



Measuring Australia's Digital Divide

The Australian Digital Inclusion Index 2018

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About this report

Any opinions, findings, conclusions, or recommendations expressed in this material are those of the authors, and do not necessarily reflect the views of the partner organisations.

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For more information about the ADII, and a full set of data tables, see digitalinclusionindex.org.au

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Foreword



Australian Digital Inclusion Index 2018



Our third Australian Digital Inclusion Index gives us an important multi-year overview of digital inclusion in Australia and it is encouraging to see steady overall improvement year on year.

There is obviously no shortage of passion when it comes to the exciting, empowering possibilities of being connected online.

A sobering point is that clearly there are still substantial gaps between Australians who are digitally included and those who are not. In fact that gap is widening for some groups. Why does that matter? Because digital inclusion is now fundamental to full participation in our economic and social life and an ever increasing number of essential and community services and other communications are going digital. Unless action is taken, this 'digital divide' will continue to widen.

At Telstra, we believe digital inclusion is inextricably linked to economic, community and individual prosperity and that the benefits of the digital economy are not being fully realised when some members of our community are still facing real barriers to online participation.

Improving digital inclusion is a shared responsibility – government, business, community and academic organisations all have a role to play in creating the conditions for success in the digital age.

Telstra is pleased to continue our partnership with RMIT University, the Centre for Social Impact (Swinburne University of Technology), and Roy Morgan Research to bring you the Australian Digital Inclusion Index.

I am sure it will continue to play a role in measuring our shared progress and help drive greater digital inclusion across Australia by benchmarking Australia's current rates of digital inclusion and informing the course for future action.

Andrew Penn

CEO
Telstra

Acknowledgements

The research team would like to thank the many people and organisations that have made this third iteration of the Australian Digital Inclusion Index (ADII) possible. Understanding digital inclusion in Australia is an ongoing project. We look forward to exploring the full potential of the ADII in collaboration with all our community partners.

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Teresa Corbin, CEO, Australian Communications Consumer Action Network (ACCAN)

Kate Stevens, Policy & Project Manager, Digital Programs, Policy & Programs, The Smith Family

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Roland Manderson, Deputy Director, Anglicare Australia

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Finally, we wish to acknowledge the significant contribution of Dr. Scott Ewing to the development of the Australian Digital Inclusion Index. Scott passed away in November 2017. We remember him as an outstanding scholar, a dependable colleague and a dear friend.

The research team

The ADII research team was led by Professor Julian Thomas at RMIT University, working with:

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Executive Summary

Digital inclusion is based on the premise that everyone should be able to make full use of digital technologies

With a growing range of education, information, government, and community services moving online, internet access is increasingly regarded as an essential service. The benefits of the digital economy cannot be shared equally when some members of the community are still facing real barriers to online participation. Digital inclusion is based on the premise that everyone should be able to make full use of digital technologies – to manage their health and wellbeing, access education and services, organise their finances, and connect with friends, family, and the world beyond.

The Australian Digital Inclusion Index (ADII) was first published in 2016, providing the most comprehensive picture of Australia's online participation to date. The ADII measures three vital dimensions of digital inclusion: Access, Affordability, and Digital Ability. It shows how these dimensions change over time, according to people's social and economic circumstances, as well

as across geographic locations. Scores are allocated to particular geographic regions and sociodemographic groups, over a five-year period from 2014 to 2018. Higher scores mean greater digital inclusion. This ADII report incorporates data collected up to March 2018.

Overall, digital inclusion is improving in Australia

Australians are spending more time – and are doing more – online. Since data was first collected in 2014, Australia's overall digital inclusion score has improved by 6.2 points, from 54.0 to 60.2. From 2017–2018 alone, Australia's score rose by 2.2 points, from 58.0 to 60.2. With the exception of NT, the scores for every state and territory also increased over this period. There were some changes to the relative ranking of states and territories between 2017 and 2018: of particular note, Tasmania's score rose by 8.0 points to 58.1 points, moving it from the lowest to second lowest ranking state or territory. South Australia now has the lowest digital inclusion score (57.9).

Table 1: Ranked scores for states and territories (ADII 2018)

Rank	State/Territory	ADII Score	Points change since 2017	Ranking change since 2017
1	ACT	66.4	+4.8	–
2	Victoria	61.4	+2.5	↑1
3	New South Wales	60.5	+1.4	↓1
4	Western Australia	59.9	+2.5	↑1
5	Queensland	58.9	+2.1	↑1
6	Northern Territory	58.8	0.0	↓2
7	Tasmania	58.1	+8.0	↑1
8	South Australia	57.9	+2.8	↓1
Australia		60.2	+2.2	

Note: In 2017, the NT sample was <100. Exercise caution in interpretation.

Source: Roy Morgan, April 2017–March 2018

Table 2: Ranked scores for groups with low digital inclusion (ADII 2018)

Rank	Select Demographic	ADII Score	Points change since 2017	Ranking change since 2017
1	Household Income Q5 (Under \$35k)	41.3	+1.3	–
2	Mobile Only	42.7	+1.2	–
3	Aged 65+	46.0	+2.3	–
4	Less than secondary education	47.4	+2.0	–
5	Disability	49.2	+1.2	–
6	Household Income Q4 (\$35k-60k)	51.3	+1.6	–
7	Not in labour force	52.0	+2.1	–
8	Indigenous Australians	54.4	+3.4	–
9	Age 50-64 years	58.1	+2.7	–
10	Completed Secondary	58.3	+2.9	–
Australia		60.2	+2.2	–

Source: Roy Morgan, April 2017–March 2018

The gaps between digitally included and excluded Australians are substantial and widening for some groups

Across the nation, digital inclusion follows some clear economic and social contours. In general, Australians with low levels of income, education, and employment are significantly less digitally included. There is consequently a substantial digital divide between richer and poorer Australians. In 2018, people in the lowest household income quintile (Q5) have a digital inclusion score of 41.3, which is 30.8 points lower than those in highest household income quintile (Q1) (72.1). The gap between people in Q5 low income households and Q1 high income households has widened since 2014, as has the gap between older and younger Australians, and those employed and those outside the labour force.

Access and the nbn™

Nationally, Access has improved steadily over the four years since 2014, from 63.9 in 2014 to 73.4 in 2018. Australians are accessing the internet more often, are using an increasingly diverse range of technologies, and have access to more data than ever before.

Evidence is emerging that the nbn rollout is increasing the Access sub-index score. This is the case in the 2018 ADII results for Tasmania, the state where the nbn rollout is largely complete and its impact is currently the most discernible.

Digital Ability remains an area for further improvement

Nationally, all three components of Digital Ability have improved since 2014: Attitudes (up 5.1 points), Basic Skills (up 10.1), and Activities (up 6.9). However, all three have risen from a low base. Furthermore, less than half of the population consider digital technologies to be empowering. Digital Ability remains an important area for attention for policy makers, business, education, and community groups interested in improving digital inclusion.

Although value for money has improved, affordability remains a key challenge

Affordability has improved only marginally since 2014 and was in decline through 2014 to 2016 before recovering slightly from 2017. While value for money spent on internet services has improved, expenditure on these services has increased faster than increases in household income, resulting in a growing share of household income devoted to them (up from 1.00% in 2014 to 1.17% in 2018). This is reason for concern, particularly for people on low and fixed incomes.

Mobile-only users are less digitally included

More than four million Australians access the internet solely through a mobile connection – this means they have a mobile phone or mobile broadband device with a data allowance, but no fixed connection. In 2018, mobile-only users have an ADII score of 42.7, some 17.5 points below the national average (60.2). Being mobile-only not only diminishes access, but also impacts on the affordability and digital ability aspects of digital inclusion. Mobile-only use is linked with socio-economic factors, with people in the lowest household income quintile (29.6%), those with low levels of education (27.2%), and the unemployed (27.0%) more likely to be mobile-only.

The ‘age gap’ is substantial but may have plateaued

People 65 years and older are Australia’s least digitally included age group. The ADII score for this age group is 46.0, some 14.2 points below the national average. This substantial age gap widened each year between 2014 and 2017, but a slight narrowing in 2018 suggests it may have plateaued.

The digital inclusion gap between Australians with disability and other Australians is substantial and grew in 2018

Australians with disability (classified in the ADII as receiving disability support pensions) have a low level of digital inclusion compared to other Australians. While their level of inclusion improved steadily between 2014 and 2017, and outpaced the national average increase over that period to reduce the gap from 11.2 points to 10.0 points, in the past twelve months much of that relative gain has been lost. The ADII score for those receiving disability support is 49.2, 11.0 points below the national average. Importantly, these results represent outcomes for a distinct subset of the wider community of Australians with disability. An examination of digital inclusion for the deaf and hard of hearing community shows very high levels of Access and Digital Ability compared to the national average, but these are tempered by a lower level of Affordability.

Indigenous digital inclusion is low, but improving

Indigenous Australians living in urban and regional areas also have low digital inclusion (54.4, or 5.8 points below the national average), scoring below the national average on each of the three ADII sub-indices. The largest gap is in Affordability, where the score for Indigenous Australians (49.7) is 7.9 points below the national average (57.6). The prevalence of mobile-only connectivity amongst Indigenous Australians which carry higher costs per gigabyte than fixed connections contributes to this Affordability result.

In 2018, the ADII team conducted a targeted digital inclusion survey in the remote Indigenous community of Ali Curung. The findings of this survey suggest that remoteness further diminishes digital inclusion for Indigenous Australians, particularly with regards to Access and Affordability.

Geography plays a critical role

The ADII reveals substantial differences between rural and urban areas. In 2018, digital inclusion is 8.5 points higher in capital cities (62.4) than in country areas (53.9). The overall ‘Capital–Country gap’ has narrowed slightly over the past three years, from 9.5 (2015) to 8.5 (2018), but remains at the same level as 2014 (8.5). There has been substantial fluctuation in the ‘Capital–Country gap’ across the states and territories since 2014. Over the past 12 months, the gap has narrowed in New South Wales, Tasmania, Victoria, and Western Australia, but expanded in Queensland and South Australia.

Some Australians are particularly digitally excluded

The ADII points to several socio-demographic groups that are Australia’s most digitally excluded in 2018, with scores 10.0 or more points below the national average (60.2). These groups in ascending order include: people in Q5 low income households (41.3), mobile-only users (42.7) people aged 65+ (46.0), people who did not complete secondary school (47.4) and people with disability (49.2).

Collaboration across all levels of government is needed

If the benefits of digital technology are to be shared by all Australians, digital inclusion should form an integral part of the state and national economic policy making and strategic planning. Digital Ability remains a critical area for attention, with collaboration across all three levels of government needed to improve the digital skills of excluded communities and people 50+ in the workforce. Consideration should also be given to digital inclusion as a key commitment in the refreshed Closing the Gap agenda, with a program of research to measure and monitor digital inclusion in remote Indigenous communities

Introduction

What is digital inclusion?

As more of our daily interactions and activities move online, digital technologies bring a growing range of important benefits – from the convenience of online banking, to accessing vital services, finding information, and staying in touch with friends and family.

Social and economic participation lies at the heart of digital inclusion

However, these benefits cannot be shared equally as some groups and individuals still face real barriers to participation. In recent years the digital divide has narrowed, but it has also deepened. The latest ABS data shows that over two and a half million Australians are not online¹.

These Australians are at risk of missing out on the advantages and assistance that digital technology can offer.

As the internet has become the default medium for everyday exchanges, information-sharing, and access to essential services, the disadvantages of being offline grow greater. Being connected is now a necessity, rather than a luxury.

Digital inclusion is about bridging this digital divide. It's based on the premise that all Australians should be able to make full use of digital technologies – to manage their health and wellbeing, access education and services, organise their finances, and connect with friends, family, and the world beyond.

The goal of digital inclusion is to enable everyone to access and use digital technologies effectively. It goes beyond simply owning a computer or having access to a smartphone. Social and economic participation lies at the heart of digital inclusion: using online and mobile technologies to improve skills, enhance quality of life, educate, and promote wellbeing and sustainable development across the whole of society².

The Australian Digital Inclusion Index

The Australian Digital Inclusion Index (ADII) has been created to measure the level of digital inclusion across the Australian population, and to monitor this level over time. Using data collected by Roy Morgan, the ADII has been developed through a collaborative partnership between RMIT University, Swinburne University of Technology, and Telstra.

A growing body of Australian and international research has outlined the various barriers to digital inclusion, the benefits of digital technologies, and the role of digital engagement in social inclusion. Single studies have also measured how different social groups access and use the internet. However, the inaugural ADII report published in 2016 was the first substantive effort to combine these findings into a detailed measure of digital inclusion across Australia.

In our increasingly digitised world, it is vital that *all* Australians are able to share the advantages of being connected. By presenting an in-depth and ongoing overview, identifying gaps and barriers, and highlighting the social impact of digital engagement, the ADII aims to inform policy, community programs, and business efforts to boost digital inclusion in Australia.

Measuring digital inclusion

For affected groups and communities, researchers, practitioners, and policy-makers alike, digital inclusion poses a complex challenge. It has an important goal that calls for a coordinated effort from multiple organisations, across many sectors.

For the benefits of digital technology are to be shared by everyone, barriers to inclusion must be identified and tackled from the outset. Access and Affordability are part of the picture, but a person's Digital Ability (made up of their skills, online activities, and attitudes to digital technology) also plays a key role in helping or hindering participation.

Recent international efforts to measure digital inclusion or engagement include Lloyds Bank's UK Consumer Digital Index, which aggregates results from multiple surveys and bank transaction data relating to digital access, skills and attitudes³. In the UK, The Tech Partnership also produces a Digital Exclusion Heat Map, a composite index that is based on measures of access, skills, and use, as well as availability of mobile and fixed broadband infrastructure⁴. Comparative international tools include the 2017 Digital Economy and Society Index, which summarises digital performance in European Union member states based on five main factors: connectivity, human capital, use of the internet, integration of digital technology, and digital public services. The Economist Intelligence Unit was commissioned by Facebook to produce the Inclusive Internet Index, which examines the performance of 86 countries in relation to internet availability, affordability, relevance (local and relevant content), and readiness (digital skills, attitudes and policy support)⁵.

In Australia, a broad measure of digital inclusion has been captured by the Australian Bureau of Statistics' (ABS) biennial Household Use of Information Technology (HUIT) survey. The 2016-2017 survey – which will be the last in the series – captured basic data on internet access, activities, and reasons for access⁶. Since 2001, the ABS has also captured data on internet access in its five yearly Census of Population and Housing. The ABS is currently determining if it will continue to do so⁷. The Australian Communications and Media Authority (ACMA) also publishes regular research on aspects of Australian digital access and activity⁸.

There have been some attempts to generate a more complex and comprehensive picture of digital inclusion in Australia. Professional services group EY have produced three iterations (2014, 2015-16, 2017) of their Digital Australia State of the Nation report⁹. It explores factors driving digital engagement from a business perspective. The 2017 Digital Inclusion survey research conducted by BehaviourWorks for Australia Post provides insights into digital access, attitudes, and skills¹⁰. The ADII further extends the picture of digital inclusion in Australia presented by these sources.

Methodology in brief

Digital inclusion is a complex, multi-faceted issue with elements including access, affordability, usage, skills, and relevance. To inform the design of the ADII, a Discussion Paper was publicly released in September 2015, and responses sought¹¹.

Feedback revealed a clear desire for highly detailed geographic and demographic data. In response, we worked with Roy Morgan to obtain a wide range of relevant data from their ongoing, weekly Single Source survey of 50,000 Australians. Calculations for the ADII are based on a sub-sample of approximately 16,000 responses in each 12-month period. From these extensive face-to-face interviews and product poll surveys, Roy Morgan collects data on internet and technology products owned, internet services used, personal attitudes, and demographics.

This rich, ongoing data source allows the ADII to report a wide range of relevant social and demographic information, and enables comparisons over time. For more detail on the Single Source survey, please see Appendix 1: Methodology.

ADII time series data

The ADII time series data presented in each annual ADII report is derived from the most current Roy Morgan Single Source dataset. This data can differ slightly from that released in prior-year reports as the dataset is subject to slight weighting changes. In addition, minor refinements to some of the variables underlying the ADII are applied to the time series data released with each report.

Readers should note that the historical ADII results presented in this 2018 report (2014, 2015, 2016 and 2017) will slightly differ from those published in previous reports. While the combination of weighting changes and minor variable refinements alter the actual ADII numbers for past years, the broader narrative regarding digital inclusion in Australia remains unchanged: there is little to no impact on the trends and relative results for different cohorts.

To conduct time-series analysis, readers should not compare data from each of the annual ADII reports, but consult the revised historical data on the ADII website: <https://digitalinclusionindex.org.au>

The Digital Inclusion score

The ADII is designed to measure three key aspects or dimensions of digital inclusion: Access, Affordability, and Digital Ability. These dimensions form the basis of three sub-indices, each of which is built from a range of variables (survey questions) relating to internet products, services, and activities. The sub-indices contribute equally and combine to form the overall ADII.

The ADII compiles numerous variables into a score ranging from 0 to 100. The higher the overall score, the higher the level of inclusion. Scores are benchmarked against a 'perfectly digitally included' individual – a hypothetical person who scores in the highest range for every variable. While rare in reality, this hypothetical person offers a useful basis for comparison. This individual:

- accesses the internet daily, both at home and away
- has multiple internet products (fixed and mobile)
- has a cable or nbn fixed broadband connection
- has a mobile and fixed internet data allowance greater than our benchmarks
- spends less money on the internet (as a proportion of household income) and receives more value (data allowance per dollar) than our benchmarks, and
- exhibits all the positive Attitudes, Basic Skills, and Activity involvement listed.

ADII scores are relative: they allow comparisons across sociodemographic groups and geographic areas, and over time. Score ranges indicate low, medium, or high levels of digital inclusion, as below:

Table 3: ADII and sub-index score ranges: Low, Medium, High

	Low	Medium	High
ACCESS	< 60	65–75	> 80
AFFORDABILITY	< 45	50–60	> 65
DIGITAL ABILITY	< 40	45–55	> 60
DIGITAL INCLUSION INDEX	< 50	55–65	> 70

The sub-indices

Each of the ADII's three sub-indices is made up of various *components*, which are in turn built up from underlying variables (survey questions).

The **Access sub-index** has *three components*:

- **Internet Access:** frequency, places, and number of access points
- **Internet Technology:** computers, mobile phones, mobile broadband, and fixed broadband
- **Internet Data Allowance:** mobile and fixed internet.

The **Affordability sub-index** has *two components*:

- **Relative Expenditure:** share of household income spent on internet access
- **Value of Expenditure:** total internet data allowance per dollar of expenditure.

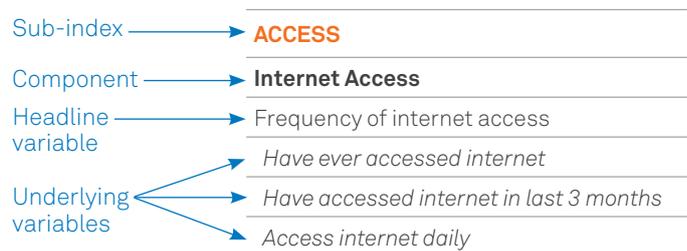
The **Digital Ability sub-index** has *three components*:

- **Attitudes,** including notions of control, enthusiasm, learning, and confidence
- **Basic Skills,** including mobile phone, banking, shopping, community, and information skills
- **Activities,** including accessing content, communication, transactions, commerce, media, and information.

Structure of the ADII

The following diagram illustrates how each sub-index is structured, with the various elements labelled.

Figure 1: Example of sub-index structure, ADII



The full ADII research methodology (including an explanation of the underlying variables, the structure of the sub-indices, and the margins of error) is outlined in the Methodology section of the Appendix. More information about the ADII, along with a full set of data tables, is available at www.digitalinclusionindex.org.au

The ADII Supplementary Survey

In 2018, the ADII team developed the ADII Supplementary Survey. This online survey can be used to derive digital inclusion index scores (including sub-index and component scorers) comparable to the ADII. It was created to enable targeted data capture from population segments underrepresented in the ADII.

The ADII Supplementary Survey consists of the specific questions from the Roy Morgan Single Source survey that are used to compile the index. The vast majority of these questions are directly transposed. A few questions have minor modifications to ensure they work in an online environment to best produce comparable results to the Single Source method. In-field testing confirms that the composition of the ADII Supplementary Survey does not bias results when compared to the ADII. Note that the sample selection will impact results.

Reading the data

- **Timeframe:** data has been collected for five years to date from the periods 2013–2014, 2014–2015, 2015–2016, 2016–2017, and 2017–2018. For each year, data was collected from April to March.
- **Sample sizes:** small sample sizes can render results less reliable. Where asterisks appear in the tables, these signify small sample sizes for that particular group, as follows:
*Sample size <100, exercise caution in interpretation;
**Sample size <50, exercise extreme caution in interpretation.
- **Regional breakdowns:** to aid comparison, data for each state is displayed alongside scores for Australia as a whole, and for the capital city and sub-regions, regional centres and rural areas within that state.
- **Indigenous Australians:** the term is used to define people that self-identify as being of Aboriginal or Torres Strait Islander origin. Note, the ADII does not capture data from Indigenous Australians in remote communities.
- **Language Other Than English (LOTE):** people who speak a language other than English at home.
- **Income:** this is presented in five household income quintiles (ranges), from highest (Q1) to lowest (Q5). The ranges are: Q1: \$150,000 or more | Q2: \$100,000 to \$149,999 | Q3: \$60,000 to \$99,999 | Q4: \$35,000 to \$59,999 | Q5: under \$35,000.
- **Employment status:** this is divided into three groups in this report – people in full- or part-time employment (Employed), those seeking employment (Unemployed), and those not in the labour force (NILF) as they are not employed or seeking employment. The latter group is composed of retirees (60%), students (20%), and home duties/other (20%).
- **Age:** scores for each state and territory are captured across five different age brackets, from people aged 14–24 years to people aged 65+. National data for people aged 65+ is further divided into four groups (65–69, 70–74, 75–79, and 80+).
- **Disability:** people with disability are defined as those receiving either the disability support pension (DSP) from Centrelink, or the disability pension from the Department of Veterans' Affairs.
- **Educational attainment:** this is divided into three levels of completion – Tertiary (degree or diploma), Secondary (secondary school), and Less than Secondary (did not finish secondary school).
- **Relative expenditure:** this component of the Affordability sub-index is based on the share of household income spent on internet access. The current national average is 1.17% of household income. Affordability improves as this share decreases.
- **Value of expenditure:** this component of the Affordability sub-index is based on the amount of data allowance obtained per dollar of expenditure. The current national average is 4.5GB per dollar. Affordability improves as this amount increases.

Australia: the National Picture

Findings

The 2018 ADII reveals a wealth of new information about digital inclusion in Australia. At a national level, digital inclusion is steadily increasing. Over the four years since 2014, we have seen marked improvements in some dimensions of the ADII – for example, a steady rise in overall Access and Digital Ability.

Across the country, digital inclusion is clearly influenced by differences in income, education levels, and the geography of socioeconomic disadvantage

In other areas, progress has fluctuated or stalled. And in some cases, the digital divide has widened. An ADII score of 100 represents a hypothetically perfect level of Access, Affordability, and Digital Ability. Australia's overall national score has increased from 54.0 in 2014, to 60.2 in 2018 (a 6.2-point increase over four years). Since 2017, the national

score has risen by 2.2 points. Australia's overall performance indicates a moderate level of digital inclusion, with mixed progress across different ADII dimensions, geographic areas, and sociodemographic groups.

The ADII confirms that digital inclusion is unevenly distributed across Australia. In general, wealthier, younger, more educated, labour market participants and urban Australians enjoy much

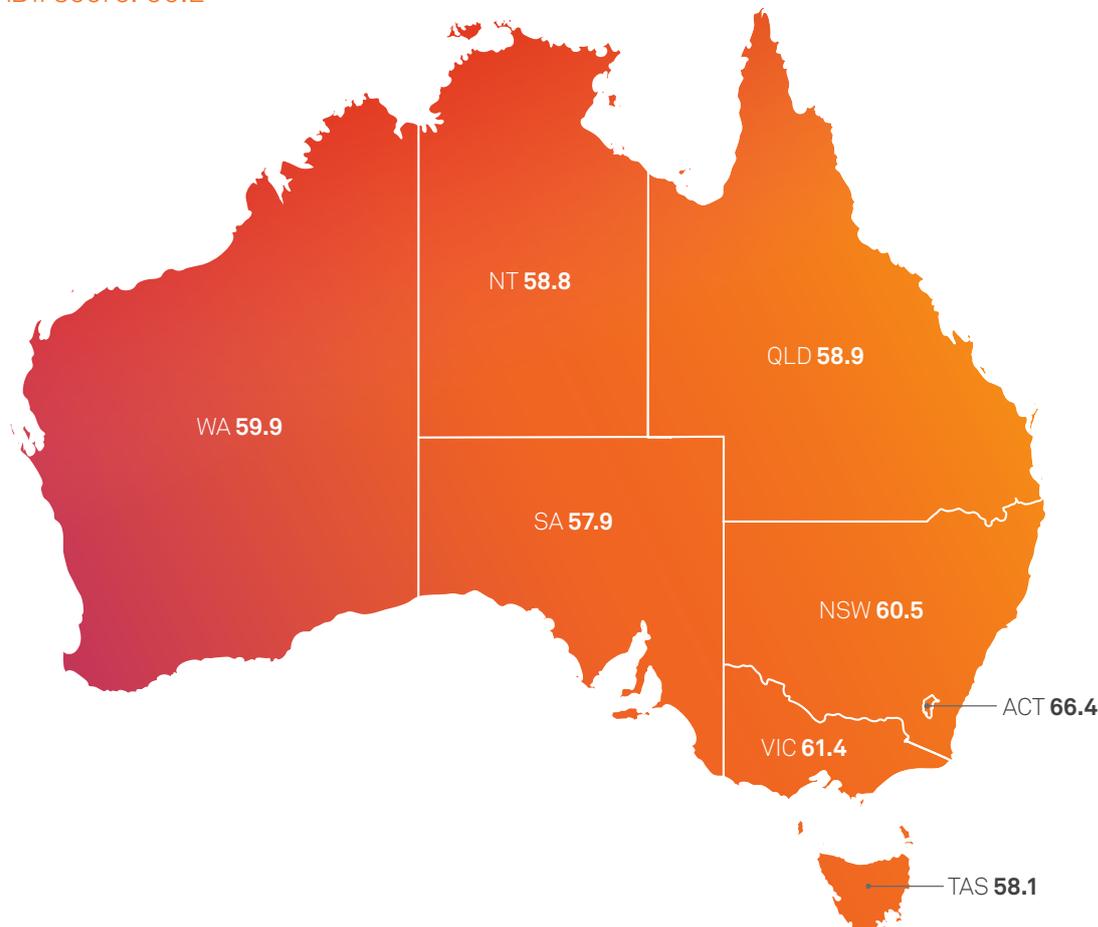
greater digital inclusion. Across the country, digital inclusion is clearly influenced by differences in income, education levels, and the geography of socioeconomic disadvantage. Some Australian communities are falling further behind - the gap between people in low and high income households is growing, as is the gap between those who are not in the labour force and those who are.

