



Measuring Australia's Digital Divide

The Australian Digital Inclusion Index 2017

Powered by Roy Morgan Research.



Contents

Foreword	3
Acknowledgements	4
Executive Summary	5
Introduction	7
Australia: the National Picture	
Findings	9
Case Study 1: Digital inclusion of Indigenous Australians	16
Case Study 2: Digital inclusion and disability	18
Case Study 3: Digital inclusion in Geelong, Newcastle, and Townsville	20
Case Study 4: Mobile-only Australians	22
State and Territory Findings	
New South Wales	24
Victoria	27
Queensland	30
Western Australia	33
South Australia	36
Tasmania	38
Australian Capital Territory	40
Northern Territory	41
Conclusion	42
Appendix	
1. Methodology	43
2. References	46
About the Project Partners	47

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.

Suggested citation: Thomas, J, Barraket, J, Wilson, C, Ewing, S, MacDonald, T, Tucker, J & Rennie, E, 2017, *Measuring Australia's Digital Divide: The Australian Digital Inclusion Index 2017*, RMIT University, Melbourne, for Telstra.

DOI: www.dx.doi.org/10.4225/50/596473db69505

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

Email us: info@digitalinclusionindex.org.au

Follow us on Twitter: @digInclusionAU

Join the conversation: #digitalinclusionAU

The text in this report (except the back-cover text, and any logos) is licensed under the Creative Commons Attribution – Non Commercial – Share Alike 4.0 International licence as it exists on 20 July 2017. See: <https://creativecommons.org/licenses/by-sa/4.0> All other rights reserved.

Foreword

Telstra



In today's world, digital technologies play a central and empowering role in our lives. Being connected is not just an added extra, but an increasingly integral part of daily life.

Yet today, around three million Australians are still not online. That's three million Australians who are missing out on the education, health, social, and financial benefits that come with being connected.

For businesses and governments, the benefits and need to digitise are overwhelming. In turn, digital inclusion has become increasingly fundamental to participation in economic and social life.

But with an increasing number of essential services and communications going digital, unless action is taken, the 'digital divide' will continue to widen.

That is why Telstra has partnered with RMIT University, the Centre for Social Impact Swinburne, and Roy Morgan Research to create the Australian Digital Inclusion Index.

The Index, which was first published in 2016, benchmarks Australia's current rates of digital inclusion, in order to inform the course for future action.

In this second report, we see that while digital inclusion in Australia is improving, the gaps between digitally included and excluded Australians are substantial and widening.

This issue is becoming urgent, and addressing it will require a national conversation.

Telstra is proud to be a part of this conversation, and it is my sincere hope and belief that the Index will play an important role in driving greater digital inclusiveness across Australia.

Andrew Penn

CEO
Telstra



Acknowledgements

The research team would like to thank the many people and organisations that have made this second 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.

We wish to acknowledge and thank our project partners. We thank Telstra for supporting and enabling this research – in particular, Nancie-Lee Robinson, Robert Morsillo, and Abigail Brydon for sharing their knowledge, expertise, and good advice. We also thank RMIT University and Swinburne University of Technology for their ongoing support, and our colleagues at Roy Morgan Research for working so hard to make the ADII a reality.

The research team was supported by a highly experienced Research Advisory Committee. We thank the members for the valuable insights and guidance they brought to the project:

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

Dr Lisa O'Brien, CEO, The Smith Family

Brendan Fitzgerald, GM Digital Inclusion, Infoxchange

Linda Caruso, Executive Manager, Australian Communications and Media Authority (ACMA)

Sue McKerracher, CEO, Australian Library & Information Association (ALIA)

Roland Manderson, Deputy CEO, Anglicare Australia

Tim O'Leary, Chief Sustainability Officer, Telstra

Associate Professor Amanda Third, Western Sydney University

Thank you to everyone who provided comments and feedback on the 2015 discussion paper and 2016 report. We wish to acknowledge the work undertaken by the authors of the four case studies featured in this report: Julie Tucker (Australians with disability and regional cities case studies), Associate Professor Ellie Rennie (Indigenous Australians), and Professor Julian Thomas (mobile-only Australians). Our thanks also to Professor Gerard Goggin (University of Sydney) for his timely comments on the disability case study.

We also thank our research colleagues – particularly Yee Man Louie, Hannah Withers, and Dr Meg Mundell – for sharing their knowledge and expertise, and acknowledge their ability to handle multiple deadlines with grace and humour. Finally, we thank our colleagues at the Digital Ethnography Research Centre (RMIT University) and the Centre for Social Impact (Swinburne University of Technology) for their advice and valuable support.

The research team

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

Professor Jo Barraket, Swinburne University of Technology

Dr Scott Ewing, Swinburne University of Technology

Dr Chris Wilson, RMIT University

Associate Professor Ellie Rennie, RMIT University

Julie Tucker, Swinburne University of Technology

Executive Summary

Australians go online to access a growing range of education, information, government, and community services. Increasingly, they also participate in online communities and create digital content. But some people are missing out on the benefits of connection. 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.

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

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 four-year period (2014, 2015, 2016, and 2017). Higher scores mean greater digital inclusion. This new ADII report incorporates data collected up to March 2017 and updates our findings from 2016.

Overall, digital inclusion is growing in Australia

Australians are spending more time – and are doing more – online. Since 2014, when data was first collected, Australia's overall digital inclusion score has improved by 3.8 points, from 52.7 to 56.5. In 2016–2017 alone, Australia's score rose by 2.0 points, from 54.5 to 56.5. Scores for every state and territory also increased over this period. While their individual scores increased by varying amounts, the relative ranking of states and territories remains unchanged since the 2016 report.

Table 1: Ranked scores for states and territories (ADII 2017)

Rank	State/Territory	ADII Score	Points change since 2016	Ranking change since 2016
1	ACT	59.9	+0.1	–
2	Victoria	57.5	+1.7	–
3	New South Wales	57.4	+2.5	–
4	Northern Territory*	56.9	+2.4	–
5	Western Australia	56.2	+2.1	–
6	Queensland	55.3	+1.8	–
7	South Australia	53.9	+2.4	–
8	Tasmania	49.7	+1.6	–
	Australia	56.5	+2.0	–

* Sample <100, treat with caution. **Source:** Roy Morgan Research, April 2016–March 2017

The gaps between digitally included and excluded Australians are substantial and widening

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 still a 'digital divide' between richer and poorer Australians.

In 2017, people in low income households have a digital inclusion score of 41.1, which is 27 points lower than those in high income households (68.1). Worryingly, the gap between people in low and high income households has widened over the past four years, as has the gap between older and younger Australians. Particular geographic communities are also experiencing digital exclusion. Tasmania remains Australia's least digitally included state on 49.7 (6.8 points below the national average), followed by South Australia on 53.9 (2.6 points below).

Access continues to improve

Nationally, Digital Access has improved steadily over the past four years, from 62.2 in 2014 to 69.6 in 2017. Australians are accessing the internet more often, using an increasingly diverse range of technologies, and with larger data plans than ever before.

Digital Ability remains an area for further improvement

Nationally, all three components of Digital Ability have improved over time: Attitudes (up 4.1 points since 2014), Basic Skills (up 6.1 points), and Activities (up 4.2). However, all three have risen from a low base. Digital Ability remains an important area for attention for policy makers, business, education, and community groups interested in improving digital inclusion.

Affordability remains a challenge for some excluded groups, although value has improved

Affordability is the only sub-index to have declined since 2014, despite a slight recovery in the preceding 12 months. While the value of internet services has improved, households are spending a growing proportion of their income on them (from 1% in 2014 to 1.19% in 2017). Thus, despite increasing value, Australia's overall Affordability score has fallen. This trend is reason for concern, particularly for people on low incomes.

Mobile-only users are less digitally included

More than four million, or one in five, Australians access the internet solely through a mobile device. This means they have a mobile phone or internet dongle with a data allowance, but no fixed connection. Mobile-only use is linked with socioeconomic factors, with people in low income households (29.8%), those who are not employed (24.0%), and those with low levels of education (27.6%) more likely to be mobile-only. Despite the benefits of mobile internet, this group is characterised by a relatively high degree of digital exclusion. In 2017, mobile-only users have an overall ADII score of 42.3, some 14.2 points below the national average (56.5).

Table 2: Ranked scores for groups with low digital inclusion (ADII 2017)

Rank	Select Demographic	ADII Score	Points change since 2016	Ranking change since 2016
1	Household Income Q5 (Under \$35k)	41.1	+1.9	–
2	Age 65+ years	42.9	+1.4	–
3	Disability	47.0	+2.2	↑1
4	Less Than Secondary Education	47.4	+2.7	↓1
5	Household Income Q4 (\$35–60k)	49.3	+2.9	–
6	Indigenous Australians	49.5	+2.8	–
7	Unemployed	50.2	+2.2	–
8	Age 50–64 years	54.0	+1.6	–
9	Secondary Education	57.1	+1.6	–
10	Household Income Q3 (\$60–100k)	57.5	+1.5	–
Australia		56.5	+2.0	–

Source: Roy Morgan Research, April 2016–March 2017

The ‘age gap’ is substantial and widening

People aged 65+ are Australia’s least digitally included age group (42.9, or 13.6 points below the national average). This ‘age gap’ has been steadily widening since 2015 (by approximately 0.5 points each year). As we explain in the section on older Australians (see p. 14), it is important to note the differences that exist amongst the diverse 65+ age group.

Women are less digitally included, particularly those aged 65+

Overall, Australian women have an ADII score 2.0 points below the score for men. While the gap between men and women is small in younger age cohorts (0.8 points for people aged 14–24; 1.0 points for those aged 25–34), the gap widens to 2.9 points in the 35–49 age group, and is largest among those aged 65+ (3.3 points).

For people with disability digital inclusion is low, but improving

Australians with disability have a low level of digital inclusion (47.0, or 9.5 points below the national average). However, nationally, their inclusion has improved steadily since 2014 (up 5.2 points), outpacing the national average increase over that period (3.8 points). It is important to note that the ADII data defines Australians with disability as those who are receiving either the disability support pension (DSP) from Centrelink, or a disability pension from the Department of Veterans’ Affairs. The ADII results therefore represent outcomes for a distinct subset of the wider community of Australians with disability.

Indigenous digital inclusion is low, but improving

Indigenous Australians also have low digital inclusion (49.5, or 7.0 points below the national average). However, their ADII score has improved by 4.5 points over four years (outpacing the national average gain of 3.8). It is important to note that the ADII data collection did not extend to remote Indigenous communities.

Some Australians are particularly digitally excluded

The ADII points to several sociodemographic groups that are Australia’s most digitally excluded in 2017, with scores well below the national average (56.5). In ascending order, these groups are: people in low income households (41.1), people aged 65+ (42.9), people with a disability (47.0), people who did not complete secondary school (47.4), Indigenous Australians (49.5), and people not in paid employment (50.2).

Geography plays a critical role

The ADII reveals substantial differences between rural and urban areas. In 2017 digital inclusion is 7.9 points higher in capital cities (58.6) than in country areas (50.7). The overall ‘Capital–Country gap’ has narrowed slightly since 2015, from 8.5 (2015), to 8.3 (2016), to 7.9 (2017). However, this is not reflected in all states and territories. While South Australia, Western Australia, and Queensland narrowed the gap between capital city and country residents, the gap widened in Victoria, New South Wales, and Tasmania.

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.

At its heart, digital inclusion is about social and economic participation

However, these benefits are not being shared equally: 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 (2016)¹ shows around three million Australians

are not online. These Australians are at risk of missing out on the advantages and assistance digital technology can offer.

As the internet becomes the default medium for everyday exchanges, information-sharing, and access to essential services, the disadvantages of being offline grow greater. Being connected is fast becoming 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. At its heart, digital inclusion is about social and economic participation: using online and mobile technologies to improve skills, enhance quality of life, educate, and promote wellbeing across the whole of society.

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 Research, the ADII has been created through a partnership between RMIT University, Swinburne University of Technology, and Telstra. In setting out the 2017 data and findings, this report provides an update on the most detailed snapshot yet of digital inclusion across Australia.

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 first iteration of the ADII, 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 this country.

Measuring digital inclusion

Digital inclusion poses both a complex challenge and an important goal – one that calls for a coordinated effort from multiple organisations, across many sectors.

If the benefits of digital technology are to be shared by everyone, barriers to inclusion must first be identified and tackled. 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 the 2017 Digital Economy and Society Index (DESI)², 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. In the UK, the Digital Inclusion Outcomes Framework (DIOF) tracks digital inclusion, with a focus on improving access, internet use, skills and confidence, and motivation.³

In Australia, a broad measure of digital inclusion is captured by the Australian Bureau of Statistics' biennial Household Use of Information Technology (HUIT) survey⁴.

The ADII focuses on household and personal use of digital technologies. Existing research addressing other aspects of connectivity includes the EY Digital Australia State of the Nation report⁵, which explores factors driving digital engagement in a business context, and a joint survey by Infoxchange, Connecting Up, and TechSoup New Zealand⁶, examining digital technology in the not-for-profit sector. The Australian Communications and Media Authority (ACMA) also publishes regular research on the digital economy.⁷

Methodology in brief

Digital inclusion is a complex, multi-faceted issue that includes such elements as access, affordability, usage, skills, and relevance. To inform the design of the ADII, a Discussion Paper was publicly released in September 2015, and responses sought. Wider input was encouraged via a website, Twitter account, and hash tag.

Feedback showed a clear desire for highly detailed geographic and demographic data. In response, we have worked with Roy Morgan Research 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. In these extensive face-to-face interviews, 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.

Readers should note that the historical ADII results presented in this 2017 report (2014, 2015, and 2016) may differ slightly from those published in the 2016 report. This is the result of small refinements to some of the variables underlying the ADII. The 2017 and revised historical data are available at 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 up 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
- owns multiple internet products, including a PC or tablet
- owns a mobile phone, with data, on the 4G network
- has a fixed broadband connection (cable or NBN)
- 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	< 50	55-65	> 70
AFFORDABILITY	< 40	45-55	> 60
DIGITAL ABILITY	< 40	45-55	> 60
DIGITAL INCLUSION INDEX	<45	50-60	> 65

Source: Roy Morgan Research, April 2016–March 2017

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.

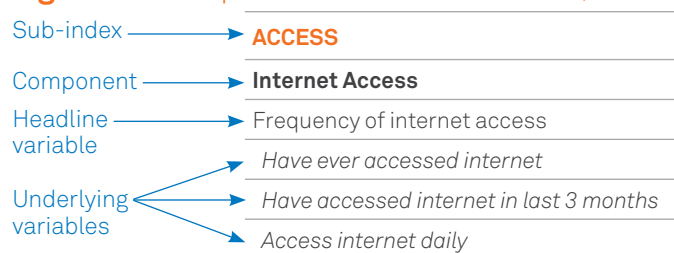
The **Digital Ability sub-index** has *three components*:

- **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



Source: Roy Morgan Research, April 2016–March 2017

Our full 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

Reading the data

- **Timeframe:** data has been collected for four years to date: 2013–2014, 2014–2015, 2015–2016, and 2016–2017. 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, treat with caution; **Sample size <50, treat with extreme caution.
- **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.
- **Sociodemographic groups:** nationally and for each state, data is presented according to income, employment, education, and age. Data is also provided for people with disability, Aboriginal and Torres Strait Islanders (listed as 'Indigenous Australians' in the tables), and people who speak a language other than English at home (LOTE).
- **Income** is presented in five household income 'quintiles' (brackets), 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:** the group 'people not in paid employment' (listed in the tables as 'Employment: None') includes people who are unemployed, retired or engaged in home duties, non-working students, and other non-workers.
- **Age:** scores are captured across five different age brackets, from people aged 14–24 years to people aged 65+.
- **Disability:** in the ADII data, people with disability are defined as those who receive either the disability support pension (DSP) from Centrelink, or a disability pension from the Department of Veterans' Affairs.
- **Education** is divided into three levels: Tertiary (degree or diploma), Secondary (completed secondary school), and Less than Secondary (did not complete secondary school).
- **Relative Expenditure:** this component of the Affordability sub-index is based on the share of household income spent on internet access. Since Affordability improves as this share decreases, counterintuitively, the Relative Expenditure measure will increase when that occurs. And vice versa: an increase in the share of income spent on internet services corresponds to a decrease in the Relative Expenditure measure.

Australia: The National Picture

Findings

The 2017 ADII reveals a wealth of information about digital inclusion in Australia. At a national level, digital inclusion is steadily increasing. Over the four years from 2014 to 2017, we have seen marked improvements in some dimensions of the ADII – for example, a steady rise in overall Access.

In general, wealthier, younger, more educated, and urban Australians enjoy much greater digital inclusion

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

52.7 in 2014, to 56.5 in 2017 (a 3.8-point increase over four years). Since the release of the 2016 ADII report, the national score has risen by 2.0 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, and urban Australians enjoy much greater digital inclusion.

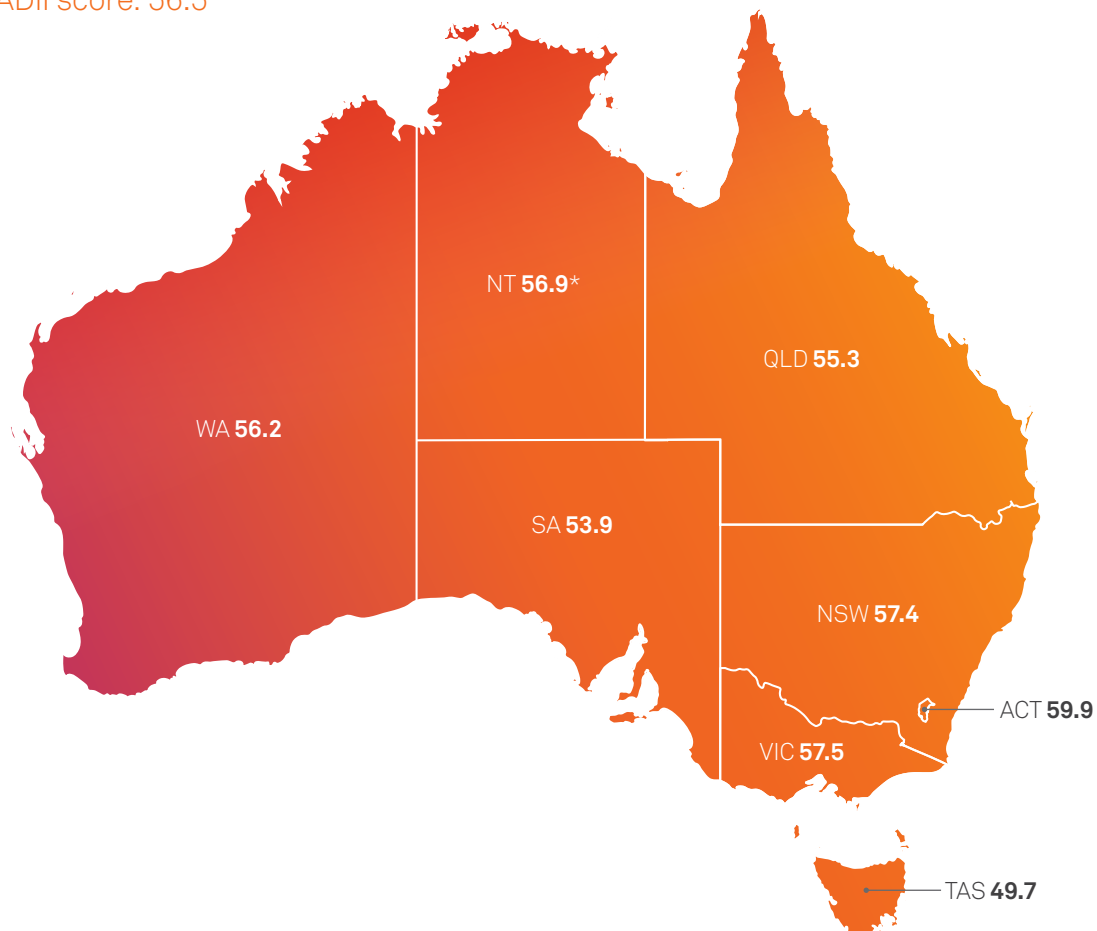
All over the country, digital inclusion is clearly influenced by differences in income, education levels, and the geography of socioeconomic disadvantage. Some Australian communities are falling further behind. For example, the gap between people in low and high income households is growing, as is the gap between older and younger Australians.

We also see some interesting regional variations over the four years to 2017. For example, the Australian Capital Territory (ACT) has the highest level of digital inclusion (59.9), although the gap between the ACT and other states and territories is narrowing. New South Wales (NSW, on 57.4) recorded the largest improvement of all states and territories over the past year (2.5 points) and is now just 0.1 points behind Victoria (57.5). Tasmania’s score recovered in 2016–2017 (rising 1.6 points, from 48.1 to 49.7), following a decline in 2015–2016, but its increase did not keep pace with the national score.

Since 2014, four states or territories have outpaced the Australia-wide increase of 3.8 points over four years: NSW and Victoria (both up 4.2 points), and Northern Territory (NT) and South Australia (SA) (both up 3.9 points). By contrast, Western Australia (WA, up 3.3), Queensland (up 3.2), ACT (up 1.8), and Tasmania (up 0.9) did not keep pace with the national increase.

Australia: The national picture 2017

National ADII score: 56.5



*Sample size <100, exercise caution in interpretation.

Source: Roy Morgan Research

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 have, 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 actually 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 62.2 in 2014 to 69.6 in 2017) and Digital Ability (from 42.4 in 2014 to 47.3 in 2017). Although there was some improvement in the Affordability score in the year to 2017, from 2014 to 2017 this score has declined from 53.5 to 52.7. Reasons for the decline in Affordability are outlined in greater detail later on in this report.

