

METHODOLOGY REPORT

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## SOCIAL PROGRESS INDEX:

### AUSTRALIA 2022 UPDATE

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**SOCIAL  
PROGRESS  
IMPERATIVE**

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### THE CENTRE FOR SOCIAL IMPACT

The Centre for Social Impact (CSI) is a national research and education centre dedicated to catalysing social change for a better world. CSI is built on the foundation of four of Australia's leading universities: UNSW Sydney, The University of Western Australia, Swinburne University of Technology and Flinders University. Our **research** develops and brings together knowledge to understand current social challenges and opportunities; our postgraduate and undergraduate **education** develops social impact leaders; and we aim to **catalyse change** by drawing on these foundations and translating knowledge, creating leaders, developing usable resources, and reaching across traditional divides to facilitate collaboration.

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The Social Progress Imperative's mission is to improve the lives of people around the world, particularly the least well off, by advancing global social progress by: providing a robust, holistic and innovative measurement tool—the Social Progress Index; fostering research and knowledge-sharing on social progress; and equipping leaders and change-makers in business, government and civil society with new tools to guide policies and programs. From the EU to India to Brazil and beyond, the Social Progress Imperative has catalysed the formation of local action networks that bring together government, businesses, academia, and civil society organizations committed to using the Social Progress Index as a tool to transform societies and improve people's lives.

For further information, please contact Frank Murillo, [fmurillo@socialprogress.org](mailto:fmurillo@socialprogress.org)

### THE AUSTRALIAN SOCIAL PROGRESS INDEX

SPI produces the Social Progress Index that is a holistic and robust measurement framework for national, social & environmental performance that can be used by leaders in government, business and civil society at the country level as a tool to benchmark success, improve policy, and catalyse action.

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### AMPLIFY SOCIAL IMPACT

Amplify is a suite of online reports and tools designed to support organisations improve their evidence-based decision making, program evaluation, and ultimately their social impact.

It combines ten years of CSI experience in social issue research and outcomes measurement with numerous data sets and reporting frameworks, to provide a 'one stop shop' in evidence and evaluation.

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## INTRODUCTION

The purpose of the Australian Social Progress Index was to develop an Index that captures the performance of States and Territories of Australia on Basic Human Needs, Foundations of Wellbeing, and Opportunity. Developing this Index can identify where there are particular needs and opportunities for policy and structural changes to help decision makers, investors, civil society actors as well as the general public understand and focus their efforts where they are needed the most.

In 2019, a multi-stage iterative process was followed to reach the most accurate framework of the Social Progress Index for Australia.

The first stage involved an interaction with the Social Progress Imperative to gain understanding of Social Progress Index concept, principles and methodology.

The second stage involved identifying a possible set of indicators and data sources that meet the Social Progress Index criteria.

The third step involved engagement with key experts and stakeholders to solicit feedback and validation.

This report describes the methodology used to calculate the Social Progress Index for the Australian States and Territories for the years 2015-2018. In 2022, the indicators and their available data were updated to recalculate the Index for the year 2015-2021. The first section talks about the conceptual architecture of the Social Progress Index and the principles that guide the index creation process. The second section provides a step-by-step overview of the process of constructing the Social Progress Index for Australia: data collection, missing values, data transformation, assessment of the fit, and aggregation. Furthermore, the report outlines the challenges and solutions to calculating the Australian Social Progress Index and describes the method for conducting relative analysis of performance for the States and Territories of Australia.

## SOCIAL PROGRESS INDEX PRINCIPLES

The Social Progress Index is a composite index which represents the first comprehensive framework for measuring social progress that is independent of traditional economic indicators, but complementary to them. The Index focuses on what matters to societies and people by giving them the tools to better understand and seize opportunities and building blocks to enhance and sustain the quality of their lives, as well as create the conditions to reach their full potential.

Developed in collaboration with a team of scholars led by Professor Michael E. Porter of Harvard Business School, the Index is being used by national and city leaders across Latin America, and the European Commission's Directorate General for Regional and Urban Policy for agenda setting, policymaking, prioritizing resource mobilization and measuring impact.

The Index presents a granular, actionable picture of what matters most to people regardless of their wealth. It creates a common understanding of how well a community performs on the things that matter to all societies, rich or poor. As a complement to traditional measures of economic performance, such as income, the Social Progress Index provides better understanding of the bi-directional relationship between economic gain and social progress. Its unique framework offers a systematic, empirical foundation for governments, businesses, civil society and communities to prioritise social and environmental issues, and benchmark performance against other countries, regions, cities and communities to inform and drive public policies, investments, and business and community decisions.

Guided by a group of academic and policy experts, the Social Progress Index follows a conceptual framework that defines social progress as well as its key elements. In this context, social progress is defined as the **“capacity of a society to meet the basic human needs of its citizens, establish the building blocks that allow citizens and communities to enhance and sustain the quality of their lives, and create the conditions for all individuals to reach their full potential.”**

The Social Progress Index is built around a framework that comprises three architectural elements: dimensions, components, and indicators.

**Dimensions** represent the broad conceptual categories that define social progress:

- **Basic Human Needs** considers citizens' ability to survive with adequate nourishment and basic medical care, clean water, sanitation, adequate shelter, and personal safety. These needs are still not met in many disparate countries and are often incomplete in more prosperous countries.
- **Foundations of Wellbeing** captures whether a society offers building blocks for citizens to improve their lives, such as gaining a basic education, obtaining information, and access communications, benefiting from a modern healthcare system and live in a healthy environment.
- **Opportunity** captures whether citizens have the freedom and opportunity to make their own choices. Personal rights, personal freedom and choice, tolerance and inclusion, and access to advanced education all contribute to the level of opportunity within a given society.
- Within each dimension are components: four distinct but related concepts that together make up each dimension (Figure 1).

Basic Human Needs	Foundations of Wellbeing	Opportunity
Nutrition and Basic Medical Care	Access to Basic Knowledge	Personal Rights
Water and Sanitation	Access to Information and Communications	Personal Freedom and Choice
Shelter	Health and Wellness	Inclusiveness
Personal safety	Environmental Quality	Access to Advanced Education

Figure 1: Social Progress Index framework

Source: (Social Progress Imperative, 2020)

Each component is composed of indicators that measure as many valid aspects of the concept as possible.

Together, this interrelated set of factors represents the primary elements that combine to produce a given level of Social Progress Index. The methodology allows measurement of each component and each dimension, and yields an overall score and ranking.

The three dimensions and twelve components of the Social Progress Index Framework provide the backbone of the Social Progress Index. The twelve-component structure provides the guidelines, while the questions below (Figure 2) provide a first guide for interpreting each component and help to identify locally relevant data to define it.

Basic Human Needs	Foundations of Wellbeing	Opportunity
<b>Nutrition &amp; Basic Medical Care</b> Do people have enough food to eat and are they receiving basic medical care?	<b>Access to Basic Knowledge</b> Do people have access to an educational foundation?	<b>Personal Rights</b> Are people's rights as individuals protected?
<b>Water &amp; Sanitation</b> Can people drink water and keep themselves clean without getting sick?	<b>Access to Information &amp; Communications</b> Can people freely access ideas and information from anywhere in the world?	<b>Personal Freedom &amp; Choice</b> Are people free to make their own life choices?
<b>Shelter</b> Do people have adequate housing with basic utilities?	<b>Health &amp; Wellness</b> Do people live long and healthy lives?	<b>Inclusiveness</b> Is no one excluded from the opportunity to be a contributing member of society?
<b>Personal Safety</b> Do people feel safe?	<b>Environmental Quality</b> Is this society using its resources so they will be available to future generations?	<b>Access to Advanced Education</b> Do people have the opportunity to access the world's most advanced knowledge?

Figure 2: Social Progress Index Guiding Questions

The Index is explicitly focused on non-economic aspects of performance. Unlike most other measurement efforts, the index treats social progress as distinct though associated with traditional economic measures such as income per capita. In contrast, other indices such as the Human Development Index (UNDP, 2016) or the OECD Better Life Index (OECD, 2015) combine economic and social indicators. The SPI objective is to utilize a clear yet rigorous methodology that isolates the non-economic dimensions of social performance.

The Index applies a set of **unique design principles** that allow an exclusive analysis of social progress and help the Index stand out from other indices:

**Social and environmental indicators only:** While economic development is generally beneficial for social progress, it is not sufficient to fully capture the wellbeing of societies, and certain kinds of economic development can reduce social progress. The relationship is complex: social progress can drive as well as be driven by economic progress. Consequently, social progress needs to be measured directly, without combining economic performance. Measuring social progress exclusively and directly, rather than utilizing economic proxies or combining economic and social variables is therefore the key principle of any Social Progress Index.

**Outcomes, not inputs:** There are two broad categories of conceptually coherent methodologies for index construction: input indices and outcome indices. Both can help countries benchmark their progress, but in very different ways. Input indices measure a country's policy choices or investments believed or known to lead to an important outcome. In competitiveness, for example, an input index might measure investments in human capital or basic research. Outcome indices directly measure the outcomes of investments. The Social Progress Index has been designed as an outcome index. The Index measures the lived experience of real people, regardless of effort spent or the capacity to impart change. Given that there are multiple distinct aspects of social progress each measurable in different ways, the Social Progress Index has been designed to aggregate and synthesize multiple outcome measures in a conceptually consistent and transparent way that will also be salient to benchmarking progress for decision-makers.

**Holistic and relevant to all communities:** A multidimensional measure of social progress that encompasses the many inter-related aspects of thriving societies everywhere. The Social Progress Index aims to be a practical tool for decision makers in any given country regardless of its level of development. At the national level, the Social Progress Index fulfils this value proposition by deepening our understanding on the relationship between social progress and economic growth and by designing a very relevant tool to highlight strength and weakness at the component and indicator levels, using GDP comparator groups. Nevertheless, what matters at the national level to compare countries among themselves may not be what matters for the policy debate in a given country. For example, tuberculosis is not an issue in the Amazon region, but Malaria is. These examples illustrate how building subnational indices by preserving the 12-components structure of the Social Progress Index and by customizing the indicators to be monitored and targeted, can increase the capacity of the Social Progress Framework to boost relevant and timely policy-debates in every country at every stage of development.

**Actionable:** The Index aims to be a practical tool with sufficient specificity to help leaders and practitioners in government, business, and civil society to benchmark performance and implement policies and programs that will drive faster social progress. At the national level, the Social Progress Index fulfils this value proposition by focusing on the granularity of the model. Every component supposes an essential area for human wellbeing. And every indicator implies a potential "entry-point" and an "explicit target" for public policy. Building subnational indices with local networks will strength the actionability of the social progress framework, if the process of disaggregating and customizing the index is also supported by strong political buy-in around socially legitimate targets. A practical tool that will help leaders and decision-makers in government, business and civil society to implement policies and programs that will drive faster social



progress.

The successes of the Global Social Progress Index has resulted in an increased demand for subnational indices to address the need for greater actionability; the need to make the index relevant for all countries at all levels of development and at any level of geography; and a need to build common languages and to align interventions. As a result local stakeholders around the world have developed innovative initiatives to build relevant and consistent social progress indices at the macro (national), meso (regional, municipal) and micro (community, organizational) levels, to influence the policy decision-making process and move the needle of social progress around the world.

## SOCIAL PROGRESS INDEX: STATES AND TERRITORIES OF AUSTRALIA

The Australian Social Progress Index follows the Social Progress Index rationale as well as its key principles and methodology. As such, it adopts the same dimension and component level framework as the global Social Progress Index, although the indicators and their data sources differ from the global Index due to the following reasons:

- There are certain indicators that are valid globally but are not directly applicable at subnational level (such as rural defecation, and property rights for women)
- It was important to take into consideration Australia's unique challenges to include indicators that are specifically relevant and reflect the real issues across Australia's States and Territories.

These indicators and challenges were identified through multiple rounds of consultation with data and topic experts in academia, industry, and the not-for-profit sector.

### GEOGRAPHIC COVERAGE AND TIME SPAN

The Index is calculated for the eight Australian States and Territories. Most data sources provided data that were broken down at the State or Territory level as the maximum granularity. The Australian Bureau of Statistics (ABS) publishes statistics that are at the community (SA4) level; however, this was the case for the minority of indicators considered and included.

The Index is calculated for seven recent years – 2015–2021, based on the availability of data for the various indicators. A detailed table with annual data availability for each indicator is presented in Appendix B.

### INDEX CALCULATION

Calculating the Australia Social Progress Index involved the following multistage process:

1. Consultation and Stakeholder Input
2. Indicator Selection and Data Collection.
3. Dealing with missing values.
4. Data Transformation.
5. Aggregation and scaling.
6. Evaluating the fit.

### CONSULTATION AND STAKEHOLDER INPUT

Multiple rounds of one-on-one and group consultations were conducted between October 2018 and September 2019.

#### *November 2018-March 2019*

The purpose of the first round of consultations were to introduce the SPI, and seek input on a 'wishlist' of potential indicators that could be included in the Index, as well as collating potential data sources. A total of thirteen consultation meetings were held:

- Local government – 1
- Peak body – 1
- Industry – 2
- University/academics – 7

Following suggestion and feedback, all potential indicators and data sources sourced or recommended were pursued. A total of 395 potential indicators were investigated. A common reason for exclusion of indicators were due to a lack of appropriate and rigorous data sources that met indication selection criteria. Some indicators were not being measured at all, others were being measured sporadically or were not appropriately representative of the Australian population.

#### *June 2019-August 2019*

A list of 53 preliminary indicators, their definition, and data source were presented at an event at the Progress 2019 Conference in Melbourne. Approximately 40 conference delegates attended the event and were provided the opportunity to ask questions about the Index and the indicators, and provide feedback on the proposed Australian framework. The audience included executive staff of peak Australian not-for-profit sector organisations, media, social purpose advocacy groups, and campaigners for environmental issues. No new additional indicators were suggested – all queries about missing indicators were captured by the list of considered and excluded indicators. Three follow up consultation meetings were held following the presentation with attendees from the event.

#### *September-October 2019*

Following the calculation of the beta-Index, additional consultations were carried out with stakeholders to receive feedback on the final indicators, the scores that the SPI calculations produced, and the overall messaging and narrative of the Australian SPI scores. These consultations were done with the wider research team at the Centre for Social Impact, as well as with two academics, the staff of a government funded data collection agency, and one chief of research and data at a peak body organization representing the social purpose sector.

#### *2022 Update*

In late 2022, the Australian Social Progress Index was updated to include data from year 2019-2022. Indicators were primarily kept the same, dependent on data availability. The impact of COVID-19 was considered when revisiting indicators; due to the need for indicators to be collected regularly over the 7-year period, most COVID-specific datasets were not appropriate for inclusion.

Key indicators that were removed or changed were based on feedback to the first SPI. Women accessing homelessness services due to family and domestic violence (FDV) was included as a new indicator as a key area of policy concern. Environmental outcome indicators continue to be somewhat inconsistently measured and remain a key area of concern when accurately estimating Australia's progress in supporting environmental quality.

### **INDICATOR SELECTION AND DATA COLLECTION**

The Indicators for the Australian SPI were selected following SPI general design principles: non-economic focus, outcome indicators, relevant to all units of observation and actionable. Furthermore, credibility of sources, expert feedback, and data availability were also considered. The process of indicator selection followed the Social Progress Index methodology as outlined in Figure 4.

Detailed information on individual indicators included in the Index is presented in Appendix A. A list of indicators that were taken into consideration but are not included in the final index is presented in Appendix C.