We also see interesting regional variations in each of the five years to 2018. For example, the Australian Capital Territory (ACT) has the highest level of digital inclusion (66.4). The gap between the ACT and other states and territories narrowed between 2015–2017, but with the ACT recording the second largest rise (4.8 points) in digital inclusion over the past year, the gap has further expanded. Tasmania significantly trailed other states in 2017 and has recorded the largest improvement in digital inclusion in 2018, rising 8.0 points to 58.1. This result is related to the rapid and substantial uptake of nbn services in that state, where the nbn rollout is largely complete. The results for Tasmania in 2018 may signal the potential for significant digital inclusion improvements in other states and territories as the nbn rollout progresses.

Since 2014, three states have outpaced the Australia-wide increase of 6.2 points: Tasmania (up 7.7 points), SA (up 7.5), and Victoria (up 7.1). By contrast, the ACT (up 6.1), Queensland (up 5.9), NSW (up 5.6), WA (up 4.9), and the NT (up 4.6) did not keep pace with the national increase.

Australia: The national picture 2018

National ADII score: 60.2



Dimensions of digital inclusion: the sub-indices over time

The ADII is made up of three sub-indices or dimensions that track different aspects of digital inclusion: Access, Affordability, and Digital Ability.

Access is about how and where we access the internet, the kinds of devices we use to access it, and how much data we can use. Affordability is about how much data we get for our dollar, and how much we spend on internet services as a proportion of our income. Digital Ability is about our skill levels, what we do online, our attitudes towards technology, and our confidence in using it. Taken together, these measures give us a unique, multi-faceted picture of digital inclusion.

The rise in Australia's ADII score has mainly been driven by improvements in Access (from 63.9 in 2014 to 73.4 in 2018) and Digital Ability (from 42.2 in 2014 to 49.5 in 2018). The national Affordability score fell from 56.0 to 54.0 points between 2014 and 2016 and the recovery since 2016 has been modest. The 2018 Affordability score is 57.6. Affordability is examined in greater detail later in this report.

On a national scale, Access is relatively strong while Digital Ability is relatively weak. Affordability may cause particular concern in the case of digitally excluded groups. There is scope for improvement across all three dimensions of the ADII, but Digital Ability appears to present the greatest opportunity for an investment of effort and resources.

Access

All three components of the Access sub-index have improved steadily since 2014. The Internet Access component was already relatively high at 82.7 in 2014, and has made marginal annual improvements since then (83.3 in 2015, 84.4 in 2016, 85.4 in 2017 and 87.1 in 2018). The Internet Technology and Internet Data Allowance scores both started from a lower base and have steadily improved over the four years to 2018. The national Internet Technology score rose from 68.2 in 2014 to 78.7 in 2018 (with scores of 69.1, 73.0 and 75.7 in the three intervening years), while the Internet Data Allowance score rose from 40.8 in 2014 to 54.4 in 2018 (with scores of 41.5, 45.7 and 51.2 in the three intervening years). This reflects several developments over the past four years, including the proliferation of connected consumer devices, especially smart phones and the growing demand for data as Australians spend more time – and do more things – online. It also reflects improvements to mobile and fixed network infrastructure.

There is emerging evidence that the rollout of nbn infrastructure is linked to improvements in the Internet Technology and Data Allowance aspects of digital inclusion. It is the 2018 ADII results for Tasmania where this link is currently most discernible (discussed in detail in the Tasmanian state profile, pp.39-41). The impact of the nbn rollout on the Internet Technology and Data Allowance components is multidimensional, and there are three reasons for this.

First, switching from other broadband technologies to the nbn generates a higher Internet Technology score. The Index rates nbn and cable connections as better fixed broadband technologies than their pre-nbn alternatives, given their capacity for higher speeds and improved reliability¹².

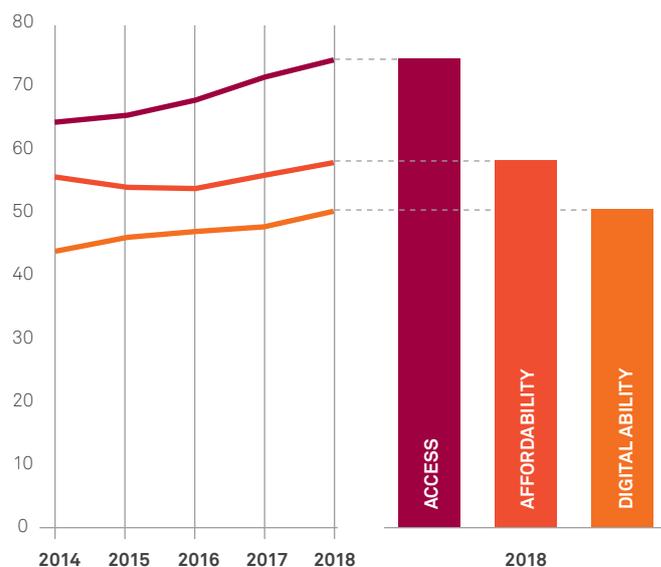
Second, detailed ADII data analysis suggests that the nbn rollout may encourage those previously without fixed broadband to establish a connection¹³. There are a number of possible reasons for this, one being consumer awareness: in the 18 month switch-over window, households in areas with nbn access must

Table 4: Australia: Sub-index scores over time (ADII 2014–2018)

	2014	2015	2016	2017	2018
Australia					
ACCESS					
Internet Access	82.7	83.3	84.4	85.4	87.1
Internet Technology	68.2	69.1	73.0	75.7	78.7
Internet Data Allowance	40.8	41.5	45.7	51.2	54.4
	63.9	64.6	67.7	70.8	73.4
AFFORDABILITY					
Relative Expenditure	60.3	58.8	55.0	54.9	54.3
Value of Expenditure	51.6	49.9	52.9	56.9	60.9
	56.0	54.3	54.0	55.9	57.6
DIGITAL ABILITY					
Attitudes	45.9	47.3	49.2	50.1	51.0
Basic Skills	46.6	49.7	51.7	53.3	56.7
Activities	34.1	36.2	37.2	38.4	41.0
	42.2	44.4	46.0	47.3	49.5
DIGITAL INCLUSION INDEX	54.0	54.4	55.9	58.0	60.2

Source: Roy Morgan, April 2017–March 2018

Figure 2: Australia: Sub-index trends over time (ADII 2014–2018)



Source: Roy Morgan, April 2017–March 2018

make decisions about new telecommunications products. Since fixed broadband connectivity is considered to enhance digital inclusion, taking up such a service generates a higher Internet Technology score.

Third, the average data allowance for those with nbn connections is 7% higher than those on other types of fixed broadband¹⁴. One reason for this may be that nbn subscribers tend to have newer plans with higher data allowances than those with older 'legacy' ADSL plans¹⁵. Regardless, an increase in nbn connectivity translates into larger data allowances and therefore higher Internet Data Allowances scores.

Notably, plans with higher data allowances tend to incur lower charges per gigabyte and so a rise in nbn connections may be a factor driving higher Value of Expenditure scores (see Table 5).

Affordability

The national Affordability sub-index score has risen only marginally since 2014. It was previously in decline through 2014 to 2016, with a slight recovery since.

The limited improvement in Affordability does not simply reflect rising costs because in fact, internet services are becoming less expensive. Nationally, Value of Expenditure (a measure of gigabytes per dollar spent) has increased over the past four years (from 51.6 in 2014 to 60.9 in 2018). However, while cost per gigabyte of data continues to fall, Australians are spending more time online and more money on internet services. Expenditure on internet services has increased faster than household income and therefore the Relative Expenditure component – which reflects the share of household income spent on internet services – has declined in each year since 2014 (falling from 60.3 in 2014, to 58.8 in 2015, 55.0 in 2016, 54.9 in 2017 and 54.3 in 2018). Overall, the proportion of household income devoted to internet services has risen 0.17% since 2014.

If Affordability falls it will have a negative effect on the digital inclusion of Australians on lower incomes because they have less discretionary income to spend. For a number of Australia's more digitally excluded groups, the Affordability score gap widened in 2017–2018. These groups include single parents, Indigenous Australians, people reporting low household income (Q5), people with disability, people outside the labour force (NILF), and people who did not complete secondary school (Less than Secondary).

Digital Ability

All three components of Digital Ability have improved steadily over time. In 2018, the Attitudes sub-index score stands at 51.0 (up from 45.9 in 2014), the Basic Skills score is at 56.7 (up from 46.6 in 2014), and the Activities score is 41.0 (up from 34.1 in 2014). While the rate of improvement has been slow since 2014, over the past year the overall Digital Ability score has risen by 2.2 points.

The data shows that while Australians report increasing interest in having continuous internet access, they struggle to keep up with new technologies, and relatively few users engage in more advanced activities. This suggests scope to further improve Digital Ability.

Geography: digital inclusion in the states, territories and regions

Geography plays a critical role in digital inclusion in Australia. Our data reveals significant differences between rural and urban areas. This 'Capital–Country gap' is evident across all three sub-indices – Access, Affordability, and Digital Ability.

Geography plays a critical role in digital inclusion in Australia

The digital inclusion score is 8.5 points higher in capital cities than in rural areas. The overall 'Capital–Country gap' has narrowed slightly over the past three years – from 9.5 (2015) to 8.5 (2018) – but remains at the same level as 2014 (8.5). This trend is not consistent across the three sub-indices. The Access gap for Capital–Country areas has narrowed each year (from 8.8 in 2014 to 6.7 in 2018). The Affordability gap widened between 2014 and 2016, peaking in 2016 at 11.7 points. It has since narrowed, but remains very high at 9.6 points. The Digital Ability gap expanded between 2014 and 2015 (from 7.7 to 10.0) before contracting to 8.1 in 2016 and 7.8 in 2017. In the past year, it has expanded again and is now 9.2 points.

While there were some changes to the relative ranking of states and territories between 2017 and 2018, the ACT remains the highest-scoring state or territory, a position it has held throughout the reporting period (2014–2018). The ACT's lead narrowed between 2015 and 2017, but a 4.8 point increase in the past year has again expanded the gap. Victoria is the second most digitally included state or territory with a score of 61.4. Victoria's 2.5 point increase in the past year pushed it above NSW (60.5) in the rankings. Of all the states and territories, the NT had the greatest shift in the rankings in the past year: falling two positions as its digital inclusion score remained static at 58.8 points. Tasmania (58.1) records the largest gain of any state and territory in the past year (8.0 points) and rose one position in the rankings. SA (57.9) now has the lowest ADII score of all states and territories.

In ascending order, Australia's least digitally included regions are: Eyre (45.0), South East SA* (48.6), North Victoria (50.8), and Murray & Murrumbidgee (51.0). These regions have ADII scores at least 9.0 points below the national average of 60.2.

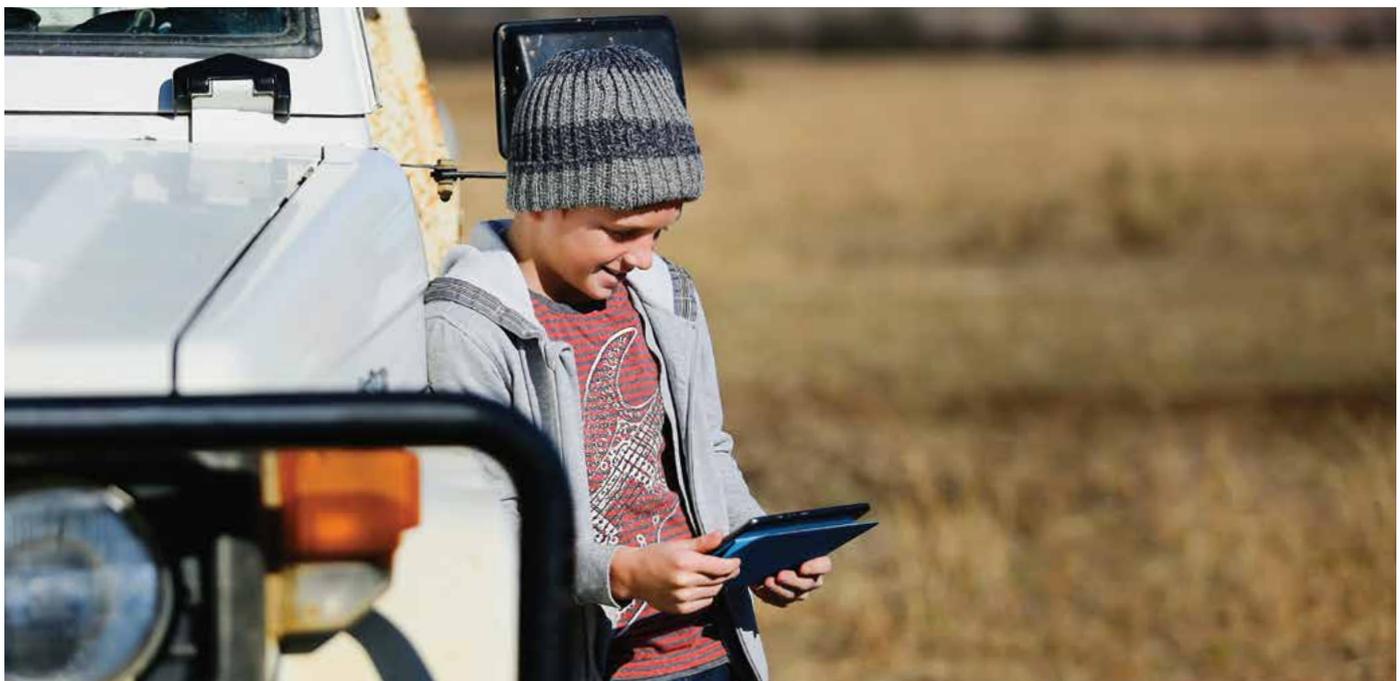


Table 5: Australia: Digital inclusion by geography (ADII 2018)



Source: Roy Morgan, April 2017–March 2018

Digital inclusion in regional centres

The ADII provides data for a number of regional centres.

Table 6 shows the ADII scores for a number of these communities.

Every regional centre has a lower digital inclusion score than the Australia-wide average for capital cities (62.4).

Wollongong has the highest level of digital inclusion of the regional centres with a score of 62.1. It experienced a sizeable increase in digital inclusion (5.8 points) over 2017, with the improvement based largely on rises in the Affordability and Digital Ability sub-indices. Cairns had a similarly large improvement in digital inclusion (4.2 points), although its improvement was based on a rise in Access and Affordability. By contrast, over the past year digital inclusion fell in Geelong (down 1.3 points). A slight reduction in fixed broadband connectivity diminished Geelong's Access score, while the Digital Ability score of this regional Victorian city also fell.

Table 6: scores for select regional centres (ADII 2018)

Regional centre	ADII score	Points change since 2017	Ranking change since 2017
Wollongong	62.1	5.8	+5
Cairns	59.7	4.2	+5
Gold Coast	59.5	0.8	-1
Gosford	59.4	0.8	-1
Geelong	58.7	-1.3	-4
Townsville	58.6	0.2	-2
Sunshine Coast	58.3	3.2	+1
Newcastle	57.9	1.0	-3
Capital Cities	62.4	2.2	
Rural	53.9	2.3	
Australia	60.2	2.2	

Source: Roy Morgan, April 2017–March 2018

Demography: digital inclusion and socioeconomic groups

Income, employment and education

The ADII illuminates the social and economic aspects of digital inclusion in Australia. There is clearly a digital divide between richer and poorer Australians. In 2018, individuals in households with an annual income of less than \$35,000 (Q5) recorded an ADII score of 41.3. This is 30.8 points lower than those living in households with an income over \$150,000 (Q1) and 18.9 points below the national average score.

Looking at the Affordability sub-index in the context of household income, people in the lowest income bracket spent a substantial proportion of that income on network access (approximately 3.6%), which translated into a Relative Expenditure score of 12.0. This lies in sharp contrast with those in the highest household income bracket, who spent less than 1% of household income on network access for a Relative Expenditure score of 86.0. There was also a significant gap in Digital Ability between those in low (Q5) and high (Q5) income households (33.8 versus 59.8).

In the four-years since 2014, those in the highest household income (Q1) recorded the largest ADII gain (6.0 points) of all income quintiles. In contrast, those in the lowest income bracket (Q5) recorded a slightly smaller increase of 5.6 points. The increase in the highest income bracket is from a high base while those in the lowest income bracket are from a low base, which indicates the income gap is widening.

There is also a clear 'employment gap' in digital inclusion. In 2018, the ADII score for people not in the labour force (NILF) is 52.0 (8.2 points below the national average), while those that are employed have an ADII score of 65.0 (4.8 above the national average). The digital inclusion gap between those not in the labour force and employed groups has widened since 2015, largely as a result of differences in the Affordability sub-index score.

People looking for part time or full time work have an ADII score of 60.9. This is 0.7 points higher than the national average. The unemployed have Access and Digital Ability sub-index scores higher than the national average, but do not score as well on the Affordability sub-index. This result reflects the younger age profile of the unemployed compared to the overall population.

The 'education gap' highlighted in earlier ADII reports remains significant. People who did not complete secondary school scored 47.4 (12.8 points below the national average). Those with a secondary education scored 58.3 (1.9 points below the national average), while tertiary-educated people scored 65.0 (4.8 points above the national average).

Gender

Women have an ADII score 2.2 points below that of men in Australia, with similar differences across all three sub-indices. While this 'gender gap' is maintained across the life-cycle it is narrowest in the 25-34 age bracket and widest in the 65+ bracket (4.6 points). The gap between men and women in the 65+ age category is most significant in the Access and Digital Ability sub-indices.

Older Australians

Digital inclusion tends to decline as age increases, particularly for older Australians. People aged 14-49 years all have similar ADII scores, ranging from 64.5 to 66.5 (roughly 5 points above the national average). In 2018, those aged 50-64 recorded an ADII score of 58.1. This is 7.3 points lower than those aged 35-49. The largest difference is in Digital Abilities. Those aged 65+ are the least digitally included age group in Australia, with a score of 46.0 (14.2 points below the national average, and 19.4 below those aged 35-49). This substantial 'age gap' widened each year between 2014 and 2017, but a slight decline in 2018 suggests it may have plateaued.

Table 7: Gender and age (ADII 2018)

2018	Gender and Age: Years											
	Men	Women	Men 14-24	Women 14-24	Men 25-34	Women 25-34	Men 35-49	Women 35-49	Men 50-64	Women 50-64	Men 65+	Women 65+
ACCESS												
Internet Access	87.5	86.8	92.4	90.9	91.8	92.7	92.8	93.3	85.6	86.6	74.4	70.6
Internet Technology	79.5	77.8	81.1	80.1	83.9	83.0	83.2	82.8	78.4	77.4	70.6	66.0
Internet Data Allowance	56.9	51.9	59.5	54.8	66.8	64.6	64.2	60.4	53.8	48.0	39.8	32.6
	74.7	72.2	77.7	75.3	80.8	80.1	80.1	78.8	72.6	70.7	61.6	56.4
AFFORDABILITY												
Relative Expenditure	55.3	53.3	61.6	60.0	54.0	51.1	57.8	56.1	56.0	54.6	45.4	43.0
Value of Expenditure	62.0	59.8	67.2	60.6	63.6	65.0	63.5	63.9	61.2	58.6	53.2	49.1
	58.6	56.5	64.4	60.3	58.8	58.0	60.7	60.0	58.6	56.6	49.3	46.1
DIGITAL ABILITY												
Attitudes	54.6	47.6	67.1	61.5	64.4	56.1	57.1	49.9	46.8	42.0	38.3	30.8
Basic Skills	56.0	57.3	53.0	59.7	66.0	71.0	67.5	66.8	53.4	55.6	38.8	33.9
Activities	41.2	40.8	42.4	44.7	52.6	53.0	49.1	48.3	35.9	36.8	25.7	22.2
	50.6	48.6	54.2	55.3	61.0	60.0	57.9	55.0	45.4	44.8	34.3	29.0
DIGITAL INCLUSION INDEX	61.3	59.1	65.4	63.6	66.9	66.0	66.2	64.6	58.9	57.4	48.4	43.8

Source: Roy Morgan, April 2017-March 2018

Table 8: Older Australians gender and age (ADII 2018)

2018	Gender and Age: Years											
	65-69	70-74	75-79	80+	Men 65-69	Women 65-69	Men 70-74	Women 70-74	Men 75-79	Women 75-79	Men 80+	Women 80+
ACCESS												
Internet Access	80.2	74.7	66.5	54.9	81.0	79.4	76.2	73.5	70.3	63.3	59.3	50.2
Internet Technology	74.6	70.3	63.2	53.5	75.8	73.5	72.5	68.4	67.2	59.8	57.9	48.7
Internet Data Allowance	43.9	37.5	29.7	20.7	46.8	41.1	41.5	34.1	35.1	25.2	24.6	16.6
	66.2	60.9	53.1	43.0	67.9	64.7	63.4	58.7	57.5	49.4	47.3	38.5
AFFORDABILITY												
Relative Expenditure	44.0	43.4	44.0	47.7	45.6	42.4	44.6	42.2	44.2	43.8	48.4	46.8
Value of Expenditure	52.4	51.6	50.5	46.1	54.1	50.8	54.4	49.1	53.1	48.2	48.1	43.6
	48.2	47.5	47.3	46.9	49.8	46.6	49.5	45.6	48.7	46.0	48.2	45.2
DIGITAL ABILITY												
Attitudes	38.9	36.3	29.5	24.4	42.3	35.8	40.3	32.9	34.7	25.2	28.5	20.0
Basic Skills	45.5	37.8	28.7	18.5	47.0	44.1	40.8	35.3	33.9	24.3	20.2	16.7
Activities	29.6	24.4	20.0	12.9	30.3	28.9	27.1	22.2	23.0	17.5	14.8	10.9
	38.0	32.9	26.1	18.6	39.9	36.3	36.1	30.1	30.6	22.3	21.2	15.8
DIGITAL INCLUSION INDEX	50.8	47.1	42.2	36.2	52.5	49.2	49.7	44.8	45.6	39.3	38.9	33.2

Source: Roy Morgan, April 2017–March 2018

A closer look at the 65+ category reveals a pattern of diminishing digital inclusion as age increases. The largest gaps between this age group and younger people is in the Access and Digital Ability sub-indices. This is despite scores for both Access and Digital Ability increasing across all age brackets in the 65+ category since 2014. The cohort aged 75–79 years has made the largest proportional progress on these sub-indices (up 15.2 points on Access and 11.3 points on Digital Ability). The key issue faced by those 65+ – as with other groups reporting relatively low incomes – is the rising proportion of income spent on network access. As a result, affordability has been in decline for each of the age cohorts aged 65+.

Gender also impacts inclusion for this group. Older Australian women have lower levels of overall digital inclusion than their male counterparts, and record lower scores on all three sub-indices. The digital inclusion gap between older women and men is widest for the group aged 75–79.

Indigenous Australians

Indigenous Australians living in urban and regional areas have a similarly low level of digital inclusion, with an ADII score of 54.4 (5.8 points below the national score). While they score below the national average on each of the three ADII sub-indices, the largest gap is in Affordability. Indigenous Australians record an Affordability score of 49.7, some 7.9 points below the national average (57.6). Indigenous Australians spend a greater portion of their household income on internet connectivity than other Australians, as indicated by their Relative Expenditure component score of 48.1 (6.2 points below the national average). They also receive less data for each dollar of expenditure, as indicated by their Value of Expenditure component score of 51.3, some 9.6 points lower than the national average. In part, these Affordability results reflect the prevalence of mobile-only use amongst the Indigenous Australians population (34.7% compared to the national average of 20.4%). Mobile data costs substantially more per gigabyte than fixed broadband.

Since 2014, the digital inclusion gap between Indigenous Australians and the national average narrowed slightly (down from 8.7 points in 2014 to 5.8 points in 2018). While the gap closed across each of the three ADII sub-indices over this period, the largest relative improvement recorded by Indigenous Australians was in Digital Ability. The score for Indigenous Australians on this sub-index rose from 33.7 in 2014 to 45.0 in 2018 (up 11.3 points). The national average for this index rose 7.3 points over this period.

Significantly, the ADII data collection does not extend to remote Indigenous communities, where high levels of geographic isolation and socioeconomic disadvantage pose distinct challenges for digital inclusion. Case Study 1 (p.18) reports on survey research conducted by the ADII team in the remote indigenous community of Ali Curung in the NT. Findings from this survey suggest remoteness further diminishes digital inclusion for Indigenous Australians, particularly in terms of Access and Affordability.

Australians with Disability

In 2018, Australians with disability (defined in the ADII as receiving either the disability support pension or disability pension) have relatively low digital inclusion. In 2018, the ADII score for this group is 49.2 (11.0 points below the national score).

Between 2014 and 2017, the gap between people with disability and the national average narrowed, largely due to gains by this group in Access and Digital Ability. However, the gap in Affordability expanded in this period. As a consequence of a lack of improvement in Affordability and Digital Ability over 2017–2018, the overall digital inclusion gap between people with disability and other Australians has widened. Importantly, these results represent outcomes for a distinct subset of the wider community of Australians with disability. Case Study 2 (p.20) provides a picture of digital inclusion for the deaf and hard of hearing (DHH) community. It reveals very high levels of digital access and digital ability compared to the national average, but these are tempered by a lower level of affordability.

Australians who speak a Language Other Than English

Australians who speak a first Language Other Than English (LOTE) have a relatively high level of digital inclusion, with an ADII score of 63.2 (3.0 points above the national average). The LOTE community is a highly diverse group and care should be taken in interpreting findings.

Mobile-only users

More than four million Australians access the internet solely through a mobile connection: they have a mobile phone or mobile broadband device with a data allowance, but no fixed connection¹⁶. The ABS has reported that more than 90% of data downloaded in Australia is over fixed connections¹⁷. In 2018, mobile-only users have an ADII score of 42.7, some 17.5 points below the national average (60.2). Being mobile-only not only diminishes the Access dimension of digital inclusion. Mobile-only users report low affordability as mobile data costs substantially more per gigabyte than fixed broadband and, given their restricted data allowances, are less likely to be engaged in advanced heavy data-use activities such as streaming which diminishes their Digital Ability sub-index result. Mobile-only use is linked with socio-economic factors, with people in Q5 low income households (29.6%), those with low levels of education (27.2%), and the unemployed (27.0%) more likely to be mobile-only. In addition, Indigenous Australians (34.7%), Australians with disability (30.6%) and single parents (28.8%) are more likely to be mobile-only.