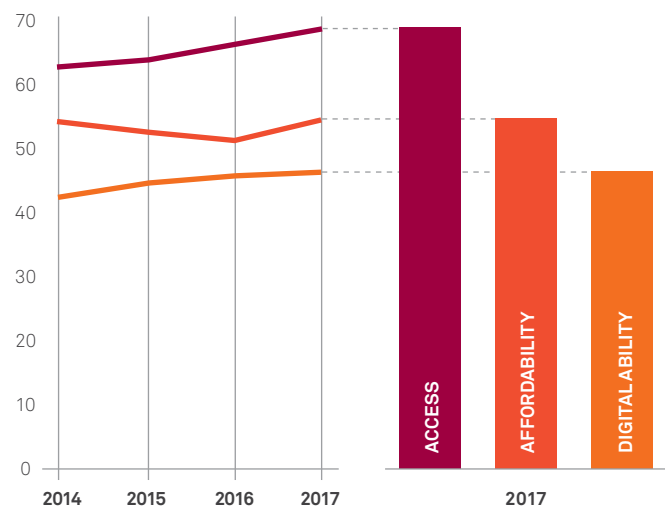
On a national scale, Access is relatively strong while Digital Ability is relatively weak. Affordability may cause particular concern in the case of digitally excluded groups. There is scope for improvement across all three dimensions of the ADII, but Digital Ability appears to present the greatest opportunity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

Table 4: Australia: Sub-index scores over time (ADII, 2014–2017)

Australia	2014	2015	2016	2017
ACCESS	62.2	63.5	66.2	69.6
AFFORDABILITY	53.5	52.0	51.2	52.7
DIGITAL ABILITY	42.4	44.6	46.0	47.3
DIGITAL INCLUSION INDEX	52.7	53.4	54.5	56.5

Source: Roy Morgan Research, April 2016–March 2017

Figure 2: Australia: Sub-index trends over time (2014–2017)



Source: Roy Morgan Research, April 2016–March 2017

Access

All three components of the Access sub-index have improved steadily. The Internet Access measure 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, and 85.3 in 2017). The Internet Technology and Internet Data Allowance scores both started from lower bases and have steadily improved over the four years. The national Internet Technology score rose from 62.3 in 2014 to 72.1 in 2017 (with scores of 64.7 and 68.6 in the two intervening years), while the Internet Data Allowance score rose from 41.6 in 2014 to 51.2 in 2017 (with scores of 42.4 and 45.5 in the two intervening years).

This reflects several developments over the past four years: improvements to mobile and fixed network infrastructure; the proliferation of connected consumer devices, especially smart phones; and growing demand for data as Australians spend more time, and do more things, online.

Affordability

The Affordability measure is the only dimension of the ADII to have registered a decline nationally since 2014, although it made a slight recovery in 2016–2017, scoring 52.7 (up from 51.2 in 2016, but remaining below 2014's score of 53.5).

This decline in Affordability does not simply reflect rising costs. In fact, internet services are becoming less expensive. The catch is Australians are spending more on them. Nationally, Value of Expenditure – a key component of the Affordability measure – has increased steadily over four years (from 51.0 in 2014, to 58.5 in 2017). The cost per gigabyte of data continues to fall, but we are spending more time online, and more money on internet services. While the value of these services has increased, that's been offset by the growing share of household income devoted to them (up 0.19% since 2014). The result of this complex dynamic is an overall decline in Affordability.

This higher spending likely reflects the growing importance of the internet in everyday life. As noted in the 2016 ADII report, Relative Expenditure on internet access has continued to rise. This translates to a declining score (from 56.0 in 2014 to 46.8 in 2017). If Affordability continues to fall it will have a negative effect on the digital inclusion of Australians on lower incomes because they have less discretionary income to spend. For most of Australia's more digitally excluded groups, the Affordability score gap has widened in 2016–2017.

Digital Ability

All three components of Digital Ability have improved steadily over time. The Attitudes sub-index score now stands at 50.1 (up from 46.0 in 2014), the Basic Skills score is at 53.3 (up from 47.2 in 2014), and the Activities score is 38.4 (up from 34.2 in 2014). Despite the fact that the three components are rising from a low base, the rate of improvement has slowed over the four years.

These results reflect the rapid pace of change in digital technologies, the emergence of new applications, and the proliferation of new devices and online services. The data shows that while Australians report high interest in using the internet, they also find it hard 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

Our data reveals significant differences between rural and urban areas. This 'spatial digital divide' (referred to as the 'Capital–Country gap') is evident across all three sub-indices – Access, Affordability, and Digital Ability.

The ADII score for rural Australians is 50.7, compared with 58.6 for those residing in Australia's capital cities, a gap of 7.9 points. The overall 'Capital–Country gap' has narrowed slightly over the past three years, from 8.5 (2015), to 8.3 (2016) to 7.9 (2017), but still remains wider than its 2014 level (7.5). This trend is not

Geography plays a critical role in the uneven distribution of digital inclusion in Australia

consistent across the three sub-indices. The Access gap for Capital–Country areas has narrowed each year (from 8.6 in 2014 to 7.4 in 2017). The Affordability gap has widened over that period, with only a slight recovery this past year.

The Digital Ability gap has narrowed since 2015 (from 9.6, to 7.8 in 2017), but still remains higher than its 2014 level (7.5).

In 2017, the ranking of states and territories based on ADII scores remains unchanged from the 2016 report. ACT remains the highest-performing state or territory, with a score of 59.9. But ACT's lead is narrowing, with both Victoria and NSW now within 2.5 points of its score. In 2016 ACT's score of 59.8 was 4.0 points above Victoria and 4.9 points above NSW. Tasmania remains the least digitally included state or territory (on 49.7) and the gap between Tasmania's score and the national average has widened since 2016. SA remains the second least digitally included state or territory (on 53.9), but unlike Tasmania, the gap between SA's score and the national average has narrowed (from 3.0 to 2.6 points).

Australia's least digitally included regions, in ascending order, are: Burnie and Western Tasmania* (44.1), North West Queensland* (45.9), North Victoria (46.5), East Victoria (47.0), Launceston and North-East Tasmania (47.7), and North West Victoria (48.2). These regions have ADII scores at least 15% below the national average of 56.5.

Table 5: Australia: Digital inclusion by geography (ADII 2017)



*Sample size <100, exercise caution in interpretation. **Source:** Roy Morgan Research, April 2016–March 2017

Digital inclusion in regional centres

The ADII provides data for a number of regional centres. Table 6 (right) shows the ADII scores for a number of these communities. With the exception of Geelong, the digital inclusion scores for these regional centres are lower than the Australia-wide average for capital cities. The Sunshine Coast (53.9) has the lowest score of the regional communities profiled here, but has narrowed the gap with the national score slightly since 2016. Wollongong, which had the highest score of the regional centres reported in 2016, did not keep pace with the improvements in other regions and actually experienced a slight decline in its score. By contrast, in 2017 Geelong experienced a substantial improvement in digital inclusion, with increased scores across all three sub-indices.

The variation between regional centres is a significant finding of the ADII. In Case Study 3 (p. 20) we examine digital inclusion in three regional centres – Geelong, Newcastle, and Townsville – in more detail. There is scope for further research into the factors contributing to digitally inclusive regional centres.

Table 6: scores for select regional centres (ADII 2017)

Regional centre	Digital Inclusion Index
Geelong	58.7
Gold Coast	57.2
Gosford & Wyong	56.9
Townsville	56.7
Newcastle	55.5
Wollongong	55.3
Cairns*	54.9
Sunshine Coast	53.9
Capital Cities	58.6
Rural	50.7

*Sample size <100, exercise caution in interpretation.

Source: Roy Morgan Research, April 2016–March 2017



Demography: digital inclusion and socioeconomic groups

Income, employment and education

The ADII illuminates the social and economic aspects of digital inclusion in Australia

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 2017, individuals in households with an annual income of less than \$35,000 recorded an ADII score of

41.1. This is 27 points lower than those living in households with an income over \$150,000 and 15.4 points below the national average score.

Looking at the Affordability measure in the context of household income, people in the lowest income bracket spent a substantial proportion of that income on network access (approximately 3.5%), which translated into a Relative Expenditure score of 25.5. By contrast, those in the highest household income bracket spent less than 1% of their household income on network access, for a Relative Expenditure score of 68.2. There was also a significant gap in Digital Ability between those in low and high income households (33.5 versus 58.4).

Despite a high base, those in the top household income quintile recorded the largest ADII gain of all quintiles over the four-year

period from 2014–2017 (4.5 points). While the digital inclusion of people in Q5 income households increased over that period (up 3.3 points), it did not keep pace with the national average increase (3.8 points), which indicates that the gap is widening for this group.

There is also a clear ‘employment gap’ in digital inclusion. In 2017 the ADII score for people not in paid employment is 50.2 (6.3 points below the national average), while for full-time workers the figure is 62.1 (5.6 above the national average). The gap between the not-employed and full-time employed groups, which had been widening from 2014–2016, narrowed marginally in 2016–2017 (from 12.3 to 11.9).

The ‘education gap’ highlighted in the 2016 report remains significant, despite a slight contraction. People who did not complete secondary school scored 47.4 (9.1 points below the national average). Those with a secondary education scored 57.1 (slightly above the national average), while tertiary-educated people scored 61.6 (5.1 points above the national average).

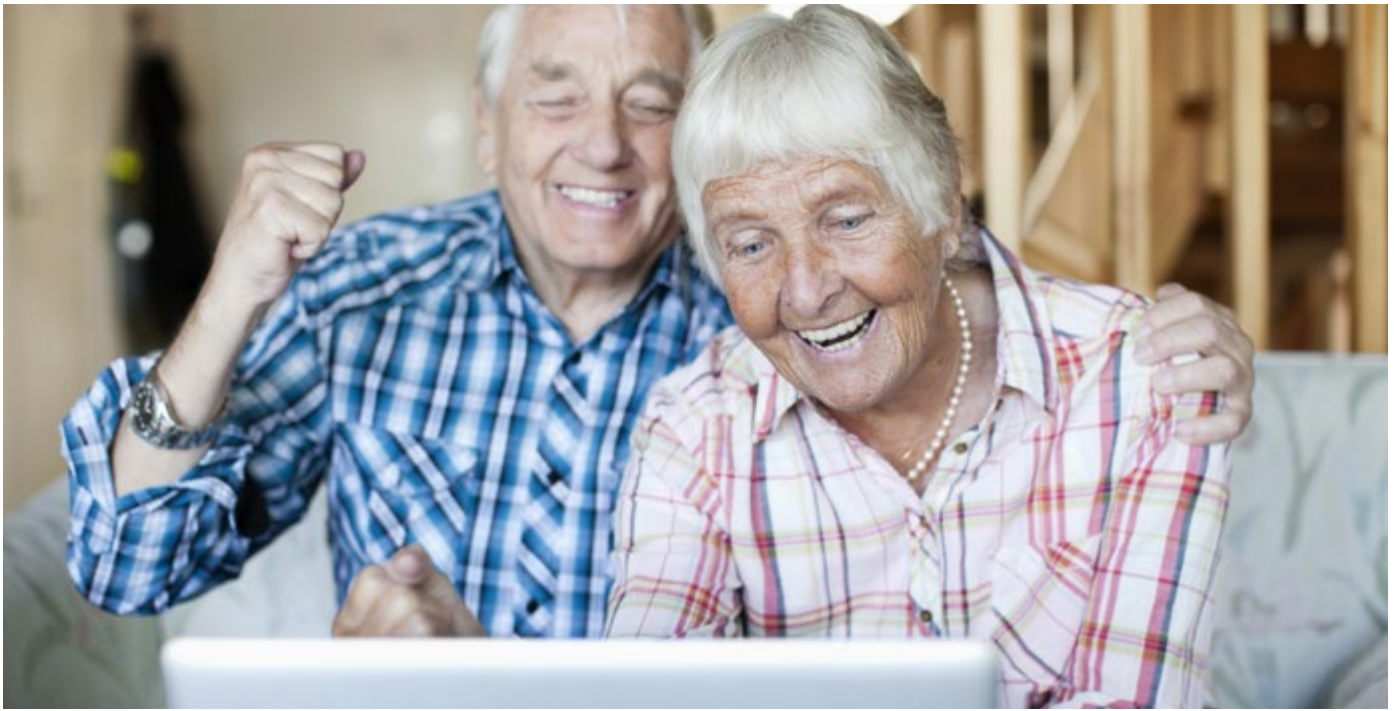
Gender

Women have an ADII score 2.0 points below that of men in Australia, with the greatest difference visible in Access and Affordability. The gender data also reveals a definite age dimension. While the gap between men and women is marginal in younger age cohorts (0.8 points for people aged 14–24 years and 1.0 points for those aged 25–34), it expands to 2.9 points in the 35–49 year cohort, and is greatest amongst those aged 65+. It is in the 50–64 year age groups that the gender gap is at its narrowest (0.2 points).

Table 7: Gender and age: scores for women and men (ADII 2017)

	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+	
2017													
ACCESS													
Internet Access	85.9	84.9	90.2	90.4	91.1	91.2	92.2	91.5	83.8	84.6	70.1	66.6	
Internet Technology	73.1	71.2	75.6	74.5	77.8	76.8	78.0	76.9	71.4	70.3	61.1	57.4	
Internet Data Allowance	53.5	49.1	56.3	54.2	63.0	60.0	62.4	56.8	49.0	45.9	34.4	29.0	
	70.8	68.4	74.0	73.0	77.3	76.0	77.6	75.1	68.1	66.9	55.2	51.0	
AFFORDABILITY													
Relative Expenditure	47.7	46.0	52.5	49.8	42.9	41.8	47.1	44.6	47.7	46.3	48.2	48.2	
Value of Expenditure	59.7	57.4	61.3	60.7	64.5	60.8	66.8	64.0	56.8	57.8	47.2	42.9	
	53.7	51.7	56.9	55.3	53.7	51.3	57.0	54.3	52.3	52.1	47.7	45.5	
DIGITAL ABILITY													
Attitudes	54.1	46.2	68.4	57.3	63.7	55.4	58.4	49.2	44.9	40.7	35.6	31.3	
Basic Skills	52.0	54.5	46.8	55.2	62.8	69.6	64.1	64.6	48.6	52.3	34.0	30.5	
Activities	38.2	38.6	39.2	42.5	47.6	51.1	46.9	45.0	32.3	35.0	23.2	20.4	
	48.1	46.5	51.5	51.7	58.0	58.7	56.5	52.9	42.0	42.7	30.9	27.4	
DIGITAL INCLUSION INDEX	57.5	55.5	60.8	60.0	63.0	62.0	63.7	60.8	54.1	53.9	44.6	41.3	

Source: Roy Morgan Research, April 2016–March 2017



Older Australians

Digital inclusion tends to decline as age increases, particularly for older Australians

Digital inclusion tends to decline as age increases, particularly for older Australians (those aged 65+). People aged 14–49 years all have similar ADII scores, ranging from 60.4 to 62.5 (roughly 5 points above the national average). Those aged

65+ are the least digitally included age group in Australia, with a score of 42.9 (13.6 points below the national average), and the gap between this group and younger Australians is widening.

A closer look at the 65+ category reveals a pattern of declining digital inclusion with increasing age. While scores for both Access and Digital Ability have increased across all age brackets in the 65+ category over the past four years, the cohort aged 75–79 years has made the largest proportional progress. One issue faced by those 65+, as with other groups on relatively low incomes, is the rising proportion of income spent on network access.

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 70–74.

Table 8: Older Australians: women compared to men, age breakdowns (ADII 2017)

	Gender and Age: Years									
	Men 65+	Women 65+	Men 65–69	Women 65–69	Men 70–74	Women 70–74	Men 75–79	Women 75–79	Men 80+	Women 80+
2017										
ACCESS										
Internet Access	70.1	66.6	79.2	77.0	73.0	66.5	64.3	60.9	50.4	44.9
Internet Technology	61.1	57.4	68.5	65.5	63.8	58.1	56.1	52.7	44.4	38.9
Internet Data Allowance	34.4	29.0	42.8	37.1	35.8	29.2	28.7	23.1	19.5	13.4
	55.2	51.0	63.5	59.9	57.5	51.3	49.7	45.6	38.1	32.4
AFFORDABILITY										
Relative Expenditure	48.2	48.2	43.5	41.0	44.6	45.5	49.6	51.9	65.3	69.2
Value of Expenditure	47.2	42.9	53.0	49.9	49.2	43.9	44.8	38.6	32.7	26.8
	47.7	45.5	48.2	45.4	46.9	44.7	47.2	45.2	49.0	48.0
DIGITAL ABILITY										
Attitudes	35.6	31.3	41.3	38.1	37.5	31.0	30.6	26.2	24.4	19.1
Basic Skills	34.0	30.5	42.8	40.2	35.0	29.6	28.3	23.8	18.7	12.9
Activities	23.2	20.4	29.1	26.3	23.4	20.5	20.1	16.0	13.1	8.8
	30.9	27.4	37.7	34.9	32.0	27.0	26.3	22.0	18.7	13.6
DIGITAL INCLUSION INDEX	44.6	41.3	49.8	46.7	45.5	41.0	41.1	37.6	35.3	31.3

Source: Roy Morgan Research, April 2016–March 2017

Australians with Disability

For this group, the gap relative to the national average is narrowing, with gains evident in Access and Digital Ability. However, the gap in Affordability is widening

In 2017, Australians with disability have relatively low digital inclusion, registering an ADII score of 47.0 (9.5 points below the national score). For this group, the gap relative to the national average is narrowing, with gains in Access and Digital Ability. However, the gap in Affordability is widening, based on an increase in the portion of household income

spent on network access. Case Study 2 (p. 18) explores this area more fully. It is important to note that the survey used for the ADII defines Australians with disability as those who receive either the disability support pension (DSP) or the disability pension. The ADII results therefore represent outcomes for a distinct subset of the wider community of Australians with disability.

Indigenous Australians

Indigenous Australians have a similarly low level of digital inclusion, with an ADII score of 49.5 (7.0 points below the national score). While the gap between Indigenous Australians and the overall national population has narrowed over the past four years, it is important to note the 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. 16) looks in more detail at the results for Indigenous Australians.

Australians who speak a Language Other Than English (LOTE) at home

LOTE Australians have a relatively high level of digital inclusion, with an ADII score of 59.3 (2.8 points above the national average). The LOTE community is a highly diverse group and care should be taken in interpreting findings.

Table 9: Australia: Digital inclusion by demography (ADII 2017)



Source: Roy Morgan Research, April 2016–March 2017

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

Digital inclusion of Indigenous Australians

The ADII yields important insights into the digital inclusion of Indigenous Australians living in urban and regional areas. While the ADII does not include data for those living in remote areas, the data at national level can be treated with more confidence.¹¹

The key finding is that while Indigenous Australians have lower ADII scores than the overall population, the gap has narrowed over the past three years (from 9.2 in 2015 to 7.0 in 2017). Access and Ability have significantly improved¹², while Affordability has improved slightly.¹³ At first glance, the ADII data reflects rising levels of digital inclusion for Indigenous Australians in non-remote areas. However, as outlined below, there are important distinctions in how Indigenous Australians access the internet and aspects of digital exclusion may persist for this group even as technology adoption increases.

The low ADII score for Indigenous Australians cannot be explained by low socioeconomic status (SES) alone. While the average household income of Indigenous Australians is lower than that of the general population, when we compare low-SES Indigenous people with the total low-SES population, Indigenous Australians still score lower across all three sub-indices.

ADII data shows that Indigenous Australians are much more likely to be mobile-only users (49% of those surveyed) compared with the total population (21.3%). Mobile-only use is likely to affect the Affordability score.¹⁴ While Indigenous Australians' Relative Expenditure does not differ greatly from the wider population (1.3 points lower), they get significantly less value out of that expenditure (12.7 points lower) because mobile data costs more than fixed line data.

Mobile-only users also tend to have lower Digital Ability, which may explain why Indigenous Australians score lower than average on Basic Skills (11.9 lower) and Activities (7.5 lower). In particular,

they are far less likely to use the internet for transactions and shopping. The one area where Indigenous Australians score relatively highly is on Attitudes to digital technologies. They tend to see technology as giving them greater control over their life; they're interested in being able to access the internet wherever they are; and they go out of their way to learn new things. Therefore, while Indigenous Australians are disadvantaged across multiple dimensions of the ADII, they are more likely than the general population to see digital technologies as a pathway to a better future.

Since the ADII does not survey remote Indigenous communities, it is likely that the ADII numbers are skewed upwards. Other surveys show that those living in remote areas are less likely to have an internet connection. For instance, the ABS' National Aboriginal and Torres Strait Islander Social Survey (NATSISS) shows that while 85.7% of Aboriginal people living in urban and regional areas have accessed the internet in the last 12 months, only 53.1% of those living in remote and very remote areas have done so. For daily use, this drops to 64.1% and 25.2% respectively. However, the NATSISS does not tell us which devices people are using to access the internet. These data gaps make it difficult to provide a full picture of digital inclusion for this group.¹⁵

The ADII nonetheless provides some useful insights. It suggests that digital inclusion programs specifically for Indigenous Australians may be beneficial as their digital choices are different from other groups. Moreover, the fact that Indigenous Australians have a positive attitude to technology suggests these programs may have a high rate of success.

Table 10: Indigenous Australians, national comparisons (ADII, 2014–2017)

	2017			2014		2015		2016	
	Australia	Indigenous	Difference	Australia	Indigenous	Australia	Indigenous	Australia	Indigenous
ACCESS									
Internet Access	85.3	76.4	-8.9	82.7	73.5	83.3	72.6	84.4	76.8
Internet Technology	72.1	64.1	-8.0	62.3	57.2	64.7	53.0	68.6	61.0
Internet Data Allowance	51.2	44.4	-6.8	41.6	33.1	42.4	31.8	45.5	38.8
	69.6	61.7	-7.9	62.2	54.6	63.5	52.5	66.2	58.9
AFFORDABILITY									
Relative Expenditure	46.8	45.5	-1.3	56.0	58.9	53.4	53.9	47.9	44.8
Value of Expenditure	58.5	45.8	-12.7	51.0	35.9	50.6	35.0	54.5	43.0
	52.7	45.7	-7.0	53.5	47.4	52.0	44.5	51.2	43.9
DIGITAL ABILITY									
Attitudes	50.1	51.2	1.1	46.0	40.0	47.8	40.7	49.0	47.3
Basic Skills	53.3	41.4	-11.9	47.2	35.6	49.9	38.3	51.6	38.1
Activities	38.4	30.9	-7.5	34.2	23.7	36.2	27.7	37.3	26.9
	47.3	41.2	-6.1	42.4	33.1	44.6	35.5	46.0	37.4
DIGITAL INCLUSION INDEX	56.5	49.5	-7.0	52.7	45.0	53.4	44.2	54.5	46.7

Source: Roy Morgan Research, April 2016–March 2017



**Indigenous
Australians score
relatively highly on
Attitudes to digital
technologies**

Case Study 2

Digital inclusion and disability



**The ADII reveals
a mixed picture
for the digital
inclusion of people
with disability**

The ADII presents useful data on digital inclusion and disability. However, it is important to remember that our data defines disability as people who receive either the disability support pension (DSP) from Centrelink (83% of these respondents), or the Department of Veterans' Affairs disability pension (17%). The DSP is means tested, and while the Veterans' Affairs disability pension is not, most people receiving this latter payment report a below-average household income. The ADII results therefore represent outcomes for a distinct group within the wider community of Australians with disability.