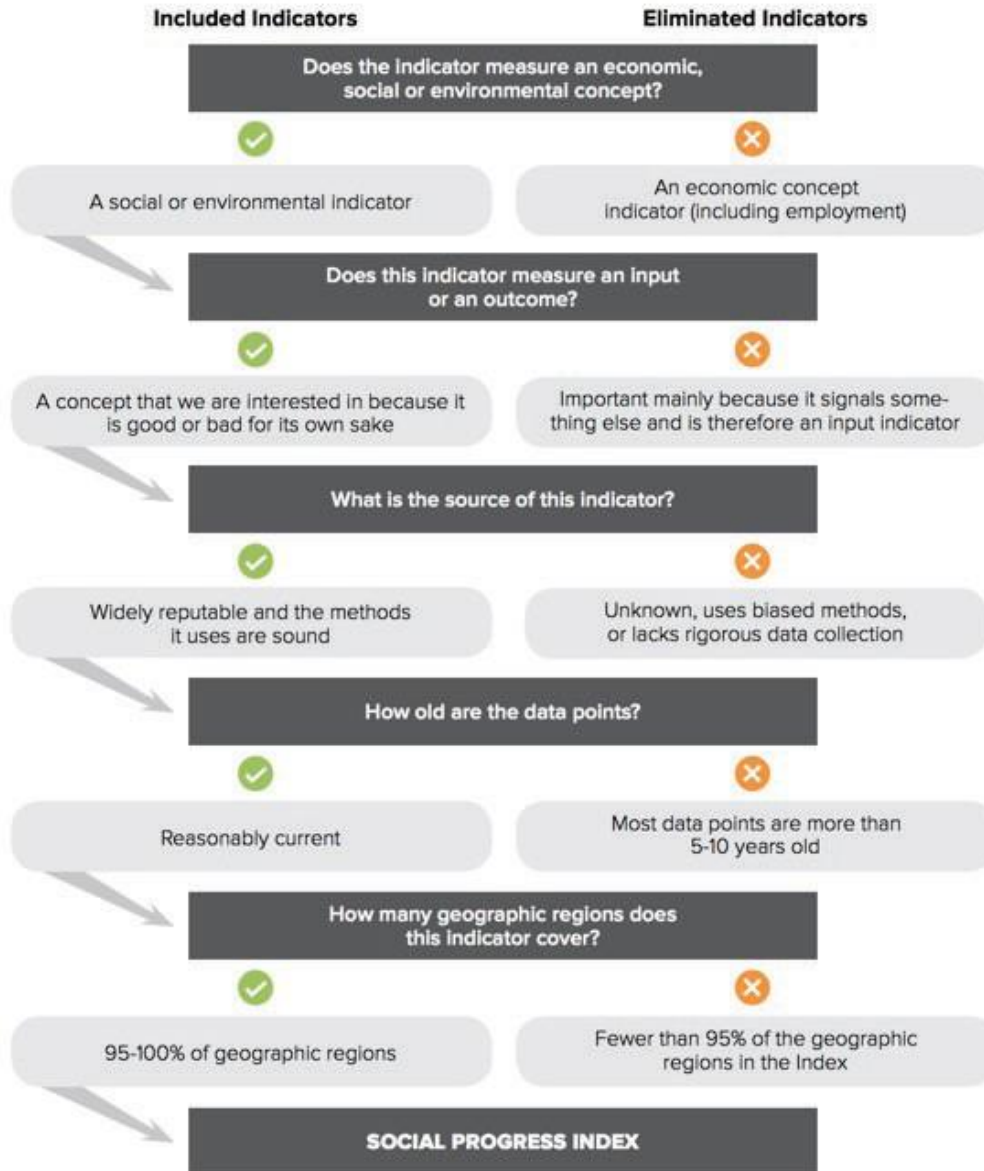


Figure 3: Indicator selection tree

Source: (Stern et al., 2018)

All the data used in the Index was compiled from national data sources, unless otherwise indicated. In a number of cases, however, the data for certain States or Territories was missing for particular indicators, and these had to be completed by imputation methods.

An exploratory factor analysis was used to test the underlying factors among the set of selected indicators in each component. In this process, the indicators that were statistically incompatible, or formed a second, less dominant factor, were removed.

Forty-seven indicators that had usable data were excluded from the final Index framework because of poor model fit (correlations either too high or too low, or negatively correlated) (N = 43), or the suggested indicators did not fit conceptually with the other indicators included in the component to answer the universal question (N = 4).

The final framework is presented in Figure 4.

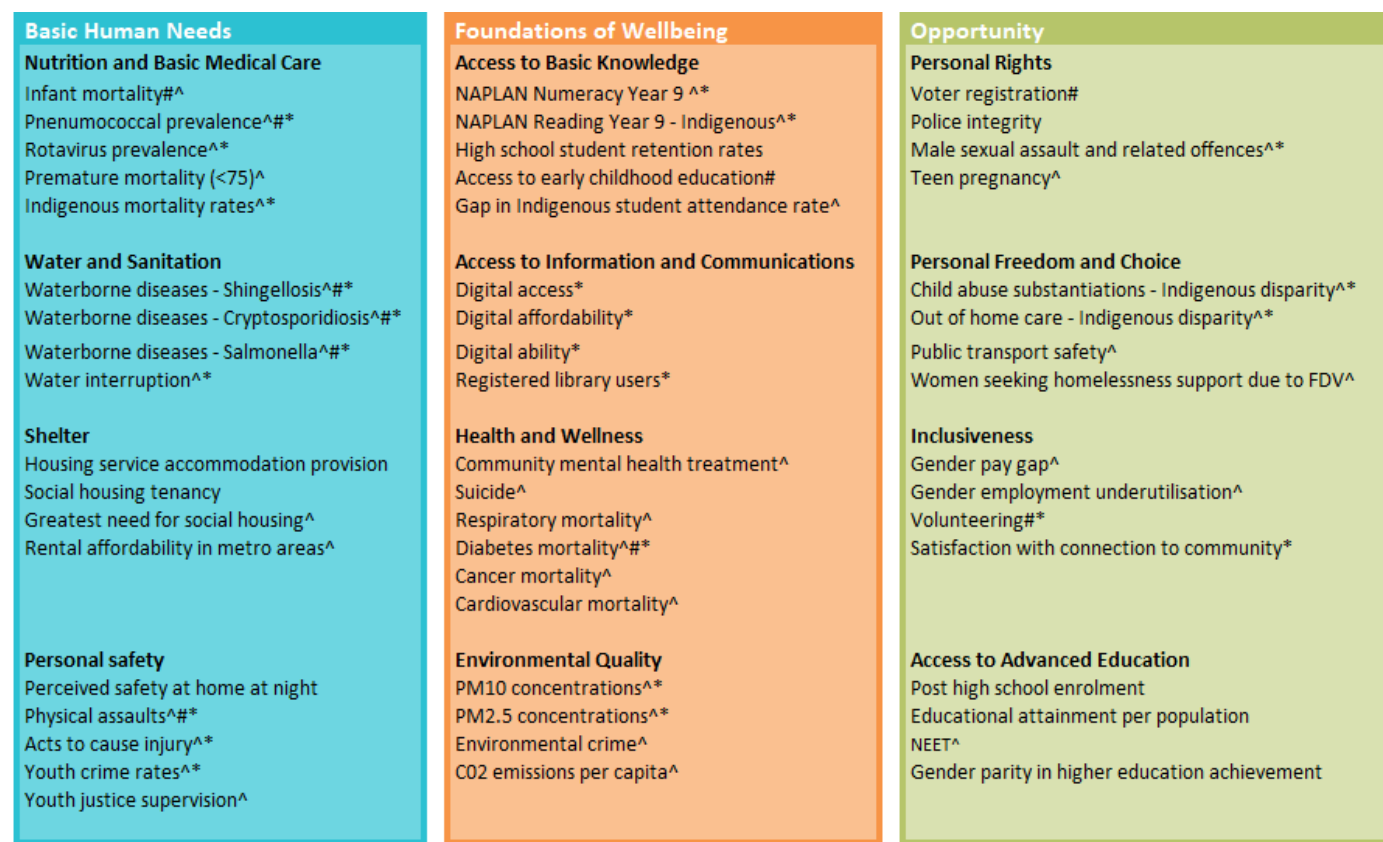


Figure 4: Australian Social Progress Framework

Source: Author. ^ inverted indicator; # log transformed indicator; \* missing values or outliers treated

### DEALING WITH MISSING VALUES

Overall, the following 4 approaches were considered for missing values imputation (see Table 1):

1. using historical data forward
2. using most recent data backward
3. using comparable State/Territory data (geographic and population size)

Imputing values by regression analysis was tested, however the results were not believed to be more accurate than the above methods, therefore this method was not used in any missing values imputations.

Table 1: Missing value imputations

Indicator	Missing Value	Estimation
Indigenous mortality rates	VIC, TAS, ACT all years	Use lowest rate (usually NSW; also as the largest population in Australia a useful reference state)

Water interruption	NT 2015-2019, TAS 2015-2019	NT - use WA, also remote areas, large land area. TAS - use SA, primarily regional
NAPLAN Numeracy Year 9	2020 values	Impute 2021 values (NAPLAN not conducted in 2020 due to COVID)
NAPLAN Reading Year 9 - Indigenous	2020 values	Impute 2021 values (NAPLAN not conducted in 2020 due to COVID)
Gap in Indigenous student attendance rate	2020 values	Impute 2020 values
Digital access	2020 values	Impute 2020 values
Digital affordability	2021 values	Impute 2020 values
Digital ability	2021 values	Impute 2020 values
Community mental health treatment	2021 values	Impute 2020 values
PM10 concentrations	SA all years	Use WA as conservative estimate; location and population comparable
	Tas 2018-2021	Use ACT as conservative estimate; land size and population comparable
	NSW, VIC, ACT 2021	Impute 2020 values
PM2.5 concentrations	SA all years	Use WA as conservative estimate; location and population comparable
	Tas 2018-2021	Use ACT as conservative estimate; land size and population comparable
	NSW, VIC, ACT 2021	Impute 2020 values
CO2 per capita	2021 values	Impute 2020 values
Teen pregnancy	2021 values	Impute 2020 values
Child abuse substantiations - Indigenous disparity	NSW, TAS 2018	Use NSW, TAS 2017 values
Out of home care - Indigenous disparity	TAS 2018	Use TAS 2017 values
Satisfaction with connection to community	2021 values	Impute 2020 values
Volunteering	2021 values	Impute 2020 values

Source: Author

### DATA TRANSFORMATION

Several key data transformations took place in the process of calculating Australia's Social Progress Index.

There were specific cases where data values for certain indicators were over a rational boundary. In some other cases, data values exceed all other values (aka outliers) which excessively skewed the distribution. These indicators are **confined** at a boundary, a list is presented in **Error! Reference source not found.**

Table 2 Capped indicators

Indicator	Treatment	Explanation of treatment
Infant mortality	NT capped to its lowest value (2016)	NT values introduce high kurtosis; capping to lowest value for NT reduced the value
Pneumococcal incidence	NT capped to its lowest value (2016)	NT values introduce high kurtosis; capping to lowest value for NT reduced the value
Rotavirus incidence	NT 2021 value capped	Replace NT 2021 value with next highest NT value (2015)
Premature mortality	NT values capped to next highest rate in reference year, with additional 30% buffer added	NT twice as high than other states/territories. Capped using next highest rate with 30% buffer to maintain rank
Waterborne diseases - shigellosis	NT values capped	NT values introduce high kurtosis; capping to lowest value for NT reduced the value
Waterborne diseases - cryptosporidiosis	NT values capped	Remove outlier by replacing with NT 2019 value
Waterborne diseases - salmonella	NT values capped to next highest rate in reference year, with additional 30% buffer added	NT values 2-4 times higher than other states/territories. Capped using next highest rate with 30% buffer to maintain rank
Social housing overcrowding	NT 2018 value capped	Remove outlier by replacing with NT 2016 value
Acts to cause injury	NT values capped to next highest rate in reference year, with additional 30% buffer added	NT values 4-5 times higher than other states/territories. Capped using next highest rate with 30% buffer to maintain rank
Preschool attendance	NSW 2021 and VIC 2020-21 values capped to next lowest rate in reference year, with 30% buffer added	NSW and VIC rates low due to COVID lockdowns. Capped using new lowest rate with 30% buffer to maintain rank
NAPLAN Numeracy Year 9	NT values outliers across all years	Use lowest NT value from reference years (2017)
NAPLAN Reading Year 9 - Indigenous	NT values capped to next highest rate in reference year, with additional 30% buffer added	NT values 2.5-3 times higher than other states/territories. Capped using next highest rate with 30% buffer to maintain rank
Diabetes mortality	NT values capped to next highest rate in reference year, with additional 30% buffer added	NT values 2 times higher than other states/territories. Capped using next highest rate with 30% buffer to maintain rank

Source: Author

On account of having outliers that ultimately did not support a normal distribution, several indicators were log transformed in order to address this issue. These are:

- Infant mortality
- Pneumococcal prevalence

- Waterborne diseases - Shingellosis
- Waterborne diseases - Cryptosporidiosis
- Waterborne diseases - Salmonella
- Acts to cause injury
- Access to early childhood education
- Diabetes mortality
- Volunteering

Fourthly, as all the indicators are measured in different units, it was important to **standardize** them so that they become comparable. Otherwise, a variable that has less variation relatively but is measured on a larger scale compared to other variables may appear to have much greater variation than it actually does. Standardization helps solving the problem by making indicators unitless as it rescales them with a mean of zero and standard deviation of one.

Finally, we **invert** all indicators for which a higher value denotes lower social progress, such as rotavirus incidence where higher means worse and lower means better. A list of the inverted indicators is presented in Appendix D.

### AGGREGATION

For the Australian Social Progress Index the researchers adopted the geometric mean approach to aggregation, which applies the geometric mean to aggregate the four components within each dimension into a dimension score and across dimensions into the overall index score.

The Social Progress Index uses the Principal Component Analysis (PCA) for calculating the weights of indicators within a component.<sup>1</sup> There are no indicators with smaller than ideal weights.

The component values are calculated by summing the weighted scores using the following formula:

$$\text{Component}_s = \sum (w_i * \text{indicator})$$

A complete list of weights is presented in Appendix E.

To calculate **component scores** the Index transforms indicator values onto 0 to 100 scale. This is done by calculating scores using best- and worst-case scenarii which are defined at the indicator level according to desirable or theoretically possible upper and lower bounds. See Appendix F for the worst and best-case scenarii.

This method enhances comparability as well as comprehensiveness across the dataset.

The calculation is done using the following formula:

$$\frac{X_j - \text{Worst Case}}{\text{Best Case} - \text{Worst Case}}$$

Where,  $X_j$  represents the raw component values.

Each **dimension** score is then taken to be the geometric average<sup>2</sup> of its four components.

<sup>1</sup> Principal Component Analysis is a multivariate technique which was developed in early 20th century for the purpose of aggregating information. Calculations were done in STATA, using “factor, pcf” command.

<sup>2</sup> Geometric mean represents the central tendency of a group of numbers – the  $n^{\text{th}}$  root of the product of  $n$  numbers. Unlike arithmetic means, geometric mean compensates outlier performances, *to a point*, but also penalizes inconsistent performance



$$Dimension_d score = \sqrt[4]{\left(\prod_{c=1}^4 Component_c score\right)}$$

The overall **Index** score is the geometric average of the three dimensions.

$$Social Progress Index = \sqrt[3]{\left(\prod_{d=1}^3 Dimension_d score\right)}$$

### EVALUATING THE FIT

The indicator selection process entails including the indicators that describe the concept of the component in the best possible way and are conceptually linked to each other. The rigor of the Social Progress Index methodology is strengthened by assessing multiple aspects of fit between those. First, exploratory factor analysis is used to test the underlying factors among the set of selected indicators in each component. In this process, the indicators that are statistically incompatible are removed. This step was initially done when defining the framework for the Australian SPI.

Furthermore, the Social Progress Index methodology involves evaluating the fit between the individual indicators by calculating Cronbach’s alpha for each component. Alpha was developed by Lee Cronbach in 1951 to provide a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1 (Tavakol & Dennick, 2011). Internal consistency describes the extent to which all the items in a test measure the same concept or construct and hence it is connected to the inter-relatedness of the items within the test. Internal consistency can be employed for research or examination purposes to ensure validity. An applied practitioner’s rule of thumb is that the alpha value should be above 0.7 for any logical grouping of variables (Cortina, 1993). The alpha values are presented in Table 3.

