (Australia, abroad). See Table 1 for changes in the distributions of weighting covariates after calibration.

Variable	Unweighed		Weighted	
	n	%	n	%
Gender				
Female	1,331	67.6	968	49.1
Male	571	29.0	976	48.7
Prefer not to say/self describe	67	3.4	43	2.2
Age				
18-24 years	331	17.4	282	14.5
25-44 years	455	23.9	451	23.2
45-64 years	656	34.4	688	35.4
65+ years	465	24.4	523	26.9
Education				
Bachelor's degree or more	1,070	54.5	392	19.8
(Advanced) diploma, Cert 1-4	490	25.0	621	31.3
High School	403	20.5	871	49.0
Region (SA4)				
Greater Hobart	1,018	52.4	899	45.8
Launceston and North East	408	21.0	428	21.8
South East	149	7.7	150	7.6
West and North West	367	18.9	486	24.8
Country of birth				
Australia	1,542	78.6	1,669	84.2
Abroad	420	21.4	314	15.8

Table 1: Socio-demographic characteristics of TTP6 sample (pre- and post-calibration, n=2,043)

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Benchmarking study

In the case of surveys, benchmarking is a method for accuracy estimation of different survey samples or modes, or post-survey adjustment methodologies. It is used to compare the quality of survey data collected (and/or processed) using different methodological approaches.

Benchmarking requires access to population benchmarks, which are normally defined as survey/census estimates from high-quality data sources, such as those funded by the (federal) government. In Australia, examples of population benchmarks would be the proportion of adult Australians from Australian Census 2021, or the proportion of daily smokers from the National Drug Strategy Household Survey 2019.

In this study and using TTP6 data, we conducted a small benchmarking study to determine what weighting scheme improves the quality of TTP6 estimates the most when using raking (calibration). We compared 11 different schemes including: (1) between 3 and 5 covariates, (2) *age group#sex* interaction (and both covariates separately), (3) *age group* with four (18-24, 25-44, 45-64, 65+) and six categories (18-29, 30-39, 40-49, 50-59, 60-69, 70+).

To determine suitability of different weighting schemes, we compared our TTP6 weighted estimates to the following representative benchmarks for Tasmania: (1) COVID infection, (2) being fully vaccinated, (3) having a booster shot, (4) volunteering in past 12 months, (5) giving birth to a child, (6) Australian citizenship, (7) Indigenous status, (8) employed full time, and (9) a single person household. The sources of benchmarks were Australian Census 2016 and the Tasmanian Department of Health media releases (statistics combined on COVID Live website).

The results are presented in Figure 2. To compare the quality of the weighted samples, we calculated Average Absolute Error (AAE) as a benchmarking measure. Error as "an absolute distance between benchmarks and estimates" was averaged for all 9 items listed above into AAE, which was reported for each of the 11 weighting schemes.