In 2017 the ADII reveals a mixed picture for the digital inclusion of people with a disability. Since 2014, scores for this cohort have increased nationally (up 5.2 points, to 47.0), in capital cities (up 5.4 points to 47.9), and across rural Australia (up 5.3 points to 45.1). Scores for both women and men with disability have increased since 2014, with women scoring marginally higher than men. However, Affordability remains an issue, confirming the findings of earlier Australian research.¹⁶ At 46.0, the Affordability score for men with disability is lower than the national (male) average of 53.7. Similarly, Affordability for women with disability is 42.7 compared with the national average of 51.7.

Despite these improved scores, digital inclusion remains relatively low for people with a disability. Their national score of 47.0 is still 9.5 points behind the Australia-wide score of 56.5. This 'disability gap' is wider in capital cities, but narrower in rural Australia.

Age influences digital inclusion for Australians with disability, with those aged 35–49 recording higher scores than those aged 50–64 years (49.2 and 42.0 respectively).¹⁷ Interestingly, in 2017 the ADII score for Australians with disability aged 65+ rose above the score for the same age group without a disability for the first time (45.5 versus 42.9). This suggests mainstream digital inclusion programs could learn from the experience and motivations of older Australians with disability.

Education also plays a key role in digital inclusion for people with a disability. The ADII score for tertiary-educated Australians with disability is 53.8, compared with 49.7 for those with a secondary education, and just 40.0 for those who did not complete secondary school.

Digital Ability research in Australia has considered the importance of accessibility. However, studies have focused primarily on ensuring the accessibility and usability of digital content and technology¹⁸, rather than improving access to digital infrastructure. The ADII data suggests unequal access to digital infrastructure may present another potential barrier to digital inclusion for people with a disability.

Affordability has long been recognised as relevant to the digital inclusion of Australians with disability.¹⁹ People with a disability in Sydney, Melbourne, and Brisbane all scored significantly lower on this sub-index than their fellow residents.

Given that large cities typically provide more opportunities to participate in low-cost digital skills training, the relatively low Digital Ability scores for people with disability in these cities is surprising. This suggests additional, as-yet unidentified barriers to digital inclusion for this group, and a need for accessibility training in the use of digital technology.²⁰

The ADII reveals how age, gender, and education impact on the digital inclusion of people with a disability. The results raise important questions about how this group can realise the full benefits of a digital era, including access to the NDIS.

Furthermore, the ADII suggests the need for further research on Australians with disability who do not receive a pension or benefit. The Disability, Ageing and Carers survey (Australian Bureau of Statistics) could be extended to collect more information on digital inclusion; and in-depth studies of particular groups with a disability, such as Indigenous Australians, could address other gaps in our understanding.

Table 11: People with a disability: capital cities vs general population (ADII, 2017)

	Australia		Sydney		Melbourne		Brisbane	
	Population	Disability	Population	Disability*	Population	Disability*	Population	Disability*
2017								
ACCESS								
Internet Access	85.3	73.0	87.6	72.1	88.4	76.2	84.5	71.3
Internet Technology	72.1	63.3	74.8	64.4	75.6	69.2	72.8	66.8
Internet Data Allowance	51.2	42.4	54.3	41.0	55.5	46.5	52.3	43.4
	69.6	59.6	72.2	59.1	73.1	64.0	69.9	60.5
AFFORDABILITY								
Relative Expenditure	46.8	37.1	51.7	40.3	46.7	36.5	47.9	33.4
Value of Expenditure	58.5	51.6	63.9	55.8	62.8	53.6	59.4	52.9
	52.7	44.3	57.8	48.1	54.8	45.1	53.6	43.2
DIGITAL ABILITY								
Attitudes	50.1	40.7	53.1	38.1	54.2	45.0	49.8	45.7
Basic Skills	53.3	41.2	55.8	40.3	57.8	43.8	53.1	45.3
Activities	38.4	29.5	41.4	28.1	41.1	31.5	37.8	31.5
	47.3	37.1	50.1	35.5	51.0	40.1	46.9	40.9
DIGITAL INCLUSION INDEX	56.5	47.0	60.0	47.6	59.6	49.7	56.8	48.2

*Sample size <100, exercise caution in interpretation. **Source:** Roy Morgan Research, April 2016–March 2017

Case Study 3

Digital inclusion in Geelong, Newcastle, and Townsville: a tale of three regional cities

As regional cities assume greater significance in Australia's social and economic landscape, understanding their digital inclusion becomes increasingly important. Offering access to high quality schools and universities, modern health facilities, employment, and relatively affordable housing, regional cities make an attractive lifestyle choice for professionals, families, and older Australians. Regional cities also function as important hubs for communities living in surrounding regions, including rural and remote communities.

This case study explores digital inclusion within three regional Australian cities: Geelong, Newcastle, and Townsville. The value of comparing digital inclusion across these three regional cities lies both in their similarities as well as their differences. While each city is located on Australia's eastern seaboard, they are distinguished by their proximity to the nearest capital city. Geelong is an easily commutable 75 kilometres from Melbourne, while Newcastle is 162 kilometres – a two-hour drive – from Sydney. By contrast, Townsville is 1,348 kilometres, or a two-day drive, from Brisbane.

Previous Australian research has explored digital inclusion within rural communities²¹, but less is known about how regional cities are responding to the digital inclusion challenge.²²

The ADII data for 2017 reveals some interesting parallels and differences between these three cities. All three regional cities scored higher than rural areas in the same state, but lower than the nearest capital city.

Digital inclusion within these three regional cities has increased over the four years recorded to date (2014–2017), but at varying rates: Geelong is up by 9.9 points, Newcastle by 4.0, and

Townsville by 5.3. In each case, rising scores were driven by improvements across the three sub-indices: Access, Affordability, and Digital Ability.

The ADII data suggests that improved Access has been a driving factor, with Geelong and Townsville recording increases greater than both the national and the state capital average figures. In both cases, increased Access was driven by improvements in Internet Technology (up 17.1 points in Geelong and 14.3 points in Townsville) and Internet Data Allowance (up 20.1 in Geelong and 16.9 in Townsville). This increased Access appears to reflect Australia-wide rises across regional and rural areas (up 8.1 points since 2014). While the factors behind this trend require further investigation, increased Access may reflect a growing awareness of the value of digital connectivity in regional and rural Australia.

By contrast, Affordability played a relatively minor role in improving digital inclusion levels across these three regional cities. Looking at the components of Affordability, the improvement in Value of Expenditure on internet products was largely offset by a decline in Relative Expenditure. This reflects the fact that across the Australian population, an increasing proportion of household income is being spent on internet services. Consistent with previous research on rural digital inclusion²³, the ADII data suggests that while increased Access is helping to drive digital inclusion in these regional cities, Affordability represents a potential barrier.

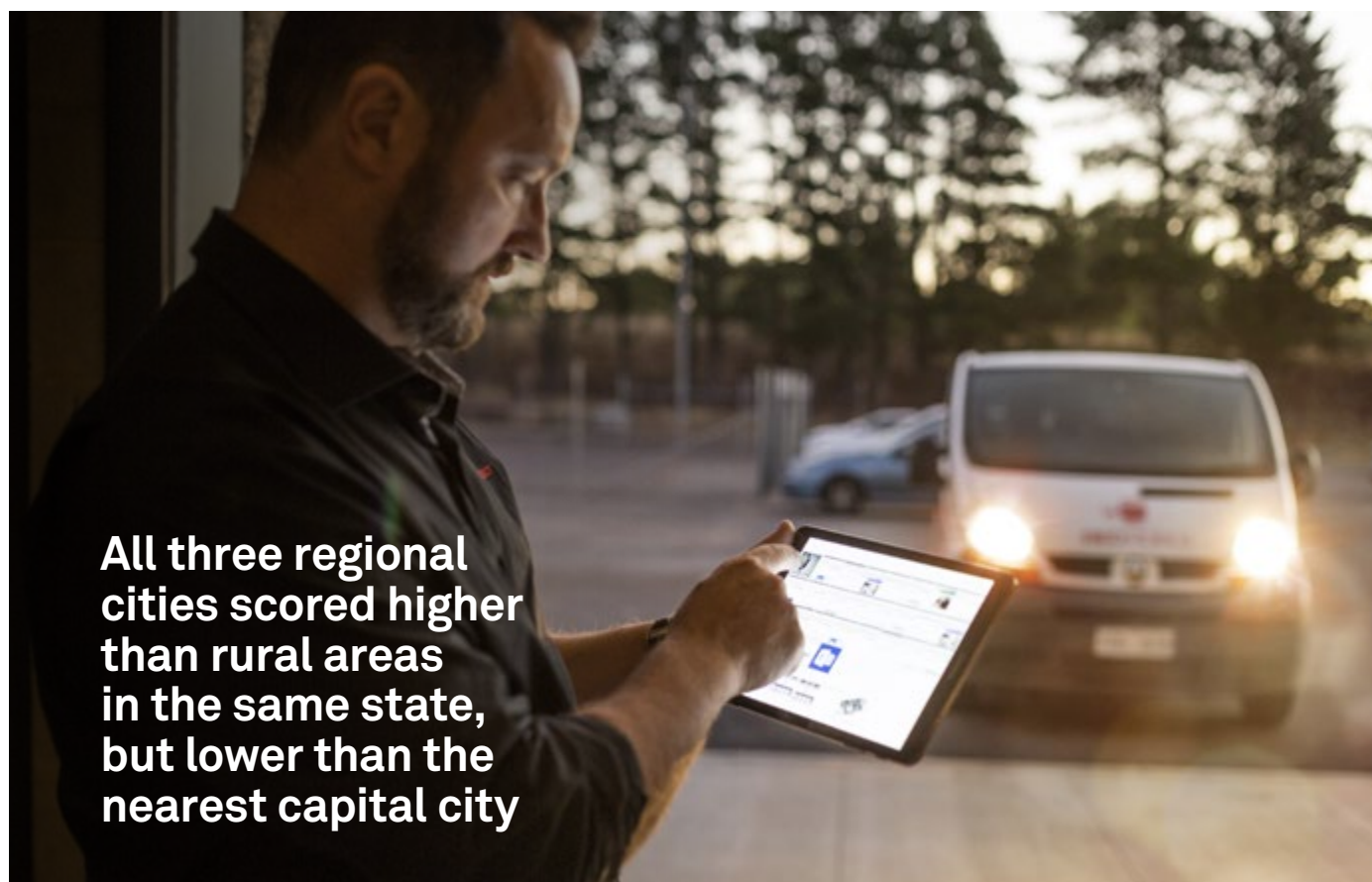
Table 12: Regional, rural, and city digital inclusion comparisons (ADII 2017)

	National			New South Wales				Victoria				Queensland			
	Australia	Capital Cities	Regional & Rural	Newcastle	NSW	Sydney	Rural NSW	Geelong	Victoria	Melbourne	Rural Vic	Townsville	Queensland	Brisbane	Rural Qld
2017															
ACCESS															
Internet Access	85.3	86.9	82.5	84.7	85.4	87.6	79.7	86.4	86.5	88.4	79.1	88.2	84.5	84.5	83.2
Internet Technology	72.1	74.0	68.8	69.6	72.2	74.8	65.8	74.0	73.5	75.6	66.0	75.8	71.7	72.8	69.7
Internet Data Allowance	51.2	53.6	46.9	48.0	51.6	54.3	45.5	55.6	52.6	55.5	41.5	54.6	50.9	52.3	47.0
	69.6	71.5	66.0	67.4	69.7	72.2	63.7	72.0	70.9	73.1	62.2	72.8	69.0	69.9	66.6
AFFORDABILITY															
Relative Expenditure	46.8	48.1	44.5	43.5	49.1	51.7	44.9	45.0	45.9	46.7	42.7	43.7	46.2	47.9	41.4
Value of Expenditure	58.5	61.7	52.7	60.1	60.4	63.9	51.5	61.0	59.5	62.8	47.1	59.4	56.9	59.4	52.4
	52.7	54.9	48.6	51.8	54.7	57.8	48.2	53.0	52.7	54.8	44.9	51.6	51.6	53.6	46.9
DIGITAL ABILITY															
Attitudes	50.1	52.2	46.3	46.9	50.6	53.1	46.2	53.8	52.0	54.2	43.7	48.3	48.5	49.8	43.9
Basic Skills	53.3	55.5	49.2	56.2	53.7	55.8	47.2	58.3	55.5	57.8	46.6	51.2	50.9	53.1	47.1
Activities	38.4	40.3	35.1	38.9	39.3	41.4	33.9	41.0	39.2	41.1	31.7	37.6	36.6	37.8	33.6
	47.3	49.3	43.5	47.3	47.9	50.1	42.5	51.0	48.9	51.0	40.7	45.7	45.3	46.9	41.5
DIGITAL INCLUSION INDEX	56.5	58.6	52.7	55.5	57.4	60.0	51.4	58.7	57.5	59.6	49.3	56.7	55.3	56.8	51.7

Source: Roy Morgan Research, April 2016–March 2017

The Digital Ability scores for Geelong (up 11.4 points) and Newcastle (up 6.3 points) have increased notably since 2014, exceeding comparable gains in Sydney, Melbourne, and Australia-wide. Looking at the components of the Digital Ability measure, both of these regional cities recorded strong growth in Basic Skills (up 16.1 and 10.7 points respectively). On the other hand, Townsville recorded a relatively modest rise of 1.0 points on the Digital Ability sub-index. Unlike Geelong, increased Access in Townsville has not been matched by a corresponding increase in Digital Ability.

The rising rates of digital inclusion in Geelong, Newcastle, and Townsville have been driven by increased Access and improved Digital Ability. This reflects a broader trend across regional and rural Australia, and a growing recognition of the value of digital connectivity for all Australian communities. At the same time, Affordability remains a key issue and a potential barrier to achieving full digital inclusion in regional Australia.



All three regional cities scored higher than rural areas in the same state, but lower than the nearest capital city

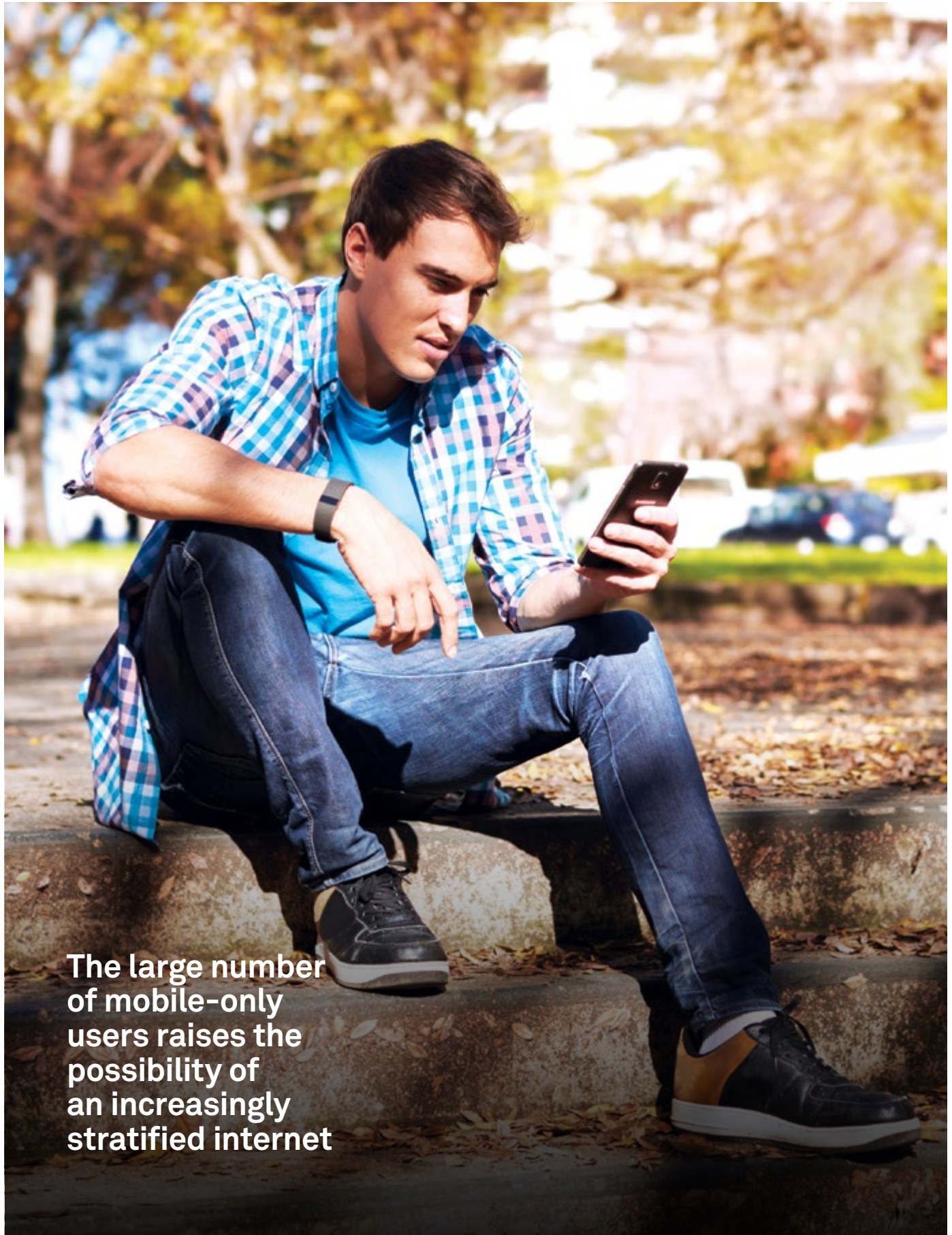
Table 13: Regional cities: changes over time (ADII, 2014–2017)

	National			New South Wales				Victoria				Queensland			
	Australia	Capital Cities	Regional & Rural	Newcastle	NSW	Sydney	Rural NSW	Geelong	Victoria	Melbourne	Rural Vic	Townsville	Queensland	Brisbane	Rural Qld
Change 2014–2017															
ACCESS															
Internet Access	+2.6	+2.1	+3.2	+3.7	+3.2	+3.1	+3.0	+7.3	+3.3	+3.0	+2.3	+3.7	+1.1	-1.4	+3.0
Internet Technology	+9.8	+9.2	+10.6	+7.6	+9.8	+10.0	+9.0	+17.1	+9.8	+9.4	+9.0	+14.3	+9.7	+6.9	+12.3
Internet Data Allowance	+9.6	+8.8	+10.6	+3.9	+9.6	+9.2	+11.4	+20.1	+9.2	+9.0	+6.6	+16.9	+10.1	+6.6	+11.6
	+7.4	+6.7	+8.1	+5.1	+7.5	+7.4	+7.9	+14.8	+7.4	+7.1	+6.0	+11.6	+6.9	+4.0	+8.9
AFFORDABILITY															
Relative Expenditure	-9.2	-7.8	-11.8	-11.7	-8.9	-6.4	-14.0	-10.5	-7.8	-6.8	-11.5	-8.2	-7.3	-4.7	-12.4
Value of Expenditure	+7.5	+6.5	+8.6	+12.8	+8.0	+6.4	+8.7	+17.5	+7.4	+7.0	+5.5	+14.9	+7.6	+5.0	+9.9
	-0.8	-0.6	-1.6	+0.6	-0.5	0.0	-2.7	+3.5	-0.2	+0.1	-3.0	+3.4	+0.2	+0.1	-1.3
DIGITAL ABILITY															
Attitudes	+4.1	+4.3	+3.4	+1.5	+3.8	+4.3	+4.5	+9.6	+5.1	+5.2	+2.9	-2.6	+2.8	+2.5	+1.5
Basic Skills	+6.1	+6.0	+5.7	+10.7	+7.2	+7.0	+7.4	+16.1	+7.3	+6.9	+6.1	+3.3	+3.1	+2.3	+1.0
Activities	+4.2	+4.0	+4.3	+6.7	+5.7	+5.6	+6.0	+8.4	+4.0	+3.5	+3.4	+2.2	+2.0	+1.3	+0.6
	+4.9	+4.8	+4.4	+6.3	+5.6	+5.6	+6.0	+11.4	+5.5	+5.2	+4.2	+1.0	+2.6	+2.0	+1.0
DIGITAL INCLUSION INDEX	+3.8	+3.6	+3.6	+4.0	+4.2	+4.3	+3.7	+9.9	+4.2	+4.1	+2.4	+5.3	+3.2	+2.1	+2.9

Source: Roy Morgan Research, April 2016–March 2017

Case Study 4

Mobile-Only Australians



The large number of mobile-only users raises the possibility of an increasingly stratified internet

Australians are enthusiastic adopters of smart phones. According to a recent worldwide Pew study, only the South Koreans have higher rates of ownership.²⁴ For many of us, mobile devices and mobile broadband are valuable ways of accessing the internet, and we use them in addition to fixed line services. Mobiles add a personal and flexible dimension to our use of fixed line computers at home, work, or school. They are outward signs of highly-connected lives.

But for people who have no fixed internet access, it's a different story: smart phones offer great advantages, but also involve trade-offs and costs. Low-cost smart phones are more affordable than traditional computers, and mobility is a great benefit. But while devices can be cheap, mobile internet access remains comparatively expensive. There are also limits to what people can do with mobiles when it comes to accessing government services, education, or work.

The 'mobile-only' group now represents a substantial minority of Australia's population. But we know little about this group, despite useful recent research.²⁵ We do know that more than four million Australians – that's one in five – only access the internet through a mobile phone or internet dongle with a data allowance. Despite all the benefits of mobile internet, this group is relatively digitally excluded.

The ADII sheds some light on this. In 2017, mobile-only users have an ADII score of 42.3, some 14.2 points below the national average (56.5), and 2.5 points below the 2014 outcome (44.8). Over the same period, the national average rose by 3.8 points, so the relative inclusion of mobile-only users is declining. Mobile-only use is linked to socioeconomic factors, with people in low income households (29.8%), not employed (24.0%), and with low education levels (27.6%) more likely to be mobile-only. The ADII reports a particularly high level of mobile-only use for Indigenous Australians, at 49%.