	Component	Cronbach's Alpha
Basic Human Needs	Nutrition and Basic Medical Care	0.91
	Water and Sanitation	0.89
	Shelter	0.74
	Personal Safety	0.91
Foundations of Wellbeing	Access to Basic Knowledge	0.91
	Access to Information and Communications	0.83
	Health and Wellness	0.92
	Environmental Quality	0.73
Opportunity	Personal Rights	0.82
	Personal Freedom and Choice	0.80
	Inclusiveness	0.77
	Access to Advanced Education	0.89

Source: Author

in any of the components within a dimension. This helps to emphasize nuance across States and Territories.

After calculating each component, the goodness of fit is evaluated using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy<sup>3</sup>. The KMO index ranges from 0 to 1, as a rule of thumb, KMO scores should be above 0.5 (Williams, Onsmann, & Brown 2010). The results of this analysis are shown in Table 4. The KMO values are well above the set standards for each of the component reflecting appropriate selection of indicators.

	Component	Mean KMO
Basic Human Needs	Nutrition and Basic Medical Care	0.86
	Water and Sanitation	0.76
	Shelter	0.70
	Personal Safety	0.77
Foundations of Wellbeing	Access to Basic Knowledge	0.77
	Access to Information and Communications	0.66
	Health and Wellness	0.86
	Environmental Quality	0.61
Opportunity	Personal Rights	0.61
	Personal Freedom and Choice	0.63
	Inclusiveness	0.64
	Access to Advanced Education	0.83

Source: Author

The last test undertaken to validate the conceptual fit of indicators selected for the three dimensions was exploratory principal component analysis (PCA)<sup>4</sup>. The results for PCA applied on the three dimensions of Basic Human Needs, Foundations of Wellbeing and Opportunity are shown in Figures 5-7 respectively. Eigenvalues higher than 1 imply there is a significant underlying concept. As all three scree plots indicate within each dimension there is only one strong concept as measured by the four components within each dimension.

<sup>3</sup>The statistics is a measure of the proportion of variance among variables that might be common variance.

<sup>4</sup> Following Annoni, P. Dijkstra, L. and Hellman, T. (2016)

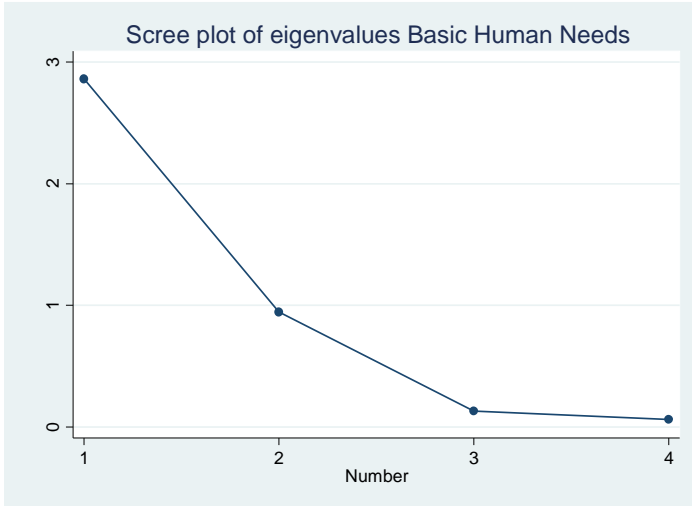


Figure 6: Scree plot Basic Human Needs

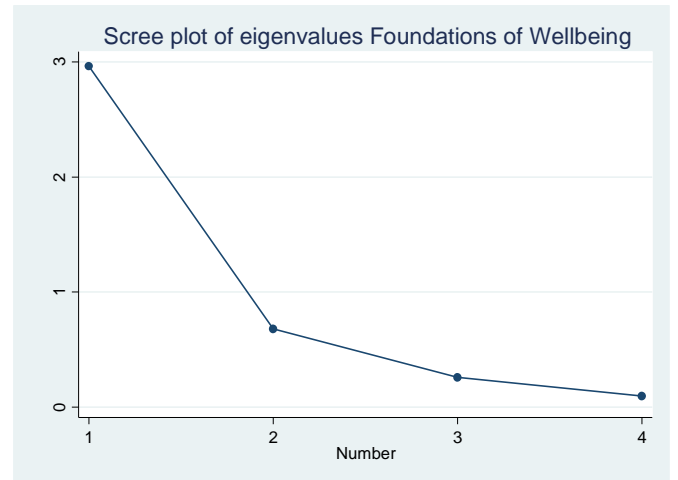


Figure 5: Scree plot Foundations of Wellbeing

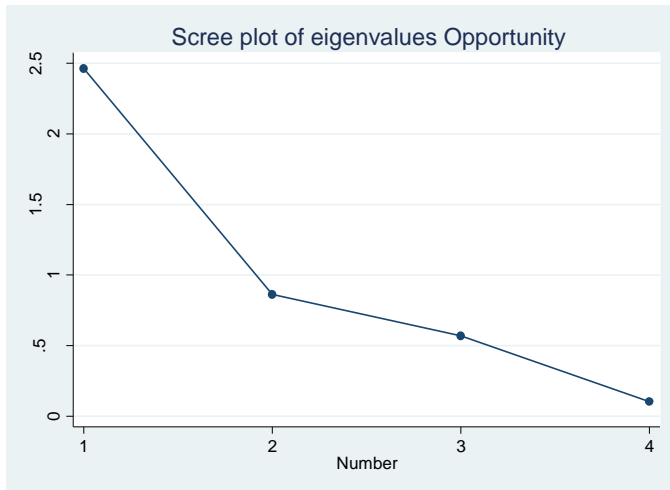


Figure 7: Scree plot Opportunity

## RELATIVE PERFORMANCE OF STATES AND TERRITORIES

The absolute scores do not distinguish States and Territories on the basis of economic development. In some cases, it is more illuminating to compare a state's performance with its economic peers. For instance, a state may score low on certain aspects of social progress, but its performance could exceed the scores of states with similar per capita income levels. Conversely, a high-income state may have a high absolute score on a component, but still fall short of what is typical for comparably wealthy states. The authors have identified two suitable economic metrics that best reflect Australia's context and constructed two sets of scorecards—one using median household wealth and second using Gross State Product (GSP) per capita.

For this reason, the Social Progress Index developed a methodology to assess state's strengths and weaknesses on a relative rather than absolute basis.

Scorecards are used to depict the relative results. The scorecards portray a State or Territory's detailed absolute and relative analysis. The scorecards are colour-coded to highlight relative strengths and weaknesses. Red indicates performance below the peer group median; yellow indicates performance consistent with the peer group; and blue highlights areas of relative strength.

To determine the relative strength and weakness of each state, the first step is to identify a peer group. The authors define state's economic peers as 4 states closest in median household wealth/state gross product (Appendix G). We then calculate median social progress scores for the peer group (overall, and by dimension, component, and indicator). A State or Territory's performance is then compared to its peer group's median social progress scores to identify its relative strengths and weaknesses. A strength is performance significantly greater than the median score, while a weakness is performance significantly lower than the median score. Neutral performance is neither strong nor weak, but within the same range as economic peers. Significance is determined by a score that is greater than or less than the average absolute deviation from the median of the comparator group.

## CONCLUSION

The Social Progress Index for the States and Territories of Australia is the first endeavor of its kind. Led by the Center for Social Impact at UNSW, in collaboration with the Social Progress Imperative, the process involved input from key stakeholders and actors across Australia to ensure the Index captures the most relevant metrics for Australia's society, and highlights gaps in data collection. The research team devoted significant time to the index construction, to produce a robust and rigorous outcome which can be used to inform policies, investments, and other decisions in order to advance social progress across Australia. However, this is just the beginning, the index will be updated on regular basis, and it is our sincere hope that with time, there will be more and better measures. Please do not hesitate to get in touch with us if you know of any indicators that would be suitable, or if you would like to use the index in any way. We will be looking forward to hearing from you.

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APPENDIX A: INDICATOR DEFINITIONS AND SOURCES

Dimension/component	Indicator Name	Definition	Source
<b>Basic Human Needs</b>			
Nutrition and Basic Medical Care	Infant mortality	The number of deaths of children under one year of age in a specified period per 1,000 live births in the same period.	ABS Deaths and Infant Mortality Rates
	Pneumococcal prevalence	Notification rate of Pneumococcal, per 100,000	Department of Health National Notifiable Diseases Surveillance System
	Rotavirus prevalence	Notification rate of rotavirus, per 100,000	Department of Health National Notifiable Diseases Surveillance System
	Premature mortality (<75)	Potential years of life lost, per 100 000 of the population aged 1-64	ABS Deaths Register and Rates
	Indigenous mortality rates	Rate ratio between Indigenous and non-Indigenous standardised death rates, per 100,000 people	ABS Deaths Register and Rates
Water and Sanitation	Waterborne diseases - Shingellosis	Notification rates per 100,000 of shingellosis	Department of Health National Notifiable Diseases Surveillance System
	Waterborne diseases - Cryptosporidiosis	Notification rates per 100,000 of cryptosporidiosis	Department of Health National Notifiable Diseases Surveillance System
	Waterborne diseases - Salmonella	Notification rates per 100,000 of salmonella	Department of Health National Notifiable Diseases Surveillance System
	Water interruption	Average frequency of unplanned interruptions - water (no per 1000 properties) (averaged over providers)	Bureau of Meteorology Urban National Performance Report
Shelter	Social housing tenancy	Rate of people living in social housing, per 10,000 of the population	AIHW National Housing Assistance Data Repository
	Accommodation provision	Proportion of clients of Specialist Housing Services with identified need for accommodation provision who received short, medium or long-term accommodation	AIHW Specialist Homelessness Services
	Greatest need for social housing	Proportion of households on public housing waiting list with greatest need status	AIHW National Housing Assistance Data Repository
	Rental affordability	Rental affordability index score for metropolitan areas	Rental Affordability Index

METHODOLOGY REPORT

Personal Safety	Perceived safety at home at night	Perceptions of safety at home at night Index score	Federal Productivity Commission Report on Government Services
	Physical assaults	Rate of persons who experienced physical assault in last 12 months (per 10,000)	ABS Crime Victimization Survey
	Acts to cause injury	Offender rate of recorded acts intended to cause injury	ABS Recorded Crime
	Youth crime rates	Offender rate of all recorded crime committed by youth	ABS Recorded Crime
	Youth justice supervision	Rate of 10-17 year olds under community and detention supervision on an average day (per 10,000)	AIHW Youth Justice in Australia

**Foundations of Wellbeing**

Access to Basic Knowledge	NAPLAN Numeracy Year 9	Proportion of population achieving below the national minimum standard for writing	NAPLAN
	NAPLAN Reading Year 9 - Indigenous	Difference in Proportion of population achieving below the national minimum standard for reading - Indigenous cf non-Indigenous	NAPLAN
	High school student retention rates	Apparent retention rates for students, Year 7/8 - Year 11	ACARA National report on Schooling in Australia
	Access to early childhood education	Proportion of children aged 4-5 enrolled in preschool program (%)	ABS Children enrolled in preschool program
	Gap in Indigenous student attendance rate	Gap in student attendance rate years 1-10 - Indigenous to non-Indigenous students	ACARA National report on school attendance

Access to Information and Communications	Digital access	Digital access score in Digital inclusion index	Digital Inclusion Index
	Digital affordability	Digital affordability score in Digital inclusion index	Digital Inclusion Index
	Digital ability	Digital ability score in Digital inclusion index	Digital Inclusion Index
	Registered library users	Total number of registered or active members as a percentage of the population (need to calculate as %)	NSLA Annual Australian Public Library Statistics

Health and Wellness	Community mental health treatment	Patient rate per 1,000 population receiving community mental health care	AIHW Mental Health Services
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METHODOLOGY REPORT

	Suicide	Standardised death rate due to self-harm (suicide)	ABS Causes of Death
	Respiratory mortality	Age-standardised death rate due to respiratory disease	ABS Causes of Death
	Diabetes mortality	Age-standardised death rate due to diabetes	ABS Causes of Death
	Cancer mortality	Age-standardised death rate due to cancer-neoplasms	ABS Causes of Death
	Cardiovascular mortality	Age-standardised death rate due to diseases of the circulatory system	ABS Causes of Death
Environmental Quality	PM10 concentrations	Median 24 hour concentrations of PM10, averaged across monitoring stations	State Environment agencies
	PM2.5 concentrations	Median 24 hour concentrations of PM2.5 measured using continuous BAM method, averaged across monitoring stations	State Environment agencies
	Environmental crime	Offender rate for property damage and environmental pollution	ABS Recorded Crime
	CO2 per capita	Greenhouse gas emissions per capita (t CO2-e per person)	Department of Climate, Energy the Environment and Water National Greenhouse Accounts
<b>Opportunity</b>			
Personal Rights	Voter registration	Proportion of eligible adults enrolled to vote (%)	Australian Electoral Commission enrolment statistics
	Police integrity	Police integrity - total proportion in agreement with 'police treat people fairly and equally' (%)	Federal Productivity Commission Report on Government Services
	Male sexual assault and related offences	Offender rate of recorded sexual assault and related offences by males	ABS Recorded Crime
	Teen pregnancy	Rate of 15-19 year old women who gave birth (per 1,000)	ABS Births and Deaths Statistics
Personal Freedom and Choice	Child abuse substantiations - Indigenous disparity	Rate ratio of Indigenous to non-Indigenous children aged 0-17 who were the subjects of substantiations of notifications received	AIHW Child Protection Australia
	Out of home care - Indigenous disparity	Rate ratio of Indigenous to non-Indigenous children in out of home care (per 1,000)	AIHW Child Protection Australia

METHODOLOGY REPORT

	Public transport safety	Perceptions of safety on public transport at night Index score	Federal Productivity Commission Report on Government Services
	Women seeking homelessness services FDV	Rate ratio of women to men seeking homelessness services due to family and domestic violence	AIHW Specialist Homelessness Services
Inclusiveness	Gender pay gap	Female total cash earnings, expressed as a percentage of men's total cash earnings.	ABS Average Weekly Earnings
	Gender employment underutilisation	The difference between women's and men's underutilisation rate, expressed as a ratio of female to male underutilisation	ABS Labour Force Survey
	Volunteering	Proportion of people who reporting volunteering for more than half an hour a week	HILDA
	Satisfaction with connection to community	Proportion of people who are satisfied with feeling part of the community	HILDA
Access to Advanced Education	Post high school enrolment	Proportion of the population aged 15-64 who are attending higher education, TAFE or other institution/organisation (not secondary) (%)	Survey of Education and Work, ABS
	Educational attainment per population	Proportion of population 20-64 with post-school qualification	Survey of Education and Work, ABS
	NEET	Proportion of 15-24 year olds who are not fully or partially engaged in employment or study	Survey of Education and Work, ABS
	Gender parity in higher education achievement	Proportion of women with a bachelor degree or above as a ratio to men with a bachelor degree or above aged 20-64	Survey of Education and Work, ABS