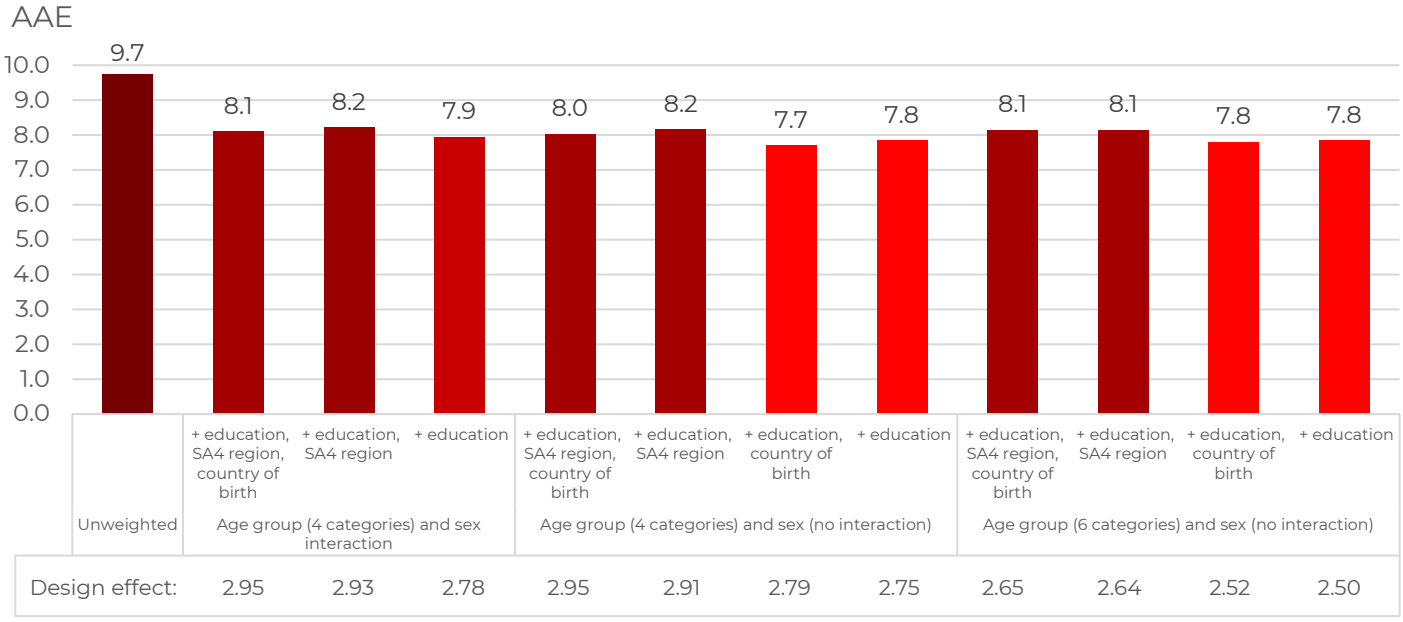

Figure 2: AAE for TTP6 sample weighted with different combinations of covariates (and design effects)

First, the results show that any weighting scheme improves the accuracy (measured with AAE) by at least 1.5% (from 9.7% to between 7.7% to 8.2%). However, there are minor differences in accuracy between the analysed 11 weighted samples. The lowest AAEs can be observed for weighting schemes including age group (4 or 6 categories), sex (no interaction), education and country of birth.

On the other hand, we can observe fairly large design effects. The design effect is an indicator of an increased variance of survey estimates, in our case due to weighting. The lowest design effect can be observed for weighting schemes including age group (6 categories), sex, education (with or without country of birth).

It was determined that the following four covariates: age group with 6 categories, sex, education, and country of birth, represented the best balance between AAE and raking design effect, and we were also able to weight age more precisely and improve the estimate of country of birth (also see Table 1).

Survey experiment to assess representation bias

In the Reopening Survey, we also assessed the differences between the respondents from:

(1) the panel sample *(i.e. those who had registered to participate in TTP research and were emailed survey invitation directly)*,

(2) the social media sample *(i.e. cross-sectional/ad-hoc respondents who were not emailed invitations but rather accessed TTP6 questionnaire via a survey link shared across social media)*.

Those two samples entered the TTP6 questionnaire via two different URLs. The aim of this experiment was to study the representation of The Tasmania Project samples invited via different channels. The literature suggests that including various socio-demographic and socio-economic population subgroups can improve the representativeness of volunteer samples, and using various recruitment channels can help achieve that goal. While the panel sample and the social media sample (ad-hoc in TTP6) were both largely recruited via social media, various differences might exist due to the panel sample being recruited using additional channels (see Recruitment channels section), as well as differential panel attrition/nonresponse.

We analysed the differences between the samples by looking at:

1) Demographic variables *(primary demographics, used for weighting/raking)*.
2) Factual variables *(with corresponding benchmarks, see the Benchmarking study)*
3) Key attitudinal/behavioural variables

Demographic differences. Table 2 presents differences in the distribution of demographics.

Variable	Panel sample	Social media sample	Total
	%	%	%
Gender			
Female	70.0	65.3	67.6
Male	28.3	29.6	29.0
Prefer not to say/self describe	1.6	5.1	3.4
Age			
18-24 years	0.9	33.4	17.4
25-44 years	13.8	33.6	23.9
45-64 years	43.7	25.4	34.4
65+ years	41.6	7.6	24.4
Education			
Bachelor's degree or more	62.5	46.9	54.5
(Advanced) diploma, Cert 1-4	27.1	29.5	25.0
High School	10.3	22.9	20.5
Region (SA4)			
Greater Hobart	50.6	54.1	52.4
Launceston and North East	21.5	20.6	21.0
South East	8.0	7.4	7.7
West and North West	19.9	17.9	18.9
Country of birth			
Australia	79.1	78.1	78.6
Abroad	20.9	21.9	21.4

Table 2: Socio-demographic differences between the panel sample (n=980) and the social media sample (n=1,063), unweighted

There are some notable differences between the panel and the social media samples in their socio-demographic characteristics. The social media sample was much younger and less educated. Also, the proportion of women was slightly smaller, and there were slightly more respondents from Greater Hobart. The proportions of Australian-born were comparable. Ultimately, including the social media sample notably improved the socio-demographic representativeness of TTP6 sample, i.e. made the sample more similar to the Tasmanian population (compared to the Australian Census 2016 demographic figures). This has many practical implications, such as in the post-survey adjustment stage (weighting, design effect).