Household composition is also a key factor in mobile-only use. Those living alone or in share housing are significantly more likely to be mobile-only (32.2% and 28.8% respectively), while those living with a partner and children are much less likely to lack fixed broadband (15.6%).

The ADII reports considerably lower digital inclusion levels for mobile-only users across all three sub-indices. On Affordability, mobile-only users scored low (33.3 points, 19.4 points below the national average figure). This is due to the higher pricing and cost structure of mobile broadband. While mobile data charges have reduced in recent years, a gigabyte of mobile data costs much more than the fixed broadband equivalent.

Mobile-only users are also less digitally included than the general population in terms of Access (54.1, against 69.6 for Australia-wide) and Digital Ability (39.5, against 47.3 for Australia-wide).

These outcomes reflect constraints in mobile-only services which extend beyond cost issues. In terms of Access, mobile-only users have far less data available than fixed line customers. In relation to Digital Ability, the gap between mobile-only users and the wider population is greatest for more advanced online Activities (30.4, against 38.4 for Australia). This points to the fact that for all their convenience, mobile devices have more limited capacities than desktop or laptop computers. The limitations of mobiles have repercussions for many everyday uses of the internet. Tasks such as completing complex forms can be difficult; many web pages do not display readily or completely in mobile form; work and school-related applications such as word processors or spreadsheets may be difficult to access or use. The ADII reports that even mobile-only users in high income households, and those with a tertiary education, score lower on Digital Ability than their fixed line counterparts.

The ADII's findings for mobile-only Australians highlight the complexity of the digital inclusion challenge. For this group, issues of Affordability and Digital Ability are clearly as important as Access. While mobile services are evolving quickly, the large number of mobile-only users raises the possibility of an increasingly stratified internet, rather than a more inclusive one. In this light, initiatives such as free or subsidised Wi-Fi services are likely to become increasingly important as inclusion measures. The functionality of web pages on mobiles phones is another area that will require attention.

Table 14: Mobile-only internet use (ADII, 2017)

	Australia		Sydney		Melbourne	
	Australia	Mobile Only	Household Income Q1 (\$150k+)	Mobile Only	Tertiary Education	Mobile Only
2017						
ACCESS						
Internet Access	85.3	75.6	94.2	82.4	90.7	80.2
Internet Technology	72.1	55.9	79.7	57.1	76.3	58.1
Internet Data Allowance	51.2	30.7	61.6	32.8	56.0	32.6
	69.6	54.1	78.5	57.4	74.3	57.0
AFFORDABILITY						
Relative Expenditure	46.8	43.8	68.2	69.6	47.5	46.3
Value of Expenditure	58.5	22.8	66.4	20.5	63.7	23.0
	52.7	33.3	67.3	45.0	55.6	34.6
DIGITAL ABILITY						
Attitudes	50.1	43.7	58.7	51.2	54.9	47.5
Basic Skills	53.3	44.4	67.5	55.9	63.2	55.0
Activities	38.4	30.4	49.2	37.4	46.6	39.1
	47.3	39.5	58.4	48.1	54.9	47.2
DIGITAL INCLUSION INDEX	56.5	42.3	68.1	50.2	61.6	46.3

Source: Roy Morgan Research, April 2016–March 2017

New South Wales

Findings

For the year ending March 2017, the ADII score for NSW is 57.4 (0.9 points above the national average). NSW's score has increased steadily over 2014–2017, rising a total of 4.2 points to match Victoria's as the largest increase of all states and territories. In 2014, NSW's score was 53.2. It rose to 54.9 in 2016 then reached 57.4 in 2017.

Over time, NSW's ADII score has been consistently above the national average on all three sub-indices, with the largest advantage in Affordability (2.0 points ahead). Since 2014, consistent improvement in Digital Ability has seen NSW's score increase by 0.6 points above the national average on this sub-index.

Geography

In 2017 Sydney recorded an ADII score of 60.0, the highest of any capital city in Australia. A substantially lower score of 51.4 was

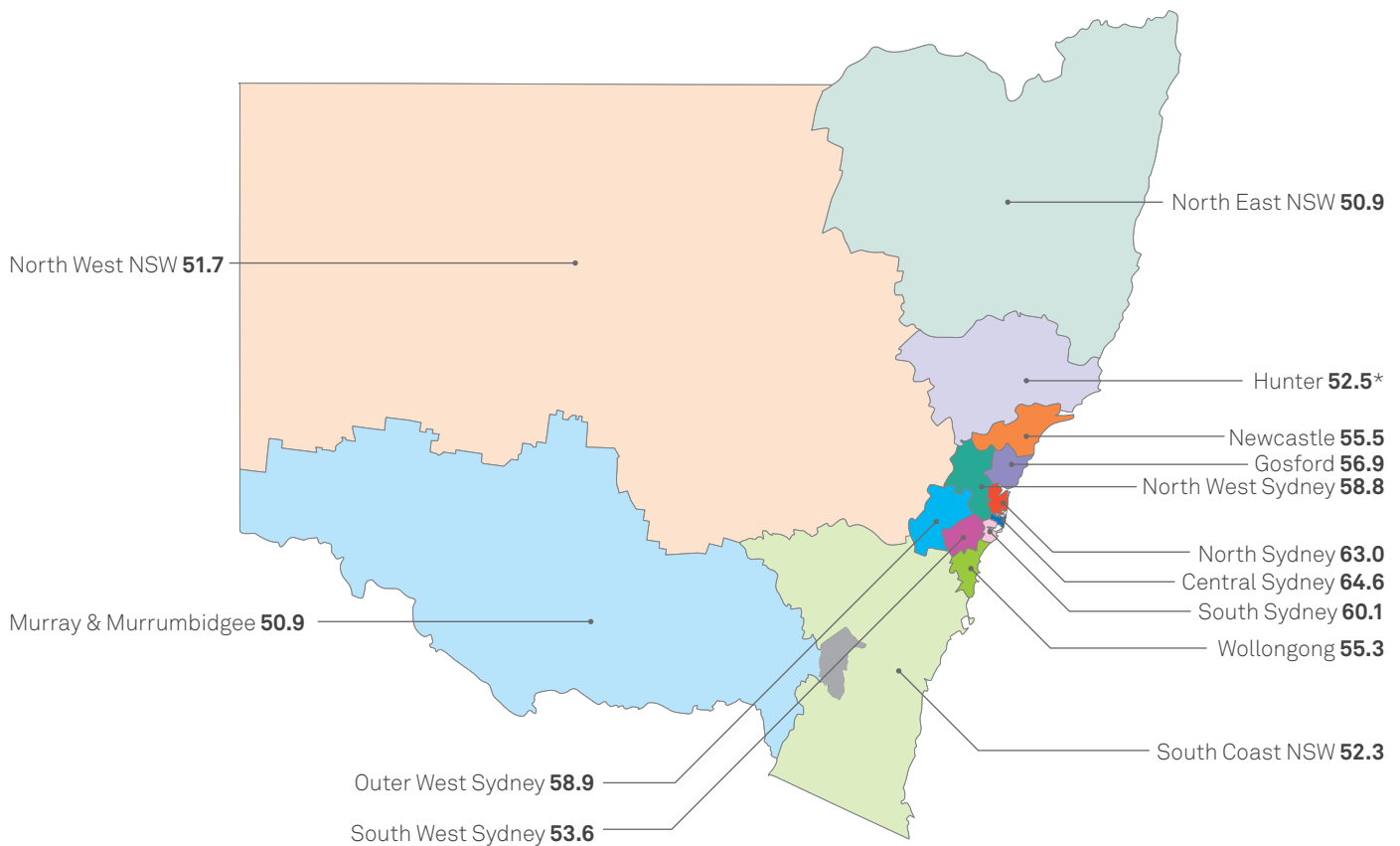
recorded for rural NSW (outside Sydney and the regional cities), although this was 0.7 points above the national rural average of 50.7.

Newcastle, the second-largest city in NSW, recorded an ADII score of 55.5 in 2017, up by 3.6 points on 2016 and narrowing the gap with Sydney. Wollongong experienced a decline in the Affordability and Digital Ability sub-indices to record a slightly lower ADII score in 2017 (55.3) than in 2016 (56.3). The regional centre of Gosford recorded a score of 56.9, having experienced significant growth in Access and Digital Ability scores over the four years.

While digital inclusion rose in each of the five regions of NSW in 2016–2017, improvements in the Murray, Murrumbidgee (2.4 points), and North East (1.4 points) regions did not keep pace with Sydney (2.5 points), or the NSW average (also 2.5). The Hunter* region's ADII score increased to 52.5 in 2017, rising from a low base the year before²⁶, but still 4.9 points below the state average (57.4).

NSW Regions ADII scores

NSW ADII score: 57.4



*Sample size <100, exercise caution in interpretation.

Source: Roy Morgan Research

Table 15: NSW: Digital inclusion by geography

2017	Australia	NSW	Sydney	Rural NSW	Sydney Regions						Newcastle	Hunter*	North East NSW	Wollongong	South Coast NSW	North West NSW	Murray & Murrumbidgee	
					North	North West	South	Central	South West	Outer West								Gosford
ACCESS																		
Internet Access	85.3	85.4	87.6	79.7	88.1	87.9	87.9	90.8	83.8	85.9	84.6	84.7	79.8	78.9	85.7	80.2	81.0	79.2
Internet Technology	72.1	72.2	74.8	65.8	76.2	75.9	74.4	75.9	70.6	76.2	72.9	69.6	65.3	66.1	74.4	66.5	65.8	64.4
Internet Data Allowance	51.2	51.6	54.3	45.5	53.8	55.2	55.8	56.7	50.0	54.3	50.9	48.0	47.6	45.2	52.7	43.7	48.7	43.8
	69.6	69.7	72.2	63.7	72.7	73.0	72.7	74.5	68.1	72.1	69.4	67.4	64.2	63.4	70.9	63.5	65.2	62.5
AFFORDABILITY																		
Relative Expenditure	46.8	49.1	51.7	44.9	59.8	50.2	52.8	55.2	44.6	44.8	42.1	43.5	39.2	43.4	41.8	49.4	41.8	49.0
Value of Expenditure	58.5	60.4	63.9	51.5	63.9	64.3	67.2	65.9	59.4	63.0	59.0	60.1	54.2	50.3	57.4	52.2	51.5	52.5
	52.7	54.7	57.8	48.2	61.9	57.3	60.0	60.6	52.0	53.9	50.6	51.8	46.7	46.9	49.6	50.8	46.7	50.8
DIGITAL ABILITY																		
Attitudes	50.1	50.6	53.1	46.2	56.6	52.6	49.5	58.7	47.9	50.1	52.1	46.9	50.7	46.6	42.7	44.7	46.4	45.1
Basic Skills	53.3	53.7	55.8	47.2	60.1	49.8	54.6	65.1	43.4	59.7	59.2	56.2	51.1	46.5	54.1	47.6	49.1	44.5
Activities	38.4	39.3	41.4	33.9	46.3	36.2	38.7	52.1	30.3	42.3	40.4	38.9	38.1	34.2	39.4	35.4	34.2	29.2
	47.3	47.9	50.1	42.5	54.3	46.2	47.6	58.6	40.5	50.7	50.6	47.3	46.6	42.4	45.4	42.6	43.2	39.6
DIGITAL INCLUSION INDEX	56.5	57.4	60.0	51.4	63.0	58.8	60.1	64.6	53.6	58.9	56.9	55.5	52.5	50.9	55.3	52.3	51.7	50.9

*Sample size <100, exercise caution in interpretation. **Source:** Roy Morgan Research, April 2016–March 2017

Demographics

Reflecting the national figures, in NSW digital inclusion increases in line with income. In NSW people in the highest household income bracket had an ADII score of 69.9 in 2017, 1.8 points above the national average for this income bracket (68.1). People in the lowest household income bracket in NSW recorded an ADII score of 40.7. This is slightly below the national average for this income bracket (41.1). Indeed, the ‘income gap’ between the highest and lowest household income brackets in NSW (29.2 points) is greater than the comparable national figure (27.0).

Despite coming from a high base, people in the highest household income bracket recorded the largest ADII gain of all NSW income brackets over 2014–2017 (up 5.7 points). Over the same period, NSW residents in the lowest income bracket recorded an increase of 3.6 points (from 37.1 to 40.7), falling further behind both those in the top household income bracket and the state average.

Reflecting national patterns, digital inclusion in NSW is linked to employment, education, and age. Full-time workers in NSW had steadily increasing ADII scores across the four years 2014–2017, with a total increase of 5.2 points over that period to reach 63.9 in 2017, while people not in paid employment registered a score of 51.0 in 2017, up 4.3 points since 2014.

In 2017, tertiary-educated people in NSW scored 62.8 (against a national average of 61.6 for that cohort), while those who did not complete secondary school scored 48.0 (against 47.4 nationally for that cohort).

People in NSW aged below 50 recorded significantly higher ADII scores (in the range of 61.3 to 64.3) than older groups (ranging from 43.5 to 54.8). Both the 25–34 and 35–49 age groups had substantially higher Digital Ability scores (59.4 and 55.6 respectively) than the state average of 47.9 for that sub-index. Interestingly, the 2.7-point improvement in Digital Ability registered by NSW 35–49 year olds since 2016 took that group’s score above the 14–24 year olds’ (51.6) for this sub-index.

While the 50–64 and 65+ age groups recorded a modest improvement in ADII scores between 2014 and 2017 (up 3.4 points and 3.3 points respectively), this gain did not keep pace with that of the broader NSW population (up 4.2 points). The 7.1-point gain made by the 65+ group in Digital Ability over 2014–2017, and their 8.3 point gain in Access (both from a low base), were offset by a decline in the Affordability sub-index (down 5.7 points). This was due to a substantial increase in the proportion of household incomes spent on network access. In 2017, the gap between NSW’s most digitally included age cohort (25–34 year olds) and those aged 65+ widened beyond 20 points for the first time in the ADII data collection period (2014–2017).

In 2017, people with a disability in NSW recorded an ADII score of 45.9, up by 4.7 points on 2016 and narrowing the gap with the national average for Australians with disability (47.0). However, as fixed income recipients, this group has a declining Affordability sub-index score (down 1.7 points since 2014). Again, this is underpinned by an increase in the proportion of household income spent on network access.

In 2017, Indigenous NSW* residents recorded an ADII of 50.4, 0.9 points higher than the average for Indigenous Australians nationally. While Indigenous people’s score has improved by 1.4 points in NSW since 2016, this has not kept pace with the national increase of 2.8 points for Indigenous Australians. It should be noted that the sample size on which this analysis is based is small, between 50 and 100 people, and is therefore subject to significant margins of error.

In line with national findings, people in NSW from a LOTE background scored 60.5, well above both the NSW (57.4) and overall Australian (56.5) scores, and slightly above the LOTE national average (59.3). The score for the LOTE group in NSW rose by 3.2 points between 2014 and 2017. 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 (of 57.4 points). In ascending order, these groups are: people in low income households (40.7), older Australians (those aged 65+, on 43.5), people with a disability (45.9), people who did not complete secondary school (48.0), Indigenous Australians* (50.4), and people not in paid employment (51.0).

Table 16: NSW: Digital inclusion by demography

2017	NSW	Income Quintiles					Employment			Education			Age					Disability	Indigenous Australians*	LOTE
		Q1	Q2	Q3	Q4	Q5	Full-Time	Part-Time	None	Tertiary	Secondary	Less	14-24	25-34	35-49	50-64	65+			
ACCESS																				
Internet Access	85.4	94.6	92.1	87.6	81.1	69.6	92.6	90.6	77.3	90.6	86.5	74.2	90.5	92.7	92.1	84.1	67.3	70.6	77.1	88.9
Internet Technology	72.2	80.3	78.2	74.8	67.6	58.8	77.8	76.0	66.1	76.9	72.5	63.0	74.4	78.9	77.6	70.9	59.1	61.6	65.2	74.9
Internet Data Allowance	51.6	63.4	58.9	53.7	46.6	35.3	61.2	54.9	42.5	56.8	52.4	40.7	56.2	62.5	60.9	46.9	31.6	39.2	42.5	57.5
	69.7	79.4	76.4	72.0	65.1	54.6	77.2	73.8	62.0	74.8	70.5	59.3	73.7	78.0	76.9	67.3	52.7	57.1	61.6	73.8
AFFORDABILITY																				
Relative Expenditure	49.1	69.8	55.1	41.5	30.0	25.6	50.1	46.9	49.2	50.3	44.5	51.8	55.3	44.1	47.6	48.9	50.1	42.3	48.1	51.6
Value of Expenditure	60.4	71.7	66.7	63.0	58.2	44.6	67.8	63.4	53.1	66.5	60.2	48.8	61.8	67.0	67.7	58.4	46.4	50.5	44.8	64.3
	54.7	70.8	60.9	52.2	44.1	35.1	59.0	55.1	51.2	58.4	52.4	50.3	58.5	55.5	57.7	53.7	48.3	46.4	46.4	57.9
DIGITAL ABILITY																				
Attitudes	50.6	57.4	54.6	49.7	45.3	37.3	56.0	52.9	45.2	54.1	52.1	42.2	64.2	60.6	53.5	43.5	34.0	38.9	55.4	56.7
Basic Skills	53.7	69.6	65.1	56.3	47.3	34.5	63.2	60.2	43.2	64.0	51.6	36.0	50.7	66.5	65.8	51.7	32.0	37.5	41.7	52.8
Activities	39.3	51.1	47.8	40.4	33.0	25.2	47.2	43.1	31.3	48.1	36.7	25.2	40.0	51.1	47.4	35.6	22.2	26.1	32.3	40.1
	47.9	59.4	55.8	48.8	41.8	32.3	55.5	52.1	39.9	55.4	46.8	34.5	51.6	59.4	55.6	43.6	29.4	34.2	43.1	49.8
DIGITAL INCLUSION INDEX	57.4	69.9	64.4	57.7	50.3	40.7	63.9	60.3	51.0	62.8	56.5	48.0	61.3	64.3	63.4	54.8	43.5	45.9	50.4	60.5

*Sample size <100, exercise caution in interpretation. **Source:** Roy Morgan Research, April 2016–March 2017

Victoria

Findings

The 2017 ADII score for Victoria is 57.5. This is the second highest score of any state and territory in Australia, behind ACT (59.9).

Over 2014–2017, the ADII score for Victoria rose 4.2 points, placing it equal with NSW as the state or territory showing the largest improvement in digital inclusion. Although Victoria's current score exceeds the national average, the gap between the two narrowed marginally in 2016–2017 with Victoria's score rising from 55.8 to 57.5 (up 1.7 points) and the national average from 54.5 to 56.5 (up 2.0 points).

Looking at the three sub-indices, Victoria's Access and Digital Ability scores have risen steadily over the four years 2014–2017, and exceeded the national scores for these indices each year. Victoria's Affordability score matches the national average (52.7), having been slightly below the average in 2014 and 2015, and slightly above it in 2016.

Geography

Within Victoria, Melbourne has the highest ADII score, at 59.6. Melbourne's score is 3.1 points above the national average score and 1.1 points above the nationwide average for capital cities, but slightly lower than Sydney on 60.0 points.

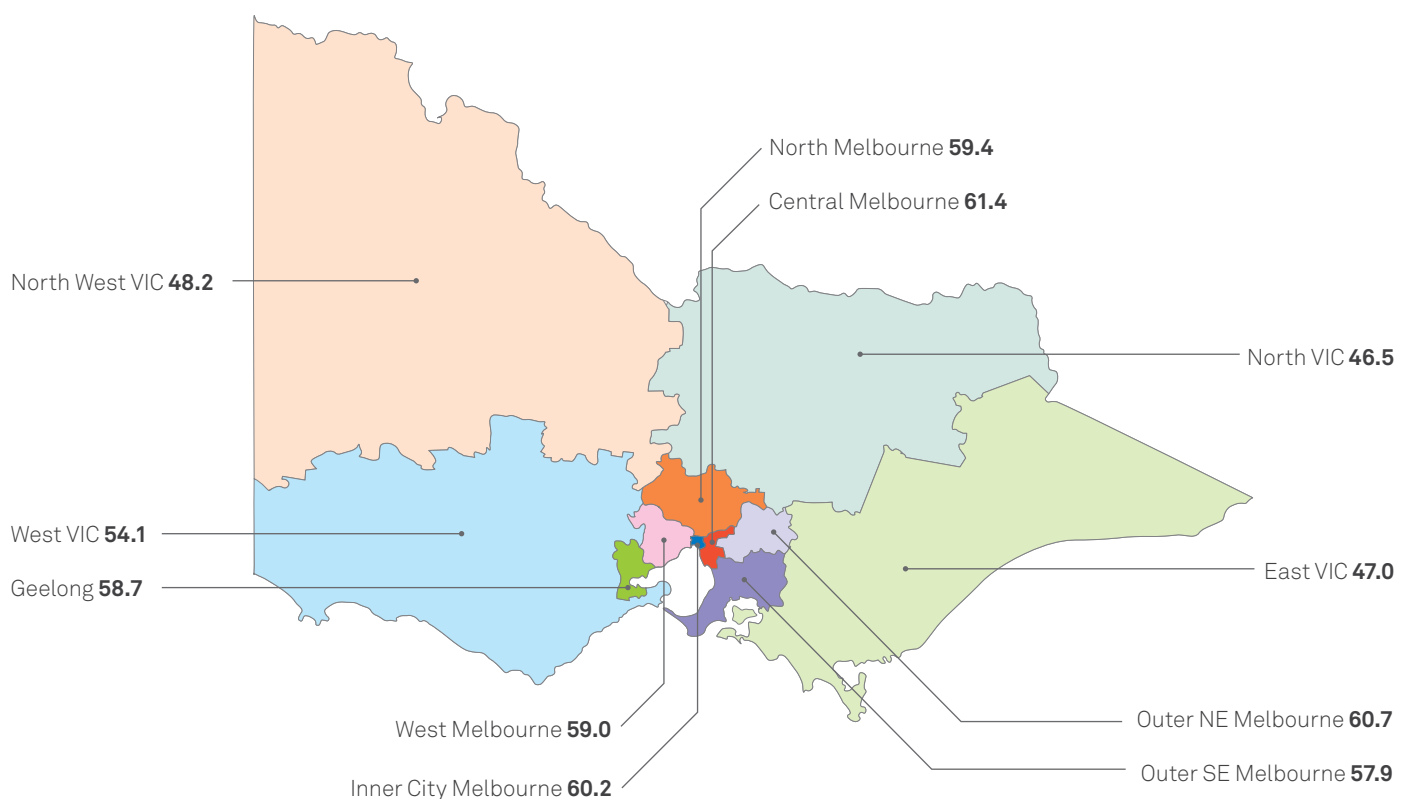
Geelong, the state's second-biggest city, has an ADII score of 58.7 in 2017, up from 51.7 in 2016 and 48.8 in 2014. This considerable improvement is discussed in more detail in Case Study 3 (p. 20).