## APPENDIX B: ANNUAL DATA AVAILABILITY

Data source	Availability and most recent update
<b>ABS Average Weekly Earnings</b>	Updated every six months in February and August; latest data update for May 2022 released August 2022
<b>ABS Births and Deaths Statistics</b>	Updated annually; latest update with 2021 data released October 2022
<b>ABS Causes of Death</b>	Updated annually; latest update with 2021 data updated October 2022
<b>ABS Children enrolled in preschool program</b>	Updated annually; 2021 data released March 2022
<b>ABS Crime Victimization Survey</b>	Updated annually; 2020-21 data released February 2022
<b>ABS Labour Force Survey</b>	Updated monthly; October 2022 data released November 2022
<b>ABS Recorded Crime</b>	Updated annually; 2021 data released July 2022
<b>ABS Survey of Education and Work</b>	Updated annually; 2022 data released November 2022
<b>ACARA National report on school attendance</b>	Updated annually; latest update available with 2021 data
<b>ACARA National report on Schooling in Australia</b>	Updated annually; latest update available with 2021 data
<b>AIHW Child Protection Australia</b>	Updated annually; 2020-21 data released June 2022
<b>AIHW Mental Health Services</b>	Updated continuously throughout year; community mental health data last updated for 2019-20
<b>AIHW National Housing Assistance Data Repository</b>	Updated annually; 2021 data released July 2022
<b>AIHW Youth Justice in Australia</b>	Updated annually; 2020-21 data released March 2022
<b>Australian Electoral Commission enrolment statistics</b>	Updated annually; 2019 data released July 2019
<b>Bureau of Meteorology Urban National Performance Report</b>	Updated annually; 2020-21 data released February 2022
<b>Department of Health National Notifiable Diseases Surveillance System</b>	Updated daily, summary department provided on request from the Department
<b>Department of Climate, Energy the Environment and Water National Greenhouse Accounts Factors</b>	Updated annually; 2022 data available
<b>Digital Inclusion Index</b>	Updated annually; 2021 data released 2021

<b>Federal Productivity Commission Report on Government Services</b>	Updated annually; 2020-21 data released June 2022
<b>HILDA</b>	Updated annually; 2020 wave released February 2022
<b>NAPLAN</b>	Updated annually (excluding 2020); 2022 results released 2022
<b>NSLA Annual Australian Public Library Statistics</b>	Updated annually with two-year lag; 2020-21 results released March 2022
<b>Rental Affordability Index</b>	Updated annually; 2021 results released November 2021
<b>State Environment agencies</b>	Sourced from individual State and Territory Environment agencies; update frequency and timing varies

## APPENDIX C: EXCLUDED INDICATORS

**Nutrition and Basic Medical Care**

## Malnutrition/Hunger

**Description**

Proportion of the population with intakes less than the estimated average requirement for key nutrients (%)

**Source, YEAR RANGE AVAILABLE**

AIHW – 2011-2012

**Reason for exclusion**

Data more than 5 years old

## Anaemia

**Description**

Anaemia biomarker estimates, normal and at risk of anaemia

**Source, YEAR RANGE AVAILABLE**

ABS – 2011-2012

**Reason for exclusion**

Data more than 5 years old

## Australian dietary guidelines

**Description**

Proportion of people with usual daily intake less than recommended number of serves

**Source, YEAR RANGE AVAILABLE**

ABS – 2011-2012

**Reason for exclusion**

Data more than 5 years old

## Infectious diseases

**Description**

Notification rates per 100,000 population (bloodborne, gastrointestinal, bacterial, quarantinable, STI, vaccine preventable, vectorborne, zoonoses)

**Source, YEAR RANGE AVAILABLE**

Department of Health National Notifiable Diseases Surveillance System – 1991-2017

**Reason for exclusion**

Indicator refined to specific diseases – choice made to look at vaccine-preventable diseases

## Diphtheria

**Description**

Notification rate of diphtheria per 100,000 people

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

Not enough variability across time points

## Polio

**Description**

Notification rate of Polio, per 100,000

**Source, YEAR RANGE AVAILABLE**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

No notifications across all years and States/Territories

## Tetanus

**Description**

Notification rate of Tetanus, per 100,000

**Source, YEAR RANGE AVAILABLE**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

Not enough variability across time points

## Chickenpox

**Description**

Notification rate of chickenpox (varicella), per 100,000 people

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

Poor model fit

## Influenza

**Description**

Notification rate of influenza (laboratory confirmed) per 100,000 people

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

Poor model fit

## Hepatitis B

**Description**

Notification rate of Hepatitis B (newly acquired) per 100,000 people

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

Poor model fit

## Hib (Haemophilus influenzae type B)

**Description**

Notification rate of HIB (Haemophilus influenzae type B) per 100,000 people

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

Poor model fit

Measles

**Description**

Notification rate of measles, per 100,000 people

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

Poor model fit

Meningococcal

**Description**

Notification rate of meningococcal disease (invasive), per 100,000 people

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

NT outliers, otherwise little variability

Mumps

**Description**

Notification rate of mumps, per 100,000 people

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

NT outliers, otherwise little variability

Rubella

**Description**

Notification rate of rubella, per 100,000 people

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

Poor model fit

Whooping cough (pertussis)

**Description**

Notification rate of whooping cough (pertussis), per 100,000 people

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

Poor model fit

Unmet medical needs

**Description**

Proportion of people who needed to go to hospital but didn't at least once in last 12 months

**Source, YEAR RANGE AVAILABLE**

ABS Patient Experiences in Australia Survey – 2011-12, 2016-17

**Reason for exclusion**

Data collected and excluded - not enough time series

Unmet medical needs - remoteness

**Description**

Proportion of people who needed to go to hospital but didn't at least once in last 12 months, urban cf remote/very remote

**Source, YEAR RANGE AVAILABLE**

ABS Patient Experiences in Australia Survey – 2011-12, 2016-17

**Reason for exclusion**

Data collected and excluded - not enough time series

Maternal mortality

**Description**

Maternal mortality ratio by State or territory per 100,000 women who gave birth

**Source, YEAR RANGE AVAILABLE**

AIHW Maternal Deaths in Australia – 2012-2014

**Reason for exclusion**

Data collected and excluded - not enough time series

Maternal mortality

**Description**

Standardised death rate for females who died due to pregnancy, childbirth and the puerperium

**Source, YEAR RANGE AVAILABLE**

ABS Causes of Death – 2013-2017

**Reason for exclusion**

Data not reported due to small numbers

Low birth weight

**Description**

Live infants born with a birthweight of less than 2,500 grams (rate)

**Source, YEAR RANGE AVAILABLE**

AIHW Children's Headline Indicators – 2006-2015

**Reason for exclusion**

Data collected and excluded - not enough time series

Low birth weight - remoteness

**Description**

Live infants born with a birthweight of less than 2,500

grams (rate)

**Source, YEAR RANGE AVAILABLE**

AIHW Children's Headline Indicators – 2006-2015

**Reason for exclusion**

Data collected and excluded - not enough time series

Low birth weight - Indigenous

**Description**

Live infants born with a birthweight of less than 2,500 grams (rate)

**Source, YEAR RANGE AVAILABLE**

AIHW Children's Headline Indicators – 2006-2015

**Reason for exclusion**

Data collected and excluded - not enough time series

Stillbirth rate

**Description**

Perinatal mortality (stillbirths, neonatal and perinatal deaths) rate per 1000 births

**Source, YEAR RANGE AVAILABLE**

AIHW Australia's Mothers and Babies – 2013-2016

**Reason for exclusion**

Data collected and excluded - not enough time series

Satisfaction with medical care

**Description**

Proportion of people who waited longer than felt acceptable to get an appointment with a GP in last 12 months (%)

**Source, YEAR RANGE AVAILABLE**

ABS Patient Experiences in Australia Survey – 2011-12, 2016-17

**Reason for exclusion**

Data collected and excluded - not enough time series

Satisfaction with medical care - remoteness

**Description**

Proportion of people who waited longer than felt acceptable to get an appointment with a GP in last 12 months, broken into remoteness areas (%)

**Source, YEAR RANGE AVAILABLE**

ABS Patient Experiences in Australia Survey – 2011-12, 2016-17

**Reason for exclusion**

Data collected and excluded - not enough time series

Vaccinations in children

**Description**

Proportion of children fully immunised at 1 year of age

**Source, YEAR RANGE AVAILABLE**

Australian Department of Health – 2013-2017

**Reason for exclusion**

Input, not outcome

Vaccinations in children - Indigenous

**Description**

Proportion of Indigenous children fully immunised at 1 year of age

**Source, YEAR RANGE AVAILABLE**

Australian Department of Health – 2013-2017

**Reason for exclusion**

Input, not outcome

**Water and Sanitation**

Access to piped water (includes tank water)

**Description**

Proportion of total state households who have access to mains/town water (%)

**Source, YEAR RANGE AVAILABLE**

ABS – 2007, 2010, 2013

**Reason for exclusion**

Data more than 5 years old

Waterborne diseases

**Description**

Notification rates per 100,000 of certain water and food-borne diseases (listeria, salmonella, cryptosporidium)

**Source, YEAR RANGE AVAILABLE**

Department of Health National Notifiable Diseases Surveillance System – 1991-2017

**Reason for exclusion**

Have sourced data for individual diseases to include

Waterborne diseases – Campylobacteriosis

**Description**

Notification rate per 100,000 of Campylobacteriosis

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 1991-2019

**Reason for exclusion**

Poor model fit

Waterborne diseases – Listeria

**Description**

Notification rate per 100,000 of Listeria

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 1991-2019

**Reason for exclusion**

Poor model fit

Sewage treatment

**Description**

Average number of sewer main breaks and chokes per 100 kilometres of sewer main

**Source, Year range available**

Bureau of Meteorology – 2006-2012

**Reason for exclusion**

Data more than 5 years old

Satisfaction with water quality

**Description**

Satisfaction with quality of water for drinking, proportion (%)

**Source, Year range available**

ABS – 2007, 2010, 2013

**Reason for exclusion**

Data more than 5 years old

Water Stability

**Description**

Average number of water main breaks per 100km of water main

**Source, Year range available**

Bureau of Infrastructure, Transport and Regional Economics – 2008-2016

**Reason for exclusion**

Not reported in 2018 report

Water Recycling Services

**Description**

Percentage of effluent recycled (%) (averaged over providers)

**Source, Year range available**

Bureau of Meteorology Urban National Performance Report – 2008-2016

**Reason for exclusion**

Input rather than outcome

Water service violations

**Description**

Percentage of population where microbiological compliance was achieved (%) (averaged over providers)

**Source, Year range available**

Bureau of Meteorology Urban National Performance Report – 2005-2016

**Reason for exclusion**

Input rather than outcome

Sewer Overflows

**Description**

Sewer overflows reported to the environmental regulator (number per 100km of sewer main) (averaged

over providers)

**Source, Year range available**

Bureau of Meteorology Urban National Performance Report – 2005-2018

**Reason for exclusion**

Input rather than outcome

*Shelter*

Estimated Homelessness

**Description**

Estimated rate of homelessness (per 10,000 of the population)

**Source, Year range available**

ABS Census – 2011, 2016

**Reason for exclusion**

Not enough time series

Homelessness - Indigenous

**Description**

Rate of Indigenous people who are reported as homeless (per 10,000 of the population)

**Source, Year range available**

ABS Census – 2011, 2016

**Reason for exclusion**

Not enough time series

Homelessness - Disability

**Description**

Rate of people who need assistance with core activities who are classified as homeless (per 10,000 of the population)

**Source, Year range available**

ABS Census – 2011, 2016

**Reason for exclusion**

Not enough time series

Homelessness – Young People

**Description**

Rate of homelessness in people aged 12-24 years (per 10,000 of population)

**Source, Year range available**

ABS Census – 2011, 2016

**Reason for exclusion**

Not enough time series

Homelessness – Aging Population

**Description**

Rate of homelessness in people aged 55+ years (per 10,000 of population)

**Source, Year range available**



ABS Census – 2011, 2016

**Reason for exclusion**

Not enough time series

Homelessness service use - Indigenous

**Description**

Rate ratio of Indigenous to non-Indigenous clients accessing homelessness services

**Source, Year range available**

AIHW Specialist Homelessness Services – 2011-2017

**Reason for exclusion**

Poor correlations

Housing affordability

**Description**

Housing costs as a proportion of gross household income (%)

**Source, Year range available**

ABS Survey of Income and Housing – 1994-2016

**Reason for exclusion**

Not enough data points

Housing affordability – Income quartile disparities

**Description**

Disparity in housing costs as a proportion of gross household income (%) between highest and lowest income quartiles

**Source, Year range available**

ABS Survey of Income and Housing – 1994-2016

**Reason for exclusion**

Not enough data points

Low income housing stress

**Description**

Proportion of low-income rental households spending more than 30% of their gross income on housing costs

**Source, Year range available**

HILDA – 2001-2017

**Reason for exclusion**

Not enough data points

Low income housing stress

**Description**

Proportion of low-income rental households spending more than 30% of their gross income on housing costs

**Source, Year range available**

ABS Survey of Income and Housing – 2007-2016

**Reason for exclusion**

Not enough data points

Housing affordability

**Description**

Total disposable household income divided by annual rent or mortgage payments

**Source, YEAR RANGE AVAILABLE**

HILDA – 2001-2017

**Reason for exclusion**

Economic indicator

Overcrowding - remoteness

**Description**

Rate of dwellings that require 2 or more extra bedrooms to meet the Canadian National Occupancy Standard (HOSD) (%) - remote/very remote areas

**Source, YEAR RANGE AVAILABLE**

ABS Census - 2016

**Reason for exclusion**

Cells too small to conduct analysis

Overcrowding

**Description**

Proportion of dwellings that require 2 or more extra bedrooms to meet the Canadian National Occupancy Standard (HOSD) (%)

**Source, Year range available**

ABS Census – 2016

**Reason for Exclusion**

2016 data only available

Overcrowding

**Description**

Proportion of households where there are more than two people per bedroom

**Source, Year range available**

HILDA – 2001-2021

**Reason for Exclusion**

Poor model fit

Overcrowding - Indigenous

**Description**

Proportion ratio of dwellings that require 2 or more extra bedrooms to meet the Canadian National Occupancy Standard (HOSD) (%) - Households with Aboriginal and/or Torres Strait Islander person(s) vs. other households

**Source, Year range available**

ABS Census – 2016

**Reason for Exclusion**

2016 data only available

Electricity/blackouts

**Description**

Total number of people affected by blackouts, duration, number of outages, average number of people affected per outage, average duration of outage, cause of outage.