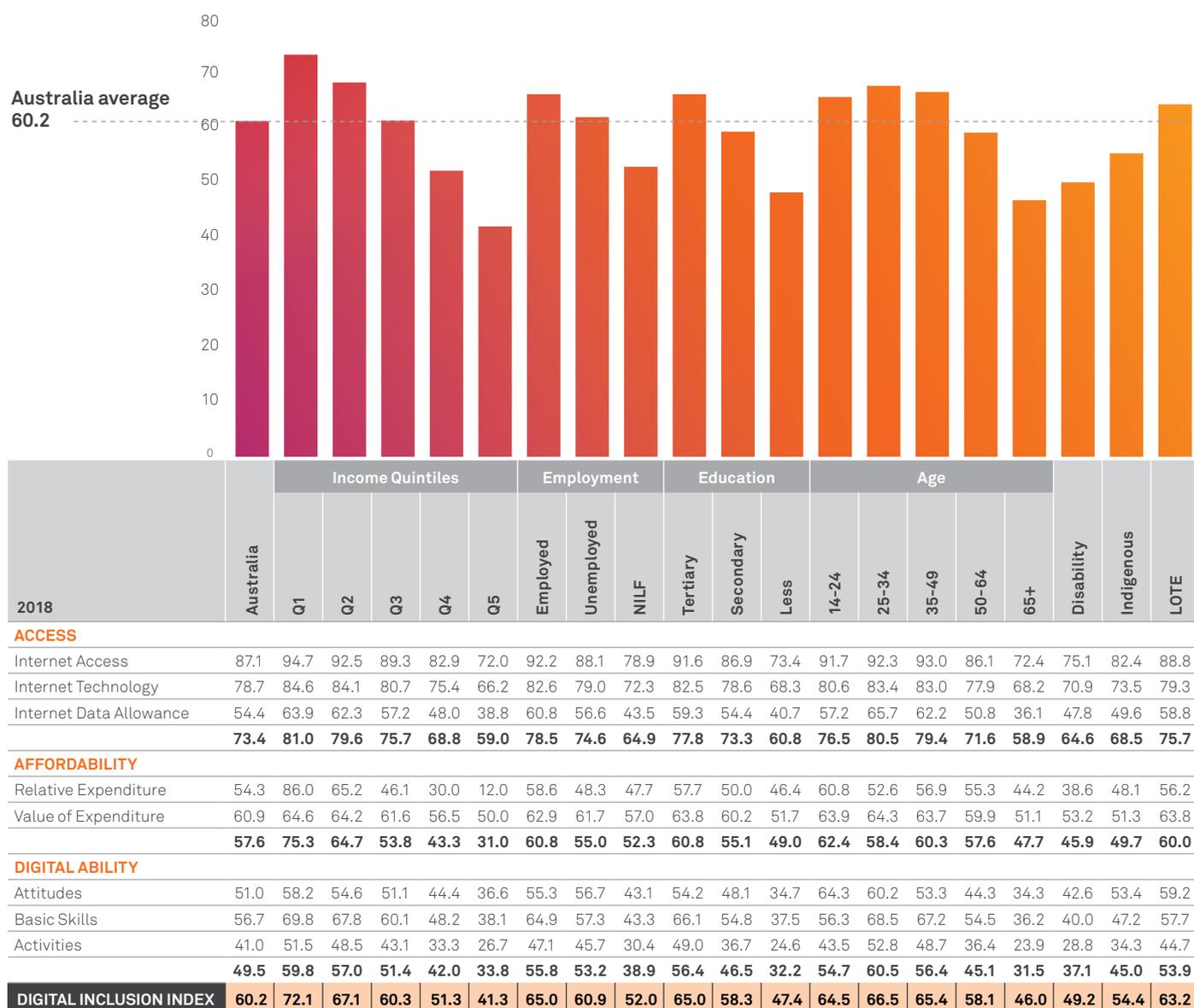
Table 9: Mobile-only users (ADII 2018)

	Australia	Mobile-Only
2018		
ACCESS		
Internet Access	87.1	74.8
Internet Technology	78.7	60.0
Internet Data Allowance	54.4	29.7
	73.4	54.8
AFFORDABILITY		
Relative Expenditure	54.3	55.3
Value of Expenditure	60.9	10.7
	57.6	33.0
DIGITAL ABILITY		
Attitudes	51.0	43.2
Basic Skills	56.7	46.1
Activities	41.0	31.5
	49.5	40.3
DIGITAL INCLUSION INDEX	60.2	42.7

Source: Roy Morgan, April 2017–March 2018



Table 10: Australia: Digital inclusion by demography (ADII 2018)



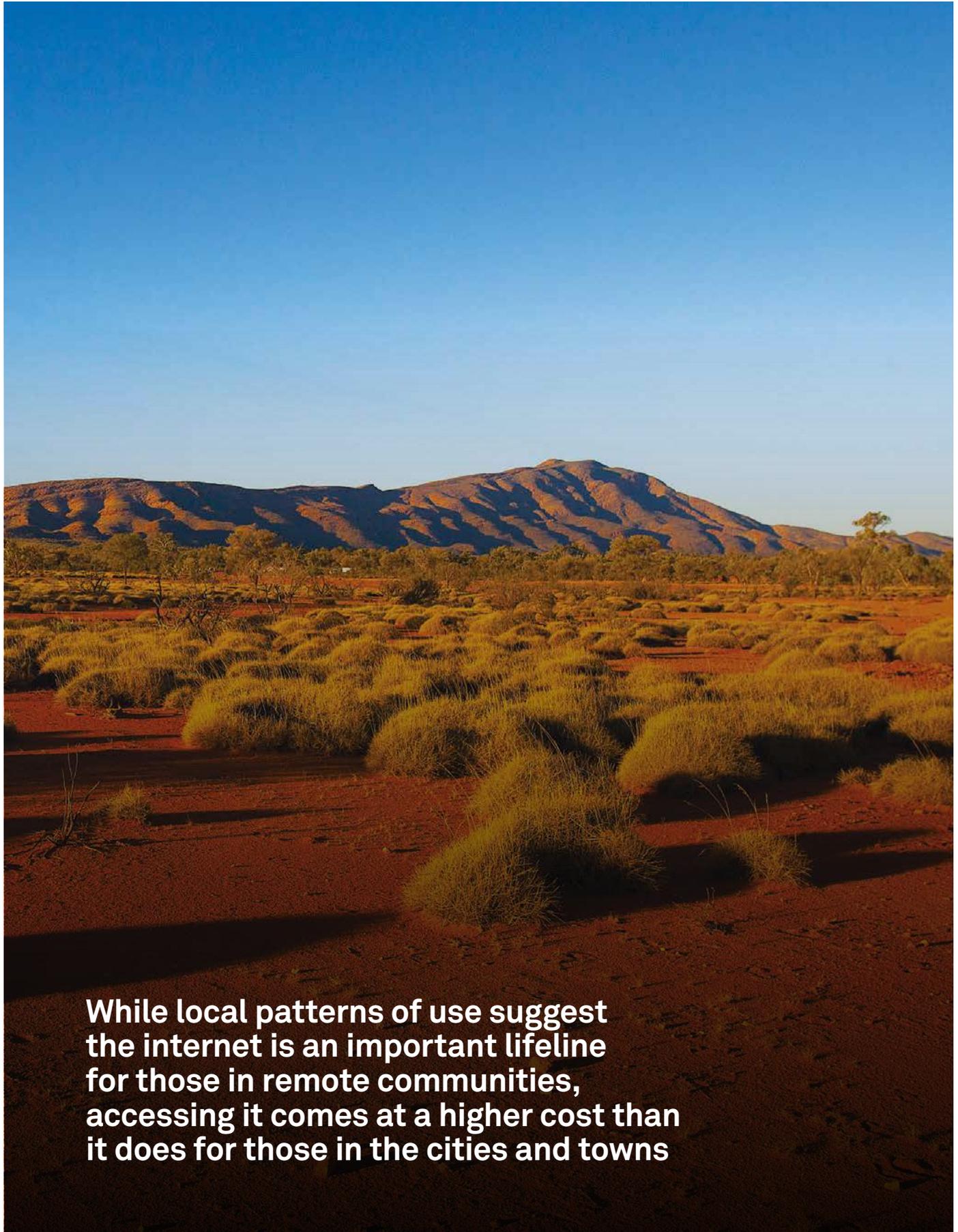
Source: Roy Morgan, April 2017–March 2018

Further information

More information about the ADII, along with a full set of data tables, is available at www.digitalinclusionindex.org.au

Case Study 1

Remote Indigenous community – Ali Curung



While local patterns of use suggest the internet is an important lifeline for those in remote communities, accessing it comes at a higher cost than it does for those in the cities and towns

Although the ADII provides a rich picture of digital inclusion for Indigenous Australians living in urban and regional areas extending back to 2014, the data does not include those living in remote areas. Recent research conducted by the ADII research team (using the ADII Supplementary Survey) in the remote Indigenous community of Ali Curung suggest that remoteness further diminishes digital inclusion for Indigenous Australians, particularly with regards to access and affordability.

Quantitative digital inclusion data collected in remote communities by the ABS suggests distinctly lower levels of internet access, for instance, 2014/15 National Aboriginal and Torres Strait Islander Social Survey data shows that 53% of Indigenous Australians in remote and very remote areas had accessed the internet in the previous 12 months, while the equivalent figure for those in other areas was 85.7%¹⁸. This data is useful, but reveals little about the barriers to fruitful online participation with regards to costs, attitudes, and skills.

To deepen our knowledge of the nature and extent of digital inclusion for Indigenous Australians in remote communities, the ADII Supplementary Survey¹⁹ was conducted with 112 Indigenous Australians from Ali Curung, a community of approximately 500 people located 380 km north of Alice Springs. The survey was administered face-to-face (using a tablet to record data) by the Centre for Appropriate Technology (CfAT) with local assistance²⁰.

Overall, the survey results reveal that members of the Ali Curung community have a very low level of digital inclusion. The digital inclusion score for the community (42.9) is 17.3 points lower than the Australian average (60.2) and 11.5 points lower than that recorded by Indigenous Australians in urban and regional areas.

The very low Access score recorded for Ali Curung (47.3) is primarily a result of a reliance on mobile connectivity. Although nine in ten respondents maintained an internet connection, not one of these people had fixed broadband despite the local availability of satellite services. Respondents also predominately used pre-paid mobile services. These results accord with previous research conducted in Ali Curung²¹, and reflect the prevalence of mobile-only connections amongst Indigenous Australians in the ADII dataset. One consequence is that Indigenous Australians in

Ali Curung have access to smaller data allowances than if they had a fixed broadband service which might be a factor in limiting the intensity of internet use – members of the Ali Curung community are less likely to use the internet daily than the national average.

Like other mobile-only users in the ADII dataset, Ali Curung community members return a very low affordability score (25.8). The higher pricing and cost structure of mobile data is one reason for this. Although mobile data charges have fallen in recent years, a gigabyte of data remains considerably more expensive on mobile networks than via fixed broadband. In Ali Curung, this translates into a Value of Expenditure score of 12.1, some 48.9 points below the national average. Ali Curung also records a very low Relative Expenditure score (39.6) since expenditure on internet access accounts for a large portion of household income – 2.15% compared to the national average of 1.17%.

Although higher costs, restricted data allowances, and device limitations associated with mobile broadband access tends to diminish Digital Ability scores for those that rely solely on this form of access, this is not the case in Ali Curung. In fact, on this sub-index – which captures online competency through participation in a range of online activities – Ali Curung recorded a higher score (52.3) than the national average (49.5). People in Ali Curung were more likely than the average Australian to use the internet to engage in shopping and banking, access government services, keep up with the news, communicate via voice and messaging services and stream or download content. These results accord with existing qualitative research that finds that for those living in very remote areas the internet is an important point of social connection and vital conduit for accessing information and services²².

The Ali Curung findings reveal some of the complexities of digital inclusion in remote Indigenous communities. While local patterns of use suggest the internet is an important lifeline for those in remote communities, accessing it comes at a higher cost than it does for those in the cities and towns. Addressing this affordability issue is important, and the Broadband for the Bush Alliance have made some recommendations worth considering, such as providing remote communities with public internet access and ensuring reliable access to online government services²³.

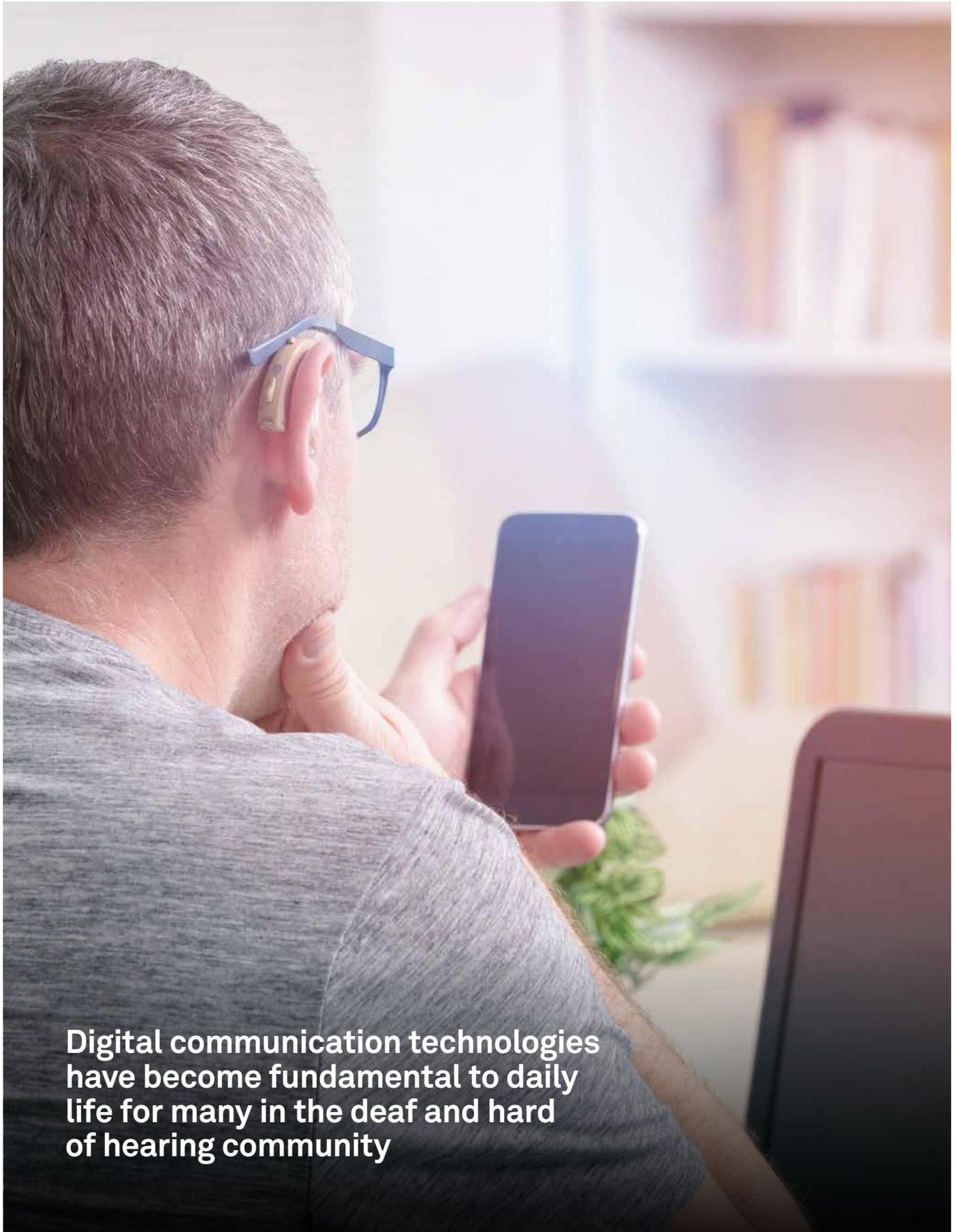
Table 11: Ali Curung remote Indigenous community digital inclusion survey (2018)

	Ali Curung survey respondents (n = 112)	ADII national	Gap between Ali Curung survey respondents and ADII national	ADII Indigenous Australians	Gap between Ali Curung survey respondents and ADII Indigenous Australians	ADII mobile-only	Gap between Ali Curung respondents and ADII mobile-only
2018							
ACCESS							
Internet Access	64.3	87.1	-22.8	82.4	-18.1	74.8	-10.5
Internet Technology	40.5	78.7	-38.2	73.5	-33.0	60.0	-19.5
Internet Data Allowance	37.2	54.4	-17.2	49.6	-12.4	29.7	7.5
	47.3	73.4	-26.1	68.5	-21.3	54.8	-7.5
AFFORDABILITY							
Relative Expenditure	39.6	54.3	-14.7	48.1	-8.5	55.3	-15.7
Value of Expenditure	12.1	60.9	-48.8	51.3	-39.2	10.7	1.4
	25.8	57.6	-31.7	49.7	-23.9	33.0	-7.2
DIGITAL ABILITY							
Attitudes	47.7	51.0	-3.3	53.4	-5.7	43.2	4.5
Basic Skills	64.5	56.7	7.8	47.2	17.3	46.1	18.4
Activities	44.8	41.0	3.8	34.3	10.5	31.5	13.3
	52.3	49.5	2.8	45.0	7.3	40.3	12.0
DIGITAL INCLUSION INDEX	42.9	60.2	-17.3	54.4	-11.5	42.7	0.2

Source: ADII Supplementary Survey – Ali Curung remote Indigenous community, 2018; Roy Morgan, April 2017–March 2018

Case Study 2

The deaf and hard of hearing community



Digital communication technologies have become fundamental to daily life for many in the deaf and hard of hearing community

Technological advancements continue to enhance the day to day lives of Australians with disability. Results of a recent survey conducted by the ADII research team indicates that the deaf and hard of hearing (DHH) community has embraced digital communication as one such technology, but this comes at cost.

While the ADII provides a rich picture of digital inclusion for Australians with disability extending back to 2014, it is limited to reporting on people who receive disability pensions. To diversify our knowledge of digital inclusion for Australians with disability, the ADII Supplementary Survey²⁴ was conducted with 115 members of the DHH community. Respondents were recruited with the assistance of Vicdeaf and its interstate partners. They completed the survey online²⁵.

Overall, the survey results suggest the DHH community has a high level of digital inclusion. Since the DHH survey was only administered online, comparative data drawn from the ADII has been limited to internet users (those using the internet in the past three months). The digital inclusion score recorded for this group (74.5) is 11.5 points higher than the Australian population average (63.0). This reflects the DHH community's very high level of Digital Ability and Access.

The DHH community posts very high scores across all three components of the Digital Ability sub-index. They are particularly positive about the empowering role of computers and technology, the appeal of learning about new technologies, and the desirability of always being able to access the internet. The very high scores recorded for Basic Skills and Activities suggest digital communication technologies have become fundamental to daily life for many in the DHH community. Members of this community are significantly more likely than the general population to use the internet to do everything from making video calls to purchasing and selling products, contacting government agencies to engaging with social media, and conducting internet banking to just generally browsing the web. This high degree of internet use is underpinned by a substantial investment in Access.

The DHH community Access sub-index result reveals very high levels of Internet Access, in particular out-of-home internet use. Indeed, 96% of respondents regularly access the internet outside the home, while the Australian average is 76%. Members of the DHH community are more likely to maintain multiple internet access plans, including both fixed and mobile internet technologies to satisfy the desire to be connected everywhere. What is striking about the Access sub-index is the Internet Data Allowance result. Respondents score 83.6 on this component, 25.6 points higher than the national average (58.0). This is a result of their investment in very large data allowance plans. Their reliance on fixed and mobile data effectively rendered their mobile internet plans more than double the size of the national average and the fixed broadband plans they purchase have 39% more data. The investment in this level of internet access may facilitate intensive day-to-day network use but comes at a high price.

On our measures, affordability appears to be the chief digital inclusion issue facing the DHH community. In particular, the high proportion of household income spent on internet access – Relative Expenditure. The result for the DHH community (32.2) is 21.7 points lower than the national average (53.9). Although a similar result (36.3) is posted by the ADII Disability cohort, there is a different dynamic at play here. The ADII Disability cohort rely on disability pensions, translating moderate expenditure on internet access into a poor Relative Expenditure result. By contrast, four in five DHH survey respondents were employed and it was a high internet spend (43% above average) that resulted in poor Relative Expenditure. The commitment to large mobile broadband plans (which have a high per gigabyte cost) was a significant contributing factor.

While digital communication clearly enhances the day-to-day lives of those in the DHH community, affordability is a key issue that should be addressed. The DHH community is large and growing. Approximately one in six Australians (4 million) currently experience hearing loss, with one in 17 experiencing moderate or severe loss (1.5 million)²⁶. The prevalence of hearing loss is also on the rise as a result of Australia's aging population.

Table 12: Deaf and hard of hearing community digital inclusion survey (2018)

2018	DHH survey respondents (n = 115)	ADII (internet users)	Gap between DHH survey respondents and ADII internet users	ADII disability (internet users)	Gap between DHH survey respondents and ADII disability (internet users)
ACCESS					
Internet Access	97.4	93.2	4.2	87.6	9.8
Internet Technology	89.9	82.3	7.6	78.4	11.5
Internet Data Allowance	83.6	58.0	25.6	55.5	28.1
	90.3	77.8	12.5	73.8	16.5
AFFORDABILITY					
Relative Expenditure	32.2	53.9	-21.7	36.3	-4.1
Value of Expenditure	68.9	62.6	6.3	57.9	11.0
	50.5	58.2	-7.7	47.1	3.4
DIGITAL ABILITY					
Attitudes	77.6	54.1	23.5	49.1	28.5
Basic Skills	89.8	60.5	29.3	47.3	42.5
Activities	80.4	43.7	36.7	33.9	46.5
	82.6	52.8	29.8	43.4	39.2
DIGITAL INCLUSION INDEX	74.5	63.0	11.5	54.8	19.7

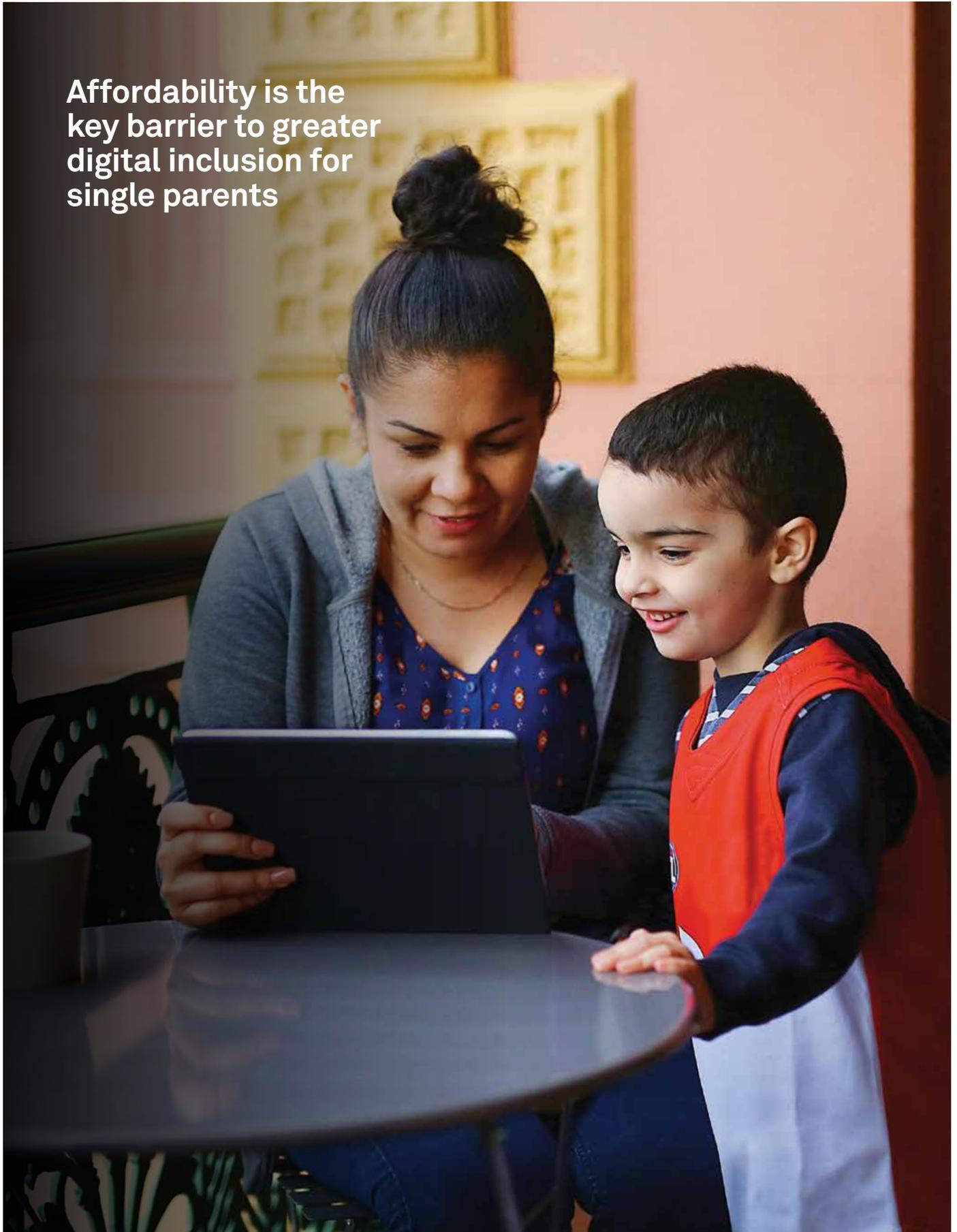
Source: ADII Supplementary Survey – Deaf and hard of hearing community, 2018; Roy Morgan, April 2017–March 2018

Note: Since the DHH survey was only administered online, all respondents were internet users. As such, comparative data drawn from the ADII has been limited to include only internet users (defined as those using the internet in the past three months).

Case Study 3

Digital inclusion and single parents

Affordability is the key barrier to greater digital inclusion for single parents



Australian telecommunication advertising commonly portray families using home internet to satisfy a wide range of social, entertainment, work, and educational needs. This depiction of home internet as a 'family essential' reflects the high rate of family household connectivity. The 2016 Census, ABS data, and the ADII reveal that more than nine in 10 family households maintain home internet access, a greater level of connectivity than other household types²⁷. This is true for both two-parent and single parent families. However, connectivity does not tell a complete story and, in the case of single parents, obscures significant digital disadvantage.

The socio-economic disadvantage of single parent families with dependent children is well documented²⁸. These families represent 7% of Australian households and are overwhelmingly headed by women²⁹. Single parents have low rates of employment and many rely entirely on government benefits³⁰. This results in very low household income – more than 20% live below the poverty line. The ADII reveals this socio-economic disadvantage translates into digital disadvantage – not only impacting on affordability, but also on the quality of internet access, the range of online activities conducted, and attitudes to digital engagement.

Overall, single parent families have an ADII score of 56.5, 3.7 points lower than the national average and 10.0 points lower than two-parent families³¹. Although their Access sub-index score is higher than the national average, single parent families are less likely to invest in fixed broadband access than other Australians (67.0% versus 72.9% national average). A greater dependence on rental housing and the higher levels of uncertainty and mobility this entails is one barrier to fixed broadband investment.

Fixed broadband plans generally provide higher speed and more reliable connections, with larger and more cost-effective data allowances than mobile connections. A greater reliance on mobile-only access translates into lower levels of engagement

in higher-bandwidth streaming and communication activities by single parent families. Instead, single parents are more likely to engage in functional online activities, such as financial transactions and government interactions.