In 2017, rural Victoria as a whole has a score of 49.3, slightly below the average for rural areas nationally (50.7). Northern Victoria recorded the state's lowest rural score (46.5), followed by Eastern Victoria (47.0). While Western Victoria's scores have steadily improved since 2014, reaching 54.1 in 2017, it is concerning to see that Northern Victoria's score has declined, Eastern Victoria's has stagnated, and North Western Victoria's improvement has not kept pace with the state average.

Overall, Victoria's Capital–Country gap is the largest of all states, with rural residents recording a 2017 score 17% lower than their Melbourne-based counterparts.

VIC Regions ADII scores

VIC ADII score: 57.5



Source: Roy Morgan Research

Table 17: Victoria: Digital inclusion by geography

2017	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	85.3	86.5	88.4	79.1	85.7	89.0	89.4	90.4	90.0	86.9	84.0	75.7	77.4	78.5	86.4
Internet Technology	72.1	73.5	75.6	66.0	74.2	75.2	75.3	78.1	77.0	73.9	72.1	62.1	64.4	64.1	74.0
Internet Data Allowance	51.2	52.6	55.5	41.5	56.3	55.9	48.6	57.7	58.2	53.6	46.5	38.5	40.1	39.8	55.6
	69.6	70.9	73.1	62.2	72.1	73.4	71.1	75.4	75.1	71.4	67.5	58.7	60.6	60.8	72.0
AFFORDABILITY															
Relative Expenditure	46.8	45.9	46.7	42.7	45.6	44.1	52.0	49.4	45.8	45.9	42.8	46.3	38.3	43.3	45.0
Value of Expenditure	58.5	59.5	62.8	47.1	64.7	61.2	55.6	65.0	65.6	61.9	57.5	45.8	43.6	38.5	61.0
	52.7	52.7	54.8	44.9	55.1	52.6	53.8	57.2	55.7	53.9	50.2	46.0	40.9	40.9	53.0
DIGITAL ABILITY															
Attitudes	50.1	52.0	54.2	43.7	53.0	55.4	58.7	53.8	54.6	52.0	45.8	44.7	41.8	41.6	53.8
Basic Skills	53.3	55.5	57.8	46.6	57.3	58.9	63.1	57.9	57.4	54.8	52.6	43.7	43.9	44.8	58.3
Activities	38.4	39.2	41.1	31.7	39.1	42.0	45.4	42.6	41.9	38.2	35.5	30.8	28.4	31.3	41.0
	47.3	48.9	51.0	40.7	49.8	52.1	55.7	51.5	51.3	48.3	44.6	39.7	38.0	39.2	51.0
DIGITAL INCLUSION INDEX	56.5	57.5	59.6	49.3	59.0	59.4	60.2	61.4	60.7	57.9	54.1	48.2	46.5	47.0	58.7

Source: Roy Morgan Research, April 2016–March 2017

Demographics

Reflecting the national pattern, in Victoria digital inclusion increases as incomes rise. Over 2014–2017, Victorians in the top household income bracket recorded increasing ADII scores, up from 64.7 in 2014 to 69.4 in 2017. Every year, this group's scores have remained some 10+ points above the Victorian and Australian averages. In 2017 the ADII score for Victorians in the top household income bracket (69.4) is 1.3 points higher than the national average for this income bracket (68.1). As was the case nationwide, this group scored highly on all three sub-indices (Access, Affordability, and Digital Ability).

In 2017, Victorians in the lowest household income bracket recorded an ADII score of 41.2. This is 15.3 points below the national average and slightly lower than the national score for this cohort (0.1 points). While the score for lowest household income Victorians rose 1.3 points between 2014 and 2017, this group fell further behind both the state average, which rose 4.2 points in this period, and those in the top household income bracket (up 4.7 points). The digital inclusion gap between Victorians in the highest and lowest household income brackets is now 28.2 points, higher than the comparable national figure (27.0).

Echoing the national pattern, digital inclusion in Victoria is clearly linked to employment, education, and age. Full-time workers recorded steadily increasing ADII scores between 2014 and 2017 (with a total increase of 4.8 points). Victorians in full-time employment scored 63.2 in 2017, some 13 points higher than those not in paid employment (50.2). While not-employed Victorians had steadily increasing scores between 2014 and 2017 (up 3.2 points), the 'employment gap' between these two groups widened over that period.

In 2017, Victorians with a tertiary education scored 62.1, while those who did not complete secondary school scored 47.1 – an 'education gap' of 15 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 most stark gap evident in Digital Ability. Despite a slight rise in Digital Ability for Victorians who did not complete secondary school, the gap compared with those with tertiary education remains greater than 20.0 points.

Reflecting the national pattern, people in Victoria aged below 50 recorded significantly higher ADII scores in 2017 (ranging from 60.9 to 63.1) than older groups (ranging from 43.8 to 55.1). In Victoria, the most digitally included age groups in 2017 were the 25–34 and 35–49 year olds (both on 63.1 points). The 25–34 year olds also recorded the largest gain of any age group over the four years (up 5.4 points).

While Victoria's 50–64 age cohort recorded a 4.9-point improvement between 2014 and 2017, exceeding the state average gain of 4.2 points, those aged 65+ recorded a more modest gain of 2.2 points, highlighting a widening 'age gap' in digital inclusion for the state. For Victorians aged 65+, gains in Digital Ability (up 6.4 points) and Access (up 7.5 points) over the four years were offset by a decline in the Affordability score (down 7.3 points, due to a substantial increase in the proportion of household incomes spent on network access). In 2017, the gap between Victoria's most digitally included age cohorts (25–34 and 35–49 year olds) and those aged 65+ stands at 19.3 points.

In 2017, Victorians with a disability recorded an ADII score of 49.0, up 1.4 points on 2016 and 6.2 points on 2014. This group has slightly higher levels of digital inclusion than their counterparts in other mainland states. As fixed income recipients, this group has experienced a decline in the Affordability score (down 4.1 points since 2014), which is underpinned by an increase in the proportion of household income being outlaid on network access.

Victorians from a LOTE background have had a consistently increasing ADII score since 2015. In 2017 the score for this group is 60.3, some 2.8 points higher than the Victorian state

average (57.5) and slightly above the national LOTE average (59.3). The LOTE community is a highly diverse group, and care should be taken in interpreting findings.

It is clear that several groups in Victoria are digitally excluded, with ADII scores substantially below the state average (57.5). In ascending order, they are: people in low income households (41.2), older Australians (43.8), people who did not complete secondary school (47.1), people with a disability (49.0), and people not in paid employment (50.2).

Table 18: Victoria: Digital inclusion by demography

2017	VIC	Income Quintiles					Employment			Education			Age					Disability	Indigenous Australians**	LOTE
		Q1	Q2	Q3	Q4	Q5	Full-Time	Part-Time	None	Tertiary	Secondary	Less	14-24	25-34	35-49	50-64	65+			
ACCESS																				
Internet Access	86.5	96.1	93.6	89.1	81.9	70.5	92.8	91.3	77.5	91.3	88.8	74.1	91.1	90.8	92.8	85.2	70.6	74.5	81.0	87.5
Internet Technology	73.5	81.8	80.7	75.4	69.8	58.5	79.5	77.5	65.6	77.1	76.1	63.8	76.1	77.4	79.3	72.6	60.8	66.9	75.4	75.4
Internet Data Allowance	52.6	62.0	59.9	54.0	48.6	36.8	62.6	56.4	41.1	57.1	56.0	40.1	56.5	62.0	60.3	49.6	32.5	45.2	59.6	58.5
	70.9	80.0	78.1	72.8	66.8	55.3	78.3	75.1	61.4	75.2	73.6	59.3	74.6	76.7	77.4	69.1	54.6	62.2	72.0	73.8
AFFORDABILITY																				
Relative Expenditure	45.9	69.0	52.5	39.5	26.6	23.7	47.1	44.1	45.9	46.2	43.5	47.6	49.9	43.5	45.1	44.7	46.8	34.8	32.6	47.5
Value of Expenditure	59.5	65.1	64.5	61.6	54.5	44.4	63.7	65.4	51.7	64.0	60.7	49.2	62.0	60.8	67.3	58.7	46.2	52.9	60.3	63.5
	52.7	67.0	58.5	50.6	40.6	34.1	55.4	54.7	48.8	55.1	52.1	48.4	56.0	52.2	56.2	51.7	46.5	43.8	46.4	55.5
DIGITAL ABILITY																				
Attitudes	52.0	63.7	56.0	51.1	45.3	38.3	59.0	53.2	44.9	56.9	54.5	39.6	64.3	62.0	55.0	44.8	34.7	44.4	55.7	57.4
Basic Skills	55.5	69.5	68.2	61.0	47.5	37.8	64.1	60.3	44.6	64.7	56.0	36.6	51.2	69.6	66.0	53.2	34.0	45.9	57.3	56.3
Activities	39.2	50.7	45.7	41.6	32.8	26.7	44.5	43.8	31.4	46.5	39.1	24.7	41.4	49.6	45.9	35.2	22.3	33.0	38.2	41.4
	48.9	61.3	56.6	51.2	41.9	34.3	55.9	52.4	40.3	56.0	49.9	33.6	52.3	60.4	55.6	44.4	30.3	41.1	50.4	51.7
DIGITAL INCLUSION INDEX	57.5	69.4	64.4	58.2	49.7	41.2	63.2	60.7	50.2	62.1	58.5	47.1	60.9	63.1	63.1	55.1	43.8	49.0	56.3	60.3

**Sample size <50, exercise extreme caution in interpreting results. Source: Roy Morgan Research, April 2016–March 2017

Queensland

Findings

Queensland's ADII score in 2017 is 55.3. Queensland has a slightly lower score than the national average (56.5) and ranks sixth out of the eight states and territories. Over 2014–2017, Queensland's ADII score has risen by 3.2 points from 52.1 in 2014. 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 2017 the state's Access score increased from 62.1 to 69.0, while Digital Ability increased from 42.7 to 45.3 (up 2.6 points). Mirroring the national picture, Queensland's Affordability score has fluctuated over the four years, declining between 2014 and 2016 (from 51.4 to 49.6), before making a slight recovery (up 2.0 points) to its current level of 51.6.

Geography

In 2017, Brisbane's ADII score is 56.8. Compared with the larger east coast cities, Brisbane scores less than both Melbourne (59.6) and Sydney (60.0).

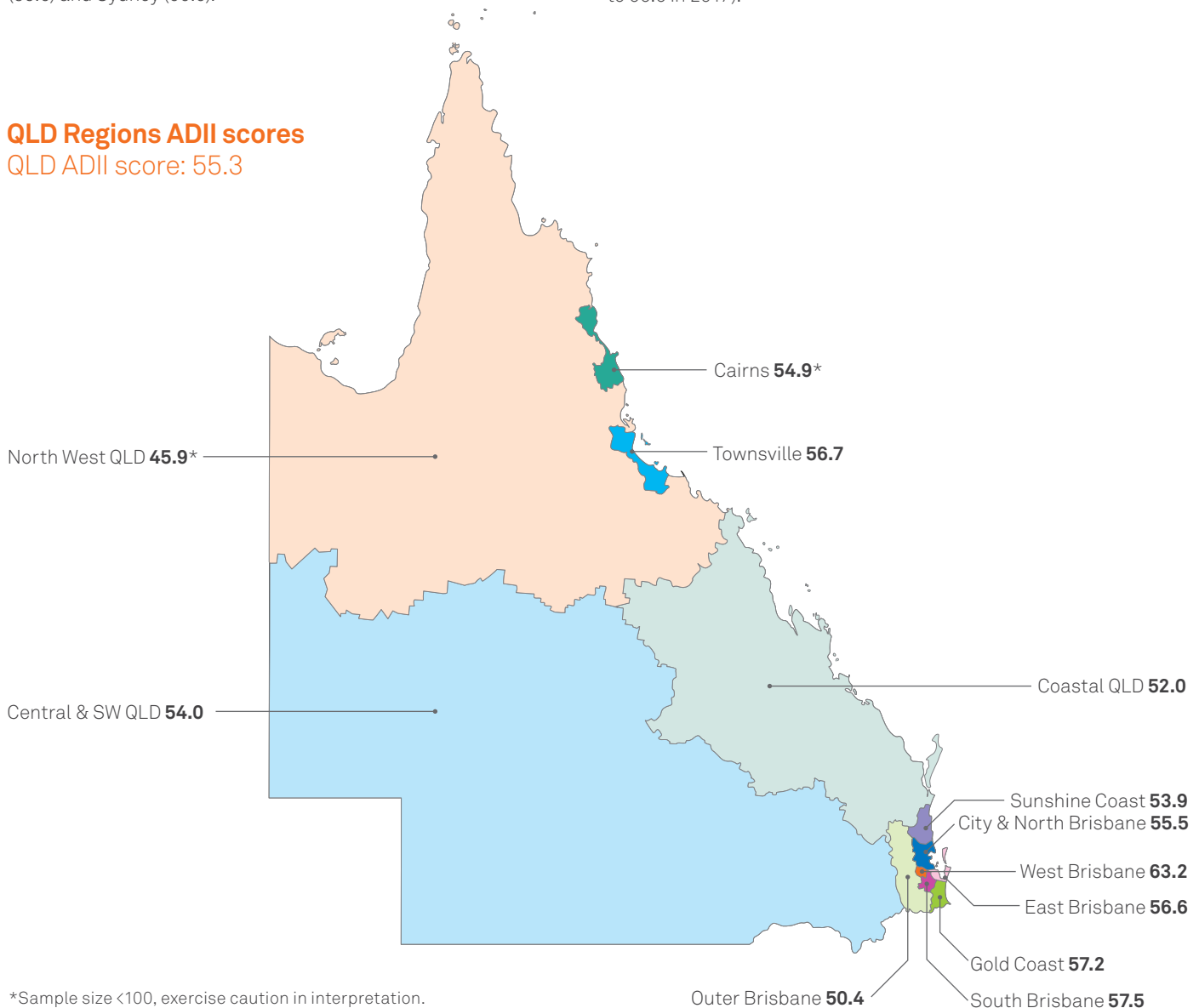
Brisbane has a higher score than the state's regional cities and population centres, with the exception of the Gold Coast, which has a score of 57.2 (0.4 points above Brisbane). Townsville, Cairns*, and the Sunshine Coast registered scores of 56.7, 54.9, and 53.9 respectively. All of Queensland's regional centres have registered significant improvements over 2014–2017, except the Sunshine Coast where scores have stagnated.

Across the three rural areas into which the Queensland dataset is divided, scores vary greatly. While Central and South West Queensland and Coastal Queensland both record ADII scores within 3.3 points of the state average (54.0 and 52.0 respectively), North West Queensland* has a score of 45.9 (9.4 points below the state average). North West Queensland (45.9) is Australia's second least digitally included region (after Burnie and Western Tasmania*, on 44.1).

The gap between scores for Brisbane and rural Queensland, referred to as the 'Capital–Country gap', has narrowed slightly over the past year, from 6.3 points to 5.1 points. This is largely due to improvements in Access (which rose from 63.4 in 2016 to 66.6 in 2017).

QLD Regions ADII scores

QLD ADII score: 55.3



*Sample size <100, exercise caution in interpretation.

Source: Roy Morgan Research

Table 19: Queensland: Digital inclusion by geography

2017	Australia	QLD	Brisbane	Rural QLD	Brisbane Regions					Gold Coast	Sunshine Coast	Central & SW QLD	Coastal QLD	Cairns*	Townsville	North West QLD*
					City & North	West	South	East	Outer							
ACCESS																
Internet Access	85.3	84.5	84.5	83.2	82.3	92.0	87.1	83.6	76.6	86.5	82.7	85.5	84.2	85.6	88.2	74.7
Internet Technology	72.1	71.7	72.8	69.7	73.3	74.5	73.5	72.2	66.2	73.0	67.8	71.5	70.5	69.8	75.8	62.5
Internet Data Allowance	51.2	50.9	52.3	47.0	51.5	57.3	52.1	54.1	44.1	52.9	48.7	47.8	48.1	52.2	54.6	40.8
	69.6	69.0	69.9	66.6	69.0	74.6	70.9	69.9	62.3	70.8	66.4	68.3	67.6	69.2	72.8	59.4
AFFORDABILITY																
Relative Expenditure	46.8	46.2	47.9	41.4	48.2	48.7	46.8	46.9	51.0	50.4	48.8	43.6	40.4	41.5	43.7	41.3
Value of Expenditure	58.5	56.9	59.4	52.4	59.6	68.6	57.9	58.6	49.5	59.1	52.3	57.8	51.9	54.0	59.4	44.1
	52.7	51.6	53.6	46.9	53.9	58.7	52.4	52.7	50.2	54.8	50.5	50.7	46.2	47.8	51.6	42.7
DIGITAL ABILITY																
Attitudes	50.1	48.5	49.8	43.9	46.5	59.4	52.6	49.7	40.1	54.0	48.8	47.2	43.6	43.5	48.3	38.8
Basic Skills	53.3	50.9	53.1	47.1	49.7	63.4	54.1	54.0	46.5	49.0	49.4	47.3	49.2	55.7	51.2	37.4
Activities	38.4	36.6	37.8	33.6	34.3	46.1	41.1	38.1	29.6	34.7	36.0	34.2	34.1	44.0	37.6	30.6
	47.3	45.3	46.9	41.5	43.5	56.3	49.3	47.3	38.7	45.9	44.7	42.9	42.3	47.7	45.7	35.6
DIGITAL INCLUSION INDEX	56.5	55.3	56.8	51.7	55.5	63.2	57.5	56.6	50.4	57.2	53.9	54.0	52.0	54.9	56.7	45.9

*Sample size <100, exercise caution in interpretation. **Source:** Roy Morgan Research, April 2016–March 2017

Demographics

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

In 2017, Queenslanders in the top household income bracket have an ADII score of 65.6. This is 10.3 points above the average Queensland score (55.3), but 2.5 points below the national figure for people in this bracket (68.1). Queenslanders in the lowest household income bracket recorded a score of 40.7. This is 15.8 points below the national average and slightly lower than the national score for this bracket (41.1).

Queenslanders in the highest household income bracket have recorded an improved ADII score over 2014–2017 (up 2.9 points), while residents in the lowest household income bracket have registered a smaller gain (up 2.5 points, from 38.2 to 40.7). The ‘income gap’ between Queenslanders in the top and bottom household income brackets (24.9 points) may be lower than the comparable national figure (27.0), but it has widened slightly over the past four years.

Queenslanders in full-time employment recorded a steadily improving ADII score between 2014 and 2017 (up 3.2 points). This group’s 2017 score (60.1) is some 10.9 points higher than that of Queenslanders not in paid employment (49.2). Over the four years, scores for Queenslanders not in paid employment have risen steadily (up 3.4 points), thereby narrowing the gap slightly with those employed full-time.

In 2017, Queenslanders who did not complete secondary school recorded an ADII score of 47.3, while those with a tertiary education scored 60.8 – a 13.5-point difference. Both groups have experienced steadily rising scores over 2014–2017. While the score for tertiary-educated Queenslanders has risen by 3.3 points (from 57.5 in 2014 to 60.8 in 2017), those who did not complete secondary school have gained 4.0 points (from 43.3 in 2014 to 47.3 in 2017). While the ‘education gap’ between these two groups has therefore narrowed, it still remains in excess of 20.0 points.

Age is also a significant influence on digital inclusion in Queensland. In 2017, people aged 35–49 years were the most digitally included age group, with a score of 61.6. They also recorded the greatest gain of any age cohort over the four years, up 6.4 points.

The 65+ group recorded the lowest ADII score (41.3) of all Queensland age cohorts in 2017. This was some 20.3 points below the state’s most digitally included cohort this year (35–49 year olds). However, Queenslanders aged 65+ recorded a 3.6-point rise over the four years (from 37.7 to 41.3), outpacing the overall state-wide increase over that same period. Queensland was one of only two states or territories in which the ‘age gap’ narrowed (the other being Tasmania). It should be noted that the very strong gains made by this group on the Access sub-index (up 10.6 points) since 2014, and their solid improvement in Digital Ability (up 6.7 points), were largely offset by a decline in the Affordability sub-index (down 6.6 points, due to a substantial increase in the proportion of household incomes spent on network access).

Queenslanders with a disability have a relatively low level of digital inclusion, recording a 2017 ADII score of 48.6, some 6.7 points below the state average. While this group’s score has improved since 2014 (up 5.7 points), with strong gains in Access (up 9.0 points) and Digital Ability (up 12.1 points), Affordability has declined (down 3.9 points).

In 2017, Indigenous Queenslanders* recorded an ADII score of 47.4, or 2.1 points below the national average for Indigenous Australians. In the four years 2014–2017, the ADII score for Indigenous Queenslanders has risen 3.6 points, slightly higher than the state’s overall increase (3.2 points). It should be noted that the data for Indigenous Queenslanders is based on a small sample size of between 50 and 100 people, and is therefore subject to significant margins of error.