**Source, YEAR RANGE AVAILABLE**

Eaton – 2005-2017

**Reason for exclusion**

Not a reputable data source

Electricity Interruptions

**Description**

Average number of times a customer’s supply is interrupted per year - System Average Interruption Frequency Index

**Source, Year range available**

Australian Energy Regulator and BITRE Report – 2006-2016

**Reason for exclusion**

Input not outcome

Access to garbage collection

**Description**

Waste collection and disposal in area (garbage, recycling, hard rubbish, garden waste, other) (%)

**Source, YEAR RANGE AVAILABLE**

ABS Environmental Views and Behaviour – 2011-12

**Reason for exclusion**

Data more than 5 years old

Access to social housing - Indigenous

**Description**

Disparity in proportions of households owned by state or territory housing authority divided by total households (%) - Indigenous vs non-Indigenous

**Source, Year range available**

ABS Census – 2011, 2016

**Reason for exclusion**

Not enough time series

Access to social housing - remoteness

**Description**

Disparity in proportions of households owned by state or territory housing authority divided by total households (%) - urban vs remote/very remote

**Source, YEAR RANGE AVAILABLE**

ABS Census – 2011, 2016

**Reason for exclusion**

Cells too small to conduct analysis

Access to social housing – Country of birth

**Description**

Disparity in proportions of households owned by state or territory housing authority divided by total households (%) - born in Australia vs overseas

**Source, YEAR RANGE AVAILABLE**

ABS Census – 2011, 2016

**Reason for exclusion**

Not enough time series

PEOPLE WITH DISABILITY ACCESS TO HOUSING

**Description**

Proportion of people accessing social housing with a disability (%)

**Source, YEAR RANGE AVAILABLE**

AIHW – 2014-2018

**Reason for exclusion**

Not enough data points

YOUTH ACCESS TO HOUSING

**Description**

Proportion of people accessing social housing aged 15-24 (%)

**Source, YEAR RANGE AVAILABLE**

AIHW – 2014-2018

**Reason for exclusion**

Not enough data points

Evictions – CONCERNS INCLUDED

**Description**

Proportion of people who said main reason for last move - notice given by landlord (%)

**Source, YEAR RANGE AVAILABLE**

ABS General Social Survey – 2014

**Reason for exclusion**

Data more than 5 years old

Public housing complaints

**Description**

Overall satisfaction with services provided by housing organisation (% satisfied or very satisfied)

**Source, YEAR RANGE AVAILABLE**

AIHW National Social Housing Survey – 2014-2018

**Reason for exclusion**

None listed

Satisfaction with home

**Description**

Proportion of people reporting that they are satisfied with the home in which they live, scale 1-10

**Source, Year range available**

HILDA – 2011-2016

**Reason for exclusion**

Poor correlation

Homelessness service use - Indigenous

**Description**

Rate ratio of Indigenous to non-Indigenous clients accessing homelessness services

**Source, Year range available**

AIHW Specialist Homelessness Services – 2011-2017

**Reason for exclusion**

Poor correlations with other homelessness data

Homelessness service use - Gender

**Description**

Rate ratio of male to female clients accessing homelessness services

**Source, Year range available**

AIHW Specialist Homelessness Services – 2011-2017

**Reason for exclusion**

Poor correlations with other homelessness data

Air conditioning

**Description**

Air conditioner ownership (%)

**Source, YEAR RANGE AVAILABLE**

Energy Efficient Strategies and ABS – 1978-2010

**Reason for exclusion**

Data more than 5 years old

Heating

**Description**

Percentage of people unable to heat home (%)

**Source, Year range available**

HILDA – 2001-2016

**Reason for exclusion**

Poor data and not appropriate for sample

Social Housing Overcrowding

**Description**

Proportion of public housing dwellings that are overcrowded (requiring one or more bedrooms)

**Source, Year range available**

AIHW National Housing Assistance Data Repository

**Reason for exclusion**

Poor correlations with other homelessness data

Satisfaction with social housing services

**Description**

% satisfied or very satisfied with overall services

**Source, Year range available**

AIHW National Social Housing Survey – 2014, 2016,

2018, 2021

**Reason for exclusion**

Poor correlations with other homelessness data

Rental Affordability – Low Income households

**Description**

Proportion of lower income renter households paying more than 30% of income on housing costs

**Source, Year range available**

Housing Occupancy and Costs, Australian Bureau of Statistics 2007-2020

**Reason for exclusion**

Poor correlations with other homelessness data

**Personal Safety**

Perceived safety

**Description**

Proportion of people reporting that they are satisfied with how safe they feel, scale 1-10

**Source, Year range available**

HILDA – 2001-2016

**Reason for exclusion**

HILDA indicator and will use other source for perceived safety

Perceived safety – walking alone at night

**Description**

Perceptions of safety walking alone in neighbourhood at night Index score

**Source, Year range available**

Federal Productivity Commission Report on Government Services – 2012-2018

**Reason for exclusion**

Using other indicators for perceived safety

Perceived safety – Public transport during day

**Description**

Perceptions of safety on public transport during the day Index score

**Source, Year range available**

Federal Productivity Commission Report on Government Services – 2012-2018

**Reason for exclusion**

Using other indicators for perceived safety

Perceived safety – walking alone during day

**Description**

Perceptions of safety walking alone in neighbourhood during the day Index score

**Source, Year range available**

Federal Productivity Commission Report on Government Services – 2012-2018

**Reason for exclusion**

Will use perceived safety at home at night instead – more representative of component

Victimization – Property crime

**Description**

Proportion of people who report being victim of property crime in the last 12 months (%)

**Source, Year range available**

HILDA – 2001-2016

**Reason for exclusion**

Property crime captured in another indicator

Victimization – Property crime

**Description**

Rate of households who experience attempted break ins, robbery, motor vehicle theft, or other malicious property damage in the last 12 months (per 10,000)

**Source, Year range available**

ABS Crime Victimization Survey – 2008-2017

**Reason for exclusion**

Doesn't fit conceptually

Victimization – Physical violence

**Description**

Proportion of people who report being victim of physical violence in the last 12 months (%)

**Source, Year range available**

HILDA – 2001-2016

**Reason for exclusion**

Victimization/violence captured in another indicator

Victimization – Threatened Assault

**Description**

Rate of persons who experienced a threatened assault in last 12 months (per 10,000)

**Source, Year range available**

ABS Crime Victimization Survey – 2008-2017

**Reason for exclusion**

Will use rates of physical assault instead

Domestic and Family Violence – Remoteness, SEIFA, Cultural diversity, disability, sex

**Description**

Proportion of the population who have experienced violence by partner in the last 12 months (%) disparity urban vs remote/very remote, first and tenth decile of SEIFA, those born in Australia/main English-speaking countries and other countries, has disability vs doesn't have disability, women vs men

**Source, YEAR RANGE AVAILABLE**

ABS Personal Safety Survey - 2016

**Reason for exclusion**

Not enough data points

Sexual harassment – gender inequality, remoteness, SEIFA, disability, country of birth

**Description**

Proportion of the population who experienced sexual harassment in the last 12 months (%) disparity in women vs men, urban vs remote/very remote, first and tenth decile of SEIFA, those born in Australia/main English-speaking countries and other countries, has disability vs doesn't have disability

**Source, YEAR RANGE AVAILABLE**

ABS Personal Safety Survey – 2016

**Reason for exclusion**

Not enough data points

Victimization - violence – Sex, remoteness, SEIFA, disability, country of birth

**Description**

Proportion of the population who experienced violence in the last 12 months (%) disparity in women vs men, urban vs remote/very remote, first and tenth decile of SEIFA, those born in Australia/main English-speaking countries and other countries, has disability vs doesn't have disability

**Source, YEAR RANGE AVAILABLE**

ABS Personal Safety Survey – 2016

**Reason for exclusion**

Not enough data points

Road/traffic accidents

**Description**

Number of fatal road crashes (all passengers) calculated as a proportion of the population

**Source, Year range available**

Department of Infrastructure and Regional Development - Road Trauma Annual Summaries – 2001-2017

**Reason for exclusion**

Numbers too small to calculate rate

Deaths from traffic accidents

**Description**

Standardised death rate from transport accidents

**Source, Year range available**

ABS Causes of Death – 2008-2017

**Reason for exclusion**

Not constrained to traffic accidents but includes all transport

Deaths in custody

**Description**

Rate of deaths in custody per 100 prisoners on an average day

**Source, Year range available**

AIC Deaths in Prison Custody – 2013-2015

**Reason for exclusion**

Unable to attribute deaths to lack of social progress; not enough time points

Deaths in custody – Indigenous

**Description**

Ratio of deaths in police custody and custody related operations - (non-Indigenous compared with Indigenous)

**Source, YEAR RANGE AVAILABLE**

Federal Productivity Commission Report on Government Services – 2007-2014

**Reason for exclusion**

Numbers too small to calculate rates

Work-related fatalities

**Description**

Fatality rate of accidents at work

**Source, YEAR RANGE AVAILABLE**

Safework Australia Fatality statistics – 2003, 2012-2016

**Reason for exclusion**

Not enough time points

Drowning

**Description**

Standardised death rate for accidental drowning or submersion

**Source, Year range available**

ABS Causes of Death – 2008-2017

**Reason for exclusion**

Not enough variability

Bullying – workplace, cyber – SEIFA, Sex

**Description**

Proportion of people who have experience bullying and/or harassment in the last 12 months (%) disparity between first and tenth decile of SEIFA, men and women

**Source, YEAR RANGE AVAILABLE**

ABS General Social Survey – 2014

**Reason for exclusion**

Not enough data points

Young people under supervision – Indigenous

**Description**

Rate of 10-17 year olds under community and detention supervision on an average day (per 10,000) - Indigenous compared to non-Indigenous

**Source, YEAR RANGE AVAILABLE**

AIHW Youth Justice in Australia – 2014-2017

**Reason for exclusion**

Poor model fit

Abuse substantiations

**Description**

Rate of children aged 0-17 years old who were the subjects of substantiations of notifications received (per 1,000)

**Source, Year range available**

AIHW Child Protection Australia – 2014-2018

**Reason for exclusion**

Abuse substantiations captured in Personal Freedom and Choice in comparison with Indigenous rate

Abuse substantiations - Remoteness

**Description**

Rate of children aged 0-17 who were the subjects of substantiations of notifications received (per 1,000) - urban and remote/very remote

**Source, Year range available**

AIHW Child Protection Australia – 2014-2018

**Reason for exclusion**

Rate comparison not possible

Rate of Out of home care/separation from parents

**Description**

Rate of children in out of home care (per 1,000)

**Source, Year range available**

AIHW Child Protection Australia – 2014-2018

**Reason for exclusion**

Out of home care captured in Personal Freedom and Choice in comparison with Indigenous rate

**Access to Basic Knowledge**

NAPLAN Reading score - year 3

**Description**

Proportion of population achieving above the national minimum standard for reading

**Source, Year range available**

NAPLAN – 2015-2018

**Reason for exclusion**

Correlations very high between years 3, 5, 7, 9. Isabella and Petra decided on year 9 (28/05/2019) as literature shows the biggest gap in achievement in year 9, and is more determinant in further study/career

<https://grattan.edu.au/wp->

[content/uploads/2016/03/937-Widening-gaps.pdf](https://grattan.edu.au/wp-content/uploads/2016/03/937-Widening-gaps.pdf)).

NAPLAN Reading score - year 5

**Description**

Proportion of population achieving above the national minimum standard for reading

**Source, Year range available**

NAPLAN – 2015-2018

**Reason for exclusion**

Correlations very high between years 3, 5, 7, 9. Isabella and Petra decided on year 9 (28/05/2019) as literature shows the biggest gap in achievement in year 9, and is more determinant in further study/career

(<https://grattan.edu.au/wp-content/uploads/2016/03/937-Widening-gaps.pdf>).

NAPLAN Reading score - year 7

**Description**

Proportion of population achieving above the national minimum standard for reading

**Source, Year range available**

NAPLAN – 2015-2018

**Reason for exclusion**

Correlations very high between years 3, 5, 7, 9. Isabella and Petra decided on year 9 (28/05/2019) as literature shows the biggest gap in achievement in year 9, and is more determinant in further study/career

(<https://grattan.edu.au/wp-content/uploads/2016/03/937-Widening-gaps.pdf>).

NAPLAN Reading score - year 9

**Description**

Proportion of population achieving above the national minimum standard for reading

**Source, Year range available**

NAPLAN – 2015-2018

**Reason for exclusion**

High correlation, covered by Indigenous reading gap

NAPLAN Numeracy score - year 3

**Description**

Proportion of population achieving above the national minimum standard for numeracy

**Source, Year range available**

NAPLAN – 2015-2018

**Reason for exclusion**

Correlations very high between years 3, 5, 7, 9. Isabella and Petra decided on year 9 (28/05/2019) as literature shows the biggest gap in achievement in year 9, and is more determinant in further study/career

(<https://grattan.edu.au/wp-content/uploads/2016/03/937-Widening-gaps.pdf>).

NAPLAN Numeracy score - year 5

**Description**

Proportion of population achieving above the national minimum standard for numeracy

**Source, Year range available**

NAPLAN – 2015-2018

**Reason for exclusion**

Correlations very high between years 3, 5, 7, 9. Isabella and Petra decided on year 9 (28/05/2019) as literature shows the biggest gap in achievement in year 9, and is more determinant in further study/career

(<https://grattan.edu.au/wp-content/uploads/2016/03/937-Widening-gaps.pdf>).

NAPLAN Numeracy score - year 7

**Description**

Proportion of population achieving above the national minimum standard for numeracy

**Source, Year range available**

NAPLAN – 2015-2018

**Reason for exclusion**

Correlations very high between years 3, 5, 7, 9. Isabella and Petra decided on year 9 (28/05/2019) as literature shows the biggest gap in achievement in year 9, and is more determinant in further study/career

(<https://grattan.edu.au/wp-content/uploads/2016/03/937-Widening-gaps.pdf>).

NAPLAN Reading score - year 3 - Indigenous

**Description**

Difference in proportion achieving above the national minimum standard in Reading - Indigenous - non-Indigenous

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Correlations very high between years 3, 5, 7, 9. Isabella and Petra decided on year 9 (28/05/2019) as literature shows the biggest gap in achievement in year 9, and is more determinant in further study/career

(<https://grattan.edu.au/wp-content/uploads/2016/03/937-Widening-gaps.pdf>).

NAPLAN Reading score - year 5 - Indigenous

**Description**

Difference in proportion achieving above the national minimum standard in Reading - Indigenous - non-Indigenous

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Correlations very high between years 3, 5, 7, 9. Isabella and Petra decided on year 9 (28/05/2019) as literature shows the biggest gap in achievement in year 9, and is more determinant in further study/career

(<https://grattan.edu.au/wp-content/uploads/2016/03/937-Widening-gaps.pdf>).

NAPLAN Reading score - year 7 - Indigenous

**Description**

Difference in proportion achieving above the national minimum standard in Reading - Indigenous - non-Indigenous

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Correlations very high between years 3, 5, 7, 9. Isabella and Petra decided on year 9 (28/05/2019) as literature shows the biggest gap in achievement in year 9, and is more determinant in further study/career

(<https://grattan.edu.au/wp-content/uploads/2016/03/937-Widening-gaps.pdf>).

NAPLAN Reading improvement - year 3 to 5

**Description**

Average gain in Reading scores between year 3 and year 5

**Source, Year range available**

NAPLAN – 2015-2017

**Formula**

Will use proportion above national minimum standard instead, as gain showed negative correlations

NAPLAN Reading improvement – year 5 to 7

**Description**

Average gain in reading scores between year 5 and year 7

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Will use proportion above national minimum standard instead, as gain showed negative correlations

NAPLAN Reading improvement - year 7 to 9

**Description**

Average gain in reading scores between year 7 and year 9

**Source, Year range available**

NAPLAN – 2015-2017

**Formula**

Will use proportion above national minimum standard instead, as gain showed negative correlations

NAPLAN Numeracy improvement - year 3 to 5

**Description**

Average gain in numeracy scores between year 3 and year 5

**Source, Year range available**

NAPLAN – 2015-2017

**Formula**

Will use proportion above national minimum standard instead, as gain showed negative correlations

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**Description**

Average gain in numeracy scores between year 5 and year 7

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Will use proportion above national minimum standard instead, as gain showed negative correlations

NAPLAN Numeracy improvement – year 7 to 9

**Description**

Average gain in numeracy scores between year 7 and year 9

**Source, Year range available**

NAPLAN – 2015-2017

**Formula**

Will use proportion above national minimum standard instead, as gain showed negative correlations

NAPLAN Reading improvement - year 3 to 5 - Indigenous

**Description**

Difference in average gain in Reading scores between year 3 and year 5 - Indigenous - non-Indigenous

**Source, Year range available**

NAPLAN – 2015-2017

**Formula**

Will use proportion above national minimum standard instead, as gain showed negative correlations

NAPLAN Reading improvement - year 5 to 7 - Indigenous

**Description**

Difference in average gain in Reading scores between year 5 and year 7 - Indigenous - non-Indigenous

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Will use proportion above national minimum standard instead, as gain showed negative correlations

NAPLAN Reading improvement - year 7 to 9 - Indigenous

**Description**

Difference in average gain in Reading scores between year 7 and year 9 - Indigenous - non-Indigenous

**Source, Year range available**

NAPLAN – 2015-2017

**Formula**

Will use proportion above national minimum standard instead, as gain showed negative correlations

NAPLAN Numeracy improvement - year 3 to 5 - Indigenous

**Description**

Difference in average gain in numeracy scores between year 3 and year 5 - Indigenous - non-Indigenous

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Including only Indigenous literacy indicators

NAPLAN Numeracy improvement - year 5 to 7 - Indigenous

**Description**

Difference in average gain in numeracy scores between year 5 and year 7 - Indigenous - non-Indigenous