Given their socio-economic circumstances, single parents tend to have regular contact with government agencies. Such agencies increasingly promote online contact and self-management of claims through apps such as MyGov³² on the grounds that it reduces costs for providers and users. Given lengthy call centre and face-to-face service queues, single parents might derive some transactional benefits from online contact, but online systems can also be unreliable and difficult to navigate³³. This may be one factor which makes single parents less likely than other Australians to feel that computers and technology are empowering (40.4% versus 46.4% national average). Furthermore, those with mobile-only plans endure higher costs for accessing government services online.

Affordability is the key barrier to greater digital inclusion for single parents. The impact of internet access on single parent family budgets is substantial – it accounts for 2% of their household income compared to the national average of 1.17%. This results in a Relative Expenditure score of 32.2 – 22.1 points lower than the national average. With greater reliance on mobile connections, single parents, on average, get poorer value for money than other Australians – their Value of Expenditure score is 58.4 compared to the national average of 60.9.

The complex picture of the nature and level of digital inclusion for single parent families derived from the ADII points to a range of intervention options, such as targeted fixed-broadband provisioning in social housing (where there is a concentration of single parents)³⁴; more flexible fixed broadband options for those in the private rental market; and data-use exemptions for accessing online government services.

Table 13: Family households (ADII 2018)

2018	Australia	Single Parent Families			Two Parent Families			All Family Households		
		All	With secondary school aged children	With primary school or below aged children	All	With secondary school aged children	With primary school or below aged children	All	With secondary school aged children	With primary school or below aged children
ACCESS										
Internet Access	87.1	89.2	90.1	88.3	92.6	93.5	92.4	92.3	93.0	92.0
Internet Technology	78.7	79.2	81.4	77.5	83.8	84.1	83.5	83.4	83.9	83.0
Internet Data Allowance	54.4	58.3	60.3	56.4	63.4	63.8	63.4	63.0	63.5	63.0
	73.4	75.5	77.3	74.1	79.9	80.5	79.8	79.5	80.1	79.3
AFFORDABILITY										
Relative Expenditure	54.3	32.2	32.3	29.2	59.7	60.9	58.5	56.3	56.8	55.5
Value of Expenditure	60.9	58.4	60.6	56.0	66.3	68.7	66.0	65.5	67.8	65.2
	57.6	45.3	46.4	42.6	63.0	64.8	62.2	60.9	62.3	60.3
DIGITAL ABILITY										
Attitudes	51.0	45.9	44.1	47.5	53.6	51.4	55.0	52.7	50.5	54.1
Basic Skills	56.7	58.1	53.8	59.3	67.1	64.5	68.6	65.8	63.0	67.3
Activities	41.0	41.8	39.4	43.1	49.0	44.5	51.0	47.9	43.5	49.9
	49.5	48.6	45.8	50.0	56.6	53.5	58.2	55.5	52.3	57.1
DIGITAL INCLUSION INDEX	60.2	56.5	56.5	55.5	66.5	66.3	66.7	65.3	64.9	65.6

Source: Roy Morgan, April 2017–March 2018

New South Wales

Findings

The 2018 ADII score for New South Wales (NSW) is 60.5. NSW's ADII score has increased steadily since 2015. In 2014, NSW's score was 54.9, it fell to 54.8 in 2015 and then rose to 56.6 in 2016, 59.1 in 2017 and 60.5 in 2018. In each of the past five years, NSW's ADII score has consistently been above the national average, although its advantage has narrowed from 0.9 points in 2014 to 0.3 points in 2018.

Access and Affordability scores in NSW have risen steadily over the four years since 2014 and remained close to the national average in each year. In 2018, the Access score in NSW (73.1) is 0.3 points below the national average, while the Digital Ability score for the state (49.4) is 0.1 points below the national average. Since 2014, NSW has maintained an Affordability score over the national average. In 2018 the Affordability score for NSW (59.0) is 1.4 points above the national average (57.6).

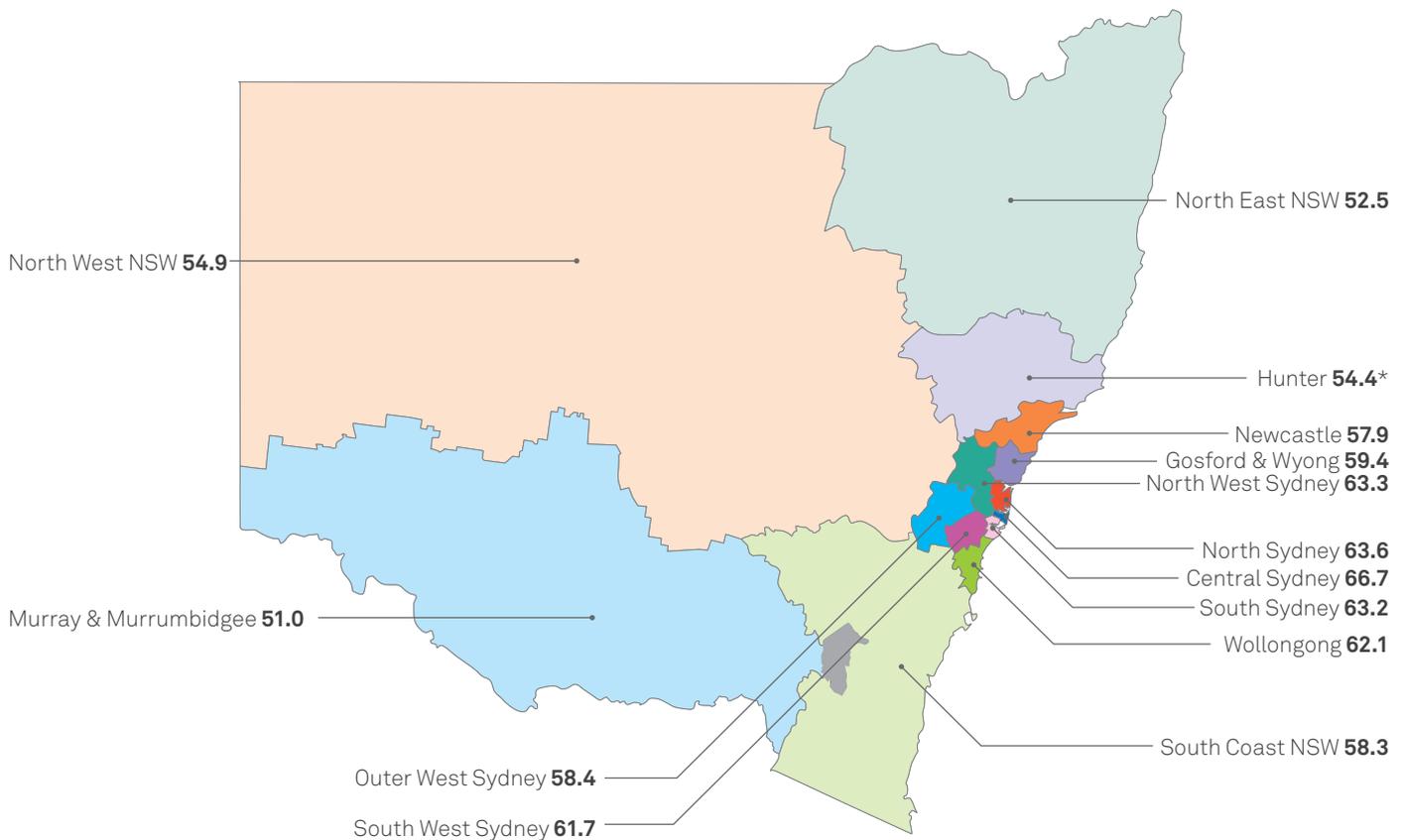
Geography

In 2018, the ADII score for Sydney is 63.5, the second highest of the capital cities after Melbourne (63.6). A substantially lower score of 54.1 was recorded for rural NSW (outside Sydney and the regional cities), although this was 0.2 points above the national rural average of 53.9. The 'Capital-Country gap' in NSW is 9.4 points having narrowed slightly since 2017 (down 0.2).

Wollongong recorded an ADII score of 62.1 in 2018, making it the most digitally included regional city in NSW. In the past year Wollongong's ADII score rose 5.8 points, based largely on increases to the Affordability and Digital Ability sub-indices (up 6.4 and 7.3 points respectively). The regional centre of Gosford has an ADII score of 59.4 in 2018. This area made continuous improvements in digital inclusion since 2016, with a particularly substantial increase in Access (rising 11.9 points between 2016 and 2018).

NSW Regions ADII scores

NSW ADII score: 60.5



*Sample size <100, exercise caution in interpretation.

Source: Roy Morgan

Table 14: NSW: Digital inclusion by geography (ADII 2018)

2018	Australia	NSW	Sydney	Rural NSW	Sydney Regions						Gosford & Wyong	Newcastle	Wollongong	North East NSW	South Coast NSW	North West NSW	Murray & Murrumb.	Hunter*
					North	North West	South	Central	South West	Outer West								
ACCESS																		
Internet Access	87.1	86.6	88.7	82.1	89.5	88.0	88.4	91.3	86.9	85.2	86.1	85.0	87.9	82.1	86.9	79.5	78.2	82.6
Internet Technology	78.7	78.5	79.7	73.6	78.6	81.8	78.0	82.4	78.5	75.8	82.5	80.5	83.2	71.7	75.9	76.4	71.7	74.3
Internet Data Allowance	54.4	54.3	57.1	48.4	54.2	57.9	57.9	60.9	57.3	49.0	54.6	50.4	56.8	46.6	50.2	53.4	44.9	46.8
	73.4	73.1	75.2	68.0	74.1	75.9	74.8	78.2	74.2	70.0	74.4	72.0	76.0	66.8	71.0	69.8	65.0	67.9
AFFORDABILITY																		
Relative Expenditure	54.3	56.3	60.9	47.9	62.9	60.4	59.8	65.2	56.5	55.3	51.0	51.5	53.4	44.0	55.8	45.5	47.3	54.4
Value of Expenditure	60.9	61.6	65.1	53.7	66.0	65.8	66.6	64.4	64.4	60.9	62.5	58.3	61.7	53.0	53.9	60.2	47.9	52.8
	57.6	59.0	63.0	50.8	64.4	63.1	63.2	64.8	60.5	58.1	56.7	54.9	57.5	48.5	54.8	52.8	47.6	53.6
DIGITAL ABILITY																		
Attitudes	51.0	51.2	54.0	45.7	52.0	53.2	54.1	58.4	55.6	44.9	48.9	48.9	52.0	43.4	51.8	45.4	44.8	42.8
Basic Skills	56.7	56.3	58.9	50.6	59.7	57.2	59.7	63.8	53.6	56.7	54.2	52.4	62.1	50.3	55.8	48.8	45.8	51.2
Activities	41.0	40.8	44.0	33.8	45.3	42.4	41.0	49.7	42.3	39.2	38.3	38.9	43.9	33.0	39.5	32.2	31.1	30.9
	49.5	49.4	52.3	43.4	52.3	50.9	51.6	57.3	50.5	47.0	47.1	46.7	52.7	42.2	49.0	42.1	40.6	41.6
DIGITAL INCLUSION INDEX	60.2	60.5	63.5	54.1	63.6	63.3	63.2	66.7	61.7	58.4	59.4	57.9	62.1	52.5	58.3	54.9	51.0	54.4

*Sample size <100, exercise caution in interpretation. **Source:** Roy Morgan, April 2017–March 2018

Newcastle, the second-largest city in NSW, recorded an ADII score of 57.9 in 2018. It has made improvements across all three sub-indices since 2015, resulting in an overall ADII increase of 5.9 points in the period 2015–2018.

Digital inclusion has increased in four of the five country areas of NSW in 2017–2018. Only Murray & Murrumbidgee recorded a decline in digital inclusion (down 1.4 points). This was largely a result of a drop in the Affordability sub-index (down 6.2 points). The South Coast recorded an ADII score of 58.3 in 2018, the largest improvement of the NSW regions over the past year (up 4.1 points). This rise was greater than that reported by Sydney (up 1.5 points) and NSW overall (up 1.4 points).

Demographics

Reflecting the national figures, in NSW digital inclusion increases in line with income. People in the Q1 high household income bracket have an ADII score of 72.6 in 2018, 0.5 points above the Q1 national average (72.1). People in the Q5 low household income bracket in NSW recorded an ADII score of 39.6. This is 1.7 points below the Q5 national average (41.3). The 'income gap' between the highest and lowest household income brackets in NSW (33.0 points) is greater than the comparable national figure (30.8).

Despite coming from a high base, people in the Q1 high household income bracket recorded the largest ADII gain of all NSW income brackets over 2014–2017 (up 6.0 points). Over the same period, NSW residents in the Q5 low household income bracket recorded an increase of 5.0 points (from 34.6 to 39.6), lagging behind the improvement made by Q1.

Reflecting national patterns, digital inclusion in NSW is linked to employment, education, and age. Employed people in NSW had steadily increasing ADII scores across each of the four years since 2014, with a total increase of 5.9 points over that period to reach 65.9 in 2018. In 2018, unemployed people in NSW scored 59.0. While this was a 7.7 point increase since 2014, in the past year digital inclusion declined slightly for this group (down 0.6 points). People not in the labour force registered an ADII score of 52.0 in 2018, up 4.5 points since 2014.

In 2018, tertiary-educated people in NSW scored 65.5, which is 19.8 points higher than those who did not complete secondary school (45.7). Since 2014, residents of NSW who did not complete secondary school recorded gains in Access (up 9.8 points) and Digital Ability (up 6.6 points); however these were offset by a decline in Affordability (down 6.5 points). An overall ADII increase of 3.3 points since 2014 for those not completing secondary school in NSW was not as large as the improvements recorded by those that were tertiary educated (up 4.9 points), indicating a widening of the 'education gap'.

People in NSW aged below 50 recorded significantly higher ADII scores (in the range of 64.9 to 66.9) than older groups (ranging from 46.4 to 59.3). As a result of improvements in Access (up 3.1 points) and Digital Ability (up 6.0 points) in the past year, 14–24 year olds displaced 25–34 year olds as the most digitally included of all age groups in NSW. Their ADII score in 2018 is 66.9.

The 50–64 age group in NSW has an ADII score of 59.3 in 2018. This is a 2.8 point increase over 2017, a rate of improvement greater than that of both the 25–39 and 35–49 age groups in NSW. While the gap between 50–64 year olds and these younger cohorts remains over 5 points, it is narrowing on the basis of improvements in Access and Digital Ability for the 50–64 year old group.

NSW residents aged 65+ recorded an ADII score of 46.4 in 2018. Although this group had a 4.5 point ADII score increase between 2014 and 2018, this gain is below that of the NSW population average (up 5.6 points), indicating that the 'age gap' is increasing. Over this four year period, the substantial improvements in Access (up 13.1 points) and Digital Ability (up 9.9 points) recorded by the 65+ group in NSW was offset by a decline in the Affordability (down 9.4 points). This was due to both a substantial increase in the proportion of household incomes spent on network access pushing Relative Expenditure down and a decline in Value of Expenditure.

In 2018, people with disability in NSW recorded an ADII score of 48.7, up by 1.8 points on 2017 and narrowing the gap with the national average for Australians with a disability (49.2).

Table 15: NSW: Digital inclusion by demography (ADII 2018)

2018	NSW	Income Quintiles					Employment			Education			Age					Disability	Indigenous Australians	LOTE
		Q1	Q2	Q3	Q4	Q5	Employed	Unemployed	NILF	Tertiary	Secondary	Less	14-24	25-34	35-49	50-64	65+			
ACCESS																				
Internet Access	86.6	94.4	92.5	88.5	82.5	68.9	92.4	86.2	77.6	91.0	85.7	70.8	93.7	90.6	92.7	85.6	71.5	74.3	78.8	88.1
Internet Technology	78.5	85.0	84.9	79.6	75.1	62.9	82.8	76.5	72.0	82.7	77.6	65.6	82.1	83.5	81.4	78.2	68.2	69.8	70.3	79.5
Internet Data Allowance	54.3	63.7	63.8	55.5	47.5	35.7	61.2	54.0	43.4	60.6	53.3	36.7	58.9	67.1	60.1	51.9	35.5	46.2	41.3	59.4
	73.1	81.0	80.4	74.5	68.4	55.8	78.8	72.3	64.3	78.1	72.2	57.7	78.2	80.4	78.1	71.9	58.4	63.4	63.5	75.7
AFFORDABILITY																				
Relative Expenditure	56.3	87.1	65.7	48.2	31.1	13.9	61.5	48.1	48.4	59.5	52.7	47.3	63.4	54.3	58.8	57.8	46.6	42.3	45.3	59.2
Value of Expenditure	61.6	66.3	63.1	62.2	59.7	47.8	64.1	60.0	57.5	65.3	60.9	49.3	66.0	66.1	61.5	62.2	52.2	48.5	41.5	66.3
	59.0	76.7	64.4	55.2	45.4	30.8	62.8	54.1	53.0	62.4	56.8	48.3	64.7	60.2	60.1	60.0	49.4	45.4	43.4	62.8
DIGITAL ABILITY																				
Attitudes	51.2	59.3	53.8	51.0	43.5	35.1	56.5	54.1	42.4	54.5	46.0	33.1	68.2	57.9	54.5	45.0	34.0	42.8	51.5	60.5
Basic Skills	56.3	69.5	69.2	58.4	46.1	36.5	64.5	54.9	43.3	65.4	50.8	36.3	59.5	63.6	66.5	55.9	36.2	40.4	43.4	57.0
Activities	40.8	51.1	50.5	40.2	32.9	25.1	47.2	42.8	30.3	48.3	33.5	24.0	45.3	49.9	48.6	37.4	24.1	28.2	30.1	44.7
	49.4	60.0	57.8	49.9	40.8	32.2	56.1	50.6	38.7	56.1	43.4	31.1	57.7	57.1	56.6	46.1	31.4	37.1	41.7	54.0
DIGITAL INCLUSION INDEX	60.5	72.6	67.5	59.9	51.5	39.6	65.9	59.0	52.0	65.5	57.5	45.7	66.9	65.9	64.9	59.3	46.4	48.7	49.5	64.2

*Sample size <100, exercise caution in interpretation. **Source:** Roy Morgan, April 2017–March 2018

However, as fixed income recipients, this group has a declining Affordability sub-index score (down 4.0 points since 2014). This is underpinned by both an increase in the proportion of household income spent on network access and fluctuation in Value of Expenditure.

Between 2017 and 2018 the ADII score for Indigenous Australian residents in NSW fell by 2.1 points to 49.5, largely as a result of a reduction in affordability. This score is 4.9 points below that of Indigenous Australians nationally (54.4). It is the first year in the ADII dataset (2014–2018) that Indigenous Australian residents in NSW have fallen below the national result for Indigenous Australians. It should be noted that the annual sample size for Indigenous Australians in NSW is small and results should be treated with caution.

In line with national findings, people in NSW from a LOTE background scored 64.2, well above both the NSW score (60.5) and overall Australian score (60.2), and slightly above the LOTE national average score (63.2). The score for the LOTE group in NSW rose by 4.6 points between 2014 and 2018. The LOTE community is a highly diverse group and care should be taken in interpreting findings.

Several sociodemographic groups in NSW are digitally excluded, with ADII scores substantially below the state average (60.5 points). These groups are in ascending order: people in Q5 low income households (39.6), people who did not complete secondary school (45.7), older Australians (those aged 65+, 46.4), people with a disability (48.7), Indigenous Australians (49.5), and people not in the labour force (52.0).

Victoria

Findings

The 2018 ADII score for Victoria is 61.4. This is the second highest score of any state and territory in Australia, behind the ACT (66.4) and 1.2 points above the national average (60.2). In Victoria, digital inclusion improved each year between 2014 and 2018. Overall, Victoria's ADII score rose 7.1 points in this period, outpacing the national average, which rose 6.2 points.

Looking at the three sub-indices, Victoria's Access and Digital Ability scores rose steadily over the four years 2014–2018, and exceeded the national scores for these indices each year. Victoria's Affordability score (58.0) is slightly above the national average (57.6), having been slightly below the average in 2017 and also in 2014 and 2015.

Geography

Within Victoria, Melbourne has the highest ADII score at 63.6. This is 3.4 points above the national average score and 1.2 points above the average for capital cities (62.4). Melbourne has the highest digital inclusion score of all state capitals.

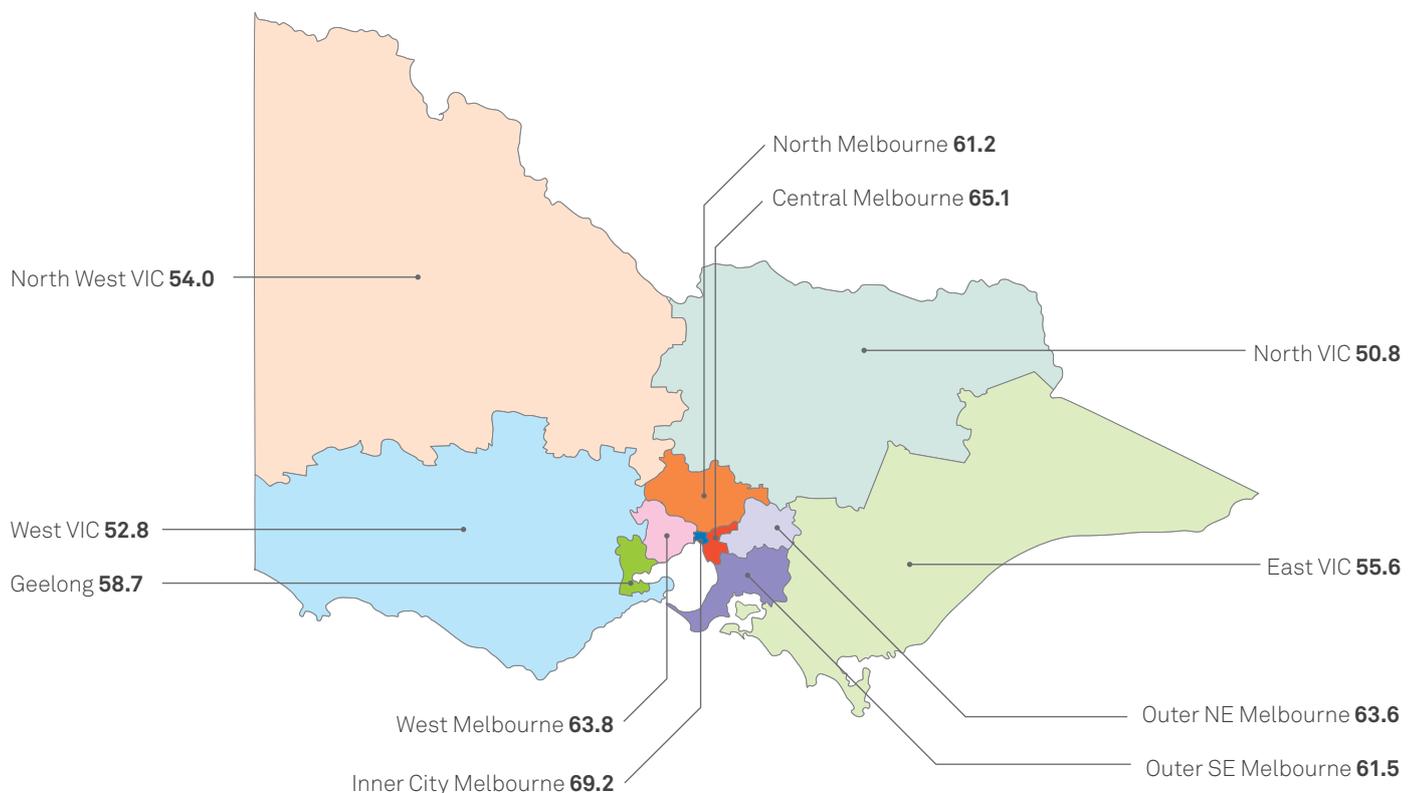
Geelong is the state's second-biggest city and has an ADII score of 58.7 in 2018. Although this represents a 7.8 point increase in Geelong's ADII score since 2014 (greater than the 7.1 point rise reported by the entire state over this period), Geelong's score has fallen in the past year. Geelong's 1.3-point decline over 2017–2018 is the result of a small change to the Access and Digital Ability sub-indices (down 1.4 points and 3.1 points respectively).

In 2017, country Victoria as a whole has a score of 53.3, slightly below the average for rural areas nationally (53.9). Digital inclusion rose in three of the four country areas of Victoria in 2017–2018. East Victoria recorded the largest rise (8.3 points) due to an improvement across all three sub-indices. It is now the most digitally included region in Victoria. Northern Victoria recorded a 4.4 point increase in its ADII score to 50.8, but remains Victoria's lowest ranked rural area on the basis of digital inclusion (50.8). Western Victoria ranks second lowest with an ADII score of 52.8, following a 2.3 point decline since 2017.

Overall, Victoria's 'Capital–Country gap' is the largest of all states, with rural residents recording a 2018 score 10.3 points lower than their Melbourne-based counterparts.

VIC Regions ADII scores

VIC ADII score: 61.4



Source: Roy Morgan

Table 16: Victoria: Digital inclusion by geography (ADII 2018)

2018	Australia	VIC	Melbourne	Rural VIC	Melbourne Regions						West VIC	North West VIC	North VIC	East VIC	Geelong
					West	North	Inner City	Central	Outer NE	Outer SE					
ACCESS															
Internet Access	87.1	88.6	90.1	83.0	91.3	87.7	94.9	92.1	90.7	87.0	82.0	85.4	80.9	83.6	85.4
Internet Technology	78.7	79.6	80.7	75.7	82.1	77.7	81.0	82.2	82.1	80.2	73.5	76.0	75.3	78.7	75.5
Internet Data Allowance	54.4	55.7	57.8	47.8	60.7	53.6	59.5	57.2	58.7	58.6	44.3	50.0	47.1	50.3	53.9
	73.4	74.6	76.2	68.9	78.0	73.0	78.4	77.2	77.2	75.3	66.6	70.5	67.8	70.9	71.6
AFFORDABILITY															
Relative Expenditure	54.3	54.1	56.5	44.6	53.6	56.3	60.4	61.7	57.6	51.3	46.9	47.2	40.0	43.3	54.6
Value of Expenditure	60.9	62.0	64.5	52.6	65.4	62.9	67.2	65.8	64.2	62.8	53.1	48.8	50.1	59.7	58.4
	57.6	58.0	60.5	48.6	59.5	59.6	63.8	63.7	60.9	57.1	50.0	48.0	45.0	51.5	56.5
DIGITAL ABILITY															
Attitudes	51.0	52.3	54.4	44.7	54.5	51.7	61.7	56.4	54.6	51.6	44.4	50.1	40.4	42.5	48.6
Basic Skills	56.7	59.2	61.8	50.1	61.3	58.3	75.6	62.2	60.2	59.9	49.5	49.6	47.5	54.1	56.6
Activities	41.0	42.8	45.7	32.4	46.2	42.7	58.6	44.8	43.6	44.8	31.6	30.4	31.2	37.2	38.6
	49.5	51.4	54.0	42.4	54.0	50.9	65.3	54.5	52.8	52.1	41.8	43.4	39.7	44.6	47.9
DIGITAL INCLUSION INDEX	60.2	61.4	63.6	53.3	63.8	61.2	69.2	65.1	63.6	61.5	52.8	54.0	50.8	55.6	58.7

Source: Roy Morgan, April 2017–March 2018

Demographics

Reflecting the national pattern, digital inclusion in Victoria increases as income rises. Since 2014, Victorians in the top household income bracket recorded increasing ADII scores, up from 67.6 in 2014 to 73.8 in 2018. Every year, this group's scores have remained some 10+ points above the Victorian and Australian averages. In 2018, the ADII score for Victorians in the top household income bracket (73.8) is 1.7 points higher than that recorded by this high income group nationally (72.1). As is the case nationwide, this group scored highly on all three sub-indices (Access, Affordability, and Digital Ability).