Table 20: Queensland: Digital inclusion by demography

2017	QLD	Income Quintiles					Employment			Education			Age					Disability	Indigenous Australians*	LOTE
		Q1	Q2	Q3	Q4	Q5	Full-Time	Part-Time	None	Tertiary	Secondary	Less	14-24	25-34	35-49	50-64	65+			
ACCESS																				
Internet Access	84.5	92.7	90.4	88.6	81.3	69.6	89.5	89.4	77.8	91.2	84.4	75.7	88.1	90.1	91.0	83.8	67.6	73.8	75.0	88.1
Internet Technology	71.7	78.2	76.6	75.1	68.0	58.3	76.2	76.3	65.6	76.2	72.2	65.3	75.0	75.8	77.5	70.6	58.0	64.8	59.5	73.5
Internet Data Allowance	50.9	61.1	56.7	55.0	46.3	35.1	57.7	55.9	42.5	56.5	53.9	40.9	53.1	61.6	59.3	47.5	31.4	43.9	40.0	53.3
	69.0	77.3	74.5	72.9	65.2	54.3	74.5	73.8	61.9	74.6	70.2	60.6	72.1	75.8	75.9	67.3	52.4	60.8	58.2	71.6
AFFORDABILITY																				
Relative Expenditure	46.2	66.7	54.1	40.0	29.8	26.3	50.7	41.1	44.6	46.2	43.9	48.4	50.3	41.2	47.1	45.9	46.3	33.8	53.4	46.7
Value of Expenditure	56.9	62.9	62.2	60.5	53.0	42.3	60.4	63.5	50.8	62.0	59.6	47.9	59.6	62.0	63.6	55.5	42.2	54.1	42.8	57.3
	51.6	64.8	58.1	50.3	41.4	34.3	55.5	52.3	47.7	54.1	51.7	48.1	55.0	51.6	55.4	50.7	44.2	44.0	48.1	52.0
DIGITAL ABILITY																				
Attitudes	48.5	57.0	51.6	50.6	42.6	36.1	52.3	53.2	42.9	54.0	50.6	39.2	61.9	55.5	53.9	39.5	32.1	43.3	43.3	54.5
Basic Skills	50.9	62.6	59.1	54.9	42.0	37.7	58.1	57.9	41.2	61.8	51.9	35.6	48.5	63.1	62.4	47.2	30.5	46.0	37.8	45.6
Activities	36.6	44.4	41.3	39.8	28.8	26.8	40.7	42.8	29.9	45.6	36.6	24.5	39.8	46.9	44.7	30.6	19.8	33.6	27.2	38.2
	45.3	54.7	50.7	48.4	37.8	33.5	50.4	51.3	38.0	53.8	46.4	33.1	50.0	55.2	53.6	39.1	27.4	41.0	36.1	46.1
DIGITAL INCLUSION INDEX	55.3	65.6	61.1	57.2	48.1	40.7	60.1	59.1	49.2	60.8	56.1	47.3	59.0	60.8	61.6	52.4	41.3	48.6	47.4	56.6

*Sample size <100, exercise caution in interpretation. **Source:** Roy Morgan Research, April 2016–March 2017

ADII scores for Queenslanders from a LOTE background have risen consistently since 2015. In 2017 the score for this group is 56.6, which is 1.3 points higher than the state average (55.3), but below the national LOTE average (59.3). The LOTE community is a highly diverse group, and care should be taken in interpreting findings.

Several groups in Queensland are more digitally excluded, with scores falling below the state average (55.3). In ascending order, these groups are: people in low income households (40.7), older Australians (41.3), people who did not complete secondary school (47.3), Indigenous Australians (47.4), people with a disability (48.6), and people not in paid employment (49.2).

Western Australia

Findings

In 2017, WA's ADII score is 56.2. The state now sits slightly below the national average (56.5), ranking fifth out of the eight states and territories. Over 2014–2017, digital inclusion in WA has increased by 3.3 points. However, this improvement has been inconsistent: the state's ADII score rose from 52.9 in 2014 to 54.8 in 2015, but fell to 54.1 in 2016. Then in 2017 the score rebounded, rising 2.1 points to its current level of 56.2.

WA saw steady annual improvements in Access between 2014–2017 (up 7.9 points, from 61.8 to 69.7), and a similar pattern in Digital Ability (up 5.7 points, from 41.8 to 47.5). By contrast, Affordability declined over the four-year period (from 55.1 in 2014 to 51.4 in 2017). 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 incomes have fallen as the state's mining boom has slowed.

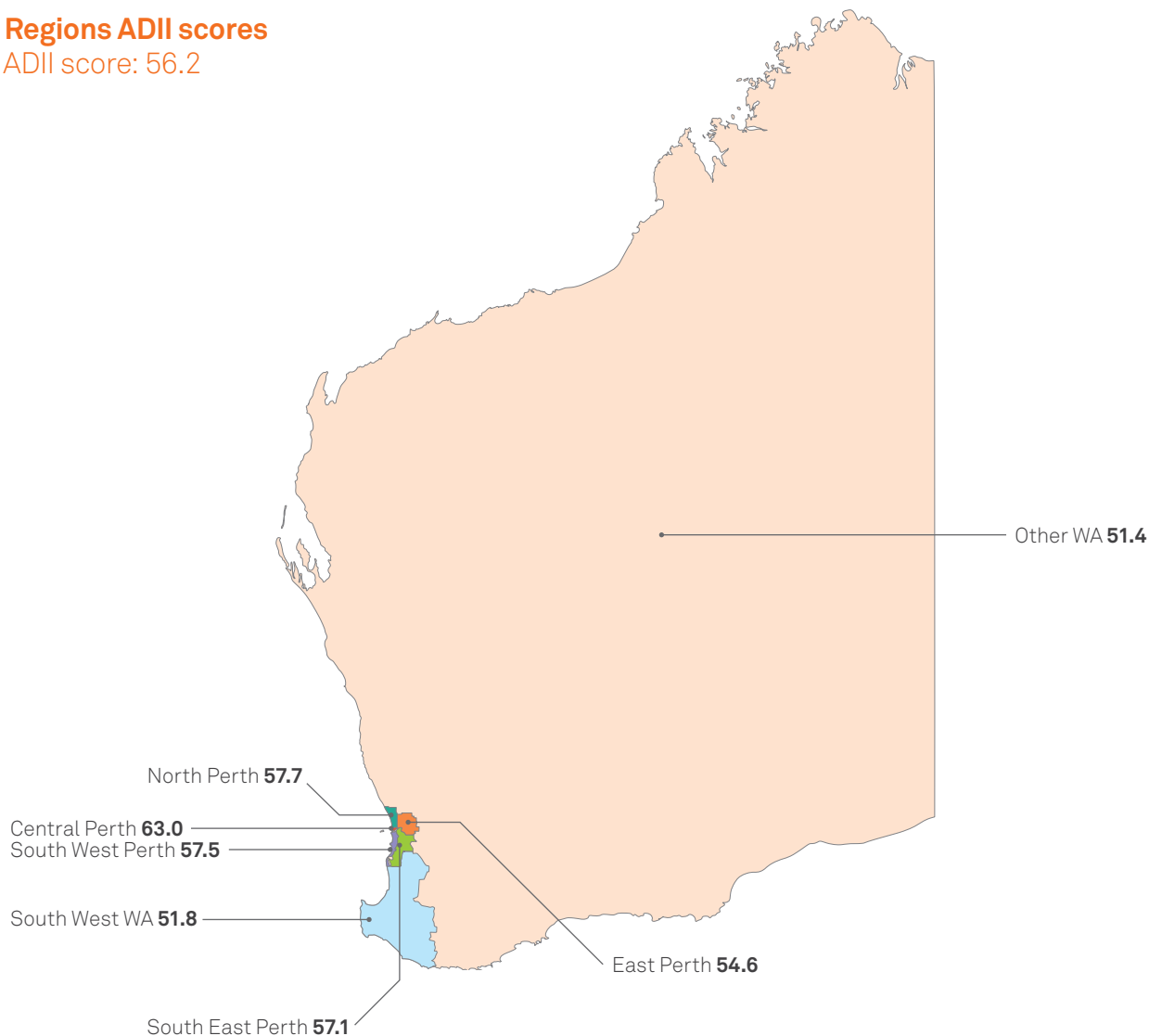
Geography

In 2017 Perth's ADII score is 57.5, slightly above the state (56.2) and national averages (56.5), but below the national capital cities average of 58.6. While Perth's score improved by 2.8 points over the four years (from 54.7 in 2014 to 57.5 in 2017), this improvement failed to keep pace with Australia's other mainland state capitals (with the exception of Brisbane). Declining household income after the mining boom – a trend that began to appear in the 2015 ADII data – has resulted in a decrease in Perth's position on the Relative Expenditure measure compared with the other mainland capitals.

The 2017 scores recorded by both of WA's rural regions, as shown in the ADII data – South West WA (51.8) and WA Country (51.4) – are above the national rural average (50.7). Although both these regions experienced some improvement in scores between 2014–2017, the pattern has not been constant, and the gap between South West WA and the national average has widened.

WA Regions ADII scores

WA ADII score: 56.2



Source: Roy Morgan Research

Table 21: WA: Digital inclusion by geography

2017	Australia	WA	Perth	Rural WA	Perth Regions					South West WA	Other WA
					Central	East	North	South West	South East		
ACCESS											
Internet Access	85.3	86.2	86.7	84.6	91.4	85.1	85.4	86.8	87.5	85.6	84.2
Internet Technology	72.1	71.7	72.4	69.3	72.9	69.9	71.4	73.7	73.6	68.8	69.6
Internet Data Allowance	51.2	51.3	52.7	46.0	54.6	50.1	52.4	56.0	50.7	44.5	46.6
	69.6	69.7	70.6	66.6	73.0	68.4	69.7	72.2	70.6	66.3	66.8
AFFORDABILITY											
Relative Expenditure	46.8	44.7	45.5	41.9	51.4	44.6	46.0	41.6	47.5	46.8	39.6
Value of Expenditure	58.5	58.1	60.4	49.3	66.8	56.8	61.4	60.5	59.3	49.4	49.3
	52.7	51.4	53.0	45.6	59.1	50.7	53.7	51.1	53.4	48.1	44.4
DIGITAL ABILITY											
Attitudes	50.1	49.2	49.9	46.4	56.4	46.6	51.2	51.6	46.5	46.1	46.5
Basic Skills	53.3	53.7	55.2	48.2	64.6	50.9	55.5	54.7	55.0	45.2	49.6
Activities	38.4	39.5	41.4	32.7	49.5	36.8	42.0	41.2	41.0	31.7	33.1
	47.3	47.5	48.8	42.4	56.8	44.8	49.6	49.1	47.5	41.0	43.1
DIGITAL INCLUSION INDEX	56.5	56.2	57.5	51.6	63.0	54.6	57.7	57.5	57.1	51.8	51.4

Source: Roy Morgan Research, April 2016–March 2017

Demographics

In line with national trends, West Australians with lower income, education, and employment levels tend to be less digitally included. Over the four years, West Australians in the top income bracket recorded fluctuating ADII scores of 61.3 (2014), 64.2 (2015), 61.7 (2016), and 65.4 (2017). However, each of these results has been more than 7.0 points above both the state-wide and national averages. In 2017, West Australians in the top household income bracket scored 65.4, or 2.7 points below the national average for this income group (68.1). Echoing the national pattern, West Australians in the top household income bracket scored highly across all three sub-indices of the ADII (Access, Affordability, and Digital Ability).

In 2017, WA residents in the lowest household income bracket recorded an ADII score of 43.4. This is 13.1 points below the national average score, and 12.8 points below the state average, but 2.3 points higher than the national score for this income bracket (41.1). In fact, West Australians in the lowest income bracket recorded a substantial improvement in digital inclusion over the four years (up 8.3 points from 35.1 in 2014 to 43.4 in 2017). This is well above both the state average (up 3.3 points) and top household income bracket gain (up 4.1 points). The gap between WA's highest and lowest income brackets remains high at 22.0 points, but has narrowed over the four years 2014–2017.

In 2017, tertiary-educated West Australians have an ADII score of 60.1, while those who didn't complete secondary school scored 48.9 – a gap of 11.2 points. Over the four years, West Australians who haven't completed secondary school recorded a 3.0-point gain, narrowing the gap with tertiary-educated residents, who gained just 0.9 points. While the tertiary-educated scored higher on all sub-indices than those who didn't complete secondary school, their 17.5-point lead on Digital Ability is below the comparable national average on this sub-index (21.1 points).

In 2017, West Australians not in paid employment recorded an ADII score of 51.2, or 8.7 points below those in full-time employment (59.9). Scores for both cohorts fluctuated over 2014–2017. Overall, the scores for full-time workers rose 3.6 points (from 56.3 to 59.9), and the not-employed cohort registered a rise of 3.9 points (from 47.3 to 51.2), meaning the 'employment gap' has narrowed slightly.

Age is also a significant factor impacting digital inclusion in WA. In 2017, residents aged 14–24 and 35–49 years were the most digitally included age groups, both scoring 60.9. The 35–49 year olds also recorded the greatest gain of any age cohort statewide, up 5.2 points (from 55.7 in 2014).

Statewide, West Australians aged 65+ recorded the lowest ADII score (42.2) of all age cohorts in 2017. This is 18.7 points below WA's most digitally included age cohort for that year, and 14.0 points below the state average. Worryingly, those aged 65+ have experienced only a very modest improvement in scores over the four years (up 2.0 points, from a score of 40.2 in 2014). Their gain falls below the state average over this period (3.3 points), indicating a widening 'age gap'. Following a nationwide pattern, West Australians aged 65+ recorded improved scores on the Access and Digital Ability sub-indices (up 9.2 and 7.7 points respectively since 2014), but these gains were offset by a decline in the Affordability sub-index (down 11.1 points, due to a substantial increase in the proportion of household income spent on network access).

In 2017, Western Australians with disability have an ADII score of 48.4, which is 7.8 points below the state average. Over 2014–2016 people in WA with a disability recorded improving annual scores, but in 2017 their score fell by 1.1 points. This fall was underpinned by reductions in the Affordability and Digital Ability sub-index scores.

Table 22: WA: Digital inclusion by demography

2017	WA	Income Quintiles					Employment			Education			Age					Disability*	Indigenous Australians**	LOTE
		Q1	Q2	Q3	Q4	Q5	Full-Time	Part-Time	None	Tertiary	Secondary	Less	14-24	25-34	35-49	50-64	65+			
ACCESS																				
Internet Access	86.2	92.1	92.0	88.6	80.5	75.0	90.8	89.8	80.7	90.1	87.9	78.4	91.6	89.1	92.8	85.6	68.4	79.9	76.0	83.7
Internet Technology	71.7	77.5	77.4	73.3	68.6	60.7	75.0	74.7	67.5	75.3	72.5	65.3	75.9	75.8	76.0	70.1	58.3	64.9	59.3	72.1
Internet Data Allowance	51.3	59.4	58.7	53.7	44.0	38.7	56.1	58.4	43.7	55.2	53.1	43.2	55.9	58.6	60.3	47.0	30.0	45.3	41.3	52.2
	69.7	76.3	76.0	71.9	64.3	58.2	74.0	74.3	64.0	73.5	71.1	62.3	74.4	74.5	76.3	67.5	52.3	63.4	58.9	69.3
AFFORDABILITY																				
Relative Expenditure	44.7	64.6	49.1	41.1	27.1	23.3	48.0	43.2	42.8	44.4	42.7	47.6	45.3	40.3	43.8	47.6	46.9	35.8	30.3	48.3
Value of Expenditure	58.1	63.1	60.6	61.2	54.0	49.0	59.2	64.5	54.0	62.1	60.2	49.4	62.8	58.3	63.0	58.7	44.6	55.6	42.1	57.8
	51.4	63.9	54.8	51.1	40.6	36.1	53.6	53.9	48.4	53.3	51.5	48.5	54.1	49.3	53.4	53.2	45.8	45.7	36.2	53.0
DIGITAL ABILITY																				
Attitudes	49.2	55.7	50.4	50.6	45.5	39.6	53.8	53.8	43.0	54.5	50.2	39.7	60.8	57.4	52.4	42.4	31.4	42.7	63.4	53.0
Basic Skills	53.7	65.1	63.6	55.5	46.8	39.4	59.4	59.1	46.3	60.7	55.9	40.3	56.0	62.8	61.4	51.8	31.6	38.8	31.9	49.3
Activities	39.5	47.7	45.8	39.0	33.8	28.7	43.2	42.7	34.9	45.2	41.9	28.0	45.6	46.6	45.4	34.6	22.6	26.8	25.7	38.0
	47.5	56.2	53.3	48.4	42.0	35.9	52.1	51.9	41.4	53.5	49.3	36.0	54.1	55.6	53.1	42.9	28.5	36.1	40.3	46.8
DIGITAL INCLUSION INDEX	56.2	65.4	61.4	57.1	49.0	43.4	59.9	60.0	51.2	60.1	57.3	48.9	60.9	59.8	60.9	54.5	42.2	48.4	45.1	56.4

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

Source: Roy Morgan Research, April 2016–March 2017

People from a LOTE background in WA have relatively strong digital inclusion, with an ADII score in 2017 of 56.4, just above the state-wide average (0.2 points higher). However, over the long term the digital inclusion of this group has not improved. In fact, back in 2014 their ADII score (56.7) was 0.3 points higher than it is in 2017. 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 (56.2). In ascending order, these groups are: older Australians (42.2), people in low income households (43.4), people with a disability (48.4), people who did not complete secondary school (48.9), and people not in paid employment (51.2).

South Australia

Findings

SA's ADII score in 2017 is 53.9, the second lowest of any state or territory. Over 2014–2017, digital inclusion in SA has consistently improved, rising from 50.0 in 2014 to its current level. The gap between SA's score and the national average has narrowed since 2015 (from 3.0 points to 2.6).

Looking at the three sub-indices, SA's Access score has improved consistently (from 59.5 in 2014 to 67.3 in 2017), as has its Digital Ability (from 39.6 in 2014 to 45.2 in 2017). Mirroring the national picture, SA's Affordability score has fluctuated, dropping between 2014 and 2016 from 50.9 to 47.5, before making a slight recovery to reach 49.3 in 2017. Since 2015, the Affordability measure has remained the largest contributor to the gap between SA and the national average; this gap is currently 3.4 points.

Geography

Adelaide is the most digitally included part of SA, with an ADII score of 54.7. While Adelaide's score increased each year between 2014–2017 (up 3.0 points from 51.7), its growth did not keep pace with the capital cities average over this time, which rose 3.6 points (from 55.0 to 58.6).

Rural SA's ADII score has improved consistently from 42.9 (2015), to 47.2 (2016), and 51.2 (2017). The score for rural SA is now higher than the national rural average (50.7). The ADII scores across all of SA's rural regions have risen steadily over the past four years, grounded in improvements in Access and Digital Ability. In 2016–2017 Yorke, Lower North and Murray, and South East SA recorded scores close to the national rural average (50.7), while Eyre's²⁷ score rose 7.7 points (to 53.2), driven by substantial gains in Access and Digital Ability.

SA has the narrowest Capital–Country gap in 2017, with rural residents in this state recording an ADII score 6% lower than those living in Adelaide.

Demographics

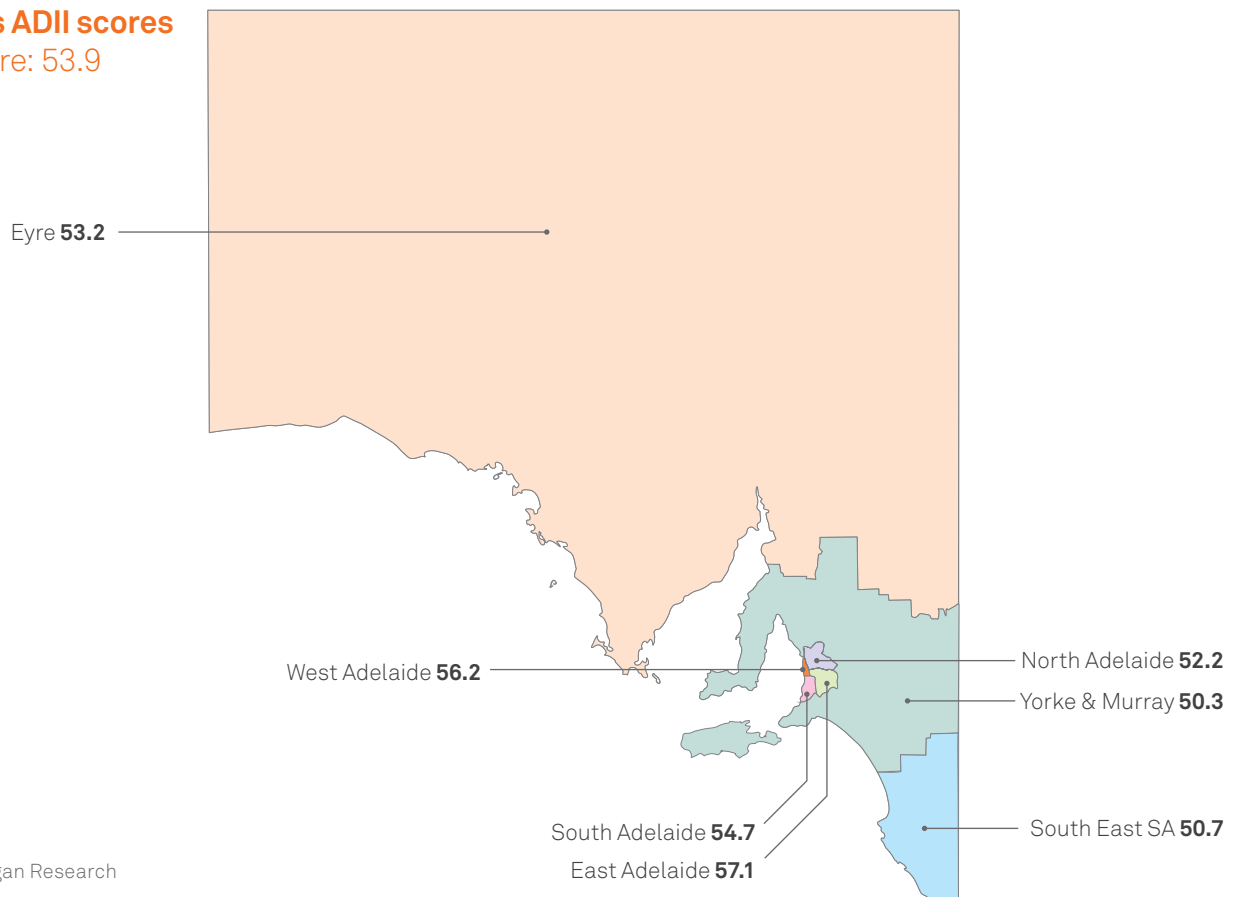
Echoing patterns in the national figures, digital inclusion in SA tends to increase as income, education, and employment levels rise. South Australians in the top household income bracket have an ADII score of 66.8 in 2017, 12.9 points above the SA average (53.9), but 1.3 points below the national figure for this income bracket (68.1). South Australians in the lowest household income bracket recorded an ADII score of 41.5. This is 15.0 points below the national average and 12.4 points below the state average. However, they did record a slightly better score than the national average for this income bracket (41.1).

SA residents in the highest household income bracket recorded an improved score over 2014–2017 (up 3.8 points, on par with the national average gain). South Australians in the lowest household income bracket recorded a stronger gain over this period (up 5.7 points, from 35.8 to 41.5). The 'income gap' between South Australians in the highest and lowest household income brackets remains high, at 25.3 points, but has narrowed slightly over the past four years.