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Including only Indigenous literacy indicators

NAPLAN Numeracy improvement - year 7 to 9 - Indigenous

**Description**

Difference in average gain in numeracy scores between year 7 and year 9 - Indigenous - non-Indigenous

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Including only Indigenous literacy indicators

NAPLAN Reading improvement - year 3 to 5 - LBOTE

**Description**

Difference in average gain in reading scores between year 3 and year 5 – LBOTE – non-LBOTE

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Not enough variability

NAPLAN Reading improvement - year 5 to 7 - LBOTE

**Description**

Difference in average gain in reading scores between

year 5 and year 7 – LBOTE – non-LBOTE

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Not enough variability

NAPLAN Reading improvement - year 7 to 9 - LBOTE

**Description**

Difference in average gain in reading scores between year 7 and year 9 – LBOTE – non-LBOTE

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Not enough variability

NAPLAN Numeracy improvement - year 3 to 5 - LBOTE

**Description**

Difference in average gain in numeracy scores between year 3 and year 5 – LBOTE – non-LBOTE

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Not enough variability

NAPLAN Numeracy improvement - year 5 to 7 - LBOTE

**Description**

Difference in average gain in numeracy scores between year 5 and year 7 – LBOTE – non-LBOTE

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Not enough variability

NAPLAN Numeracy improvement - year 7 to 9 - LBOTE

**Description**

Difference in average gain in numeracy scores between year 7 and year 9 – LBOTE – non-LBOTE

**Source, Year range available**

NAPLAN – 2015-2017

**Reason for exclusion**

Not enough variability

Educational attainment (Year 10)

**Description**

Proportion of the population aged 25+ who completed year 10 (%)

**Source, Year range available**

ABS Survey of Education and Work – 2015-2018

**Reason for exclusion**

Will use retention rates instead – greater changes across years rather than for 25+



Educational attainment (Year 10) – Disability

**Description**

Proportion of the population aged 20+ who completed year 10 (%) – has need for assistance compared with does not have need for assistance

**Source, Year range available**

ABS Census – 2016

**Reason for exclusion**

Use participation as an indicator for inclusion

Educational attainment (Year 10) - Remoteness

**Description**

Difference in proportion of population aged 25+ who completed year 10 or above - regional/remote compared with urban/major city areas

**Source, Year range available**

ABS Census – 2016

**Reason for exclusion**

Missing states/territories

Educational attainment (Year 10) – Sex

**Description**

Difference in proportion of population aged 25-74 who completed year 10 or above - Male cf. female

**Source, Year range available**

ABS Survey of Education and Work – 2015-2018

**Reason for exclusion**

Lack of variability, indicator is not very relevant in Australian context

Educational attainment (Year 12) – remoteness, indigenous, disability

**Description**

Proportion of the population aged 20+ who completed year 12 (%)

**Source, Year range available**

ABS Census – 2016

**Reason for exclusion**

Use Year 10 as indicator

Access to early childhood education - Remoteness

**Description**

Disparity in urban vs remote Proportion of children aged 4-5 enrolled in preschool program (%)

**Source, Year range available**

ABS Children enrolled in preschool program – 2013-2017

**Reason for exclusion**

Not enough variability

Access to early childhood education - Indigenous

**Description**

Disparity in Indigenous vs non-Indigenous Proportion of children aged 4-5 enrolled in preschool program (%)

**Source, Year range available**

ABS Children enrolled in preschool program – 2013-2017

**Reason for exclusion**

Very high correlations

Gap in student attendance rate – Remoteness

**Description**

Disparity in metro and remote student attendance rate years 1-10

**Source, Year range available**

ACARA National report on school attendance – 2014-2017

**Reason for exclusion**

Proportions but not raw numbers reported

Difficulties accessing education

**Description**

Proportion of people participating in education (%)

**Source, Year range available**

ABS Census – 2016

**Reason for exclusion**

Not enough data points

Difficulties accessing education due to disability – remoteness, country of birth

**Description**

Proportion of people with a disability having an education restriction (%), urban vs remote/very remote areas, born in Australia compared with born overseas

**Source, YEAR RANGE AVAILABLE**

ABS Income and Housing – 2015-16

**Reason for exclusion**

Not enough data points

Parental engagement in teaching

**Description**

Proportion of parents reporting no involvement in informal learning activities last week (aged 3-8)

**Source, YEAR RANGE AVAILABLE**

ABS Childhood Education and Care Survey – 2011, 2014, 2017

**Reason for exclusion**

Not enough data points

Adult literacy

**Description**

Literacy skill level of adults aged 15-74

**Source, YEAR RANGE AVAILABLE**

ABS International Assessment of Adult Competencies – 2011-12

**Reason for exclusion**

Data more than 5 years old

Enrolment rates

**Description**

Proportion of 5 to 15 year olds participating in education (%)

**Source, Year range available**

ABS Census – 2016

**Reason for exclusion**

Only one data point due to Census

Absenteeism

**Description**

Student attendance rate years 1-10 (%)

**Source, Year range available**

ACARA National report on school attendance – 2014-2017

**Reason for exclusion**

Extremely high correlation with NAPLAN reading

**Access to Information and Communications**

Internet access

**Description**

Proportion of households with internet access at home (%)

**Source, YEAR RANGE AVAILABLE**

ABS Household Use of Information Technology – 2008-2016

**Reason for exclusion**

Not enough data points and survey will cease in 2019

Internet access

**Description**

Proportion of households who have access to the internet in the home (%)

**Source, Year range available**

HILDA

**Reason for Exclusion**

Access is covered in the Digital Inclusion Index subcomponent which will be included

Mobile phones (proxy for connectivity)

**Description**

Proportion of households with internet access at home (%)

**Source, YEAR RANGE AVAILABLE**

Deloitte Mobile Consumer Survey – 2017

**Reason for exclusion**

Data only available at national level

NBN

**Description**

Proportion of premises not yet ready to connect to NBN (%)

**Source, Year range available**

NBN – 2018

**Reason for exclusion**

Not reported in any helpful way

Satisfaction with access to service providers

**Description**

Proportion of people who have not had difficulty accessing service providers in the last 12 months (%)

**Source, YEAR RANGE AVAILABLE**

ABS General Social Survey – 2014

**Reason for exclusion**

Not enough data points

Satisfaction with access to service providers - remoteness

**Description**

Proportion of people who have not had difficulty accessing service providers in the last 12 months (%) urban vs remote/very remote

**Source, YEAR RANGE AVAILABLE**

ABS General Social Survey - 2014

**Reason for exclusion**

Not enough data points

Ratio of internet cost to income for low-income households

**Description**

Ratio of household annual expenditure on telephone rent, calls and internet charges to gross annual household income for low income households

**Source, Year range available**

HILDA – 2001-2016

**Reason for exclusion**

Use digital inclusion affordability sub-index instead

Social media use

**Description**

Proportion of people who use some form of social media

**Source, Year range available**

Sensis Social Media Report – 2016-2018

**Reason for exclusion**

Small sample size

**Health and Wellness**

Life expectancy - men

**Description**

Years of life expectancy at birth (age 0)

**Source, YEAR RANGE AVAILABLE**

ABS – 2009-2016

**Reason for exclusion**

Doesn't contribute meaningfully – already have potential years of life lost and mortality rates which are better indicators

Life expectancy - women

**Description**

Years of life expectancy at birth (age 0)

**Source, YEAR RANGE AVAILABLE**

ABS – 2009-2016

**Reason for exclusion**

Doesn't contribute meaningfully – already have potential years of life lost and mortality rates which are better indicators

Chronic or non-communicable disease – remoteness, country of birth

**Description**

Proportion of the population ever experienced an ICD10 condition long-term, either diagnosed or undiagnosed - urban vs remote/very remote, born in Australia vs born overseas

**Source, YEAR RANGE AVAILABLE**

ABS National Health Survey – 2015

**Reason for exclusion**

Not enough data points

Years of life lost – burden of disease

**Description**

Crude years of life lost rate - total

**Source, YEAR RANGE AVAILABLE**

AIHW Burden of Disease – 2011, 2015

**Reason for exclusion**

Not enough data points

DALY – Disability adjusted life years – under 15 years

**Description**

Crude Years of life lost rate - children (under 15 years)

**Source, YEAR RANGE AVAILABLE**

AIHW Burden of Disease – 2011

**Reason for exclusion**

Not enough data points

DALY – Disability adjusted life years – 15+ years

**Description**

Crude Years of life lost rate - children (15+ years)

**Source, YEAR RANGE AVAILABLE**

AIHW Burden of Disease – 2011

**Reason for exclusion**

Not enough data points

Self-rated health

**Description**

Proportion of population that reported health as 'fair' or 'poor' (1-5 scale)

**Source, YEAR RANGE AVAILABLE**

ABS National Health Survey – 2015

**Reason for exclusion**

Not enough data points

Self-rated health – remoteness

**Description**

Proportion of population that reported health as 'fair' or 'poor' (1-5 scale) – urban vs remote/very remote

**Source, YEAR RANGE AVAILABLE**

ABS National Health Survey – 2015

**Reason for exclusion**

Not enough data points

Self-rated health

**Description**

Proportion who rated their health as 'very good or excellent' (%)

**Source, YEAR RANGE AVAILABLE**

HILDA – 2001-2017

**Reason for exclusion**

Poor model fit

Mental health treatment - Indigenous

**Description**

Rate ratio of community mental health care service contacts per 1,000 population - Indigenous compared with non-Indigenous

**Source, YEAR RANGE AVAILABLE**

AIHW Mental Health Services – 2014-2017

**Reason for exclusion**

Mental health service contacts, rather than patients

Mental health

**Description**

Proportion of people with SF-36 mental health component scores below 52 indicating disability

**Source, Year range available**

HILDA – 2001-2017

**Reason for exclusion**

HILDA – concerns about representativeness

Psychological distress

**Description**

Kessler 10 Distress scale score (pdk10s) OR risk categories (pdk10rc)

**Source, YEAR RANGE AVAILABLE**

HILDA – 2001-2017

**Reason for exclusion**

Only measured every two years

Obesity – excess weight in adults

**Description**

Proportion of adults (18+) who are classified as overweight or obese (BMI < 30) (%)

**Source, Year range available**

HILDA – 2001-2016

**Reason for exclusion**

Political concerns and HILDA calculated. Not needed due to sufficient indicators in H&W component.

Obesity – childhood obesity

**Description**

Proportion of children (0-18 years) who classified as obese (BMI < 30) (%)

**Source, YEAR RANGE AVAILABLE**

HILDA – 2001-2016

**Reason for exclusion**

Sample too small - ~234 under aged 15

Suicide - Indigenous

**Description**

Age-standardised death rate due to intentional self-harm - Indigenous compared with non-Indigenous

**Source, Year range available**

ABS Causes of Death – 2013-2017

**Reason for exclusion**

Not enough data points (combined 2013-2017)

Death from drug overdose

**Description**

Standardised death rate due to accidental poisoning by and exposure to noxious substances

**Source, Year range available**

ABS Causes of Death – 2008-2017

**Reason for exclusion**

Doesn't accurately report drug overdose due to inclusion of accidental poisoning from other substances

Eating disorders

**Description**

Rate of hospitalisations for eating disorders

**Source, YEAR RANGE AVAILABLE**

AIHW National Hospital Morbidity Database – 2017

**Reason for exclusion**

Data only available at a national level

Dental health – cavities in children

**Description**

Average number of untreated decayed or filled tooth surfaces in primary dentition (children aged 5-10 years)

**Source, Year range available**

National Child Oral Health Survey – 2012-2014

**Reason for exclusion**

Only reported 2012-2014

Dental health – unmet need

**Description**

Wait time for general dental care - from listing date to first visit (days - 50ths and 90th percentiles)

**Source, Year range available**

AIHW – 2013-2017

**Reason for exclusion**

Not well measured

Self-rated satisfaction with health

**Description**

Proportion of people reporting that they are satisfied with their health (%)

**Source, Year range available**

HILDA – 2001-2017

**Formula**

Report rate as published by HILDA

**Reason for exclusion**

Using SF-36 item to measure health satisfaction instead

Substance user disorder treatment

**Description**

Change in proportion of clients seeking treatment for alcohol, amphetamines, cannabis and heroin (%)

**Source, Year range available**

AIHW – 2013-2017

**Reason for exclusion**

Data only reports comparisons between drug types – not meaningful for SPI

Optical health – Glaucoma, cataracts

**Description**

Proportion of people with glaucoma (%), and cataracts (%)

**Source, YEAR RANGE AVAILABLE**

ABS National Health Survey – 2015

**Reason for exclusion**

Not enough data points

Indigenous hearing health

**Description**

Total Indigenous people with hearing problems as a proportion of total Indigenous sample/population

**Source, YEAR RANGE AVAILABLE**

ABS National Aboriginal and Torres Strait Islander Social Survey – 2014-15

**Reason for exclusion**

Not enough data points

Indigenous optical health

**Description**

Total Indigenous people with eye or sight problems as a proportion of total Indigenous sample/population

**Source, YEAR RANGE AVAILABLE**

ABS National Aboriginal and Torres Strait Islander Social Survey – 2014-15

**Reason for exclusion**

Not enough data points

Harmful alcohol use

**Description**

Age standardised proportion of persons aged 14 years and older who have lifetime high risky alcohol use (%)

**Source, Year range available**

National Drug Strategy Household Survey – 2013, 2016

**Reason for exclusion**

Not enough data points

Death from alcoholic liver disease

**Description**

Standardised death rate due to alcoholic liver disease

**Source, Year range available**

ABS Causes of Death – 2008-2017

**Reason for exclusion**

Low rates and likely to be only one outcome from harmful alcohol use

Tobacco use

**Description**

Age-standardised prevalence of persons aged 14 years and older who have never smoked (%)

**Source, Year range available**

National Drug Strategy Household Survey – 2013, 2016

**Reason for exclusion**

Not enough data points

Chlamydia diagnosis

**Description**

Notification rate of chlamydia, per 100,000

**Source, Year range available**

Department of Health National Notifiable Diseases

Surveillance System – 2007-2016

**Reason for exclusion**

Not useful as an STD indicator – not as impactful

Syphilis diagnosis

**Description**

Notification rate of syphilis < 2 years, per 100,000

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

Poor model fit

HIV diagnosis

**Description**

New HIV diagnoses, rate per 100,000 population

**Source, Year range available**

Kirby Institute – 2007-201y

**Reason for exclusion**

Negative/low correlations

Hepatitis C diagnosis

**Description**

Notification rate of Hepatitis C (newly acquired), per 100,000

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

Negative/low correlations

Tuberculosis

**Description**

Notification rate of tuberculosis, per 100,000

**Source, Year range available**

Department of Health National Notifiable Diseases Surveillance System – 2007-2019

**Reason for exclusion**

Primarily an illness that is contracted overseas

***Environmental Quality***

Air Quality

**Description**

**Source, Year range available**

**Reason for exclusion**

Broad term – used air quality monitoring publications instead

Ozone concentrations

**Description**

Median daily maximum 1 hour average concentrations

of ozone, averaged across monitoring stations  
**Source, Year range available**  
 Individual State and Territory Environmental Agencies  
 NSW –

<https://www.environment.nsw.gov.au/topics/air/air-quality-annual-reports>

VIC – <https://www.epa.vic.gov.au/our-work/monitoring-the-environment/monitoring-victorias-air/monitoring-results>

QLD – <https://www.qld.gov.au/environment/pollution/monitoring/air/air-reports>

SA – [https://www.epa.sa.gov.au/data\\_and\\_publications/air\\_quality\\_monitoring/reports\\_and\\_summaries](https://www.epa.sa.gov.au/data_and_publications/air_quality_monitoring/reports_and_summaries) - doesn't report at State level (reports for each individual monitoring station); reports quarterly rather than annually

WA – <https://www.der.wa.gov.au/your-environment/air/203-air-quality-publications>