In 2018, Victorians in the lowest household income bracket recorded an ADII score of 42.5. This is 17.7 points below the national average, but slightly higher (1.2 points) than the national score for this cohort (41.3). While the score for Victorians in the lowest income bracket rose 4.2 points between 2014 and 2018, this group fell further behind both the state average, which rose 7.1 points in this period, and those in the top household income bracket (up 6.2 points). The digital inclusion gap between Victorians in the highest and lowest household income brackets is now 31.3 points, slightly higher than the comparable national figure (30.8).

Echoing the national pattern, digital inclusion in Victoria is clearly linked to employment, education, and age. In 2018, employed Victorians have an ADII score of 65.8. This is 3.6 points higher than the unemployed (62.2). Victorians not in the labour force have an ADII score of 53.7, some 12.1 points lower than Victorian workers. Since 2014, Victorians not engaged in the labour market recorded improvements in Access (up 12.9) and Digital Ability (up 8.8), but these were offset by a fall in Affordability (down 2.2 points). Overall, the 'employment gap' between employed Victorians and those outside the labour market has expanded slightly in the past four years (up 0.1).

In 2018, Victorians with a tertiary education scored 65.3, while those who did not complete secondary school scored 49.5 – an 'education gap' of 15.8 points. Mirroring the national picture, tertiary-educated Victorians had higher scores on all three sub-indices than those who did not complete secondary school, with the largest gap evident in Digital Ability (22.3 points). Since 2014, residents of Victoria who did not complete secondary school recorded gains in Access (up 14.0 points) and Digital Ability (up 11.2 points). Although partly offset by a decline in Affordability (down 0.7 points), the overall ADII increase for Victorians who did not complete secondary school (up 8.1) was greater than that recorded by those that with a tertiary education (up 4.8 points).

Reflecting the national pattern, people in Victoria aged below 50 recorded significantly higher ADII scores in 2018 (ranging from 64.0 to 68.1) than older groups (ranging from 47.1 to 59.6). In Victoria, the most digitally included age group in 2018 were 25–34 year olds (68.1 points). This group also recorded the largest gain of any age group since 2014 (up 9.4 points).

The ADII score for Victoria's 50–64 age cohort is 59.6. This group recorded the second largest improvement in digital inclusion of any Victorian age group since 2014 (up 8.4 points), with substantial gains in Access (up 12.1 points) and Digital Ability (up 11.8 points). While the 'age gap' was closing for this age group, it was expanding for those Victorians aged 65+. In 2018, Victorian residents aged over 65 recorded an ADII score of 47.1. Despite improvements in Access (up 12.8 points) and Digital Ability (up 7.6 points) since 2014, a marked decline in affordability (down 9.6 points) during this period limited overall digital inclusion gains made by Victorians aged 65+ to 3.6 points. This ADII rise was lower than the state average gain of 7.1 points.

Table 17: Victoria: Digital inclusion by demography (ADII 2018)

2018	VIC	Income Quintiles					Employment			Education			Age					Disability	Indigenous Australians**	LOTE
		Q1	Q2	Q3	Q4	Q5	Employed	Unemployed	NILF	Tertiary	Secondary	Less	14-24	25-34	35-49	50-64	65+			
ACCESS																				
Internet Access	88.6	96.3	92.2	89.4	84.1	74.1	92.5	90.2	81.6	92.0	87.8	76.7	90.9	93.7	94.2	87.8	75.0	79.3	84.8	89.2
Internet Technology	79.6	85.0	82.6	80.7	77.7	68.0	83.0	80.1	73.8	82.5	79.4	71.2	80.0	83.4	84.5	79.2	69.8	73.4	81.0	79.0
Internet Data Allowance	55.7	65.5	60.0	57.5	48.5	41.0	61.7	57.0	45.1	59.2	56.2	44.1	57.6	64.5	64.4	52.2	38.1	51.6	55.2	59.8
	74.6	82.3	78.3	75.9	70.1	61.0	79.1	75.8	66.8	77.9	74.5	64.0	76.2	80.5	81.0	73.1	61.0	68.1	73.7	76.0
AFFORDABILITY																				
Relative Expenditure	54.1	85.8	65.7	42.6	29.8	10.2	57.4	47.9	49.3	57.2	50.5	45.7	59.1	54.3	56.6	55.0	43.7	38.4	26.9	57.6
Value of Expenditure	62.0	66.4	63.5	59.0	57.4	53.0	64.1	60.3	58.4	64.0	62.5	53.2	62.3	65.1	66.0	62.0	52.3	58.0	60.7	62.1
	58.0	76.1	64.6	50.8	43.6	31.6	60.7	54.1	53.9	60.6	56.5	49.4	60.7	59.7	61.3	58.5	48.0	48.2	43.8	59.9
DIGITAL ABILITY																				
Attitudes	52.3	61.4	53.9	50.9	43.7	37.3	56.7	56.7	43.9	55.2	49.5	36.8	62.6	64.3	55.1	44.9	35.4	45.1	54.1	59.8
Basic Skills	59.2	73.4	68.4	62.7	51.0	39.3	67.1	64.4	44.9	67.0	57.2	41.9	57.6	72.5	68.7	58.1	37.7	42.9	47.0	60.9
Activities	42.8	54.1	49.4	45.7	33.9	27.8	48.6	49.0	31.9	50.0	37.3	26.8	45.3	55.2	49.8	38.8	24.3	33.0	41.8	46.5
	51.4	63.0	57.2	53.1	42.8	34.8	57.5	56.7	40.2	57.4	48.0	35.1	55.2	64.0	57.9	47.3	32.4	40.3	47.6	55.7
DIGITAL INCLUSION INDEX	61.4	73.8	66.7	59.9	52.2	42.5	65.8	62.2	53.7	65.3	59.6	49.5	64.0	68.1	66.7	59.6	47.1	52.2	55.0	63.9

Sample size <50, exercise extreme caution in interpretation. **Source: Roy Morgan, April 2017–March 2018

In 2018, Victorians with disability recorded an ADII score of 52.2, a higher level of digital inclusion than their counterparts in other states. Since 2014, the ADII score for Victorians with disability has risen 8.5 points. This improvement is underpinned by a substantial increase in the Access sub-index (up 14.6 points) and Digital Ability sub-index (up 9.8 points). Victorians with disability made limited gains in Affordability (up 1.3) points.

The ADII score of Victorians from a LOTE background have consistently increased since 2015. In 2018, the score for this group is 63.9, which is 2.5 points higher than the Victorian state average

(61.4) and slightly above the national LOTE average (63.2). Care should be taken in interpreting findings, as the LOTE community is a highly diverse group.

It is clear that several sociodemographic groups in Victoria are digitally excluded, with ADII scores substantially below the state average (61.4). In ascending order, they are: people in Q5 low income households (42.5), older Australians (47.1), people who did not complete secondary school (49.5), people with a disability (52.2), and people not in the labour market (53.7).

Queensland

Findings

Queensland's ADII score in 2018 is 58.9. Queensland has a lower score than the national average (60.2) and ranks fifth out of Australia's eight states and territories. Since 2014 Queensland's ADII score has risen by 5.9 points. Queensland's improvement has lagged slightly behind the national average, indicating a widening gap.

Looking at the three sub-indices, Queensland's gains were underpinned by the population's uptake of new digital technology and an increase in network data allowances. From 2014 to 2018, the state's Access score increased from 64.0 to 73.1, while Digital Ability increased from 42.5 to 47.7. Mirroring the national picture, Queensland's Affordability score fell between 2014 and 2016 (down from 52.7 to 51.6) before recovering to its current level of 56.0. This recovery is the result of the improvement in Value of Expenditure (up 8.8 points since 2016), offsetting a decline in Relative Expenditure (down 0.2 points since 2016).

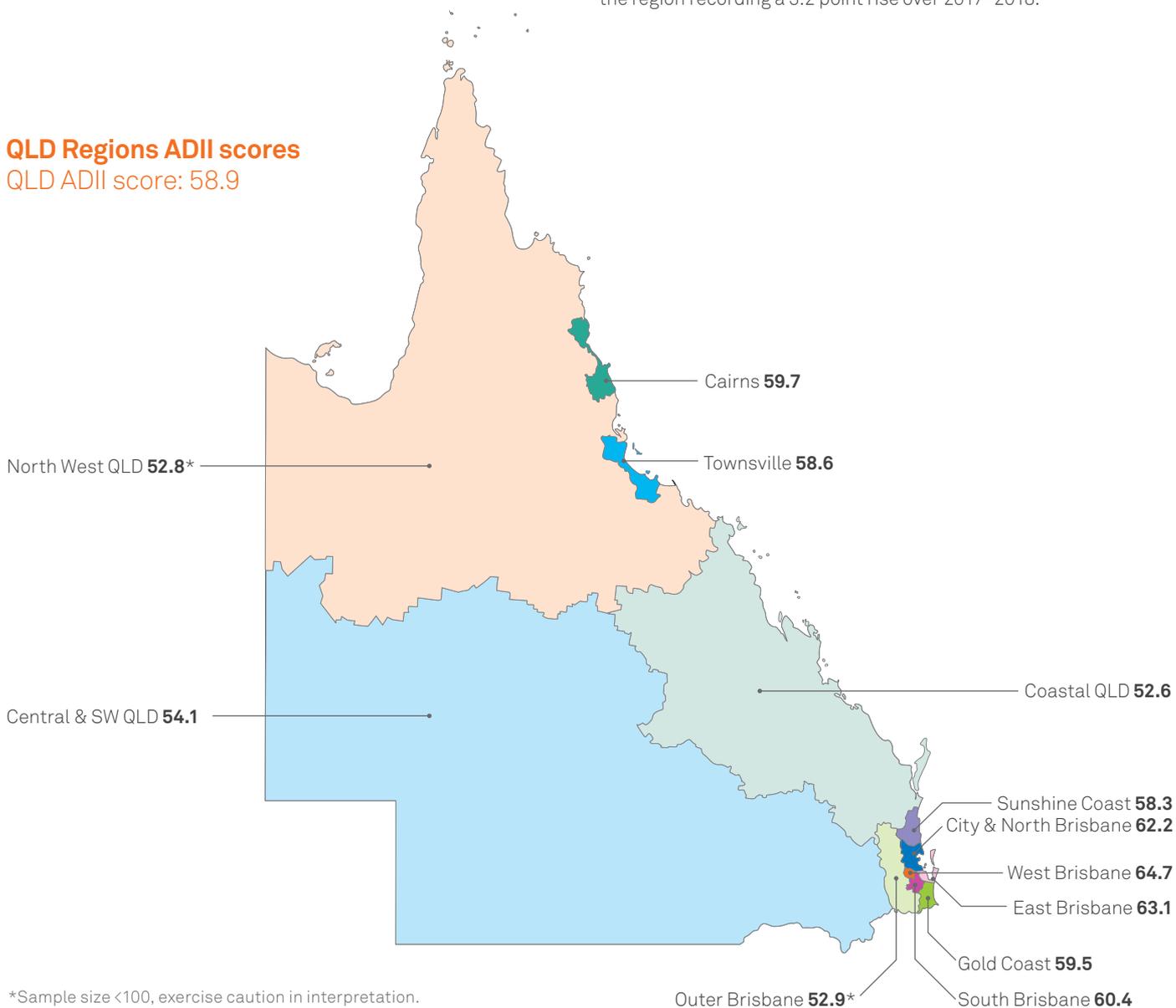
Geography

In 2018, Brisbane's ADII score is 61.6. Compared with the larger east coast cities, Brisbane scores less than both Melbourne (63.6) and Sydney (63.5).

Cairns recorded a substantial increase in its digital inclusion score over the past year (up 4.2 points to 59.7) to narrowly become the highest ranked of Queensland's four major regional cities. Cairns' improvement came from a rise in the Affordability sub-index as Value of Expenditure improved and a rise in the Access sub-index score as nbn connections rose. It should be noted that the sample size for Cairns is small and results should be treated with some caution. The Gold Coast recorded an ADII score of 59.5 in 2018. While the Gold Coast has made substantial improvements in digital inclusion since 2014 (up 10.4 points), it made limited gains in the past year (up 0.8 points). Similarly, Townsville's ADII score rose from 52.4 in 2014 to 58.6 in 2018 (up 6.2 points) but recorded only a 0.2 point improvement in the past year. The Sunshine Coast has an ADII score of 58.3 in 2018, with the region recording a 3.2 point rise over 2017–2018.

QLD Regions ADII scores

QLD ADII score: 58.9



*Sample size <100, exercise caution in interpretation.

Source: Roy Morgan

Table 18: Queensland: Digital inclusion by geography (ADII 2018)

2018	Australia	QLD	Brisbane	Rural QLD	Brisbane Regions					Gold Coast	Sunshine Coast	Cairns	Townsville	Central & SW Qld	Coastal Qld	North West QLD*
					City & North	West	South	East	Outer*							
ACCESS																
Internet Access	87.1	86.4	88.2	81.7	88.8	89.7	87.4	88.7	83.4	87.8	86.2	87.0	88.7	82.6	81.0	83.5
Internet Technology	78.7	78.3	80.1	73.7	81.3	79.7	80.1	80.9	72.8	78.6	77.9	82.7	79.2	76.8	72.1	75.5
Internet Data Allowance	54.4	54.6	56.7	47.9	58.9	55.6	56.8	57.8	45.6	59.2	53.4	57.8	53.2	49.4	47.3	47.4
	73.4	73.1	75.0	67.8	76.3	75.0	74.8	75.8	67.3	75.2	72.5	75.8	73.7	69.6	66.8	68.8
AFFORDABILITY																
Relative Expenditure	54.3	51.8	55.0	46.1	55.1	59.5	51.4	59.3	47.1	50.8	50.5	48.6	51.8	52.2	43.6	45.1
Value of Expenditure	60.9	60.1	63.0	52.5	64.8	68.2	59.9	64.3	51.8	61.3	61.7	63.7	58.8	52.5	52.8	51.1
	57.6	56.0	59.0	49.3	60.0	63.8	55.6	61.8	49.4	56.0	56.1	56.2	55.3	52.4	48.2	48.1
DIGITAL ABILITY																
Attitudes	51.0	49.6	50.9	46.2	52.0	57.4	51.2	47.1	42.1	50.2	46.2	50.2	56.0	45.9	46.1	47.1
Basic Skills	56.7	54.3	58.3	46.9	56.9	61.2	58.0	62.3	50.1	54.2	55.3	54.7	48.0	44.8	47.7	47.4
Activities	41.0	39.3	43.2	32.9	42.3	47.5	43.0	45.7	34.1	37.8	37.4	36.5	36.5	30.7	34.5	30.3
	49.5	47.7	50.8	42.0	50.4	55.4	50.7	51.7	42.1	47.4	46.3	47.2	46.8	40.5	42.8	41.6
DIGITAL INCLUSION INDEX	60.2	58.9	61.6	53.0	62.2	64.7	60.4	63.1	52.9	59.5	58.3	59.7	58.6	54.1	52.6	52.8

*Sample size <100, exercise caution in interpretation. **Source:** Roy Morgan, April 2017–March 2018

Both the Central & South West Queensland and Coastal Queensland regions recorded a slight decline in digital inclusion over the past year. Central & South West Queensland has an ADII score of 54.1 in 2018 (down from 55.2 in 2017) and Coastal Queensland has an ADII score of 52.6 in 2018 (down from 52.9 in 2018). North West Queensland* was the only Queensland rural area to report an increase in its ADII score over 2017–2018. It has an ADII score of 52.8 (up from 47.4 in 2017). However, the sample size for North West Queensland* is low and this result should be treated with caution.

The gap between scores for Brisbane and rural Queensland, referred to as the ‘Capital–Country gap’, has increased over the past year, from 5.8 points to 8.6 points.

Demographics

Echoing patterns in the national figures, digital inclusion in Queensland tends to increase as income, employment participation, and education levels rise.

In 2018, Queenslanders in the top household income bracket have an ADII score of 70.7. This is 11.8 points above the average Queensland score (58.9), but 1.4 points below the national figure for people in this bracket (72.1). Queenslanders in the lowest household income bracket recorded a score of 41.2. This is 17.7 points below the national average and slightly lower than the national score for this bracket (41.3).

Queenslanders in the highest household income bracket have recorded an improved ADII score since 2014 (up 6.1 points), while residents in the lowest household income bracket registered a smaller gain (up 5.2 points). The ‘income gap’ between Queenslanders in the top and bottom household income brackets (29.5 points) may be lower than the comparable national figure (30.8), but has widened slightly since 2014.

In 2018, the ADII score for Queenslanders in employment is 63.8, some 13.3 points higher than that of Queenslanders not in the labour force (50.5). This ‘employment gap’ remains unchanged from 2014 with both groups recording a 5.9 point increase in their

overall ADII score during this period. While those in employment in Queensland recorded moderate improvement across all three sub-indices in this period, those not in the labour force made substantial gains in Access and Digital Ability but suffered a decline on the Affordability sub-index. The unemployed in Queensland have an ADII score of 62.5. This is slightly below those in employment (63.8) who record higher scores for Access and Affordability.

Queenslanders who did not complete secondary school recorded an ADII score of 47.6 in 2018, while those with a tertiary education scored 64.3 – a 16.7 point gap. Both groups have experienced steadily rising scores since 2014. While the score for tertiary-educated Queenslanders has risen by 6.3 points (from 58.0 in 2014 to 64.3 in 2018), those who did not complete secondary school have gained 6.5 points (from 41.1 in 2014 to 47.6 in 2018). While the ‘education gap’ between these two groups has narrowed, it still remains large.

Age is also a significant influence on digital inclusion in Queensland. In 2018, people aged 35–49 years are the most digitally included age group, with a score of 65.0. They also recorded the greatest gain of any age cohort since 2014, up 8.9 points.

The 65+ group recorded the lowest ADII score (45.0) of all Queensland age cohorts in 2018. This is some 20.0 points below the state’s most digitally included cohort this year (35–49 year olds). However, Queenslanders aged 65+ recorded a 6.7 point rise between 2014 and 2018 (up from 38.3 to 45.0), outpacing the overall state-wide increase over that same period (up 5.9 points). Queensland is one of only two states or territories in which the ‘age gap’ narrowed (the other being SA). Both the very strong gains made by this group on the Access sub-index (up 15.5 points) since 2014, and their solid improvement in Digital Ability (up 10.9 points), are tempered by a decline in Affordability (down 6.3 points). The Affordability improvement is limited to Value of Expenditure, for Relative Expenditure has declined (down 11.9 points) reflecting the increasing portion of household income spent by this group on internet access.

Table 20: Queensland: Digital inclusion by demography (ADII 2018)

2018	QLD	Income Quintiles					Employment			Education			Age					Disability	Indigenous Australians*	LOTE
		Q1	Q2	Q3	Q4	Q5	Employed	Unemployed	NILF	Tertiary	Secondary	Less	14-24	25-34	35-49	50-64	65+			
ACCESS																				
Internet Access	86.4	94.5	93.1	89.8	82.2	72.7	91.6	88.1	78.1	91.6	88.1	73.5	89.9	92.2	92.3	85.6	71.5	76.8	85.0	88.1
Internet Technology	78.3	84.0	85.5	81.4	73.7	67.4	82.4	80.9	71.4	83.5	79.4	68.1	79.3	83.2	83.9	77.3	67.1	72.6	75.8	78.6
Internet Data Allowance	54.6	64.8	65.6	59.4	47.3	39.1	61.3	59.0	43.1	60.3	55.2	41.8	56.9	65.3	64.1	49.8	36.2	51.6	58.2	55.8
	73.1	81.1	81.4	76.9	67.7	59.7	78.5	76.0	64.2	78.5	74.2	61.1	75.4	80.2	80.1	70.9	58.3	67.0	73.0	74.2
AFFORDABILITY																				
Relative Expenditure	51.8	83.0	62.2	46.8	29.7	11.2	56.3	51.9	44.2	55.7	47.5	46.4	58.9	47.5	56.4	52.1	41.7	33.5	55.0	50.4
Value of Expenditure	60.1	64.5	65.5	64.4	53.2	49.3	62.5	64.1	55.2	63.7	58.0	53.7	64.0	62.1	65.0	58.1	49.4	57.1	59.0	59.9
	56.0	73.7	63.8	55.6	41.5	30.2	59.4	58.0	49.7	59.7	52.8	50.1	61.4	54.8	60.7	55.1	45.6	45.3	57.0	55.2
DIGITAL ABILITY																				
Attitudes	49.6	54.9	56.2	50.9	44.5	37.0	52.6	59.8	42.8	52.4	49.3	34.8	62.8	58.2	51.5	42.7	33.9	43.9	59.7	59.4
Basic Skills	54.3	66.8	65.8	59.0	46.4	37.0	62.9	54.0	41.2	64.7	55.5	36.0	53.8	67.9	64.8	48.9	35.8	40.1	56.5	55.1
Activities	39.3	50.3	46.3	42.5	31.4	26.8	45.0	46.7	28.9	47.1	37.8	24.4	42.4	52.1	46.5	32.1	23.8	30.1	43.0	42.9
	47.7	57.3	56.1	50.8	40.7	33.6	53.5	53.5	37.6	54.7	47.5	31.7	53.0	59.4	54.2	41.2	31.2	38.0	53.1	52.5
DIGITAL INCLUSION INDEX	58.9	70.7	67.1	61.1	50.0	41.2	63.8	62.5	50.5	64.3	58.2	47.6	63.3	64.8	65.0	55.7	45.0	50.1	61.0	60.6

*Sample size <100, exercise caution in interpretation. **Source:** Roy Morgan, April 2017–March 2018

Queenslanders with disability have a relatively low level of digital inclusion, recording a 2018 ADII score of 50.1, which is 8.8 points below the state average. While this group's score has improved since 2014 (up 6.2 points), with strong gains in Access (up 11.9 points) and Digital Ability (up 8.6 points), Affordability has declined (down 2.0 points).

ADII scores for Queenslanders from a LOTE background have risen consistently since 2015. In 2018, the score for this group is 60.6, which is 1.7 points higher than the state average (58.9), but below the national LOTE average (63.2). The LOTE community is a highly diverse group, and care should be taken in interpreting findings.

A close examination of the detailed variables that underpin the ADII suggest the very small sample of Indigenous Australian respondents from Queensland surveyed in 2018 has impacted on the reliability of the data. The long term trend has been an improvement in digital inclusion for Indigenous Australians residing in Queensland.

Several groups in Queensland are more digitally excluded, with scores falling substantially below the state average (58.9). In ascending order, these groups are: people in Q5 low income households (41.2), older Australians (45.0), people who did not complete secondary school (47.6), people with a disability (50.1), and people not in the labour force (50.5).

Western Australia

Findings

In 2018, Western Australia's (WA) ADII score is 59.9. The state now sits slightly below the national average (60.2), ranking fourth out of the eight states and territories. Improvement in WA has not been consistent. The state's ADII score rose from 55.0 in 2014 to 56.4 in 2015, but fell to 55.8 in 2016. Since 2016, digital inclusion has improved in WA, with the ADII score for the state rising to 57.4 in 2017 and then a further 2.5 points to its current level of 59.9.

WA reported steady annual improvements in Access between 2014–2018 (up 9.4 points, from 63.5 to 72.9), and a similar pattern in Digital Ability (up 7.2 points, from 42.9 to 50.1). By contrast, Affordability declined over the four-years since 2014 (from 58.4 in 2014 to 56.8 in 2018). The decline in Affordability is the result of a combination of factors: Western Australian households are spending more on internet access, while at the same time income growth has fallen as the state's mining boom slowed.

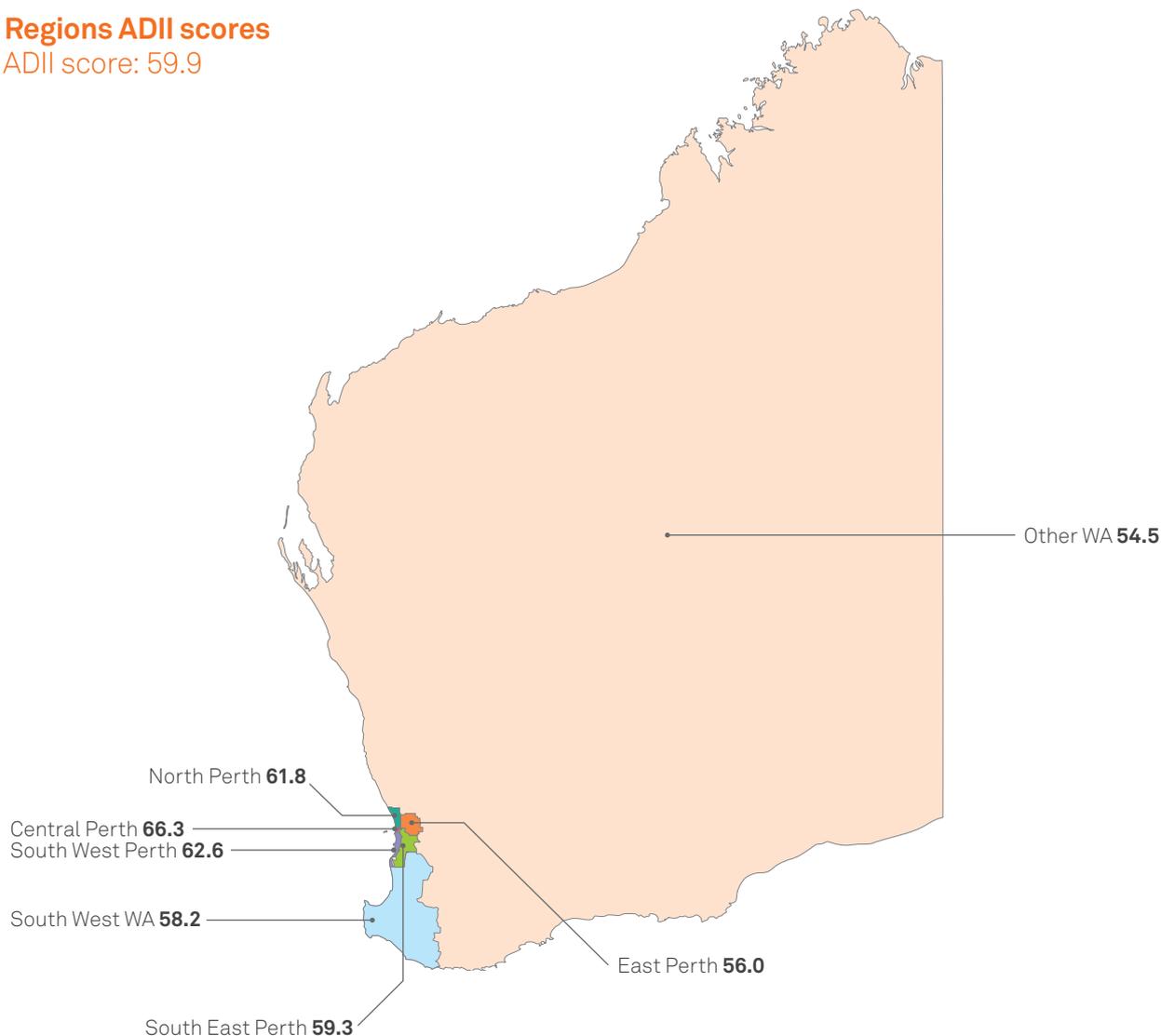
Geography

In 2018, Perth's ADII score is 61.0, slightly above the state (59.9) and national averages (60.2), but below the capital cities average of 62.4. While Perth's score improved by 3.9 points in the four years since 2014 (from 57.1 in 2014 to 61.0 in 2018), this improvement was not aligned with the greater pace of Australia's other state capitals. Declining household income after the mining boom – a trend that first appeared after 2015 – has resulted in a decrease in Perth's position on the Relative Expenditure component compared with the other mainland capitals with the exception of Adelaide.