In 2017, SA residents who did not complete secondary school recorded an ADII score of 45.2, while those with a tertiary education scored 59.1 – an 'education gap' of 13.9 points. Over 2014–2017, both these groups recorded fluctuating scores. However, comparing 2014 with 2017 scores, both groups

SA Regions ADII scores

SA ADII score: 53.9



Source: Roy Morgan Research

experienced an overall rise – the tertiary-educated up 2.5 points and those who did not complete secondary school up 3.1 points.

The ADII scores for both full-time workers and not-employed South Australians fluctuated between 2014 and 2017. While full-time workers' scores rose 3.4 points over this four-year period, the 'employment gap' narrowed slightly, with the not-employed cohort registering a rise of 6.0 points.

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 2017 than older groups in that state. Not only were 25–34 year olds the state's most digitally included age cohort in 2017 (61.0 points), but they also recorded the most improvement since 2014 (up 6.6 points, from 54.4).

SA residents aged 65+ recorded the lowest ADII score (41.5) of all

SA age groups in 2017. Over the four years older South Australians made substantial improvements on the Digital Access and Digital Ability sub-indices (up 10.0 and 7.6 points respectively), but these gains were largely offset by a decline in the Affordability sub-index (down 6.1 points). This decline was due to a substantial increase in the proportion of household incomes spent on network access.

In 2017, South Australians with disability have an ADII score of 45.1. This is substantially higher than the score recorded in 2016 (38.5), which was significantly affected by lower rates of internet access. SA residents with a disability scored 8.8 points below the state average in 2017. While this 'disability gap' remains large, it has narrowed somewhat over the four years since 2014.

LOTE South Australians recorded an ADII score of 56.9 in 2017, well above the state average (53.9) and slightly above the Australian (56.5) average. In SA the LOTE group's score rose by 5.8 points between 2014 and 2017, outpacing the average rise for the whole state over that period (up 3.9 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 (53.9). In ascending order, these groups are: older Australians (41.5), people in low income households (41.5), people with a disability (45.1), people who did not complete secondary school (45.2), and people not in paid employment (48.8).

Table 23: SA: Digital inclusion by geography

2017	Australia	SA	Adelaide	Rural SA	Adelaide Regions				Yorke & Murray	South East SA	Eyre
					North	West	East	South			
ACCESS											
Internet Access	85.3	83.8	84.0	83.0	81.2	85.4	88.0	83.2	81.4	80.6	87.0
Internet Technology	72.1	69.7	70.0	68.5	68.0	69.2	72.9	70.3	67.3	67.1	71.3
Internet Data Allowance	51.2	48.4	49.2	45.6	48.8	51.6	50.2	47.4	42.7	47.8	49.8
	69.6	67.3	67.7	65.7	66.0	68.7	70.4	67.0	63.8	65.2	69.4
AFFORDABILITY											
Relative Expenditure	46.8	43.7	44.6	40.6	43.7	47.2	43.8	44.6	41.3	41.8	38.8
Value of Expenditure	58.5	54.9	56.4	49.4	54.1	56.8	60.8	55.3	48.9	46.8	51.8
	52.7	49.3	50.5	45.0	48.9	52.0	52.3	49.9	45.1	44.3	45.3
DIGITAL ABILITY											
Attitudes	50.1	48.7	49.9	44.6	44.7	50.5	55.1	51.2	43.1	44.6	47.3
Basic Skills	53.3	51.0	51.5	49.5	47.4	55.7	52.8	52.5	48.8	49.2	50.9
Activities	38.4	35.9	36.3	34.9	32.8	37.7	38.2	37.8	34.1	34.4	36.6
	47.3	45.2	45.9	43.0	41.6	47.9	48.7	47.1	42.0	42.8	44.9
DIGITAL INCLUSION INDEX	56.5	53.9	54.7	51.2	52.2	56.2	57.1	54.7	50.3	50.7	53.2

Source: Roy Morgan Research, April 2016–March 2017

Table 24: SA: Digital inclusion by demography

2017	SA	Income Quintiles					Employment			Education			Age					Disability	Indigenous Australians**	LOTE
		Q1	Q2	Q3	Q4	Q5	Full-Time	Part-Time	None	Tertiary	Secondary	Less	14-24	25-34	35-49	50-64	65+			
ACCESS																				
Internet Access	83.8	94.9	91.4	90.2	81.2	69.9	92.5	88.7	76.5	89.2	88.7	74.3	91.1	91.4	90.6	81.4	67.6	70.9	75.6	86.6
Internet Technology	69.7	78.0	76.4	73.3	67.3	58.6	75.7	73.8	64.2	73.2	73.7	62.6	74.4	74.7	75.5	67.6	57.9	58.6	62.3	70.7
Internet Data Allowance	48.4	58.1	58.1	52.2	46.5	37.6	56.7	52.9	41.6	51.8	56.4	38.7	55.2	58.4	57.5	44.4	30.1	44.1	58.1	54.1
	67.3	77.0	75.3	71.9	65.0	55.3	75.0	71.8	60.8	71.4	72.9	58.5	73.6	74.8	74.5	64.5	51.9	57.9	65.3	70.5
AFFORDABILITY																				
Relative Expenditure	43.7	64.7	50.7	40.4	31.7	26.1	44.1	41.4	44.5	45.1	41.0	44.3	44.2	39.2	40.5	45.5	48.2	37.5	34.4	44.8
Value of Expenditure	54.9	60.8	61.1	57.6	54.0	45.0	58.7	59.0	50.7	58.5	63.1	44.7	58.9	60.8	63.6	52.5	40.4	48.9	55.0	61.5
	49.3	62.8	55.9	49.0	42.9	35.6	51.4	50.2	47.6	51.8	52.0	44.5	51.5	50.0	52.0	49.0	44.3	43.2	44.7	53.2
DIGITAL ABILITY																				
Attitudes	48.7	61.4	56.2	56.3	42.0	36.8	56.6	51.5	42.8	56.5	53.3	36.8	60.2	62.8	52.3	42.6	31.5	35.7	35.8	56.4
Basic Skills	51.0	71.4	66.3	57.1	46.6	37.6	60.7	59.7	41.4	61.5	54.8	36.9	53.6	63.6	63.8	45.6	31.7	38.6	40.6	49.2
Activities	35.9	49.5	45.0	41.7	33.8	26.2	41.7	42.0	29.8	44.1	40.5	23.7	40.1	48.0	45.0	29.0	21.4	28.0	37.7	36.0
	45.2	60.8	55.8	51.7	40.8	33.5	53.0	51.1	38.0	54.1	49.5	32.4	51.3	58.1	53.7	39.1	28.2	34.1	38.1	47.2
DIGITAL INCLUSION INDEX	53.9	66.8	62.3	57.5	49.6	41.5	59.8	57.7	48.8	59.1	58.2	45.2	58.8	61.0	60.1	50.8	41.5	45.1	49.4	56.9

**Sample size <50, exercise extreme caution in interpreting results. Source: Roy Morgan Research, April 2016–March 2017

Tasmania

Findings

Tasmania's ADII score in 2017 is 49.7, the lowest of any state or territory in Australia. While Tasmania's score fell by 2.0 points between 2015 and 2016 (from 50.1 to 48.1), it recovered slightly in 2017 (by 1.6 points). However, the gap between Tasmania and the national average is widening, with a national average gain of 2.0 points in 2016–2017.

Tasmania's scores are the lowest nationally across all three sub-indices – Access (63.2, against Australia's national average of 69.6), the Affordability measure (45.8, against 52.7 nationally), and Digital Ability (39.9, against 47.3 nationally). Digital Ability and Affordability are the biggest contributors to Tasmania's digital divide. Scores on both these sub-indices are approximately 7.0 points below the national average, and the gap has widened since 2014. The Access gap between Tasmania and Australia overall is currently 6.4 points. It has widened each year since 2015.

Geography

Hobart is the most digitally included place in Tasmania, with an ADII score of 54.0 in 2017. Despite a strong statewide position, Hobart's score has improved little over the past four years. After recording a score of 52.2 in 2014, Hobart's digital inclusion level fell for the next two years (52.1 and 50.0), before making a solid recovery in 2017 (up 4.0 points to 54.0). Hobart's score remains 4.6 points lower than the national average for capital cities, but this is an improvement from 2016, when the gap was 6.8 points.

Digital inclusion in rural Tasmania is relatively low, at 46.5 points, and has fallen from a high of 48.5 in 2015, when it was above the national rural average. Rural Tasmania now sits 4.2 points below the national rural average of 50.7. Launceston and North East Tasmania have experienced similar fluctuations, recording a high of 51.0 in 2015, before a sharp 4.2-point decline in 2016 (to 46.8), then a modest 0.9-point recovery to its current level of 47.7.

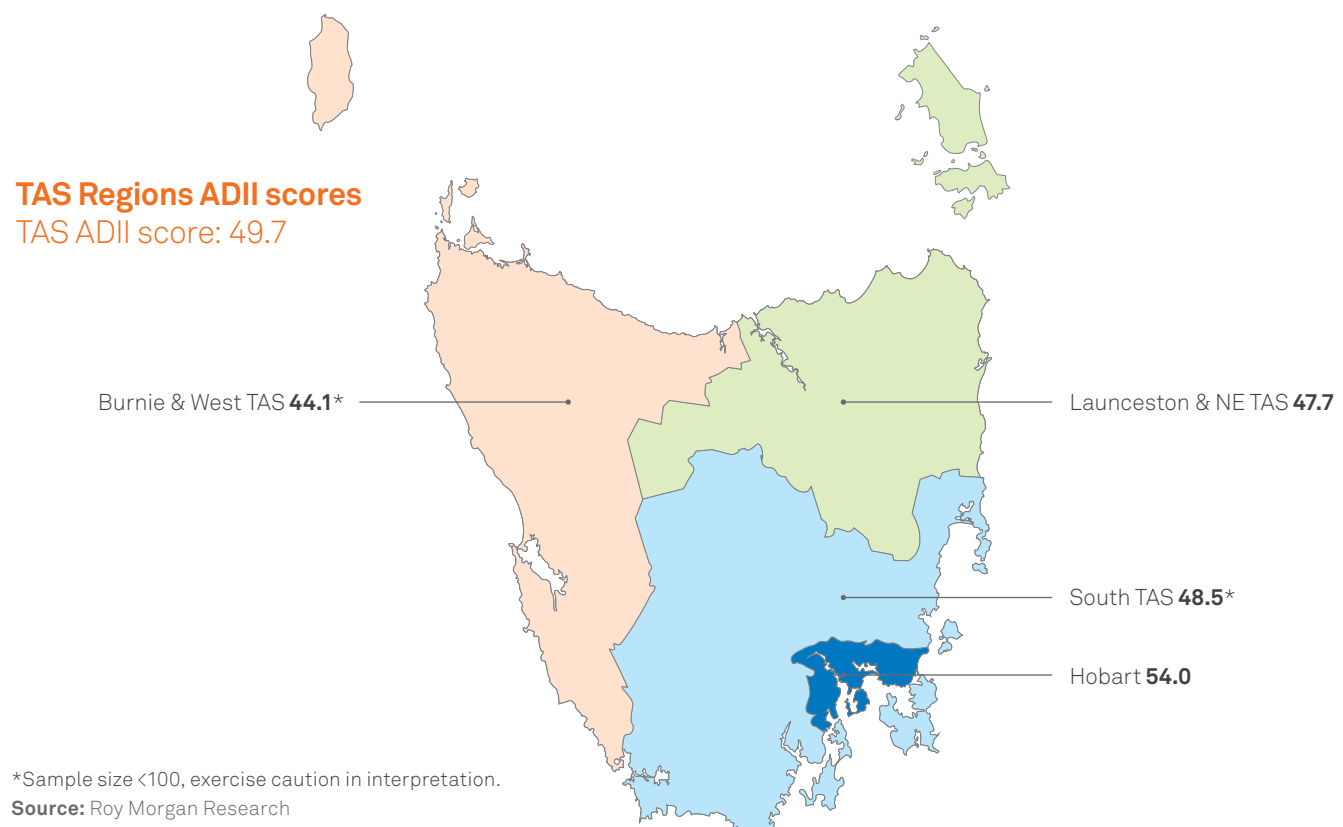
A decrease in the number of surveys conducted in Southern Tasmania*, Burnie & Western Tasmania* over 2014–2017 has reduced the reliability of the data set, and this may account for some of the variation in results recorded in these regions.

Table 25: Tasmania: Digital inclusion by geography

2017	Australia	TAS	Hobart	Rural TAS	South TAS*	Burnie & West TAS*	Launceston & NE TAS
ACCESS							
Internet Access	85.3	79.8	84.6	76.3	75.1	73.3	79.0
Internet Technology	72.1	67.5	72.3	64.0	63.5	57.5	69.3
Internet Data Allowance	51.2	42.4	47.8	38.4	46.2	34.0	39.7
	69.6	63.2	68.2	59.5	61.6	54.9	62.7
AFFORDABILITY							
Relative Expenditure	46.8	43.4	40.8	45.4	38.0	47.2	46.0
Value of Expenditure	58.5	48.2	55.9	42.6	46.7	40.2	43.3
	52.7	45.8	48.3	44.0	42.4	43.7	44.7
DIGITAL ABILITY							
Attitudes	50.1	44.8	49.3	41.5	44.8	40.6	41.2
Basic Skills	53.3	44.2	50.8	39.2	46.2	37.0	39.1
Activities	38.4	30.8	36.2	26.8	33.9	23.5	27.5
	47.3	39.9	45.4	35.8	41.6	33.7	35.9
DIGITAL INCLUSION INDEX	56.5	49.7	54.0	46.5	48.5	44.1	47.7

*Sample size <100, exercise caution in interpretation.

Source: Roy Morgan Research, April 2016–March 2017



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, Tasmanians in the lowest household income bracket recorded not only extremely low ADII scores, but declining ones. ADII scores for this cohort fell marginally between 2014 (37.6) and 2015 (37.5), before a more substantial drop in 2016 (down 2.4 points, to 35.1). In 2016–2017, digital inclusion has improved for this cohort, rising 5.4 points to 40.5. This gain is primarily due to improvements in Access and Digital Ability.

The ADII score of Tasmanians in the lowest household income bracket is 40.5. This is 9.2 points below the state average, 16 points below the national average, and slightly below the comparable national figure for this income bracket (41.1). While the ‘income gap’ between Tasmanians in low income households and the overall Tasmanian population narrowed between 2014 and 2017 (down 2.0 points), this must be viewed in the context of a negligible improvement at state level. Tasmania’s 0.9-point gain over this four-year period (from 48.8 to 49.7) is substantially below the nationwide increase of 3.8 points (from 52.7 to 56.5).

Mirroring statewide patterns, the ADII scores of both full-time workers and not-employed Tasmanians fluctuated over the four years. Overall, both groups have recorded an improvement between 2014 and 2017. The ADII score of full-time workers* increased 1.9 points (from 54.9 to 56.8), while the score of non-employed Tasmanians rose 3.2 points (from 42.6 to 45.8).

In 2017, tertiary-educated Tasmanians scored 56.0, while those who did not complete secondary school scored 42.7 – an ‘education gap’ of 13.3 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. However, the gap between these two cohorts on the Affordability sub-index is small, and has been narrowing since 2015. Despite a slightly improved Digital Ability score over four years for Tasmanians who did not complete secondary school, on this sub-index the gap with those with a tertiary education remains large, at 21 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 35 and over. In 2017, Tasmanians aged 65+ recorded the lowest score (41.0) of all ADII age cohorts. While both the 35–49* and 50–64 year olds scored higher than those aged 65+, between 2014 and 2017 those relatively younger groups showed little or no improvement. By contrast, the 65+ age group recorded a gain of 3.2 points. Tasmania was one of only two states and territories in which the ‘age gap’ in digital inclusion narrowed (the other being Queensland).

Over 2014–2017, the very strong gains made by Tasmanians aged 65+ in the Access and Digital Ability sub-indices (up 10.3 and 10.0 points respectively) were largely offset by a decline in the Affordability sub-index (down 10.5 points over this period, on the basis of a substantial increase in the proportion of household incomes spent on network access).

From the data available, it is clear that several groups in Tasmania are particularly digitally excluded, with ADII scores substantially below the state average (49.7). In ascending order, they are: people in low income households (40.5), older Australians (41.0), people who did not complete secondary school (42.7), and people not in paid employment (45.8).

Table 26: Tasmania: Digital inclusion by demography

2017	TAS	Income Quintiles					Employment			Education			Age					Disability*	Indigenous Australians**	LOTE**
		Q1**	Q2**	Q3*	Q4	Q5	Full-Time*	Part-Time*	None	Tertiary	Secondary	Less	14-24*	25-34**	35-49*	50-64	65+			
ACCESS																				
Internet Access	79.8	95.3	89.0	85.4	73.2	67.4	91.0	88.7	72.6	89.4	84.2	67.4	84.0	87.1	87.8	80.1	64.5	64.5	69.7	76.4
Internet Technology	67.5	80.5	73.5	73.9	63.4	56.8	73.5	74.2	63.0	74.8	69.3	59.4	71.5	73.0	72.1	68.0	56.4	54.2	62.2	66.4
Internet Data Allowance	42.4	57.8	50.2	47.2	36.5	31.1	50.6	50.2	36.6	48.7	45.9	33.7	43.8	52.8	45.4	46.7	27.7	32.2	48.6	41.6
	63.2	77.9	70.9	68.9	57.7	51.8	71.7	71.0	57.4	71.0	66.5	53.5	66.5	71.0	68.4	64.9	49.5	50.3	60.1	61.5
AFFORDABILITY																				
Relative Expenditure	43.4	63.7	58.3	31.7	38.5	34.8	42.5	38.8	45.4	37.0	40.5	51.7	56.7	34.4	33.3	43.4	49.1	45.5	26.0	54.8
Value of Expenditure	48.2	65.6	56.6	47.7	41.9	37.8	56.8	50.0	44.3	55.7	51.9	38.4	50.1	46.3	49.5	52.4	42.3	36.9	36.6	37.6
	45.8	64.6	57.5	39.7	40.2	36.3	49.6	44.4	44.8	46.4	46.2	45.1	53.4	40.3	41.4	47.9	45.7	41.2	31.3	46.2
DIGITAL ABILITY																				
Attitudes	44.8	44.1	49.5	46.7	36.7	39.9	50.4	47.3	41.8	50.7	43.9	39.9	58.8	46.5	50.6	38.3	35.0	24.4	50.6	45.9
Basic Skills	44.2	54.0	56.9	53.0	33.4	35.3	59.3	48.4	36.9	58.6	46.7	28.6	35.9	61.9	58.8	40.8	28.9	26.8	36.4	46.1
Activities	30.8	39.0	41.4	34.0	21.6	25.3	37.8	33.4	27.2	42.5	29.9	20.5	31.2	43.2	40.1	25.7	19.7	20.0	24.6	40.1
	39.9	45.7	49.2	44.6	30.6	33.5	49.2	43.1	35.3	50.6	40.2	29.6	42.0	50.5	49.8	34.9	27.9	23.8	37.2	44.0
DIGITAL INCLUSION INDEX	49.7	62.7	59.2	51.0	42.8	40.5	56.8	52.8	45.8	56.0	51.0	42.7	53.9	53.9	53.2	49.3	41.0	38.4	42.9	50.6

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

Source: Roy Morgan Research, April 2016–March 2017

Australian Capital Territory

Findings

ACT's ADII score in 2017 is 59.9. ACT is the most digitally included of the eight states and territories, with a higher ADII than the national average of 56.5. Over 2014–2017, digital inclusion in ACT has risen only marginally (up 1.8 points, against a national average increase of 3.8 points). In the past year, the gap between ACT and each of the other states and territories has narrowed.

Dimensions of digital inclusion: Access, Affordability, Digital Ability

ACT's strong results have been driven by relatively high Access scores, which have improved annually over the four years of data collection, although at a diminishing rate. ACT's Access score is now 70.1, having risen steadily from 66.2 in 2014.

Looking at the measures that make up the Access sub-index, ACT has seen consistent improvements in Internet Technology and Internet Data Allowance over the four years. Between 2014 and 2017 the Internet Technology measure increased 8.1 points, from 64.1 (2014) to 72.2 (2017), while the Internet Data Allowance measure rose 4.5 points, from 45.5 (2014) to 50.0 (2017). The Internet Access measure fluctuated over the four years, and fell slightly overall from 89.0 (2014) to 88.1 in (2017).

Changes to ACT's Affordability sub-index score over the four years broadly reflects the decline registered at the national level. Looking at the measures that make up this sub-index, this decline is underpinned by an increase in Relative Expenditure on internet access, which is only partially offset by an improvement in the Value of Expenditure (falling cost per gigabyte of data) (see p. 10 in the national overview section for details of this dynamic). While ACT's Relative Expenditure measure fell 7.3 points between 2014 and 2017, and its Value of Expenditure rose 4.8 points over that period, annual results fluctuated (and to a greater extent than the national data). Over the four years, Relative Expenditure in ACT fell from 62.2 (2014) to 54.9 (2017), while Value of Expenditure rose from 52.9 (2014) to 57.8 (2016), before falling slightly to 57.7 (2017).

In each year 2014–2017, ACT has recorded significantly higher Digital Ability scores than other states and territories. In 2014, ACT's Digital Ability score was 50.5, some 8.1 points higher than the national average, and 7.1 points higher than Victoria, the state with the next highest score. While ACT's Digital Ability score has fluctuated annually, it has risen 2.8 points over four years, and now sits at 53.3 in 2017. Overall, ACT now ranks first nationally on the Digital Ability sub-index, but slightly below Victoria on Access and NT* on Affordability.

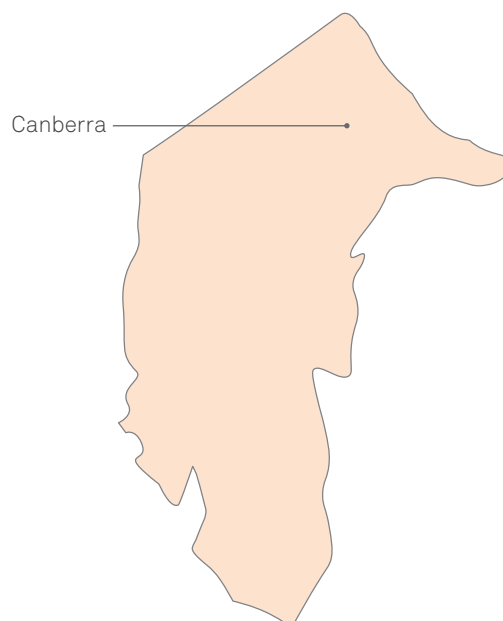
The available data for ACT was not broken down into demographic or sub-regional categories, given the restricted sample size for this territory. This means our aggregated figures do not reflect the considerable variations that exist between different communities within the broader ACT population.