Factual differences. Table 3 presents differences in the distributions of other factual variables. Some of them are demographic variables, but not those normally used in post-survey weighing schemes.

Estimate	Benchmark	Panel sample	Social media sample
	%	%	%
Having COVID-19 in the last 3 months	**7.4**	4.3	10.2
Fully vaccinated	**97.5**	96.2	95.0
Received a booster	**54.4**	81.1	62.2
Volunteering	**23.2**	62.7	45.3
Adult females giving birth to children	**74.9**	65.0	43.7
Australian citizen	**94.7**	97.5	90.5
Indigenous status	**3.8**	2.6	5.1
Employed full time	**32.4**	21.2	19.1
A single person household	**14.6**	23.2	15.3

Table 3: Factual differences between the panel sample (n=980) and the social media sample (n=1,063), unweighted

Again, we can report substantial differences between the samples, some of which are associated with primary demographic differences (e.g. age and receiving a booster). The following findings are of most interest:

1) The panel sample has estimates closer to the Tasmanian representative benchmarks for (i) fully vaccinated, (ii) giving birth to children, and (iii) employed full time
2) The social media sample has estimates closer to the benchmarks for (i) received a booster, (ii) volunteering, and (iii) a single person household.
3) Samples are balancing each other by having estimates on different sides of benchmarks for (i) having COVID-19, (ii) Australian citizen, (iii) Indigenous status.

On average, the social media sample seems to be slightly more accurate. More importantly, the unweighted estimates for the combined sample (n=2,043) are more accurate than the unweighted estimates for the panel sample (n=980), which means that adding the social media sample (n=1,063) increases TTP6 data accuracy relative to the selected benchmarks.

Attitudinal/behavioural differences. To show some key attitudinal and behavioural differences between the panel and the social media samples, we looked at the main non-demographic target variables from the Reopening Survey questionnaire. The following ten estimates were used:

a) changed attitudes and behaviours after borders reopening *(feeling safety, frequency of online grocery shopping and seeing friends and family in person),*
b) satisfaction with government economic policies to support jobs,
c) intention to get flu vaccine,
d) attitudes towards border reopening and restrictions (*border should have remained closed, Tasmanians should wear masks in public indoor spaces),*

e) attitudes towards COVID-19 *(would get tested if showing mild symptoms, pandemic will end this year),*

f) importance of health for wellbeing.

Table 4 presents differences in the distributions of attitudinal and behavioural variables between the panel sample and the social media sample of TTP6 sample.

Estimate	Panel sample	Social media sample	Total
	%	%	%
Feeling less safe (after reopening borders)	72.4	67.8	70.0
Online grocery shopping a bit/much more (after reopening borders)	23.2	24.6	24.0
Seeing friends and family in person a bit/much less (after reopening borders)	57.2	57.6	57.4
Satisfaction with government economic policies to support job – (very) dissatisfied	39.3	41.7	40.6
Intention to get flu vaccine - yes	76.0	60.8	68.1
The Tasmanian border should have remained closed - (strongly) agree	45.0	44.4	44.7
Tasmanians should have to wear masks in public indoor spaces - (strongly) agree	72.8	63.0	68.7
If I showed mild symptoms of COVID-19, I would be tested – (strongly) agree	82.1	81.6	81.9
The pandemic will end this year – (strongly) agree	6.6	7.1	6.9
Importance of health for wellbeing, selected among top 3	78.5	55.8	66.8

Table 4: Attitudinal/behavioural differences between the panel sample (n=980) and the social media sample (n=1,063), unweighted

For attitudes, opinions, behaviours, and intentions, we observe less differences in the distribution of some key variables compared to primary socio-demographics or other factual variables. The following survey items attracted little and almost negligible differences between the samples:

1) Online grocery shopping a bit/much more (after reopening borders)
2) Seeing friends and family in person a bit/much less (after reopening borders)
3) Satisfaction with government economic policies to support job – (very) dissatisfied
4) The Tasmanian border should have remained closed - (strongly) agree
5) If I showed mild symptoms of COVID-19, I would be tested – (strongly) agree
6) The pandemic will end this year – (strongly) agree

The other differences could potentially be explained with structural/socio-demographic differences between the samples, including with age (the panel sample is notably older than the social media sample):

1) Feeling less safe (after reopening borders) – the panel sample respondents felt less safe
2) Intention to get flu vaccine (yes) - the panel sample respondents are more likely to get vaccinated
3) Tasmanians should have to wear masks in public indoor spaces - (strongly) agree – the panel sample is more supportive of COVID-19 safety measures
4) Importance of health for wellbeing, selected among top 3 – the panel sample is more concerned about their health