The 2018 scores recorded by both of WA's rural regions – South West WA (58.2) and Other WA (54.5) – are above the national rural average (53.9). Although both these regions experienced some improvement in scores between 2014–2018, the pattern has not been constant. In the past year, South West WA increased its ADII score by 5.0 points and Other WA recorded a 2.8 point increase.

WA Regions ADII scores

WA ADII score: 59.9



Source: Roy Morgan

Table 20: WA: Digital inclusion by geography (ADII 2018)

2018	Australia	WA	Perth	Rural WA	Perth Regions					South West WA	Other WA
					Central	East	North	South West	South East		
ACCESS											
Internet Access	87.1	87.5	88.1	85.5	94.4	86.3	87.3	89.0	86.6	86.7	84.7
Internet Technology	78.7	77.8	78.0	76.8	79.0	73.7	76.0	81.4	79.7	81.0	74.1
Internet Data Allowance	54.4	53.3	54.7	48.2	59.8	47.7	56.3	57.4	52.5	53.7	44.6
	73.4	72.9	73.6	70.2	77.7	69.2	73.2	75.9	72.9	73.8	67.8
AFFORDABILITY											
Relative Expenditure	54.3	54.5	55.1	52.5	61.0	52.6	55.2	55.2	53.7	51.5	53.1
Value of Expenditure	60.9	59.1	59.9	55.8	59.7	56.9	61.9	61.2	58.1	60.1	52.6
	57.6	56.8	57.5	54.1	60.3	54.7	58.5	58.2	55.9	55.8	52.9
DIGITAL ABILITY											
Attitudes	51.0	51.4	52.7	46.8	60.0	46.0	53.0	55.6	50.5	48.2	46.0
Basic Skills	56.7	57.0	59.1	49.4	68.6	50.9	62.7	59.8	54.9	52.0	47.7
Activities	41.0	42.0	44.0	34.9	53.9	35.0	45.7	45.4	41.9	34.9	35.0
	49.5	50.1	51.9	43.7	60.8	44.0	53.8	53.6	49.1	45.0	42.9
DIGITAL INCLUSION INDEX	60.2	59.9	61.0	56.0	66.3	56.0	61.8	62.6	59.3	58.2	54.5

Source: Roy Morgan, April 2017–March 2018

These improvements were greater than that of the national average (up 2.2 points) indicating that that gap between WA's rural regions and the national average has contracted.

Overall, the 'Capital–Country gap' in WA (5.0 points) is the smallest of all states.

Demographics

In line with national trends, Western Australians with lower income, education, and employment levels tend to be less digitally included. Over the five years, Western Australians in the top income bracket recorded fluctuating ADII scores of 63.8 (2014), 67.4 (2015), 63.4 (2016), 67.8 (2017) and 71.2 (2018). However, each of these results have been more than 7.0 points above both the state-wide and national averages. Strong improvement in the past year (up 3.4 points) has resulted in a score of 71.2 for Western Australians in the top household income bracket. Echoing the national pattern, Western Australians in the top household income bracket score highly across all three sub-indices of the ADII (Access, Affordability, and Digital Ability).

WA residents in the lowest household income bracket recorded an ADII score of 42.0 in 2018. This is 18.2 points below the national average score, and 17.9 points below the state average, but 0.7 points higher than the national score for this income bracket (41.3). Although Western Australians in the lowest income bracket recorded a substantial improvement in digital inclusion between 2014 and 2017 (up 10.2 points from 32.6 in 2014 to 42.8 in 2017), in the past year digital inclusion for this group diminished slightly (down 0.8 points to 42.0). This was primarily due to decline in Affordability (down 1.5 points). Overall, the gap in digital inclusion between those with low and high household income has narrowed slightly since 2014 but remains substantial at 29.2 points.

In 2018, Western Australians not in the labour force recorded an ADII score of 52.2, or 11.7 points below those in employment (63.9). Scores for both cohorts fluctuated over 2014–2018. Overall, the scores for employed Western Australians rose 5.5 points (from 58.4 to 63.9), and those not engaged in the labour force

registered a rise of 4.8 points (from 47.4 to 52.2), meaning the 'employment gap' has widened slightly.

Tertiary-educated Western Australians recorded an ADII score of 64.5 in 2018, while those who did not complete secondary school scored 49.0 – a gap of 15.5 points. Since 2014, Western Australians who haven't completed secondary school recorded a 4.3-point gain, narrowing the gap slightly with tertiary-educated residents, who gained 3.5 points over the same period. The major gains since 2014 for those who have not completed secondary school were in Access (up 10.2 points) and Digital Ability (up 5.9 points). Affordability fell by 3.1 points for this group over this period.

Age is also a significant factor impacting digital inclusion in WA. In 2018, residents aged 25–34 years are most digitally included (66.9). Those aged 35–49 years have the second highest level of digital inclusion (65.4) having recorded the greatest gain of any age cohort statewide since 2014, up 8.2 points (from 57.2 in 2014).

Statewide, Western Australians aged 65+ recorded the lowest ADII score (44.3) of all age cohorts in 2018. This is 22.6 points below WA's most digitally included cohort for 2018, and 15.6 points below the state average. Worryingly, those aged 65+ have experienced only a very modest improvement in scores since 2014 (up 1.1 points, from a score of 43.2 in 2014). Their gain falls below the state average over this period (4.9 points), indicating a widening 'age gap'. Following a nationwide pattern, Western Australians aged 65+ recorded improved scores on the Access and Digital Ability sub-indices (up 12.5 and 9.3 points respectively since 2014), but these gains were offset by a decline in the Affordability sub-index (down 18.5 points) reflecting both a substantial increase in the proportion of household income spent on network access and a reduction in Value of Expenditure.

In 2018, Western Australians with disability have an ADII score of 48.6, which is 11.3 points below the state average. Over 2014–2016, people in WA with disability recorded improving annual scores, but in 2017 their score fell by 2.5 points and in the past year it has fallen by a further 1.3 points. This fall was underpinned by reductions in the Access and Digital Ability sub-index scores.

Table 21: WA: Digital inclusion by demography (ADII 2018)

2018	WA	Income Quintiles					Employment			Education			Age					Disability*	Indigenous Australians**	LOTE
		Q1	Q2	Q3	Q4	Q5	Employed	Unemployed	NILF	Tertiary	Secondary	Less	14-24	25-34	35-49	50-64	65+			
ACCESS																				
Internet Access	87.5	93.8	91.8	91.3	83.2	73.4	91.9	88.7	79.2	91.8	87.0	75.7	91.3	93.2	92.7	85.7	71.9	69.3	80.3	90.3
Internet Technology	77.8	83.4	82.0	81.2	74.2	66.5	81.2	79.7	70.9	81.3	77.7	69.9	79.0	83.3	82.7	75.6	65.9	70.1	64.3	81.1
Internet Data Allowance	53.3	63.0	59.0	58.1	48.0	38.7	59.0	56.9	42.1	57.1	53.5	43.6	54.1	66.4	61.2	47.9	33.3	43.1	38.3	60.1
	72.9	80.0	77.6	76.9	68.5	59.5	77.4	75.1	64.0	76.7	72.8	63.0	74.8	81.0	78.9	69.7	57.0	60.8	61.0	77.2
AFFORDABILITY																				
Relative Expenditure	54.5	85.7	66.7	44.0	28.7	13.1	57.9	49.5	49.0	57.1	50.2	46.7	63.2	53.3	56.1	55.0	42.5	45.5	66.0	51.8
Value of Expenditure	59.1	61.7	64.9	59.6	54.0	49.7	59.4	61.6	57.7	61.7	58.6	53.8	61.0	63.5	63.7	55.1	48.2	55.2	37.0	68.5
	56.8	73.7	65.8	51.8	41.4	31.4	58.6	55.5	53.3	59.4	54.4	50.2	62.1	58.4	59.9	55.0	45.3	50.4	51.5	60.1
DIGITAL ABILITY																				
Attitudes	51.4	56.8	54.7	52.6	48.1	36.3	54.9	58.3	43.3	54.4	49.3	37.3	61.4	61.5	52.8	45.9	34.0	39.1	38.8	55.6
Basic Skills	57.0	70.0	65.5	61.9	49.3	41.0	64.3	57.9	43.4	67.2	59.7	39.0	52.4	69.7	68.2	54.9	34.7	39.8	37.3	56.1
Activities	42.0	52.5	46.5	46.1	35.3	28.3	47.5	47.1	30.6	50.4	42.2	25.3	42.3	52.8	51.0	37.2	22.7	24.9	21.7	44.9
	50.1	59.8	55.5	53.5	44.2	35.2	55.6	54.4	39.1	57.4	50.4	33.9	52.1	61.3	57.4	46.0	30.5	34.6	32.6	52.2
DIGITAL INCLUSION INDEX	59.9	71.2	66.3	60.7	51.3	42.0	63.9	61.7	52.2	64.5	59.2	49.0	63.0	66.9	65.4	56.9	44.3	48.6	48.4	63.2

*Sample size <50, exercise extreme caution in interpretation. **Sample size <100, exercise caution in interpretation.

Source: Roy Morgan, April 2017–March 2018

People from a LOTE background in WA are relatively strong in digital inclusion, with an ADII score in 2018 of 63.2, which is 3.3 points above the state-wide average. Although the LOTE community in WA registered no major change to their level of digital inclusion between 2014 and 2017, improvements in Access and Digital Ability in the past year pushed the ADII score for this group up 5.2 points. The LOTE community is a highly diverse group, and care should be taken in interpreting findings.

Several sociodemographic groups in WA are more digitally excluded, with ADII scores substantially below the state average (59.9). These groups in ascending order are: people in Q5 low income households (42.0), older Australians (44.3), people with disability (48.6), people who did not complete secondary school (49.0), and people not in the labour force (52.2).

South Australia

Findings

South Australia's (SA) ADII score in 2018 is 57.9, the lowest of all states and territories. Since 2014, digital inclusion in SA has consistently improved, increasing 7.5 points. Since 2016, improvements in SA's score have narrowed the gap with the national average (from 3.7 points to 3.0 points). However, improvements made by other states (particularly Tasmania) have pushed SA to the bottom of the state and territory digital inclusion ranking.

Looking at the three sub-indices, SA's Access score has improved consistently (from 61.3 in 2014 to 71.7 in 2018). There is some indication that the rollout of the nbn in South Australia (which is 60% complete³⁵) has improved Access in the past 12 months. SA's Digital Ability score rose from 37.9 in 2014 to 47.5 in 2018. Mirroring the national picture, SA's Affordability score has fluctuated, dropping between 2014 and 2015 from 52.1 to 48.3, before recovering to reach 48.8 in 2016, 51.6 in 2017 and 54.6 in 2018. Since 2015, the Affordability sub-index has remained the largest contributor to the gap between SA and the national average; this gap is currently 3.0 points

Geography

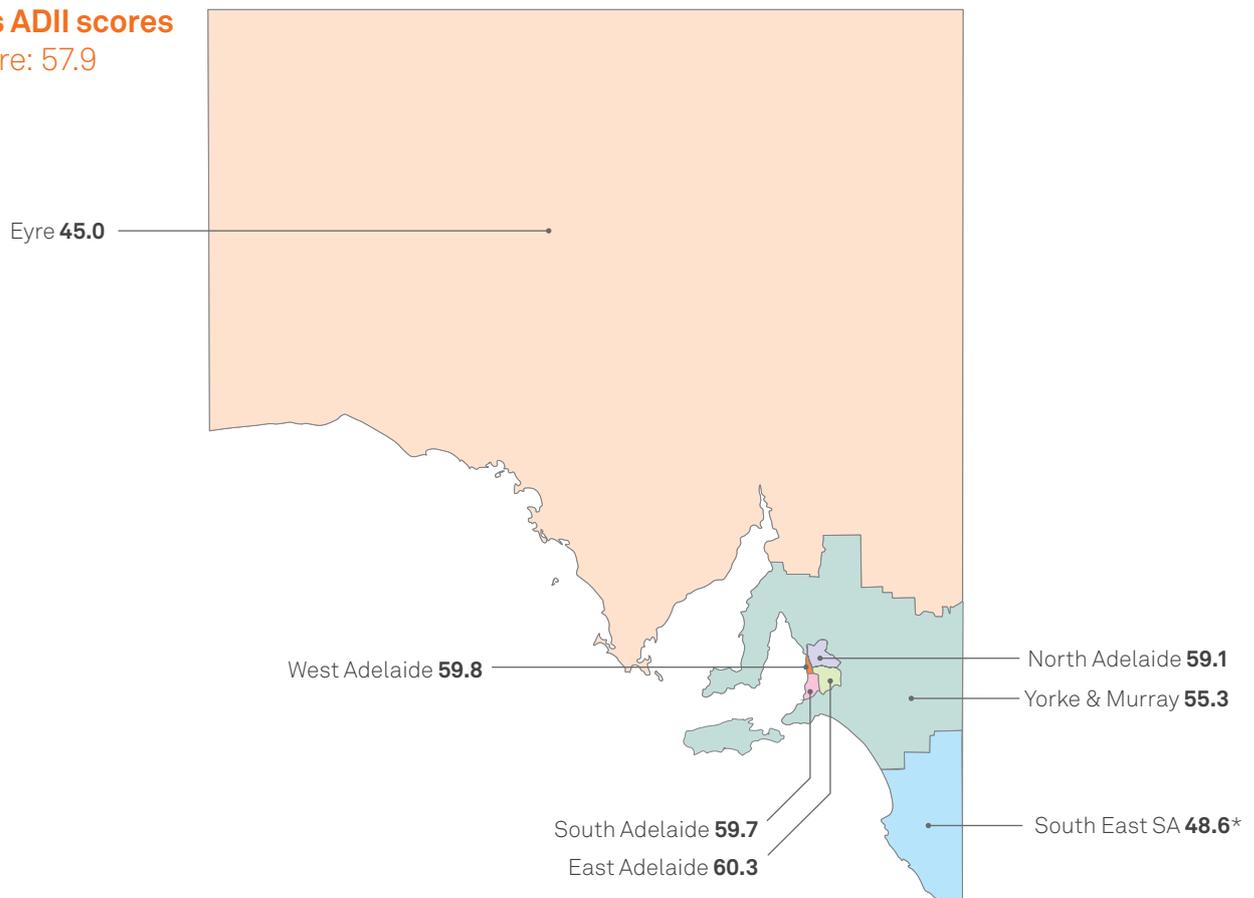
Adelaide is the most digitally included part of SA, with an ADII score of 59.7. Adelaide's score increased by 7.5 points between 2014 and 2018 (from 52.2 to 59.7) which outpaced the capital cities average over this time, which rose 5.9 points (from 56.5 to 62.4).

Rural SA recorded an ADII score of 52.1 in 2018. This is 1.8 points below the national rural average of 53.9. However, the 8.2 point rise recorded by rural SA since 2014 was greater than the national rural average, indicating that SA is closing the gap with rural communities in other states. Mirroring national rural results, SA's rural community made substantial gains on the Access and Digital Ability sub-indices since 2014, but made little improvement in regards to Affordability.

In 2018, the gap between the ADII score recorded in Adelaide and rural SA, the 'Capital-Country gap', is 7.6 points.

SA Regions ADII scores

SA ADII score: 57.9



*Sample size <100, exercise caution in interpretation.

Source: Roy Morgan

Table 22: SA: Digital Inclusion by geography (ADII 2018)

2018	Australia	SA	Adelaide	Rural SA	Adelaide Regions				Yorke & Murray	Eyre	South East SA*
					North	West	East	South			
ACCESS											
Internet Access	87.1	85.9	87.8	79.9	87.8	87.6	89.4	86.6	83.8	71.2	75.8
Internet Technology	78.7	77.4	78.7	73.1	79.4	74.5	77.1	81.6	76.2	65.8	70.7
Internet Data Allowance	54.4	51.7	53.7	45.2	55.6	50.0	51.8	55.4	50.5	34.4	38.0
	73.4	71.7	73.4	66.1	74.3	70.7	72.8	74.5	70.2	57.1	61.5
AFFORDABILITY											
Relative Expenditure	54.3	51.6	53.0	46.9	52.7	52.5	60.2	48.3	45.9	47.9	50.9
Value of Expenditure	60.9	57.5	59.8	49.7	60.5	64.2	54.8	60.3	52.6	40.4	50.2
	57.6	54.6	56.4	48.3	56.6	58.3	57.5	54.3	49.3	44.1	50.5
DIGITAL ABILITY											
Attitudes	51.0	49.4	51.8	41.6	51.7	53.2	53.9	49.5	46.8	33.4	29.9
Basic Skills	56.7	54.7	56.0	50.4	51.8	55.9	57.1	59.5	55.5	40.3	43.2
Activities	41.0	38.3	39.7	33.6	36.2	41.6	40.5	41.7	36.8	27.6	28.1
	49.5	47.5	49.2	41.9	46.6	50.2	50.5	50.2	46.4	33.7	33.7
DIGITAL INCLUSION INDEX	60.2	57.9	59.7	52.1	59.1	59.8	60.3	59.7	55.3	45.0	48.6

*Sample size <100, exercise caution in interpretation. **Source:** Roy Morgan, April 2017–March 2018

Both the Yorke & Murray region and South East SA regions made relatively consistent digital inclusion gains since 2015. Yorke & Murray's ADII score rose each year through this period and is now 55.3. The ADII score for South East SA rose from 46.0 in 2014 to 48.6 in 2018. The slight decline in South East SA's score in 2015 (42.2) was reversed in 2016, as the region's score increased to 47.4 and 50.8 in 2017. Eyre's 2018 ADII score of 45.0 makes it the most digitally excluded region in Australia. Since 2014, Eyre's ADII score has risen just 1.6 points. By comparison the Australian average rose 6.2 points since 2014. Please note the 2017 ADII sample for Eyre produced anomalous results (the prospect that 2017 results for the region may be unreliable was noted in the 2017 ADII report).

Demographics

Echoing patterns in the national figures, digital inclusion in SA tends to increase as income, education, and employment levels rise. South Australians in the top household income bracket have an ADII score of 67.1 in 2018, 9.2 points above the SA average (57.9), but 5.0 points below the national figure for this income bracket (72.1). South Australians in the lowest household income bracket recorded an ADII score of 42.1. This is 18.1 points below the national average and 15.8 points below the state average. However, they recorded a slightly better score than the national average for this income bracket (41.3).

SA residents in the highest household income bracket recorded a 1.5 point increase in their ADII score between 2014 and 2018, but this improvement was less than that of the state average (up 7.5 points). Furthermore, over the past year the ADII score for South Australians in the top household income bracket declined 1.9 points. By contrast, South Australians in the lowest household income bracket recorded a stronger gain over the 2014–2018 period (up 9.0 points, from 33.1 to 42.1), and the trend remains positive with a 1.5 point rise in the past year. As a result, the 'income gap' between South Australians in the highest and lowest household income brackets has narrowed slightly over the past four years.

The 2018 ADII score for South Australians in employment is 63.5. This is 4.5 points higher than those who are seeking work (59.0)

and 13.8 points above those not engaging in the labour market (49.7). Of some concern is the fact that the 'employment gap' has continuously increased since 2016 – from 10.5 points (2016), to 12.2 points (2017), before reaching its current level of 13.8 points.

In 2018, SA residents who did not complete secondary school recorded an ADII score of 44.3, while those with a tertiary education scored 62.8 – an 'education gap' of 18.5 points. Over the years 2014–2018, digital inclusion for South Australians who did not complete secondary school fluctuated. The 2018 score for this group (44.3) is 4.6 points higher than that recorded in 2014 (39.7), but this increase did not adhere to the same pace as those with a tertiary education (up 6.2 points over this period from 56.6 to 62.8).

Reflecting the national pattern, age is also an important factor influencing digital inclusion in SA. People in SA aged below 50 recorded significantly higher ADII scores in 2018 than older groups in that state. Not only were 25–34 year olds the state's most digitally included age cohort in 2017 (66.0 points), but they also recorded the biggest improvement since 2014 (up 11.5 points, from 54.5).

SA residents aged 65+ recorded the lowest ADII score (45.3) of all SA age groups in 2018. Over the four years since 2014, older South Australians made substantial improvements on the Digital Access and Digital Ability sub-indices (up 14.8 and 10.7 points respectively), but these gains have been partially offset by a decline in the Affordability sub-index (down 2.5 points). This decline is due to a substantial increase in the proportion of household incomes spent on network access by those in this age group.

In 2018, South Australians with disability have an ADII score of 43.3. Between 2014 and 2018, digital inclusion for this group has fluctuated. Overall, South Australians with disability recorded an ADII score increase of 5.5 points over this period, but in the past year their ADII score fell 2.5 points. The difference in the level of digital inclusion for people with disability and the population average, the 'disability gap' is larger in SA in 2018 (14.6 points) than it is nationally (11.0 points).

Table 23: SA: Digital Inclusion by demography (ADII 2018)

2018	SA	Income Quintiles					Employment			Education			Age					Disability	Indigenous Australians**	LOTE
		Q1	Q2	Q3	Q4	Q5	Employed	Unemployed*	NILF	Tertiary	Secondary	Less	14-24	25-34	35-49	50-64	65+			
ACCESS																				
Internet Access	85.9	92.3	91.9	90.6	82.3	72.6	92.4	90.1	76.1	90.6	85.7	70.5	93.0	93.0	92.1	83.8	70.1	68.5	88.8	90.0
Internet Technology	77.4	81.3	83.7	80.9	75.9	66.9	81.6	79.1	71.1	80.4	78.3	66.5	81.7	82.5	80.2	76.6	67.7	63.7	68.7	77.3
Internet Data Allowance	51.7	56.0	59.4	56.7	49.7	41.5	58.3	60.1	41.1	54.4	53.6	38.7	57.1	63.9	58.9	48.1	34.9	43.2	56.1	55.8
	71.7	76.5	78.3	76.1	69.3	60.3	77.4	76.4	62.8	75.1	72.5	58.6	77.3	79.8	77.1	69.5	57.5	58.5	71.2	74.3
AFFORDABILITY																				
Relative Expenditure	51.6	84.9	68.3	47.5	30.5	11.7	56.8	35.4	46.4	56.6	44.8	43.4	56.6	50.8	52.6	51.3	46.1	35.4	37.9	52.2
Value of Expenditure	57.5	51.7	63.8	60.4	54.0	53.3	59.8	66.9	52.4	58.8	57.9	49.0	64.3	59.2	57.7	55.2	51.0	45.0	60.2	56.5
	54.6	68.3	66.0	54.0	42.2	32.5	58.3	51.1	49.4	57.7	51.3	46.2	60.4	55.0	55.1	53.3	48.5	40.2	49.1	54.4
DIGITAL ABILITY																				
Attitudes	49.4	53.4	54.1	52.1	45.0	38.4	53.7	56.7	42.1	53.4	47.4	30.6	66.4	61.8	49.7	40.5	33.0	37.1	56.4	56.8
Basic Skills	54.7	66.9	69.9	59.3	50.7	36.7	64.8	52.6	40.7	65.3	54.3	32.5	55.9	72.8	66.2	50.6	34.1	33.8	46.5	54.1
Activities	38.3	48.9	46.3	44.0	34.0	25.7	45.8	38.8	27.6	48.0	35.8	21.0	40.1	55.4	46.4	32.7	22.5	23.2	21.4	39.1
	47.5	56.4	56.8	51.8	43.2	33.6	54.7	49.3	36.8	55.6	45.8	28.0	54.1	63.3	54.1	41.3	29.9	31.4	41.4	50.0
DIGITAL INCLUSION INDEX	57.9	67.1	67.0	60.6	51.6	42.1	63.5	59.0	49.7	62.8	56.6	44.3	63.9	66.0	62.1	54.7	45.3	43.3	53.9	59.6

**Sample size <50, exercise extreme caution in interpretation. *Sample size <100, exercise caution in interpretation.

Source: Roy Morgan, April 2017–March 2018

People in SA from a LOTE background recorded an ADII score of 59.6 in 2018, above the state average (57.9), but slightly below the Australian (60.2) average. In SA, the LOTE group's score rose by 8.2 points between 2014 and 2018, outpacing the average rise for the whole state over that period (up 7.5 points). The LOTE community is a highly diverse group, and care should be taken in interpreting findings.

Several sociodemographic groups in SA are more digitally excluded, with ADII scores substantially below the state average (57.9). In ascending order, these groups are: people in Q5 low income households (42.1), people with disability (43.3), people who did not complete secondary school (44.3), older Australians (45.3) and people not in the labour force (49.7).

Tasmania

Findings

Tasmania's ADII score in 2018 is 58.1. Although this is the second lowest score of any state or territory in Australia (just 0.2 points above SA), it represents a major improvement on Tasmania's 2017 ADII result of 50.1 (up 8.0 points). Over the three years to 2017, Tasmania's level of digital inclusion had shown no improvement. The state's ADII score was 50.4 in 2014, 50.9 in 2015, 48.7 in 2016, and 50.1 in 2017. Therefore, the increase in 2018 is remarkable.

Tasmania's 2017–2018 ADII improvement is founded on a major increase on the Access sub-index. In the past year, Tasmania's Access score rose from 64.7 to 73.0 (up 8.3 points). Looking at the three components that comprise this sub-index, it is Internet Technology (up 9.7 points) and Internet Data Allowance (up 10.2 points) that have contributed most to this increase.

The activation data made available by nbn co. reveals that the approximate number of nbn premises connected in Tasmania rose from 90,500 in March 2017 to 142,000 in April 2018³⁶, an increase of 57%. Tasmania's current level of nbn connectivity and the rate of connection growth over the past year is substantially greater than that recorded by other states. Tasmania was one of the initial nbn rollout locations, and by 2018 more than 95% of the state rollout was complete³⁷. Given that a large part of the existing landline and internet networks are switched off 18 months after the nbn rollout is complete in an area, through 2017–2018 many Tasmanian households have been required to make decisions about new telecommunications products which include switching over to the nbn³⁸.