TAS – <https://epa.tas.gov.au/epa/air/monitoring-air-pollution/annual-nepm-reports> not updated since 2015

NT – <https://ntepa.nt.gov.au/waste-pollution/air>

ACT – <https://www.act.gov.au/> - search 'air quality report [year]'

**Reason for exclusion**  
 Poor model fit

Water Quality

**Description**  
**Source, Year range available**  
**Reason for exclusion**  
 Cannot find data source

Water scarcity

**Description**  
 Percentage full of water storage in publicly-owned lakes, reservoirs and weirs.  
**Source, Year range available**  
 Bureau of Meteorology – 2017, 2018  
**Reason for exclusion**  
 Data not reported consistently

Energy from renewables (production/consumption)

**Description**  
 Energy generation by fuel type, non-renewable and renewable (GWh)  
**Source, Year range available**  
 Department of Environment and Energy Australian

Energy statistics – 1989-2016

**Reason for exclusion**  
 Input rather than outcome

Terrestrial protected areas

**Description**  
 Terrestrial protected areas by area (ha) and % of land  
**Source, Year range available**  
 Department of Environment and Energy CAPAD – 1997, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016  
**Reason for exclusion**  
 Not enough data points

Marine protected areas

**Description**  
 Marine protected areas by area (ha) and % of waters  
**Source, Year range available**  
 Department of Environment and Energy CAPAD – 1997, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2017  
**Reason for exclusion**  
 Not enough data points

Environmental behaviour

**Description**  
 Frequency of personal recycling, composting, reusing bags (%) (aggregate)  
**Source, YEAR RANGE AVAILABLE**  
 ABS Environmental Views and Behaviour – 2011-12  
**Reason for exclusion**  
 Data more than 5 years old; No longer being collected

Satisfaction with waste collection

**Description**  
 Proportion satisfied with waste collection services in area  
**Source, YEAR RANGE AVAILABLE**  
 ABS Environmental Views and Behaviour – 2011-12  
**Reason for exclusion**  
 Data more than 5 years old; No longer being collected

Biodiversity – deterioration of species, overpopulation

**Description**  
 Proportion of rare, endangered or vulnerable species, as a % of total native species)  
**Source, YEAR RANGE AVAILABLE**  
 CSIRO – 2011-2012  
**Reason for exclusion**  
 Data more than 5 years old

Asset account for forests

**Description**  
 Asset account for forests ('000 hectares)

**Source, YEAR RANGE AVAILABLE**

ABS Environmental-Economic Accounting for Agriculture  
– 2015-16

**Reason for exclusion**

Not enough data points

Air-pollution caused deaths

**Description**

Standardised death rate due to environmental-  
pollution-related condition

**Source, Year range available**

ABS Causes of Death – 2008-2017

**Reason for exclusion**

No rates reported

Climate-related deaths

**Description**

Exposure to natural forces - standardised death rate

**Source, Year range available**

ABS Causes of Death – 2008-2017

**Reason for exclusion**

No rates reported

Green space coverage in cities/urban areas

**Description**

Proportion of people living in urban areas within 400m  
of greenspace (%)

**Source, YEAR RANGE AVAILABLE**

ABS National Health Survey – 2015

**Reason for exclusion**

Not enough data points

Waste generation

**Description**

Percent change in generation of core waste

**Source, Year range available**

Department of Environment and Energy – 2017

**Reason for exclusion**

Not enough data points

Resource recovery

**Description**

Percent of waste that is recovered through energy  
recovery and recycling, divided by total waste  
generation

**Source, Year range available**

Department of Environment and Energy – 2014-2017

**Reason for exclusion**

Not enough data points

Mesothelioma related deaths

**Description**

Age-standardised incidence rate of mesothelioma

**Source, Year range available**

AIHW Australian Mesothelioma Registry – 2011-2016

**Reason for exclusion**

Poor correlations

Renewable energy

**Description**

Proportion of total energy mix that is renewable or  
hydro

**Source, Year range available**

Department of the Environment and Heritage – 2015-  
2017

**Reason for exclusion**

Poor correlations

Native forest coverage

**Description**

Native forest area as a proportion of total land area (%)

**Source, Year range available**

Department of Agriculture and Water Resources– 2013,  
2018

**Reason for exclusion**

Not enough data points

Forest coverage

**Description**

Forest area as a proportion of total land area (%)

**Source, Year range available**

Department of Agriculture and Water Resources– 2013,  
2018

**Reason for exclusion**

Not enough data points

Forest area

**Description**

Forest area differences between State of Forest Report  
(% change)

**Source, Year range available**

Department of Agriculture and Water Resources– 2013,  
2018

**Reason for exclusion**

Not enough data points

forest conservation

**Description**

Proportion of native forest ecosystems protected for  
biodiversity conservation (%)

**Source, Year range available**

Department of Agriculture and Water Resources– 2013,  
2018

**Reason for exclusion**

Not enough data points

forest soil and water protection

**Description**

Proportion of public forest managed primarily for protection functions of soil and water values (%)

**Source, Year range available**

Department of Agriculture and Water Resources– 2011, 2016

**Reason for exclusion**

Not enough data points

Tree cover loss

**Description**

Percentage decrease in tree cover compared to 2000 tree cover extent (>30% tree canopy)

**Source, Year range available**

Global Forest Watch, 2010-2018

**Reason for Exclusion**

Poor model fit

Carbon Monoxide concentrations

**Description**

Median daily maximum rolling 8 hour average concentrations of carbon monoxide, averaged across monitoring stations

**Source, Year range available**

Individual State and Territory Environmental Agencies  
NSW –

<https://www.environment.nsw.gov.au/topics/air/air-quality-annual-reports>

VIC – <https://www.epa.vic.gov.au/our-work/monitoring-the-environment/monitoring-victorias-air/monitoring-results>

QLD – <https://www.qld.gov.au/environment/pollution/monitoring/air/air-reports>

SA – [https://www.epa.sa.gov.au/data\\_and\\_publications/air\\_quality\\_monitoring/reports\\_and\\_summaries](https://www.epa.sa.gov.au/data_and_publications/air_quality_monitoring/reports_and_summaries) - doesn't report at State level (reports for each individual monitoring station); reports quarterly rather than annually

WA – <https://www.der.wa.gov.au/your-environment/air/203-air-quality-publications>

TAS – <https://epa.tas.gov.au/epa/air/monitoring-air-pollution/annual-nepm-reports> not updated since 2015

NT – <https://ntepa.nt.gov.au/waste-pollution/air>

ACT – <https://www.act.gov.au/> - search 'air quality report [year]

**Reason for Exclusion**

Poor model fit

Water stress

**Description**

Average exposure to water risk indicators

**Source, Year range available**

World Resources Institute Aqueduct 3.0 Country Rankings, 2018

**Reason for exclusion**

Not enough data points

Nitrogen Dioxide concentrations

**Description**

Median daily maximum 1 hour average concentrations of nitrogen dioxide, averaged across monitoring stations

**Source, Year range available**

Individual State and Territory Environmental Agencies  
NSW –

<https://www.environment.nsw.gov.au/topics/air/air-quality-annual-reports>

VIC – <https://www.epa.vic.gov.au/our-work/monitoring-the-environment/monitoring-victorias-air/monitoring-results>

QLD – <https://www.qld.gov.au/environment/pollution/monitoring/air/air-reports>

SA – [https://www.epa.sa.gov.au/data\\_and\\_publications/air\\_quality\\_monitoring/reports\\_and\\_summaries](https://www.epa.sa.gov.au/data_and_publications/air_quality_monitoring/reports_and_summaries) - doesn't report at State level (reports for each individual monitoring station); reports quarterly rather than annually

WA – <https://www.der.wa.gov.au/your-environment/air/203-air-quality-publications>

TAS – <https://epa.tas.gov.au/epa/air/monitoring-air-pollution/annual-nepm-reports> not updated since 2015

NT – <https://ntepa.nt.gov.au/waste-pollution/air>

ACT – <https://www.act.gov.au/> - search 'air quality report [year]

**Reason for Exclusion**

Poor model fit

Mean temperature anomaly

**Description**

Annual mean temperature anomaly based on 30-year climatology (1961-1990)

**Source, Year range available**



Bureau of Meteorology 1910-2018

**Reason for exclusion**

Poor model fit

Sulfur Dioxide concentrations

**Description**

Median daily maximum 1 hour average concentrations of sulfur dioxide, averaged across monitoring stations

**Source, Year range available**

Individual State and Territory Environmental Agencies  
NSW –

<https://www.environment.nsw.gov.au/topics/air/air-quality-annual-reports>

VIC – <https://www.epa.vic.gov.au/our-work/monitoring-the-environment/monitoring-victorias-air/monitoring-results>

QLD –

<https://www.qld.gov.au/environment/pollution/monitoring/air/air-reports>

SA –

[https://www.epa.sa.gov.au/data\\_and\\_publications/air\\_quality\\_monitoring/reports\\_and\\_summaries](https://www.epa.sa.gov.au/data_and_publications/air_quality_monitoring/reports_and_summaries) - doesn't

report at State level (reports for each individual monitoring station); reports quarterly rather than annually

WA – <https://www.der.wa.gov.au/your-environment/air/203-air-quality-publications>

TAS –

<https://epa.tas.gov.au/epa/air/monitoring-air-pollution/annual-nepm-reports> not updated since 2015

NT – <https://ntepa.nt.gov.au/waste-pollution/air>

ACT – <https://www.act.gov.au/> - search 'air quality report [year]

**Reason for exclusion**

Poor model fit

**Personal Rights**

Representation in parliament – gender

**Description**

Proportion of women members in parliament (%)

**Source, Year range available**

Australian Parliamentary Library - 2018

**Reason for Exclusion**

Not enough time points available - APL updates briefing annually, previous reports not available

Native Titles

**Description**

Proportion of land covered by Registered Native Title Claimants (%)

**Source, Year range available**

National Native Title Tribunal National-Registered Claims - 2018

**Reason for exclusion**

Correlations don't fit within component. TAS and NT have 0% so not relevant for those states

Sexual assaults on Women

**Description**

Rate of women aged 18+ who had experienced sexual assault

**Source, Year range available**

ABS Crime Victimization Survey

**Reason for exclusion**

Poor correlations, data unreliable at gender/state territory level

Crime rates – Sexual assault and related offences

**Description**

Offender rate of recorded sexual assault and related offences

**Source, Year range available**

ABS Recorded Crime – 2008-2018

**Reason for exclusion**

After feedback, changed to male offender rate to reflect gendered nature of sexual assault and violence

**Personal Freedom and Choice**

Teen pregnancy

**Description**

Birth rate per 1,000 women aged younger than 20 years who gave birth

**Source, YEAR RANGE AVAILABLE**

AIHW – 2015

**Reason for exclusion**

Not enough data points

Teen pregnancy

**Description**

Proportion of women aged 15-19 who have had at least one child (%)

**Source, YEAR RANGE AVAILABLE**

ABS Census – 2016

**Reason for exclusion**

Not enough data points

Early marriage

**Description**

Proportion of people aged 15-18 who are married (%)

**Source, Year range available**

ABS Census - 2016

**Reason for exclusion**

Will use other ABS source which reports annually

Early marriage

**Description**

Age-specific marriage rate for women aged 16-19 per 1000

**Source, Year range available**

ABS – 2015-2017

**Reason for exclusion**

Correlation doesn't fit within component and rates are low – not seen as an issue in Australian context (teen pregnancy more representative).

Conviction for drug possession

**Description**

Offender rate for recorded drug possession (principle offence) per 100,000

**Source, Year range available**

ABS Recorded Crime – 2008-2017

**Reason for exclusion**

Correlation doesn't fit within component. Conceptually problematic, may be hard to communicate why higher rates are not representative of social progress.

NDIS rollout

**Description**

Proportion of all NDIS plans approved to date compared to bilateral estimates (December Quarterly Report)

**Source, Year range available**

NDIS Quarterly Reports

**Reason for exclusion**

Correlations don't fit within component – some outliers (NT has very high 6:1 ratio) therefore not relevant.

Satisfaction with life/work balance

**Description**

Satisfaction with the amount of free time you have, 1-5 scale

**Source, Year range available**

HILDA – 2001-2016

**Reason for exclusion**

Will use HILDA work flexibility indicator instead - more representative of component

Work flexibility

**Description**

Proportion of people reporting they are satisfied with the flexibility to balance work and non-work commitments

**Source, Year range available**

HILDA – 2001-2016

**Reason for exclusion**

Poor model fit

**Inclusiveness**

Care leave – gender gap

**Description**

Male employees who utilised primary or secondary care leave, as a ratio to female employees

**Source, Year range available**

Workplace Gender Equality Agency – 2013-2018

**Reason for exclusion**

Poor model fit

Acceptance/attitudes to migration and refugees

**Description**

Proportion of people who believe immigration is a burden on social welfare system, there is too much immigration, and that immigrants take away jobs (%)

**Source, YEAR RANGE AVAILABLE**

Lowy Institute – 2016

**Reason for exclusion**

Data only at a national level

Satisfaction with Family relationships – parents, step-parents, partner, children, step-children

**Description**

Proportion of people who are satisfied or very satisfied with relationship with parents, step-parents, partner, children, step-children

**Source, YEAR RANGE AVAILABLE**

HILDA – 2017

**Reason for exclusion**

Conceptually does not fit with model – more of an input, than an indicator of social progress

Attitudes to people in minority

**Description**

Proportion who agree that "Homosexual couples should have the same rights as heterosexual couples do" (Scale 1-7) (%)

**Source, YEAR RANGE AVAILABLE**

HILDA – 2005, 2008, 2011, 2015

**Reason for exclusion**

Not enough data points

Discrimination

**Description**

Proportion of people felt their employer had discriminated against them because of their ethnicity (%)

**Source, YEAR RANGE AVAILABLE**

HILDA – 2001-2017

**Reason for exclusion**

Not enough data points

Disability participation in the workforce

**Description**

Proportion of Australian Public Service employees with a disability (%)

**Source, Year range available**

Australian Public Service Employment Database – 2000-2018

**Reason for exclusion**

Will use HILDA indicator of disability access to employment, more representative

Disability participation in the workforce

**Description**

Proportion of people who are unemployed reporting experience a difficulty getting a job due to disability/ill health (%)

**Source, Year range available**

HILDA – 2001-2016

**Reason for exclusion**

Poor model fit

Volunteering

**Description**

Proportion who did unpaid voluntary work in last 12 months through an organisation (%)

**Source, YEAR RANGE AVAILABLE**

ABS General Social Survey

**Reason for exclusion**

Not enough data points

Volunteering

**Description**

Proportion of people who reporting volunteering for more than half an hour a week

**Source, Year range available**

HILDA – 2001-2017

**Reason for exclusion**

More of an input, social connection is already covered

Sense of social connection

**Description**

Mean composite score for sense of social connection (1-7 scale)

**Source, Year range available**

HILDA – 2001-2017

**Reason for exclusion**

Social connection is already covered

Female representation in leadership

**Description**

Total female directors in ASX Listed Companies, by states in which shares are registered

**Source, Year range available**

Women on Boards report – 2015-2018

**Reason for exclusion**

Not enough data points

Enrolment rates - Indigenous

**Description**

Proportion of 5 to 15 year olds participating in education (%) Indigenous compared to non-Indigenous

**Source, Year range available**

ABS Survey of Education and Work

**Reason for exclusion**

Annual ABS Survey of Education and Work doesn't report by Indigenous status

Enrolment rates - Disability

**Description**

Proportion of 5 to 15 year olds participating in education (%) people with a disability compared to people without a disability

**Source, Year range available**

ABS Survey of Education and Work

**Reason for exclusion**

Annual ABS Survey of Education and Work doesn't report by disability status

Engagement of non-English speakers in society

**Description**

Proportion of Australian Public Service employees from a non-English speaking background (%)