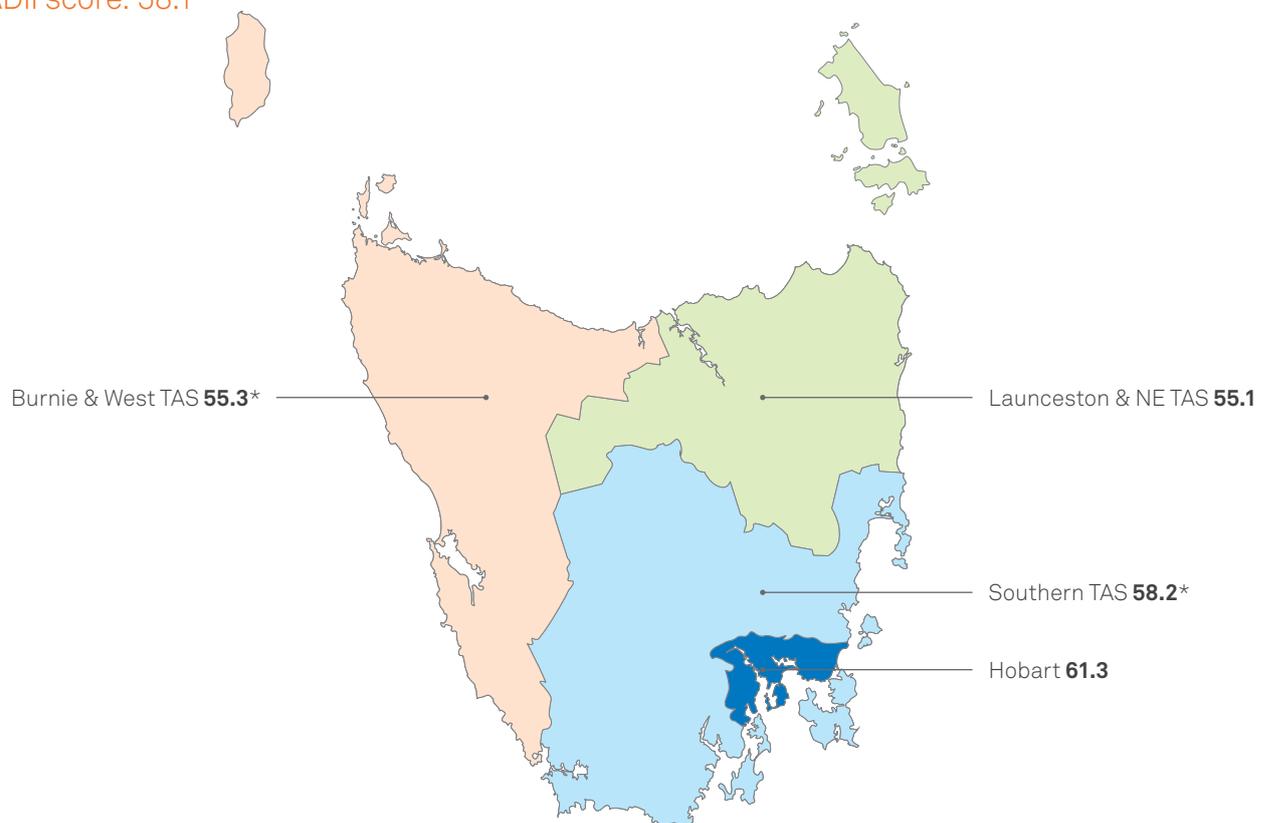
Tasmania's Internet Technology component is influenced by people switching to the nbn from other types of broadband as well as by people for whom the nbn represents an introduction to broadband. As noted in the introduction to this report, there is emerging evidence that suggests the nbn rollout may be encouraging fixed broadband take-up. An increase in Tasmania's Data Allowance component may also be related to the increase in nbn connections, as underlying ADII data reveals nbn users have higher average data allowances.

Over 2017–2018, Tasmania also recorded a substantial improvement in its Affordability sub-index score, up by 9.1 points from 45.7 in 2017 to 54.8 in 2018. Tasmania's score is still below the national average in 2018 (57.6). Tasmania's major gain was in Value of Expenditure, which rose 14.1 points. This improvement is likely to be a flow on effect of the rise in nbn connections that have better gigabyte per dollar ratios than legacy broadband plans. There is a significant drop in the proportion of mobile-only users in Tasmania (down from 30.8% in 2017 to 18.5% in 2018), which also contributed to Affordability gains.

Tasmania's 2018 Digital Ability score is 46.6. This represents a 6.7 point improvement on the state's 2017 score of 39.9. Despite this increase, Tasmania remains the poorest performing state or territory on this sub-index.

TAS Regions ADII scores

TAS ADII score: 58.1



*Sample size <100, exercise caution in interpretation.

Source: Roy Morgan

Table 24: Tasmania: Digital inclusion by geography (ADII 2018)

2018	Australia	TAS	Hobart	Rural TAS	Launceston & NETAS	Burnie & West TAS	Southern TAS*
ACCESS							
Internet Access	87.1	85.0	88.0	82.7	83.3	80.8	85.1
Internet Technology	78.7	81.5	84.8	79.0	81.4	74.9	81.3
Internet Data Allowance	54.4	52.6	56.7	49.5	50.6	50.4	45.0
	73.4	73.0	76.5	70.4	71.8	68.7	70.5
AFFORDABILITY							
Relative Expenditure	54.3	49.6	53.0	46.9	43.7	44.3	60.3
Value of Expenditure	60.9	60.0	60.7	59.4	56.1	64.2	59.0
	57.6	54.8	56.9	53.2	49.9	54.2	59.6
DIGITAL ABILITY							
Attitudes	51.0	46.9	49.8	44.7	46.1	40.6	49.6
Basic Skills	56.7	54.3	59.9	50.2	49.1	51.1	50.9
Activities	41.0	38.5	42.3	35.6	35.6	37.0	32.7
	49.5	46.6	50.7	43.5	43.6	42.9	44.4
DIGITAL INCLUSION INDEX	60.2	58.1	61.3	55.7	55.1	55.3	58.2

*Sample size <100, exercise caution in interpretation. **Source:** Roy Morgan, April 2017–March 2018

Geography

Hobart recorded an ADII score of 61.3 in 2018. Since 2014, Hobart's score has risen 7.3 points (up from 54.0). This gain is greater than the capital city average gain over that period (5.9 points), indicating that Hobart is closing the gap with other capitals: that gap is now 1.1 points (the capital city average is 62.4). Mirroring Tasmania's overall result, Hobart's digital inclusion gains were concentrated in the 2017–2018 period and centre on a rise in the Access sub-index score which in turn largely reflects a rise in nbn connectivity. Roy Morgan single source data shows that the proportion of households with the nbn in Hobart in 2018 is more than double that of any other state capital.

In 2018, the ADII score for rural Tasmania is 55.7. This is a rise of 8.4 points since 2014. Like Hobart, improvements in digital inclusion in rural Tasmania were concentrated in the 2017–2018 period and centre on a rise in the Access sub-index score related to nbn take-up.

All three regional areas recorded a substantial improvement in digital inclusion since 2017. In 2018, the ADII score for Launceston & North East Tasmania is 55.1. Burnie & Western Tasmania's current ADII score is 55.3. Given a very small sample size, the 2018 ADII result for Southern Tasmania (58.2) should be treated with caution.

Demographics

Echoing the broad pattern of the national figures, Tasmanians with lower income, employment, and education levels tend to be less digitally included.

Given the small number of surveys conducted with high income household members in Tasmania, the following analysis will focus on those in the lowest household income bracket, where the sample size is more robust.

In the first three years of data collection for the ADII (2014–2016), Tasmanians in the Q5 household income bracket recorded not only extremely low ADII scores, but declining ones. ADII scores for this cohort fell marginally between 2014 (37.4) and 2015 (36.6), before a more substantial drop in 2016 (down 4.2 points, to 32.4). Over 2016–2018, digital inclusion has improved for this cohort, rising 8.9 points to 41.3. This gain is primarily due to improvements in Access (up 13.3 points) and Digital Ability (up 9.2 points).

Despite these recent improvements in digital inclusion for low income Tasmanians, the gap between Tasmanians in Q5 low income households and the overall Tasmanian population increased from 13.0 points in 2014 to 16.8 points in 2018. The substantial increase in the Tasmanian state average between 2017 and 2018 (up 8.0 points) was not matched by low income

Table 25: Tasmania: Digital inclusion by demography (ADII 2018)

2018	TAS	Income Quintiles					Employment			Education			Age					Disability*	Indigenous Australians**	LOTE**
		Q1**	Q2*	Q3	Q4	Q5	Employed	Unemployed**	NILF	Tertiary	Secondary	Less	14-24*	25-34*	35-49*	50-64	65+			
ACCESS																				
Internet Access	85.0	95.8	94.3	87.3	82.6	72.0	91.6	77.7	77.7	93.7	85.6	69.2	88.1	92.8	92.9	85.0	69.1	74.1	88.9	89.2
Internet Technology	81.5	91.9	90.5	84.3	79.0	70.6	86.4	74.6	76.2	86.8	81.6	69.4	83.2	89.8	87.6	80.3	69.3	72.4	89.0	86.0
Internet Data Allowance	52.6	69.1	63.6	53.6	50.3	39.5	59.2	44.7	45.4	59.6	55.0	37.8	53.1	66.3	62.5	50.6	34.7	42.6	62.3	59.5
	73.0	85.6	82.8	75.1	70.6	60.7	79.1	65.7	66.4	80.0	74.1	58.8	74.8	82.9	81.0	72.0	57.7	63.0	80.1	78.3
AFFORDABILITY																				
Relative Expenditure	49.6	84.0	65.1	47.9	27.2	9.6	55.2	56.2	41.2	49.5	46.0	45.6	66.3	43.8	52.1	53.7	31.7	31.0	53.7	41.6
Value of Expenditure	60.0	68.5	67.8	63.4	54.4	46.5	62.5	49.4	57.8	65.6	58.4	46.6	62.8	70.4	68.0	55.3	44.4	48.8	66.5	61.7
	54.8	76.2	66.4	55.6	40.8	28.1	58.9	52.8	49.5	57.6	52.2	46.1	64.5	57.1	60.0	54.5	38.1	39.9	60.1	51.6
DIGITAL ABILITY																				
Attitudes	46.9	58.7	53.4	47.3	43.4	36.6	50.7	49.2	41.9	51.8	46.4	32.0	56.5	60.3	49.1	42.5	32.4	40.7	50.2	58.4
Basic Skills	54.3	73.6	66.2	61.2	47.5	39.9	64.1	55.4	42.1	68.5	53.7	32.8	48.6	73.8	68.9	51.4	33.7	36.9	31.5	61.8
Activities	38.5	50.2	47.0	41.9	36.7	28.5	44.3	45.5	30.4	50.4	38.1	20.1	37.0	55.0	46.6	36.9	21.8	26.1	25.5	54.3
	46.6	60.8	55.5	50.1	42.6	35.0	53.1	50.0	38.1	56.9	46.1	28.3	47.3	63.0	54.8	43.6	29.3	34.6	35.8	58.2
DIGITAL INCLUSION INDEX	58.1	74.2	68.2	60.3	51.3	41.3	63.7	56.2	51.4	64.9	57.4	44.4	62.2	67.7	65.3	56.7	41.7	45.8	58.6	62.7

**Sample size <50, exercise extreme caution in interpretation. *Sample size <100, exercise caution in interpretation.

Source: Roy Morgan, April 2017–March 2018

Tasmanians, whose ADII score rose 2.2 points. A comparison between Q5 and Q1 households is not possible in Tasmania due to the small sample size of Q1 high income respondents.

Mirroring statewide patterns, the ADII scores of both Tasmanian workers and those not in the labour force fluctuated annually since 2014. However, both groups recorded an improvement between 2014 and 2018. The ADII score for those employed increased 7.8 points (from 55.9 to 63.7), while the score of those not in the labour force rose 7.2 points (from 44.2 to 51.4). Much of this improvement occurred in the past 12 months in accordance with the statewide trend.

In 2018, tertiary-educated Tasmanians scored 64.9, while those who did not complete secondary school scored 44.4 – an ‘education gap’ of 20.5 points. This is a wider gap than that recorded in 2014 (16.1 points). Similar to the national picture, tertiary-educated Tasmanians have higher scores on all three sub-indices than those who did not complete secondary school. The gap in Digital Ability is 28.6 points and the Access gap is 21.2 points. The Affordability gap is 11.5 points.

As is the case nationally, age is also a significant factor impacting digital inclusion in Tasmania. Given the limited sample sizes for the younger age cohorts in that state, this analysis focuses on those aged 50+.

In 2018, Tasmanians aged 65+ recorded the lowest score (41.7) of all ADII age cohorts. The score for this age group was 16.4 points lower than the state average (58.1) and 4.3 points lower than the national 65+ age group average (46.0). Between 2014 and 2018, digital inclusion for Tasmanians aged 65+ improved little, with the overall ADII score rising just 0.9 points from 40.8 in 2014 to 41.7 in 2018. Over this period, the very strong gains made by this age group in the Access and Digital Ability sub-indices (up 16.3 and 11.7 points respectively) were almost completely offset by a decline in the Affordability sub-index (down 25.2 points). This affordability decline was due to both a substantial increase in the proportion of household incomes spent on network access and a decline in Value of Expenditure. Those aged 65+ did not experience the large increase in digital inclusion registered by other age groups over 2017–2018.

From the data available, there are several sociodemographic groups in Tasmania that are particularly digitally excluded, with ADII scores substantially below the state average (58.1). In ascending order, they are: people in Q5 low income households (41.3), older Australians (41.7), people who did not complete secondary school (44.4), and people not in paid employment (51.4).

Australian Capital Territory

Findings

The Australian Capital Territory's (ACT) ADII score in 2018 is 66.4, which is 6.2 points higher than the national average (60.2). The ACT is the most digitally included of the eight states and territories, a position it has held in each year of the ADII data collection period (2014–2018).

Although digital inclusion rose only marginally between 2014 and 2017 (up 1.3 points), a large increase in the past year (up 4.8 points) takes the overall gain for the ACT over the reporting period 2014–2018 to 6.1 points. With the exception of Tasmania, the gap between ACT and each of the other states and territories has expanded over the past year.

Dimensions of digital inclusion: Access, Affordability, Digital Ability

The ACT's strong overall ADII results throughout the ADII data period (2014–2018) have been underpinned by very high scores across all three sub-indices – Access, Affordability and Digital Ability. Indeed, the ACT has almost continuously led all other states and territories on each of the three sub-indices in the past five years (only Victoria recorded a slightly higher Access score in 2017, and the NT a slightly higher Affordability score in 2017).

The ACT's 2018 Access score of 76.0 is 2.6 points above the national average (73.4). Since 2014, the ACT's score on this sub-index has increased 8.5 points, with 4.9 points of that increase occurring in the past year. Looking at the three components that comprise this sub-index, it is Internet Technology and Internet Data Allowance that have contributed most to the ACT's Access improvement since 2014. In the past year, a substantial 8.0 point increase in Internet Data Allowance has contributed to the recent jump in the ACT's Access score. The average volume of fixed broadband data allowance purchased by those in the ACT has risen substantially in the past 12 months. A rise in the number of nbn and other fixed broadband connections in the ACT during this period is likely to have been a contributing factor as explained in the introduction to this report. Further analysis has also determined that the proportion of mobile-only people in the ACT has dropped since 2017 (down from 25.5% to 16.5%), which is a factor also contributing positively to the ACT's Access sub-index increase.

In 2018, the ACT recorded an Affordability sub-index score of 67.3. This is 9.7 points above the national average (57.6). Although the ACT's Affordability sub-index score had essentially been trending down prior to 2018 – with gains in the Value of Expenditure component offset by a decline in Relative Expenditure – a substantial improvement in Affordability was registered in the past year. The ACT recorded a large Value of Expenditure gain, a result influenced by the rise in fixed broadband connectivity, and arrested the downward trend in Relative Expenditure. The ACT was one of only three states or territories that did not register a decline in Relative Affordability over the past year (the others being Tasmania and WA). The ACT's score on this component rose 0.1 points in that period.

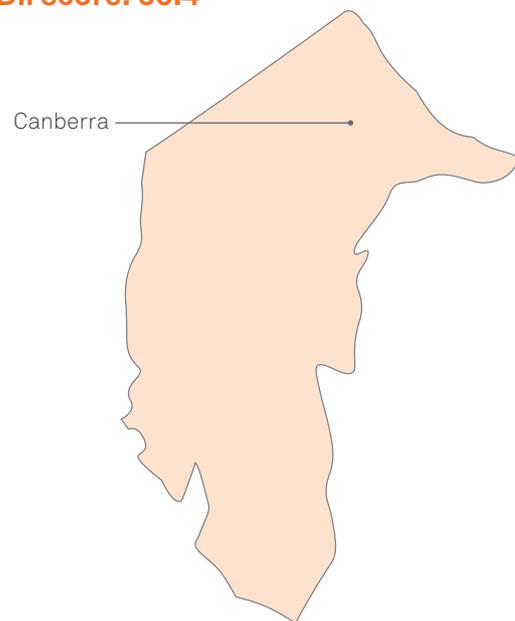
In each year 2014–2018, the ACT has recorded significantly higher Digital Ability scores than other states and territories, although the gap is narrowing. In 2018, the ACT's Digital Ability score of 55.9 is 6.4 points above the national average (49.5) and 4.5 points above than the next highest state, Victoria (51.4). Although registering some fluctuations in digital inclusion in the period 2014–2018, the current Digital Ability score (55.9) for the ACT is 4.5 points higher than that

Table 26: ACT: Digital inclusion (ADII 2018)

	Australia	ACT
2018		
ACCESS		
Internet Access	87.1	91.0
Internet Technology	78.7	78.8
Internet Data Allowance	54.4	58.0
	73.4	76.0
AFFORDABILITY		
Relative Expenditure	54.3	65.9
Value of Expenditure	60.9	68.8
	57.6	67.3
DIGITAL ABILITY		
Attitudes	51.0	54.7
Basic Skills	56.7	64.6
Activities	41.0	48.3
	49.5	55.9
DIGITAL INCLUSION INDEX	60.2	66.4

Source: Roy Morgan, April 2017–March 2018

ACT ADII score: 66.4



of 2014 (51.4). The gap between the ACT and other states on this sub-index is closing, with all other states and territories registering an improvement of between 5.2 and 9.6 points since 2014.

The available data for ACT was not broken down into demographic or sub-regional categories, given the restricted sample size for this territory. This means our aggregated figures do not reflect the considerable variations that exist between different communities within the broader ACT population.

Northern Territory

Findings

The ADII score for the Northern Territory (NT) in 2018 is 58.8, 1.4 points lower than the national average (60.2). This is the first time that the NT score has been lower than the national average during the ADII data collection period (2014–2018). NT currently ranks sixth out of the eight states and territories for digital inclusion.

Since 2014, the NT’s level of digital inclusion has fluctuated. Between 2014 and 2015, the NT’s ADII score rose from 54.2 to 58.2. It then fell to 56.3 in 2016 before recovering to 58.8 in 2017. There was no change to the digital inclusion score recorded by the NT between 2017 and 2018. Overall, the NT recorded a 4.6 point rise between 2014 and 2018.

It should be noted that the NT’s sample size in 2017 comprised fewer than 100 surveys. While the sample in other years exceeds 100, it is therefore important to interpret the data with some caution.

Dimensions of digital inclusion: Access, Affordability, Digital Ability

Since 2014, the improvement to the NT’s ADII score (up 4.6 points) has been driven by gains in Access, which rose steadily from 64.0 in 2014 to 72.8 in 2018 (up 8.8 points). The rollout of the nbn to parts of the NT has at least partly underpinned this improvement. This influencing factor is reflected in an upward trend in the scores received on the Internet Technology and Internet Data Allowance components. The NT’s score on Internet Technology (81.0) is now 2.3 points higher than the national average (78.7).

Since 2014, the NT’s Affordability sub-index score has been on an almost continuous downward trend. The NT’s 2018 score for this sub-index is 54.7, 2.8 points below the score recorded in 2014 (57.5). Underlying this pattern is a decline in Relative Expenditure from 64.1 in 2014 to its current level of 53.8 that has been only partially offset by improvements to the Value of Expenditure component which rose from 51.0 in 2014 to 55.6 in 2018 (see p.12 in the national overview section for more details of this dynamic).

There has been significant fluctuations in the NT’s annual Digital Ability results during the ADII data collection period (2014–2018), but the general trend has been one of improvement. In 2018, the NT’s Digital Ability sub-index score is 48.8. This is 0.7 points lower than the national score for this sub-index in 2018 (49.5). The NT did record a 7.6 point gain in Digital Ability over the four years since 2014 and this gain was greater than that recorded for Australia overall (up 7.3 points) indicating that the NT is closing the Digital Ability gap. Since 2016, the NT has recorded continuous annual gains on the Basic Skills and Activities components that form part of the Digital Ability sub-index.

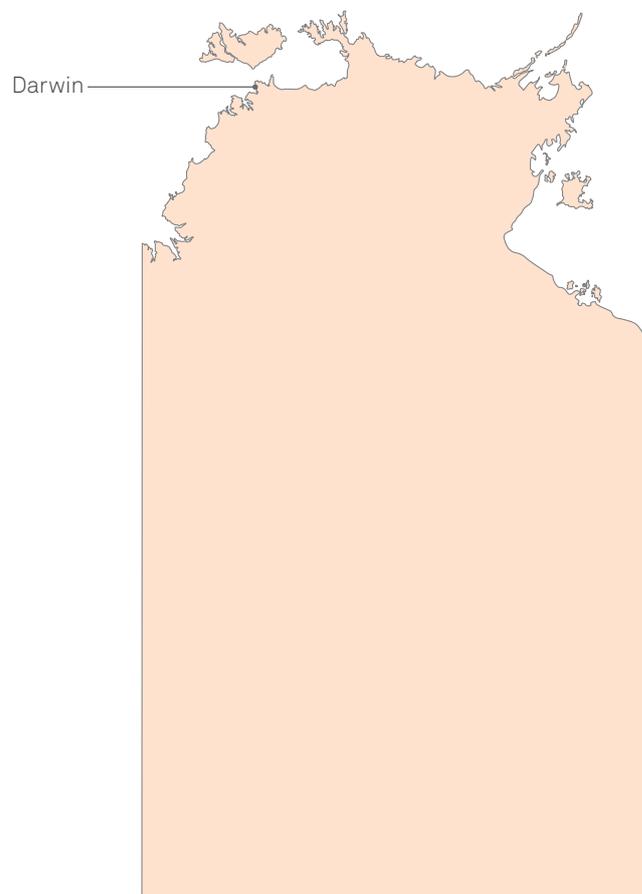
Given the restricted sample size for the NT, the available data for this territory was not broken down into demographic or sub-regional categories. This means our aggregated figures may not reflect the considerable variations that exist between different communities within the broader NT population. In particular, general ADII data collection did not extend to remote Aboriginal communities, where high levels of geographic isolation and socioeconomic disadvantage pose real challenges for digital inclusion. In a bid to know more about digital inclusion in these communities, the ADII team conducted a supplementary digital inclusion survey in the remote NT Indigenous community Ali Curung. Results of this study are presented in Case Study 1 Remote Indigenous community – Ali Curung (see p.18).

Table 27: NT: Digital inclusion (ADII 2018)

2018	Australia	NT
ACCESS		
Internet Access	87.1	87.9
Internet Technology	78.7	81.0
Internet Data Allowance	54.4	49.6
	73.4	72.8
AFFORDABILITY		
Relative Expenditure	54.3	53.8
Value of Expenditure	60.9	55.6
	57.6	54.7
DIGITAL ABILITY		
Attitudes	51.0	50.2
Basic Skills	56.7	54.4
Activities	41.0	42.0
	49.5	48.8
DIGITAL INCLUSION INDEX	60.2	58.8

Source: Roy Morgan, April 2017–March 2018

NT ADII score: 58.8



Conclusion

The ADII shows digital inclusion is improving in Australia at a national level. Since 2014, the national ADII score has risen from 54.0 to 60.2, and every state and territory has recorded improved scores in this period. Nevertheless, many Australians are missing out. Digital inclusion remains linked to geography and sociodemographic factors such as income, age and education.

Digital inclusion across the three dimensions

The ADII illuminates three key dimensions of digital inclusion: Access, Affordability, and Digital Ability. It reveals how these factors change over time, according to social and economic circumstances, and across geographic locations.

Access has improved steadily over the past four years, from 63.9 in 2014, to 73.4 in 2018 (up 9.5 points). Australians are accessing the internet more often, using an increasingly diverse range of technologies, and they have more data than ever before. In part, this reflects improvements to both mobile and fixed network infrastructure.

Evidence is emerging that the nbn rollout is starting to have a positive effect on Access. It is the 2018 ADII results for Tasmania – the state in which the nbn rollout is largely complete – where this impact is currently most discernible. The impact of the nbn rollout is multidimensional, improving the quality of fixed connections, increasing fixed broadband uptake, and increasing data allowances. While the ADII data cannot directly tie the nbn rollout to other digital inclusion dimensions such as increasing internet use, regularity of use, and changes to the nature and sophistication of online activity, this might be an avenue for further exploration.

Affordability, on the other hand, declined from 2014 to 2016 before making a slight recovery. In 2018, it is 57.6, just 1.6 points above the 2014 level (56.0). While the value of internet services has improved, households are spending a growing proportion of their income on them (up from 1.0% in 2014, to 1.17% in 2018). We need to address the challenges of Affordability and its effects, especially in relation to digitally excluded Australians on low or fixed incomes and their children in education.

Digital Ability has improved considerably since 2014, with Attitudes improving by 5.1 points, Basic Skills by 10.1, and Activities by 6.9. However, all three components have increased from a low base, and Digital Ability remains low for many groups.

Digital Ability therefore remains a critical area for attention with policy makers, business, education, and community groups. This will require collaboration and cooperation across all three levels of government for program funding, development and implementation. In particular, attention needs to be given to improving the digital skills and confidence of the most excluded sociodemographic groups, and in light of the lower levels of digital ability for Australians aged 50+, a focus on supporting workforce digital skills is also needed. The websites of essential service providers and government agencies need to be made accessible and easy to navigate and use for all Australians, at all ability levels, and across all the devices that they use.

Regional variations

The ADII illuminates the link between geography and digital inclusion. In 2018, the highest-scoring state or territory is the ACT (66.4, or 6.2 points above the national average), followed by Victoria (61.4). In the past year both the ACT and Tasmania have experienced substantial digital inclusion gains (rising 4.8 and 8.0 respectively). As a result, the ACT extended its lead on the nation, while Tasmania is no longer Australia's least digitally included state or territory. SA is now the lowest ranked state or territory with an ADII score of 57.9, which is 2.1 points below the national average.

Australia's big cities have high levels of digital inclusion, but some rural and regional areas are well behind, including Eyre (45.0), South East SA* (48.6), North Victoria (50.8) and Murray & Murrumbidgee (51.0). These regions have ADII scores at least 9.0 points below the national average of 60.2. Regional cities have higher digital inclusion than country areas, but do not score as well as capital cities.

Overall, the 'Capital–Country gap' narrowed slightly since 2015, from 9.5 points (2015), to 8.5 points (2018). However, there has been substantial fluctuation in the 'Capital–Country gap' across the states and territories over this period. In the past 12 months, the gap narrowed in NSW, Victoria, and WA but has expanded in Queensland and SA.

While national momentum and coordination is required, regional and local initiatives with strong engagement strategies will be central to tackling the geographic and social challenges of digital inclusion.

Addressing the needs of particular communities

The ADII helps us gauge the digital inclusion of particular sociodemographic groups in Australia. The 2018 data reveals a number of groups have very low levels of digital inclusion with scores substantially below the national average (60.2). In ascending order, these groups are: people in Q5 low income households (41.3), older Australians (46.0), people who did not complete secondary school (47.4), people with a disability (49.2), people not in the labour force (52.0) and Indigenous Australians (54.4).

Indigenous Australians living in urban and regional areas also have a low level of digital inclusion (54.4, or 5.8 points below the national average). Their level of digital inclusion has improved by 9.1 points between 2014 and 2018 (outpacing the national average gain of 6.2). ADII general data collection does not extend to remote Indigenous communities.

The ADII research team conducted a supplementary face-to-face digital inclusion survey in the remote indigenous community of Ali Curung in 2018. Although we would caution against statistically generalising the results of this survey to all remote communities, the Ali Curung data suggests that remoteness further diminishes digital inclusion for Indigenous Australians, particularly with regards to access and affordability. Overall, the digital inclusion score for the Ali Curung community is 42.9. This is 17.2 points

lower than the Australian average (60.2) and 11.5 points lower than that recorded by Indigenous Australians in urban and regional areas (54.4).

Consideration should be given to digital inclusion as a key commitment and measurable outcome in the refreshed Closing the Gap agenda with a program of research to measure and monitor digital inclusion specifically in remote Indigenous communities.

Australians with disability identified in the ADII general data collection as people receiving a disability pension³⁹ – have a low level of digital inclusion (49.2, or 11.0 points below the national average). However nationally, the digital inclusion of this group has improved steadily (up by 6.4 points since 2014), slightly outpacing the national average increase over the four years studied (up 6.2 points). The Australians with disability community extends beyond those receiving disability income support and is highly diverse with regards to socio-economic and health status.

In recognition that distinct disability communities are likely to have unique patterns of digital access, affordability, and digital ability, the ADII research team conducted a supplementary online digital inclusion survey with members of the deaf and hard of hearing community (DHH) with connections to Vicdeaf and other national representative bodies in 2018. The supplementary survey data revealed that the DHH community have embraced digital communications, recording Access and Ability Scores significantly above the national internet users average (+12.5 points and +29.8 points respectively). The key digital inclusion concern facing this community is Affordability, where the DHH community trail the national average by 7.7 points. In particular, very high internet expenditure (42% above average) accounts for a sizeable proportion of household income.

While household internet access is increasingly essential to meeting the wide range of social, entertainment, work, and educational needs of family households, there is clearly a digital divide between richer and poorer Australians. The gap between people in Q5 low income households and Q1 high income households has widened since 2014. Single parent families face a range of barriers to providing such access. Overall, single parent families are less digitally included than two-parent families. Their ADII of 56.5 is 10.0 points lower than two-parent families. It is also 3.7 points lower than the national average (60.2).

Nationally mobile-only users experience a relatively high degree of digital exclusion. In 2018, mobile-only users have an overall ADII score of 42.7, some 17.5 points below the national average (60.2). Mobile-only use is linked to socioeconomic factors, with people living in Q5 low income households (29.6%), people with low levels of education (27.2%) and the unemployed (24.0%) all more likely to be mobile-only. Indigenous Australians (35%), people receiving disability pensions (30.6%) and single parents (28.8%) are also more likely to be mobile only.

If the benefits of digital technology are to be shared by all Australians, digital inclusion should be considered an integral part of state and national policy making and strategic planning in relation to the development of the digital economy, including next-generation industries and services

Appendix 1

Methodology

Data collection

The data used to compile the ADII originates from Roy Morgan’s ongoing Single Source face-to-face survey of 50,000 Australians annually⁴⁰. For each 12-month period, ADII calculations are based on a sub-sample of approximately 16,000 respondents who have also completed a product poll booklet. In the extensive face-to-face interviews and product poll, Roy Morgan collects data on internet and technology products owned, internet services used, attitudes relating to technology and the internet, and demographics.

To conduct the Single Source survey, an Australia-wide sample is selected from 550 sampling areas of approximately equal population size. Using strict sampling protocol, each weekend Roy Morgan’s trained researchers interview people in their homes, and directly enter the resulting data into tablets, using computer assisted personal interviewing (CAPI)⁴¹.

All ADII scores are subject to ‘margins of error’, depending mainly on the sample sizes on which they are based⁴².

A full set of data tables for the ADII can be viewed at www.digitalinclusionindex.org.au

Structure of the ADII and sub-indices

To determine the degree of overall digital inclusion in Australia, we measured the level of access to the internet and related products, services, and activities. To help clarify the many factors in play, the ADII is made up of three sub-indices, or dimensions:

Access

Affordability

Digital Ability

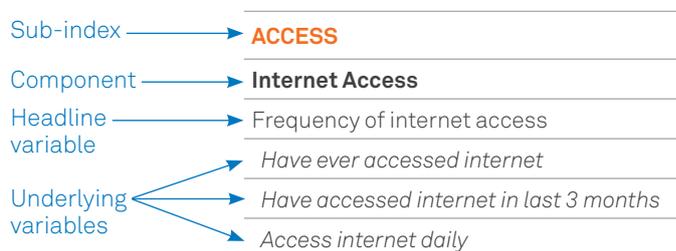
Each of these three sub-indices is made up of a number of *components*, which have themselves been calculated from numerous *variables*. These variables are either sourced directly from the Roy Morgan Single Source database, or derived from the data according to the formulas outlined below.

Variables come in two levels: ‘headline variables’ are thematic composites of ‘underlying variables’ (individual survey questions), and are generally calculated as simple averages.

For example, the underlying variable ‘Have ever accessed internet’ (see Figure A1) feeds into the headline variable ‘Frequency of internet access’, which then feeds into the ‘Internet access’ component, and so on. Conversely, the ‘Frequency of internet access’ headline variable is the average of its three underlying variables (see Figure A1).

Similarly, *components* are simple averages of headline variables. For example, the ‘Internet access’ component is the average of the ‘Frequency of internet access’, ‘Places of internet access’, and ‘Number of internet products’ headline variables. Moving upwards through the hierarchy of the ADII’s structure, the sub-indices and the overall ADII itself are also calculated as simple averages. The structure of the ADII, with a full list of variables, is detailed in Tables A1, A2, and A3. The following diagram is an example of how the sub-indices are structured, with the various elements labelled.

Figure A1: Example of sub-index structure, ADII



First sub-index: Access

The Access sub-index consists of three components:

- **Internet Access**, measured by frequency of access, places of access, and the number of access points.
- **Internet Technology**, including variables related to computers, mobile phones, mobile broadband, and fixed broadband.
- **Internet Data Allowance**, which measures mobile and fixed internet data in terms of whether there is any access at all, relative to a minimum threshold of useful data allowance⁴³, and benchmarks set proportional to national averages⁴⁴.

Table A1: Access sub-index: structure and variables

Internet Access	Internet Technology	Internet Data Allowance
<ul style="list-style-type: none"> • Frequency of internet access: <ul style="list-style-type: none"> - Have ever accessed internet - Have accessed internet in last three months - Access internet daily • Places of internet access: <ul style="list-style-type: none"> - Have accessed internet from home - Have accessed internet away from home • Number of internet products: <ul style="list-style-type: none"> - One or more internet products - Two or more internet products 	<ul style="list-style-type: none"> • Computer technology: <ul style="list-style-type: none"> - Have personal computer or tablet computer in household • Mobile internet technology: <ul style="list-style-type: none"> - Own or use mobile phone - Have mobile internet • Fixed internet technology: <ul style="list-style-type: none"> - Have fixed broadband - Have cable or nbn fixed broadband 	<ul style="list-style-type: none"> • Mobile internet data: <ul style="list-style-type: none"> - Have mobile internet - Have mobile internet data allowance over 1GB - Mobile internet data allowance relative to benchmark • Fixed internet data: <ul style="list-style-type: none"> - Have fixed broadband - Have Fixed Broadband data allowance over 10GB - Fixed Broadband data allowance relative to benchmark

Second sub-index: Affordability

Affordability is a key aspect of digital inclusion, and is made up of two components:

- **Relative Expenditure**, measured as the share of household income spent on internet access (mobile phone, mobile broadband, and fixed broadband), and then related to benchmarks set to national Relative Expenditure quintiles⁴⁵. Those without internet connections are excluded from this measure. Affordability improves as this share decreases. Note that affordability improves as the share of household income spent on access decreases.
- **Value of Expenditure**, calculated as total internet data allowance (mobile phone, mobile broadband, and fixed broadband) per dollar of expenditure on internet access, and then related to benchmarks set to national Value of Expenditure quintiles⁴⁶. Those without internet connections are excluded from this measure. Note that affordability improves as the amount of data allowance received per dollar increases.

Table A2: Affordability sub-index: structure and variables

<p>Relative Expenditure</p> <ul style="list-style-type: none"> • Share of household income spent on internet products relative to benchmark 	<p>Value of Expenditure</p> <ul style="list-style-type: none"> • Internet data allowance per dollar of expenditure relative to benchmark
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Third sub-index: Digital Ability

Digital Ability captures both the confidence with which we use the internet and associated technologies, and the extent to which they are integrated into our lives. As such, the Digital Ability sub-index consists of three components:

- **Attitudes**, measured by responses to five survey questions related to notions of control, enthusiasm, learning, and confidence⁴⁷.
- **Basic Skills**, consisting of six categories: basic⁴⁸, mobile phone⁴⁹, banking⁵⁰, shopping⁵¹, community⁵², and information skills⁵³.
- **Activities**, which mirror the six categories of Basic Skills, but are more advanced: accessing content⁵⁴, communication⁵⁵, transactions⁵⁶, commerce⁵⁷, media⁵⁸, and information⁵⁹.

Table A3: Digital Ability sub-index: structure and variables

<p>Attitudes</p> <ul style="list-style-type: none"> • Computers and technology give me more control over my life • I am interested in being able to access the internet wherever I am • I go out of my way to learn everything I can about new technology • I find technology is changing so fast, it's difficult to keep up with it (negative) • I keep my computer up to date with security software 	<p>Basic Skills</p> <ul style="list-style-type: none"> • General internet skills • Mobile phone skills • Internet banking skills • Internet shopping skills • Internet community skills • Internet information skills 	<p>Activities</p> <ul style="list-style-type: none"> • Streamed, played, or downloaded content online • AV communication via the internet • Internet transaction or payment • Purchased or sold a product online • Created or managed a site or blog • Searched for advanced information
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Data collection – ADII supplementary survey

In 2017/18 the ADII team developed the ADII Supplementary Survey. This online digital inclusion survey can be used to derive digital inclusion index scores (including sub-index and component scorers) comparable to the ADII. The ADII Supplementary Survey consists of the specific questions from the Roy Morgan Single Source survey used to compile the index. The vast majority of these questions are directly transposed. Some questions have minor modifications to ensure they work in an online environment in a manner which produces comparable results to the Single Source method. In-field testing, using a Roy Morgan national representative online panel, confirms that the composition of the ADII Supplementary Survey does not bias results when compared to the ADII. Survey data is captured through an online interface. As this interface runs on mobile devices there is flexibility in how the survey is administered. For instance, it can be administered face-to-face with respondents in outdoor spaces. It should be noted that sample selection will impact results.

- 1 Australian Bureau of Statistics (2018). *Household Use of Information Technology 2016–2017*. Catalogue number 8146.0, Canberra. The survey indicates 2.58 million Australians aged 15 years and over did not access the internet in the past 3 months.
- 2 Digital inclusion has become an increasingly important marker of broader human progress, framed in terms of wellbeing in the United Nations 2000 Millennium Development Goals and sustainable development in the United Nations Sustainable Development Goals. For a discussion of the former, see Eardley, T, Bruce, J & Goggin, G (2009), *Telecommunications and community wellbeing: a review of the literature on access and affordability for low-income and disadvantaged groups*, Social Policy Research Centre, University of New South Wales, Sydney. For a discussion of the latter, see ITU (2017), *Fast-forward progress: Leveraging tech to achieve the global goals*, International Telecommunication Union, Geneva, July.
- 3 Lloyds Bank (2018). *UK Consumer Digital Index*. Lloyds Bank, London.
- 4 The Tech Partnership (2017). *Get Digital Heatmap*. The Tech Partnership, London
- 5 Economist Intelligence Unit (2017). *The Inclusive Internet Index: Bridging digital divides*. The Economist Intelligence Unit for Internet.org (Facebook).
- 6 Australian Bureau of Statistics (2018). *Household Use of Information Technology 2016–2017*. Catalogue number 8146.0, Canberra. The survey is being discontinued as a result of a shift in ABS data collection priorities.
- 7 Australian Bureau of Statistics (2018). *Census of Population and Housing: Consultation on Topics, 2021*. Catalogue number 2007.0, Canberra.
- 8 Australian Communications and Media Authority (2017). *Research Index* www.acma.gov.au/theACMA/Library/researchacma/Research-reports/acma-research-and-publications-1.
- 9 EY Sweeney (2017). *Digital Australia: State of the Nation 2017*. Ernst & Young, www.ey.com.
- 10 Borg, K & Smith, L (2016). *Digital Inclusion - Report of Online Behaviours in Australia 2016*. BehaviourWorks Australia for Australia Post, Melbourne.
- 11 Swinburne Institute for Social Research, Centre for Social Impact, Telstra Corporation Ltd (2015). *Australian Digital Inclusion Index: Discussion Paper*.
- 12 This reflects assumptions as to the general performance of the nbn, notwithstanding cases of poor nbn performance and complaints concerning nbn consumer experiences. The ACCC's Measuring Broadband Australia program produces performance data comparing nbn with ADSL services: see www.accc.gov.au/consumers/internet-phone/broadband-performance-data.
- 13 Roy Morgan Single Source data (April 2017–March 2018) indicates that 7.5% of those with nbn connections did not have fixed broadband 12 months prior, this 'conversion rate' is higher than that for ADSL (4.5%).
- 14 Roy Morgan Single Source data (April 2017–March 2018) indicates that the average data allowance for nbn plans is 619.62GB and 580.60GB for ADSL plans.
- 15 One proxy indicator of this may be the relationship between length of time with current Internet Service Provider and average data allowance. Roy Morgan Single Source data (April 2017–March 2018) shows that the average data allowance increases as the length of time with the ISP decreases.
- 16 Australian Communications and Media Authority (2015). 'ACMA Research Snapshot: Australians get mobile'. www.acma.gov.au; Australian Communications and Media Authority (2017). Communications report 2016-17. Canberra.
- 17 Australian Bureau of Statistics (2018). *Internet Activity, Australia*. Catalogue number 8153.0, Canberra. The survey was conducted in respect of the three months ended 31 December 2017.
- 18 Australian Bureau of Statistics (2016). *National Aboriginal and Torres Strait Islander Social Survey, 2014–15*, Catalogue number 4714.0, Canberra, 27 April. See also Australian Bureau of Statistics (2017). *Census of Population and Housing, 2016*, Indigenous Locations (ILOCs) data, accessible through ABS TableBuilder.
- 19 See Appendix 1 for a description of the ADII Supplementary Survey methodology.
- 20 Given the diversity of remote communities, the Ali Curung survey results are not intended to be representative of remote-living Indigenous Australians.
- 21 Rennie, E., Hogan, E., Gregory, R., Crouch, A., Wright, A., Thomas, J., & Rasch, M. D. (2016). *Internet on the Outstation: The digital divide and remote Aboriginal communities. Theory on Demand*, (19). See pages 152-4 for a useful survey of the existing literature on the prevalence of mobile phone use in remote communities. Rennie, E. (2016). Demic deal-breakers and the statistical imaginary of the digital divide. *AoIR Selected Papers of Internet Research*, 5. Rennie's notion of demic deal-breakers offers a framework for understanding how the "consumer preference for pre-paid billing, as well as practical difficulties associated with satellite internet connections, means that households [in remote communities] are more likely to go without internet than enter into satellite internet contracts" (p.7).
- 22 Rennie, E., Hogan, E., Gregory, R., Crouch, A., Wright, A., Thomas, J., & Rasch, M. D. (2016). *Internet on the Outstation: The digital divide and remote Aboriginal communities. Theory on Demand*, (19). These benefits, however, do not come without concerns. Work by Rennie, Yunkaporta and Holcombe-James (2018) conducted in partnership with Telstra explores some of the tensions arising out of the intersection of digital technologies and Aboriginal forms of governance. Rennie, E., Yunkaporta, T., Holcombe-James, I. (2018). *Cyber safety in remote Aboriginal communities: Final report*. Melbourne: Digital Ethnography Research Centre.
- 23 Broadband for the Bush Alliance (2017). *Proposal to introduce Indigenous Digital Inclusion as a Closing the Gap key performance measure*. Retrieved 2 August 2018 from www.broadbandforthebush.com.au/wp-content/uploads/2018/01/Letter-to-NT-CM-Digital-Inclusion-as-Closing-the-Gap-indicator_20170803_....pdf
- 24 See Appendix 1 for a description of the ADII Supplementary Survey methodology.
- 25 Although we would caution against making statistical generalisations based on this small sample, Deaf and hard of hearing community leaders have indicated that the results match their experiences.
- 26 Figures calculated by applying rates determined in Access Economics (2006) *Listen Hear! The economic impact and cost of hearing loss in Australia*, to current Australian population estimates from Australian Bureau of Statistics (2017). *Australian Demographic Statistics*. Catalogue number 3101.0, Canberra.
- 27 In this report family households are those with dependent children present. There is some variation in how the Australian Bureau of Statistics (ABS) and ADII determine dependency, and thus the number of single parent families. The ABS Census classifies family household dependents as children aged under 15 years and full-time students aged 15-24 years (9% of all families). The ABS *Household Use of Information Technology* survey limits families with dependent children to those aged under 15 years. The ADII classifies family household dependents as those aged under 18 years. The ADII category Single Parent Families is based on survey responses from parents living in a single parent household structure with children aged under 18 years (7% of all families). The ADII category Two-Parent Families is based on survey responses from parents living in a two-parent household structure with children aged under 18 years. All Family Households are the aggregate of single and two-parent families.
- 28 C.f. Australian Institute of Health and Welfare 2017. *Australia's welfare 2017. Australia's welfare series no. 13*. AUS 214. Canberra: AIHW.
- 29 Australian Bureau of Statistics (2017). 2016 Census of population and housing; General community profile, Australia (Cat no. 2001.0). Canberra: ABS. Available: www.censusdata.abs.gov.au/census_services/getproduct/census/2016/communityprofile/036
- 30 Wilkins, R. (2017). *The Household, Income and Labour Dynamics in Australia Survey: Selected Findings from Waves 1 to 15*. Melbourne: Commonwealth of Australia. Available: melbourneinstitute.unimelb.edu.au/hilda
- 31 ADII scores for families in this case study are drawn from the general ADII dataset (Roy Morgan Single Source). In this dataset for 2018 the sample sizes for family types are as follows: Single Parents 386, Two-Parent Families 1888, All Families 2384.
- 32 Australian Government (2018). About myGov. Australian Government. Available: my.gov.au/mygov/content/html/about.html

- 33 Australian National Audit Office (2015). Management of Smart Centres' Centrelink Telephone Services. Commonwealth of Australia. Available: www.anao.gov.au/work/performance-audit/management-smart-centres-centrelink-telephone-services; Sleep, L. & Tranter, K. (2017). The Visiocracy of the Social Security Mobile App in Australia. *International Journal for the Semiotics of Law*, Volume 30, Issue 3, pp 495–514. For examples of consumer frustrations also see reviews of government apps (such as Express Plus Centrelink) on Google Play and the App Store.
- 34 Infocchange and ACCAN (2016). *Social Housing and Broadband: Internet Use and Affordability for Social Housing Residents*, Australian Communications Consumer Action Network, Sydney.
- 35 nbn Co (2017) nbn Corporate Plan 2018–2021, nbn Co, Sydney. See p.38.
- 36 nbn Co release weekly rollout reports that provide details of premise activations for each state - *nbn Co Weekly Progress Report* (www.nbnco.com.au/corporate-information/about-nbn-co/corporate-plan/weekly-progress-report.html). Tasmanian data was extracted from a selection of these reports at the beginning and end of each ADII annual reporting period (April to March) for 2017 and 2018. These point in time results were averaged to provide an indicator of the approximate number of premises activated during the ADII data collection periods for each year.
- 37 nbn Co (2017) *nbn Corporate Plan 2018–2021*, nbn Co, Sydney. See p.38.
- 38 For details of the services switched off see www2.nbnco.com.au/residential/learn/device-compatibility/services-that-will-be-switched-off.html
- 39 Disability support pension (DSP) from Centrelink or the disability pension from the Department of Veterans' Affairs.
- 40 Roy Morgan (n.d.). 'Single Source: the pinnacle of market research'. www.roymorgan.com/products/single-source.
- 41 Roy Morgan adheres to the Code of professional behaviour of ESOMAR and the Australian Market and Social Research Society, the *Federal Privacy Act* and all other relevant legislation. Roy Morgan is certified to the AS/NZS ISO9001 Quality Management Systems standard and the AS ISO 20252 Market, Opinion and Social Research standard.
- 42 As the ADII scores originate from survey data, and are estimates, in each case there will be a margin of error that is dependent on the size of the sample. See Roy Morgan's Margin of Error Reference Table for a general explanation of how margins of error typically relate to survey estimates, based on sample sizes. Roy Morgan (n.d.). 'Margin of Error Table'. Roymorgan.com.
- 43 1GB was chosen for mobile phone and mobile broadband, and 10GB was chosen for fixed broadband, as these were the lowest quanta in the survey data.
- 44 The benchmark was set at 20% above the nationwide average data allowances (recalibrated for each year in the dataset), and respondents with data allowances greater than the benchmark scored 100. For mobile internet data allowance the 2018 benchmark was 8.0GB, while for fixed internet data allowance it was 522GB.
- 45 Respondents without internet connections are excluded from the affordability component of the index. A percentage of household income expended on internet connections is derived for all others. Using the 2016 (April 2015–March 2016) dataset, respondents were ranked using this percentage and divided into five equal groups with the bottom and top percentage recorded for each group establishing the range. The five ranges are 0.01–73%; 0.74–1.13%; 1.14–1.65%; 1.66–2.75%; 2.75% or more. Respondents receive an index score based on the range they fall within as follows: 0.01–73% (100); 0.74–1.13% (75); 1.14–1.65% (50); 1.66–2.75% (25); 2.75% or more (0). Changes in affordability over time are measured against the base year of 2016.
- 46 Respondents without internet connections are excluded from the affordability component of the index. A data allowance per dollar of expenditure is derived for all others. Using the 2016 (April 2015–March 2016) dataset, respondents were ranked using this value and divided into five equal groups with the bottom and top value recorded for each group establishing the range. The five ranges are 0.01–0.1 GB/\$; 0.11–0.7 GB/\$; 0.71–2.6 GB/\$; 2.61–6.8 GB/\$; 6.81 GB/\$ or more. Respondents receive an index score based on the range they fall within as follows: 0.01–0.1 GB/\$ (0); 0.11–0.7 GB/\$ (25); 0.71–2.6 GB/\$ (50); 2.61–6.8 GB/\$ (75); 6.81 GB/\$ or more (100). Changes in affordability over time are measured against the base year of 2016.
- 47 Respondents should agree with these statements to score 100, except for the statement 'I find technology is changing so fast, it's difficult to keep up with it', which should be disagreed with in order to score 100.
- 48 General browsing and email; scores for each of these activities are averaged to arrive at the basic internet skills score.
- 49 Using a mobile phone to access the internet and download an app; scores for each of these activities are averaged to arrive at the mobile phone skills score.
- 50 Checking bank account balance, or viewing online bank statements (either/or).
- 51 Researching a product or services to buy, reading ratings/reviews of products or services, using price comparison websites, or reading online catalogues/classified ads (either/or).
- 52 Social networking (e.g. Facebook, Twitter), business networking (e.g. LinkedIn), online dating (e.g. RSVP), chat rooms, online forums, or reading/commenting on online newspaper articles or blogs (either/or).
- 53 Accessing news/weather/sport, reading newspapers/magazines/celebrity news, searching for maps or directions, traffic or public transport information, travel information and services, or entertainment/restaurants/what's-on information (either/or).
- 54 Streaming, playing, or downloading games, music, radio, video, TV, movies, podcasts, or software/programs.
- 55 Instant messaging (e.g. Google Hangouts), making telephone calls via internet (e.g. Skype, VoIP), or business video conferencing (either/or).
- 56 Conducting banking transactions online, paying bills online, using online payment/money transfer system (e.g. PayPal, BPAY), paying for purchases using a credit card (either/or).
- 57 Purchasing or selling a product online.
- 58 Creating or managing an online journal or blog, registering a website, or creating/managing own website (either/or).
- 59 Searching online for jobs/employment, government information and services, health or medical information, or IT information, or participating in online education (either/or).

Appendix 2

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About the Project Partners

The following partner organisations worked together to create the Australian Digital Inclusion Index and produce this research:

The Digital Ethnography Research Centre, RMIT University

The Digital Ethnography Research Centre (DERC) at RMIT University focuses on understanding a contemporary world where digital and mobile technologies are increasingly inextricable from the environments and relationships in which everyday life plays out. DERC excels in both academic scholarship and in applied work with external partners from industry and other sectors. DERC's research is incisive, interventional and internationally leading. Going beyond the call of pure academia, DERC combines academic scholarship with applied practice to produce innovative research, analysis and dissemination projects.

www.digital-ethnography.com

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Telstra is Australia's leading telecommunications and technology company, offering a full range of communications services and competing in all telecommunications markets. In Australia, Telstra provides 17.6 million retail mobile services, 5.1 million retail fixed voice services and 3.5 million retail fixed broadband services. Telstra's purpose is to create a brilliant connected future for everyone, which recognises the fundamental role the company plays in enabling social and economic inclusion. Telstra has provided products, services and support to enhance digital inclusion for more than a decade through its Access for Everyone and Everyone Connected programs, reducing the barriers to inclusion such as age, income, skill level and location.

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Centre for Social Impact, Swinburne University of Technology

The Centre for Social Impact (CSI) is an independent, not-for-profit research and education collaboration between three of Australia's leading universities: UNSW Sydney, Swinburne University of Technology, and The University of Western Australia. CSI acts as a catalyst for social change through research, education, and leadership development. CSI Swinburne's focus is on developing leaders, organisations, and policy conditions that support progressive social change in the areas of: social innovation; social investment and philanthropy; business and social impact; and measuring and demonstrating social value.

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