**Source, Year range available**

Australian Public Service Employment Database – 2000-2018

**Reason for exclusion**

Doesn't fit well with model

Engagement of Indigenous people in society/workforce

**Description**

Proportion of Australian Public Service employees who identify as Indigenous (%)

**Source, Year range available**

Australian Public Service Employment Database – 2000-2018

**Reason for exclusion**

Poor quality indicator

Female representation in leadership

**Description**

Female CEOs of non-public sector employers as a ratio

to male CEOs

**Source, Year range available**

Workplace Gender Equality Agency – 2013-2018

**Reason for Exclusion**

Data source problematic

Enrolment rates - Sex

**Description**

Proportion of 5 to 15 year olds participating in education (%) males compared to females

**Source, Year range available**

ABS Survey of Education and Work – 2004-2018

**Reason for exclusion**

Doesn't fit conceptually

Enrolment rates – Country of birth

**Description**

People born outside Australia aged 5 to 15 years participating in education compared to people born in Australia

**Source, Year range available**

ABS Survey of Education and Work – 2004-2018

**Reason for exclusion**

Doesn't fit conceptually

**Access to Advanced Education**

Satisfaction with support to complete higher education

**Description**

Proportion of students giving positive ratings for 'Entire educational experience' (%)

**Source, YEAR RANGE AVAILABLE**

Quality Indicators for Learning and Teaching – 2012-2017

**Reason for exclusion**

2017 data for individual universities available only

Lifelong learning

**Description**

Proportion of adults who participated in formal or non-formal learning in the last 12 months

**Source, YEAR RANGE AVAILABLE**

ABS Work-Related Training and Adult Learning – 2013, 2016-17

**Reason for exclusion**

Not enough data points

NEET (Not in education, employment or training)

**Description**

Proportion of the population aged 15-24 who are not engaged in employment, education or training (%)

**Source, Year range available**

ABS Census - 2016

**Reason for exclusion**

More recent data available survey of education and work

Educational attainment per population

**Description**

Proportion of the population aged 25+ with post-school qualifications

**Source, Year range available**

ABS Census - 2016

**Reason for exclusion**

More recent data available survey of education and work

Indigenous disparity in higher education

**Description**

Proportion of Indigenous Australians with a post-secondary degree as a ratio to non-Indigenous Australians with a post-secondary degree

**Source, Year range available**

ABS Census - 2016

**Reason for exclusion**

More recent data available survey of education and work

People with disability disparity in higher education

**Description**

Proportion of people with a disability with a post-secondary degree as a ratio to people without a disability with a post-secondary degree

**Source, Year range available**

ABS Census - 2016

**Reason for exclusion**

More recent data available survey of education and work

Gender disparity in higher education

**Description**

Proportion of women with a post-secondary degree as a ratio to men with a post-secondary degree

**Source, Year range available**

ABS Census - 2016

**Reason for exclusion**

More recent data available survey of education and work

Higher education achievement - COB

**Description**

Proportion of people born overseas with a bachelor's degree or above as a ratio to people born in Australia with a bachelor degree or above aged 15+

**Source, Year range available**

ABS Survey of Education and Work – 2004-2018

**Reason for exclusion**

Poor conceptual fit

APPENDIX D: INVERTED INDICATORS

**Inverted indicators**

Infant mortality  
 Pneumococcal prevalence  
 Rotavirus prevalence  
 Premature mortality (<75)  
 Indigenous mortality rates  
 Waterborne diseases - Shigellosis  
 Waterborne diseases - Cryptosporidiosis  
 Waterborne diseases - Salmonella  
 Water interruption  
 Social housing overcrowding  
 Overcrowding  
 Need for social housing waitlist  
 Victimization - physical assault  
 Social housing need  
 Low income rental stress  
 Physical assaults  
 Crime rates – acts to cause injury  
 Crime rates – youth  
 Young people under supervision  
 NAPLAN - Numeracy Year 9  
 NAPLAN Reading Indigenous - Year 9  
 Gap in student attendance rate - Indigenous compared to non-Indigenous students  
 Community mental health treatment  
 Suicide  
 Respiratory mortality  
 Diabetes mortality  
 Cancer mortality  
 Cardiovascular mortality  
 PM10 concentrations  
 PM2.5 concentrations  
 Environmental crime  
 Greenhouse gas emissions per capita  
 Crime rates – sexual assault and related offences  
 Teen pregnancy  
 Abuse substantiations - Indigenous disparity  
 Out of home care/separation from parents - Indigenous  
 Homeless services due to domestic violence  
 Gender pay gap  
 Gender employment underutilisation  
 NEET

## APPENDIX E: WEIGHTS

Dimension/component	Indicator Name	Scaled Weight
<b>Basic Human Needs</b>		
Nutrition and Basic Medical Care	Infant mortality	0.240
	Pneumococcal prevalence	0.254
	Rotavirus prevalence	0.232
	Premature mortality (<75)	0.267
	Indigenous mortality rates	0.191
Water and Sanitation	Waterborne diseases - Shigellosis	0.314
	Waterborne diseases - Cryptosporidiosis	0.325
	Waterborne diseases - Salmonella	0.340
	Water interruption	0.224
Shelter	Homelessness service accommodation provision	0.353
	Social housing tenancy	0.376
	Greatest need for social housing	0.210
	Rental affordability in metro areas	0.351
Personal Safety	Perceived safety at home at night	0.224
	Physical assaults	0.252
	Acts to cause injury	0.229
	Youth crime rates	0.221
	Youth justice supervision	0.244
<b>Foundations of Wellbeing</b>		
Access to Basic Knowledge	NAPLAN - Numeracy Year 9	0.255
	NAPLAN Reading Year 9 - Indigenous	0.244
	High school student retention rates	0.225
	Access to early childhood education	0.184
	Gap in Indigenous student attendance rate	0.247
Access to Information and Communications	Digital access	0.315
	Digital affordability	0.339
	Digital ability	0.303
	Registered library users	0.258
Health and Wellness	Community mental health treatment	0.131
	Suicide	0.200

	Respiratory mortality	0.204
	Diabetes mortality	0.206
	Cancer mortality	0.211
	Cardiovascular mortality	0.192
Environmental Quality	PM10 concentrations	0.358
	PM2.5 concentrations	0.247
	Environmental crime	0.334
	CO2 emissions per capita	0.379
<b>Opportunity</b>		
Personal Rights	Voter registration	0.288
	Police integrity	0.272
	Male sexual assault and related offences	0.331
	Teen pregnancy	0.338
Personal Freedom and Choice	Child abuse substantiations - Indigenous disparity	0.294
	Out of home care - Indigenous disparity	0.335
	Public transport safety	0.351
	Women seeking homelessness support due to FDV	0.270
Inclusiveness	Gender pay gap	0.365
	Gender employment underutilisation	0.244
	Volunteering	0.272
	Satisfaction with connection to community	0.387
Access to Advanced Education	Post high school enrolment	0.299
	Educational attainment per population	0.293
	NEET	0.291
	Gender parity in higher education achievement	0.265



APPENDIX F: BEST CASE AND WORST CASE SCENARIOS

Dimension/ component	Indicator Name	Best case	Rationale	Worst case	Rationale
<b>Basic Human Needs</b>					
Nutrition and Basic Medical Care	Infant mortality	0.77	Lowest historical rate, ACT 2019#	13.23	Highest historical rate, NT 2020 ^
	Pneumococcal prevalence	3.10	Lowest historical rate, ACT 2013 #	55.80	Highest historical rate, NT 2011 ^
	Rotavirus prevalence	0.00	Vaccine preventable	98.00	Highest historical rate, NT 2021 ^
	Premature mortality (<75, Years Life Lost)	1310.47	Lowest historical rate, VIC 2018 #	5692.44	Highest historical rate, NT 2007
	Indigenous mortality rates	1.00	Equity in rates	2.67	Highest historical rate ratio, NT 2014 ^
Water and Sanitation	Waterborne diseases - Shingellosis	0.00	Lowest historical instances	178.60	Highest historical rate, NT 2017 ^
	Waterborne diseases - Cryptosporidiosis	1.80	Lowest historical rate, ACT 2004 #	114.00	Highest historical rate, NT 2016 ^
	Waterborne diseases - Salmonella	17.85	Lowest historical rate, VIC 2021 #	267.80	Highest historical rate, NT 2016 ^
	Water interruption	33.70	Lowest historical rate, NSW 2019 #	548.10	Highest historical rate, WA 2019 ^
Shelter	Homelessness service accommodation provision	480.13	Highest historical rate, ACT 2016 ^	34.30	Lowest historical rate, VIC 2018 #
	Social housing tenancy	1.00	Best outcome	0.30	Lowest historical rate, NSW 2021 ^
	Greatest need for social housing	8.16	Lowest historical rate, WA 2017 #	100.00	Highest historical rate, QLD 2014 ^
	Rental affordability in metro areas	170.20	Highest historical score, VIC 2021 ^	73.95	Lowest historical score, TAS 2021 #

Personal Safety	Perceived safety at home at night	5.00	Highest possible rating	3.21	Lowest historical score, NT 2020 #
	Physical assaults	1.45	Lowest historical rate, ACT/NSW 2021 #	5.50	Highest historical rate, NT 2008 ^
	Acts to cause injury	136.20	Lowest historical rate, ACT 2015 #	1672.80	Highest historical rate, NT 2014 ^
	Youth crime rates	547.40	Lowest historical rate, ACT 2021 #	3408.26	Highest historical rate, NT 2019 ^
	Youth justice supervision	6.21	Lowest historical rate, VIC #	70.21	Highest historical rate, NT 2014 ^

### Foundations of Wellbeing

Access to Basic Knowledge	NAPLAN - Numeracy Year 9	2.20	Lowest historical score, ACT 2018 #	28.60	Capped NT value in 2018
	NAPLAN Reading Year 9 - Indigenous	0.00	Equity in outcome	62.30	Highest historical difference, NT 2018
	High school student retention rates	100.00	Highest possible outcome	70.70	Lowest historical rate, NT 2018
	Access to early childhood education	1.00	All children access early childhood education	0.70	Capped NSW/VIC rates in 2021 due to COVID lockdowns; imputed 30% buffer on next lowest score
	Gap in Indigenous student attendance rate	0.00	No gap in attendance	-30.50	Greatest historical disparity, NT 2018 #
Access to Information and Communications	Digital access	90.74	Highest historical score, ACT 2016 ^	58.70	Lowest historical score, TAS 2014 #
	Digital affordability	80.39	Highest historical score, ACT 2020 ^	44.20	Lowest historical score, TAS 2016 #
	Digital ability	71.50	Highest historical score, ACT 2016 ^	37.90	Lowest historical score, SA 2014 #
	Registered library users	0.75	Highest historical rate, ACT 2017 ^	0.14	Lowest historical rate, ACT 2019 #
Health and Wellness	Community mental health treatment	9.06	Lowest historical rate, VIC 2017 #	30.40	Highest historical rate, NT 2014 ^

	Suicide	5.60	WHO target of 10% reduction by 2020, off lowest historical rate ACT 2012	23.70	Highest historical rate, NT 2015 ^
	Respiratory mortality	28.20	Lowest historical rate, ACT 2017 #	94.90	Highest historical rate, NT 2013
	Diabetes mortality	8.18	WHO target reducing mortality by 25% by 2025, from lowest historical rate ACT 2020	60.10	Highest historical rate, NT 2013
	Cancer mortality	100.88	WHO target of reducing cancer mortality by 25% by 2025, from lowest historical rate, ACT 2021	226.70	Highest historical rate, NT 2014
	Cardiovascular mortality	71.40	WHO target of reducing cancer mortality by 25% by 2025, from lowest historical rate, ACT 2021	210.50	Highest historical rate, NT 2015
Environmental Quality	PM10 concentrations	6.43	Lowest historical rate, ACT 2017 #	22.86	Highest historical rate, NT 2015 ^
	PM2.5 concentrations	3.88	Lowest historical rate, QLD 2015 #	10.38	Highest historical rate, ACT 2019 ^
	Environmental crime	27.20	Lowest historical rate, ACT 2021 #	133.86	Highest historical rate, NT 2016 ^
	CO2 emissions per capita	-8.68	Historical low, TAS 2018 #	81.01	Historical high, NT 2020 ^
<b>Opportunity</b>					
Personal Rights	Voter registration	100.00	Voting is compulsory	76.20	Lowest historical rate, NT 2010
	Police integrity	96.10	Highest historical score, TAS 2016 ^	51.60	Lowest historical score, NT 2016 #
	Male sexual assault and related offences	14.50	UN SDG to halve rate of urban violent crime by 2030; halved lowest historical rate ACT 2021	179.40	Highest historical rate, NT 2015 ^
	Teen pregnancy	3.20	Lowest historical rate, ACT 2020 #	44.52	Highest historical rate, NT 2018 ^

Personal Freedom and Choice	Child abuse substantiations - Indigenous disparity	1.00	Represents equity	15.87	Highest historical rate, ACT 2021 ^
	Out of home care - Indigenous disparity	1.00	Save The Children called for national strategy and target to address over-representation of Indigenous children in out of home care; 1 resembled equity	25.19	Highest historical rate rat, VIC 2021
	Public transport safety	4.23	^	2.34	Lowest historical rate, NT 2021 #
	Women seeking homelessness support due to FDV	28.48	Lowest historical rate, NSW 2015 #	372.60	Highest historical rate, NT 2018 ^
Inclusiveness	Gender pay gap	1.00	Represents equity	0.51	Greatest historical disparity, WA 2020 #
	Gender employment underutilisation	1.00	Represents equity	1.64	Highest historical ratio, VIC 2015 ^
	Volunteering	0.46	^	0.10	Lowest historical rate, NSW 2016 #
	Satisfaction with connection to community	1.00	Maximum score	0.57	Lowest historical rate, SA 2017 #
Access to Advanced Education	Post high school enrolment	0.23	Highest historical rate, ACT 2018 ^	0.09	Lowest historical rate, NT 2019 #
	Educational attainment per population	0.83	Highest historical rate, ACT 2018 ^	0.47	Lowest historical rate, TAS 2016 #
	NEET	0.03	Lowest historical rate, ACT 2016 #	0.18	Highest historical rate, NT 2019 ^
	Gender parity in higher education achievement	1.00	Represents equity	1.92	Highest historical rate ratio, NT 2015 ^

NB. Historical rates are based on available data. # minus 15% buffer; ^ plus 15% buffer.

APPENDIX G: PEER GROUPS

Gross State Product

<b>Australian Capital Territory</b>	Western Australia, Northern Territory, New South Wales, Queensland
<b>New South Wales</b>	Queensland, Victoria, South Australia, Tasmania
<b>Northern Territory</b>	Western Australia, Australian Capital Territory, New South Wales, Queensland
<b>Queensland</b>	Victoria, New South Wales, South Australia, Tasmania
<b>South Australia</b>	Tasmania, Victoria, Queensland, New South Wales
<b>Tasmania</b>	South Australia, Victoria, Queensland, New South Wales
<b>Victoria</b>	Queensland, South Australia, New South Wales, Tasmania
<b>Western Australia</b>	Northern Territory, Australian Capital Territory, New South Wales, Queensland

Net Wealth

<b>Australian Capital Territory</b>	New South Wales, Victoria, Western Australia, Northern Territory
<b>New South Wales</b>	Australian Capital Territory, Victoria, Western Australia, Northern Territory
<b>Northern Territory</b>	Queensland, South Australia, Tasmania, Western Australia
<b>Queensland</b>	South Australia, Northern Territory, Tasmania, Western Australia
<b>South Australia</b>	Queensland, Northern Territory, Tasmania, Western Australia
<b>Tasmania</b>	South Australia, Queensland, Northern Territory, Western Australia
<b>Victoria</b>	Western Australia, Australian Capital Territory, New South Wales, Northern Territory
<b>Western Australia</b>	Victoria, Northern Territory, Queensland, South Australia