Table 27: ACT: Sub-index scores (ADII, 2017)

	Australia	ACT
2017		
ACCESS		
Internet Access	85.3	88.1
Internet Technology	72.1	72.2
Internet Data Allowance	51.2	50.0
	69.6	70.1
AFFORDABILITY		
Relative Expenditure	46.8	54.9
Value of Expenditure	58.5	57.7
	52.7	56.3
DIGITAL ABILITY		
Attitudes	50.1	54.0
Basic Skills	53.3	59.7
Activities	38.4	46.1
	47.3	53.3
DIGITAL INCLUSION INDEX	56.5	59.9

Source: Roy Morgan Research, April 2016–March 2017

ACT ADII score: 59.9



Northern Territory

Findings

The ADII score for NT* for the year ending March 2017 is 56.9, slightly above the national average (56.5). NT currently ranks fourth of the eight states and territories for digital inclusion. Over 2014–2017, NT's digital inclusion score has fluctuated from 53.0 (in 2014), to 55.8 (in 2015), to 54.5 (2016), to 56.9 (2017). Over time, NT's score has consistently remained at, or above, the Australian average.

It should be noted that NT's sample size comprises fewer than 100 surveys, as such the data in this section should be interpreted with caution.

Dimensions of digital inclusion: Access, Affordability, Digital Ability

Over 2014–2017, NT's improved ADII score has been driven by gains in Access, which rose steadily from 61.6 in 2014 to 68.8 in 2017. The rollout of NBN to parts of NT has at least partly underpinned this improvement. This influencing factor is reflected in upward trends in the Internet Technology and Internet Data Allowance indicators.

Between 2016 and 2017, NT's Affordability score increased by 4.6 points to 57.2. This result has reversed the downward trend seen in the first three years of measurement, when Affordability declined steadily in the NT, from 55.3 (in 2014) to 52.6 (in 2016). Underlying this pattern was a significant decline in Relative Expenditure between 2014 and 2016 (only partially offset by improved Value of Expenditure), before a slight recovery in 2017 (see p. 10 in the national overview section for more details of this dynamic).

Digital Ability in NT improved by 2.7 points over the four years, albeit with some annual fluctuations. Annual scores for this sub-index were 42.0 (2014), 46.9 (2015), 43.9 (2016), and 44.7 (2017). While the 2016 ADII report highlighted the decline in Digital Ability over 2015–2016 as a concern, this measure showed some signs of improvement in 2017. Improvements in the Basic Skills and Activities measures over 2016–2017 (up 1.3 and 1.8 points respectively) contributed positively to NT's overall Digital Ability result, but this was partly diminished by a slight decline in the Attitudes measure (down 0.8 points).

Given the restricted sample size for 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, data collection did not extend to remote Aboriginal communities, where high levels of geographic isolation and socioeconomic disadvantage pose real challenges for digital inclusion. More detailed research is required to gain a clearer understanding of digital inclusion in these remote communities. It should also be noted that a decrease in the number of surveys conducted annually in the NT over 2014–2017 has reduced the reliability of the dataset, and this may account for some annual variations.

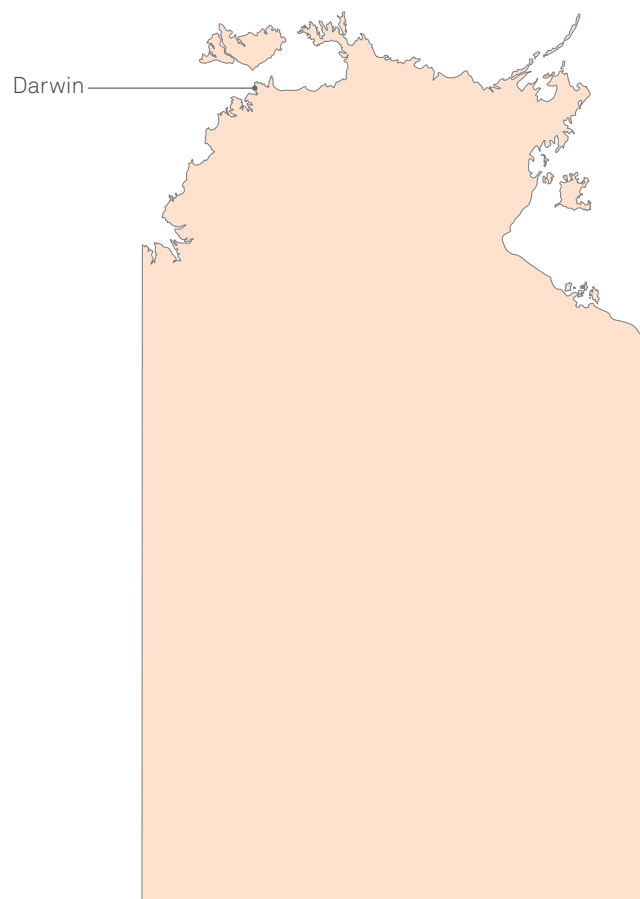
Table 28: NT: Sub-index scores (ADII, 2017)

2017	Australia	NT*
ACCESS		
Internet Access	85.3	81.5
Internet Technology	72.1	72.6
Internet Data Allowance	51.2	52.3
	69.6	68.8
AFFORDABILITY		
Relative Expenditure	46.8	51.7
Value of Expenditure	58.5	62.7
	52.7	57.2
DIGITAL ABILITY		
Attitudes	50.1	46.7
Basic Skills	53.3	49.4
Activities	38.4	37.9
	47.3	44.7
DIGITAL INCLUSION INDEX	56.5	56.9

*Sample size <100, exercise caution in interpretation

Source: Roy Morgan Research, April 2016–March 2017

NT ADII score: 56.9*



*Sample size <100, exercise caution in interpretation

Conclusion

The ADII shows digital inclusion is improving in Australia at the national level. Since 2014, the national ADII score has risen from 52.7 to 56.5, and every state and territory has recorded improved scores over the past four years. Nevertheless, many Australians are missing out. Digital inclusion remains linked to income, age, education, and other socioeconomic factors.

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 by 7.4 points since 2014, from 62.2 to 69.6 in 2017. 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 network infrastructure, but it is largely due to greater data allowances and the growing range of devices people own. We note that our aggregate measures do not capture outcomes for some specific populations, including remote Indigenous communities.

Affordability, on the other hand, has declined since 2014. 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 1.19% in 2017). Therefore, despite this improvement in value, the overall Affordability score has fallen.

Digital Ability has improved considerably since 2014, with Attitudes improving by 4.1 points, Basic Skills by 6.1, and Activities by 4.2. 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 for policy makers, business, education, and community groups.

Regional variations

The ADII illuminates the link between geography and digital inclusion. In 2017, the highest-scoring state or territory is the ACT (59.9, or 3.4 points above the national average), followed by Victoria (57.5). Victoria and NSW have experienced particularly strong growth. Australia's least digitally included state or territory is Tasmania (49.7, or 6.8 points below the national average), followed by SA (53.9).

Australia's big cities have high levels of digital inclusion. Some rural and regional areas are well behind, including Burnie and Western Tasmania (44.1), North West Queensland (45.9), North Victoria (46.5), East Victoria (47.0), Launceston and North-East Tasmania (47.7), and North West Victoria (48.2). These regions have ADII scores at least 15% below the national average score of 56.5. Regional cities have higher digital inclusion than country areas, but don't score as well as capital cities.

The overall 'Capital–Country gap' has narrowed slightly since 2015, from 8.5 (2015), to 8.3 (2016), to 7.9 (2017), but remains higher than the 2014 level (7.5). This is not consistent across all states: over this period SA, WA, and Queensland narrowed the gap between capital city and country residents, while the gap widened in Victoria, NSW, and Tasmania.

Addressing the needs of particular communities

The ADII also helps us gauge the digital inclusion of particular sociodemographic groups in Australia. People aged 65+ are Australia's least digitally included demographic group (42.9, or 13.6 points below the national average). We note the differences within this broad cohort of people, but the overall 'age gap' has been steadily widening since 2015.

People receiving a disability pension²⁸ have a low level of digital inclusion (47.0, or 9.5 points below the national average). However, nationally, the digital inclusion of this group has improved steadily (up by 5.2 points since 2014), outpacing the national average increase over the four years studied (3.8 points).

Indigenous Australians also have a low level of digital inclusion (49.5, or 7.0 points below the national average). Their inclusion has improved by 4.5 points Australia-wide over 2014–2017 (also outpacing the Australia-wide gain of 3.8). It is important to note that our data collection did not extend to remote Indigenous communities.

The ADII shows which groups are the most digitally excluded, with scores registering substantially below the national average (56.5). In ascending order, these groups are: people in low income households (41.1), older Australians (42.9), people with a disability (47.0), people who did not complete secondary school (47.4), Indigenous Australians (49.5), and people not in paid employment (50.2).

Mobile-only users experience a relatively high degree of digital exclusion. In 2017, mobile-only users have an overall ADII score of 42.3, some 14.2 points below the national average (56.5). Mobile-only use is linked to socioeconomic factors, with people living in low income households (29.8%), not employed (24.0%), and with low levels of education (27.6%) all more likely to be mobile-only.

Areas for further action

- *Improving Digital Ability should be an important focus area for policy makers, business, the education sector, and community groups.*
- *Regional and local initiatives will be central in tackling the geographic and social challenges of digital inclusion.*
- *Our aggregated data does not reflect the diversity of experiences for particular populations, such as Indigenous communities, people with a disability, and LOTE communities. Further research and community-specific initiatives are needed here.*
- *We need to closely monitor Affordability and its effects, especially in relation to digitally excluded Australians on low or fixed incomes.*
- *The websites of essential service providers and government agencies need to be made accessible and easy to navigate for mobile-only internet users.*
- *The ADII reveals some unexpected examples of high digital inclusion within specific groups and regions. More could be learned from in-depth studies of this diversity of experiences.*

The ADII is a flexible tool, which we hope will be valuable to governments, businesses, community organisations, researchers, and service providers.

Appendix 1

Methodology

Data collection

The data used to compile the ADII originates from Roy Morgan Research’s ongoing Single Source survey of 50,000 Australians annually.²⁹ ADII calculations are based on a sub-sample of approximately 16,000 responses in each 12-month period. In these extensive face-to-face interviews, Roy Morgan Research 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 interviewers interview people in their homes, and directly enter the resultant data into tablet computers, using computer assisted personal interviewing (CAPI).³⁰

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

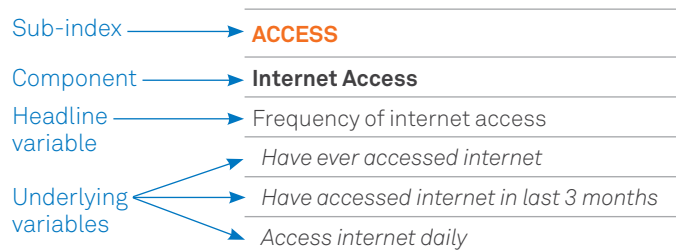
Each of these three sub-indices is made up of a number of *components*, which have themselves been calculated from numerous *variables*. These variables are either sourced directly from the Roy Morgan Single Source database, or derived from the data according to the formulas outlined below.

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 3) 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 3).

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 29, 30, and 31. The following diagram is an example of how the sub-indices are structured, with the various elements labelled.

Figure 3: Example of sub-index structure, ADII



Source: Roy Morgan Research, April 2016–March 2017

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 allowance,³² and benchmarks set proportional to national averages.³³

Table 29: 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 3 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 phone on the 4G network (until December 2016) - 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

Source: Roy Morgan Research, April 2016–March 2017

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 quintiles.³⁴

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 quintiles.³⁵

Table 30: Affordability sub-index: structure and variables

Relative Expenditure <ul style="list-style-type: none"> Share of household income spent on internet products relative to benchmark 	Value of Expenditure <ul style="list-style-type: none"> Internet data allowance per dollar of expenditure relative to benchmark
--	---

Source: Roy Morgan Research, April 2016–March 2017

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 confidence.³⁶

Basic Skills, consisting of six categories: basic,³⁷ mobile phone,³⁸ banking,³⁹ shopping,⁴⁰ community,⁴¹ and information skills.⁴²

Activities, which mirror the six categories of basic skills, but are more advanced: accessing content,⁴³ communication,⁴⁴ transactions,⁴⁵ commerce,⁴⁶ media,⁴⁷ and information.⁴⁸

Table 31: Digital Ability sub-index: structure and variables

Attitudes <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 	Basic Skills <ul style="list-style-type: none"> General internet skills Mobile phone skills Internet banking skills Internet shopping skills Internet community skills Internet information skills 	Activities <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
---	---	--

Source: Roy Morgan Research, April 2016–March 2017

¹ Australian Bureau of Statistics (2016). *Household Use of Information Technology 2014–2015*. Catalogue number 8146.0, Canberra; Australian Bureau of Statistics (2016). *Census of Population and Housing*, QuickStats Australia (estimate of 3.05 million Australians based on 1.172 million households x 2.6 person average household size).

² European Commission (2017). 'The Digital Economy and Society Index (DESI)'. Europa.eu.

³ Go On UK (n.d.). 'The Digital Inclusion Outcomes Framework'. Go-on.co.uk.

⁴ Australian Bureau of Statistics (2016). *Household Use of Information Technology 2014–2015*. Catalogue number 8146.0, Canberra.

⁵ EY Sweeney (n.d.). 'Digital Australia: State of the Nation (2015–16)'. Digitalaustralia.ey.com.

⁶ Infoboxchange, Connecting Up and TechSoup New Zealand (2016). *Digital technology in the not-for-profit sector*.

⁷ Australian Communications and Media Authority (2017). 'Research Index'. Acma.gov.au.

⁸ Swinburne Institute for Social Research, Centre for Social Impact, Telstra Corporation Ltd (2015). *Australian Digital Inclusion Index: Discussion Paper*.

⁹ 'Australian Digital Inclusion Index' (n.d.). Digitalinclusionindex.org.au.

¹⁰ Roy Morgan Research (n.d.). 'Single Source: the pinnacle of market research'. Roymorgan.com.

¹¹ For example, the ADII and the National Aboriginal and Torres Strait Islander Social Survey (NATSISS) have produced similar results on the question of daily internet use for Indigenous Australians in non-remote areas. There is a 3.5 percentage-point difference in daily internet use for Indigenous Australians (Aboriginal and Torres Strait Islander people) in the 2015 ADII data and the non-remote sample in the NATSISS (2014–2015). This is the only question contained in both datasets. While the 2016 Census contains questions on internet use, remoteness areas were not available at the time of writing. Australian Bureau of Statistics (2017). *National Aboriginal and Torres Strait Islander Social Survey, Australia (2014–15)*. Catalogue number 4714.0, Canberra.

¹² A 9.2 rise since 2015 for Access among Indigenous Australians, compared with 6.1 for all Australians; and a 5.7 rise since 2015 among Indigenous Australians for Digital Ability compared with 2.7 for all Australians.

¹³ A rise of 1.2 since 2015 for Indigenous Australians, compared with 0.7 for all Australians.

¹⁴ Research on Aboriginal people living in remote communities shows they overwhelmingly prefer pre-paid to post-paid billing – both for convenience, and because it fits better with cultural and social systems of exchange. However, the reasons for mobile-only use may be different for those living in urban and regional areas and more research is needed to better understand these differences. See Rennie E., Hogan, E., Gregory, R., Crouch, A., Wright, A. and Thomas, J. (2016). *Internet on the Outstation: The digital divide and remote Aboriginal communities*. Institute for Network Cultures: Amsterdam.

¹⁵ For instance, the ABS' National Aboriginal and Torres Strait Islander Social Survey (NATSISS) shows that while 85.7% of Aboriginal people living in urban and regional areas have accessed the internet in the last 12 months, only 53.1% of those living in remote and very remote areas have done so. For daily use, this drops to 64.1% and 25.2% respectively. However, the NATSISS does not tell us which devices people are using to access the internet. These data gaps make it difficult to provide a full picture of digital inclusion for this group. Australian Bureau of Statistics (2017). *National Aboriginal and Torres Strait Islander Social Survey, Australia (2014–15)*. Catalogue number 4714.0, Canberra.

- ¹⁶ Morsillo, R. (2011). One down, two to go: public policy in service of an available, affordable and accessible National Broadband Network for people with disability. *Telecommunications Journal of Australia*, 61(2), pp. 28.1-28.13; Goggin, G., Hollier, S. and Hawkins, W. (2017). Internet accessibility and disability policy: lessons for digital inclusion and equality from Australia. *Internet Policy Review*, 6(1).
- ¹⁷ The sample size for persons with disability aged 14–24 and 24–34 is too small to enable analysis of changes in the ADII.
- ¹⁸ Ellis, K. and Kent, M. (2003). Digital disability: the social construction of disability in new media. *Choice Reviews Online*, 41(01), pp. 41-0382-41-0382; Ellis, K. and Kent, M. (2011). *Disability and New Media*. 1st ed. New York: Routledge.
- ¹⁹ Morsillo, R. (2011). One down, two to go: public policy in service of an available, affordable and accessible National Broadband Network for people with disability. *Telecommunications Journal of Australia*, 61(2), 28.1–28.13; Australian Communications Consumer Action Network (2015). *Access to the internet for persons with disabilities and specific needs. Submission by the Australian Communications Consumer Action Network to the ITU CWG – Internet*. ACCAN; Australian Communications Consumer Action Network (2016). *Affordability Map*. ACCAN; and Goggin, G. & Hollier, S. and Hawkins, W. (2017). Internet accessibility and disability policy: lessons for digital inclusion and equality from Australia. *Internet Policy Review*, 6(1).
- ²⁰ Garrett, R. and Nguyen, T. (2012). Together we can find telecommunication solutions for people with complex communication needs. *Telecommunications Journal of Australia*, 62(2), 26.1–26.13.
- ²¹ Dobson, P., Jackson, P. and Gengatharen, D. (2013). Explaining broadband adoption in rural Australia: modes of reflexivity and the morphogenetic approach. *MIS Quarterly*, 37(3), 965–991; Freeman, J. and Park, S. (2015). Rural realities: digital communication challenges for Australian local governments. *Transforming Government: People, Process and Policy*, 9(4), 465–479; Goggin, G. (2003). Wiring the Country: Local Telecommunications and Australian Rural Communities. *Southern Review: Communications, Politics and Culture*, 36(1), 36–47; Leung, L. (2014). Availability, access and affordability across 'digital divides': Common experiences amongst minority groups. *Australian Journal of Telecommunications and The Digital Economy*, 2(2), Article 38; Park, S. (2016). Digital inequalities in rural Australia: A double jeopardy of remoteness and social exclusion. *Journal of Rural Studies*.
- ²² Atkinson, J., Black, R. and Curtis, A. (2008). Exploring the digital divide in an Australian regional city: a case study of Albury. *Australian Geographer*, 39(4), 479–493; Alam, K. and Imran, S. (2015). The digital divide and social inclusion among refugee migrants. *Information Technology & People*, 28(2), 344–365.
- ²³ Park, S. (2016). Digital inequalities in rural Australia: A double jeopardy of remoteness and social exclusion. *Journal of Rural Studies*.
- ²⁴ Pew Research Center (2016). 'Smartphone Ownership and Internet Usage Continues to Climb in Emerging Economies'. Pewglobal.org
- ²⁵ Australian Communications and Media Authority (2015). 'ACMA Research Snapshot: Australians get mobile'. Acma.gov.au; Humphrey, J. (2014). Homeless and Connected: Mobile phones and the Internet in the lives of homeless Australians, Australian Communications Consumer Action Network, Sydney; Ogle, G. and Musolino, V. (2016). *Connectivity Costs: Telecommunications Affordability for Low Income Australians*, Australian Communications Consumer Action Network, Sydney; The Salvation Army (2017). *Economic and social impact survey 2017: The hard road*. Blackburn, Victoria.
- ²⁶ The Hunter region was discussed in some detail in the 2016 ADII report, as survey data collected in the year to March 2016 suggested a very low score. An analysis of the Hunter survey sample (which, at less than one hundred respondents, carries significant margins of error), and an analysis of trends in the detailed ADII variables over the period April 2014 to March 2017, suggest that the very low 2016 result was anomalous. The Hunter region's ADII score of 52.5 in 2017 better reflects the trajectory established in 2014 and 2015, although the small sample size signals that the data should still be interpreted with caution.
- ²⁷ The sample size for Eyre is modest, but as with all longitudinal sample survey results, significant variations are best verified through triangulation with other data sources.
- ²⁸ The ADII data defines 'disability' as people who receive a disability support pension (DSP) from Centrelink, or a disability pension from the Department of Veterans' Affairs. It is important to note that this category does not include all Australians with disability.
- ²⁹ Roy Morgan Research (n.d.). 'Single Source: the pinnacle of market research'. Roymorgan.com.
- ³⁰ Roy Morgan Research 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 Research is certified to the AS/NZS ISO9001 Quality Management Systems standard and the AS ISO 20252 Market, Opinion and Social Research standard.
- ³¹ 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 Research (n.d.). 'Margin of Error Table'. Roymorgan.com.
- ³² 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.
- ³³ The benchmark was set at 20% above the nationwide average data allowances, and respondents with data allowances greater than the benchmark scored 100. For mobile internet data allowance the 2017 benchmark was 6.5GB, while for fixed internet data allowance it was 439GB.
- ³⁴ Since Affordability improves as this metric decreases, respondents in the lowest quintile of household expenditure on network access receive the highest score (100), and those with progressively higher expenditure occupy are placed in lower quintiles (i.e., 80, 60, etc.). Because a fully excluded person does not have any data allowance, and thus has no expenditure, those respondents with 0% Relative Expenditure receive a score of 0. Relative Expenditure quintiles (and scores) are: <0.73% (100); 0.74–1.13% (80); 1.14–1.65% (60); 1.66–2.75% (40); 2.75% or more (20); 0% (0).
- ³⁵ Since Affordability improves as this metric increases, respondents in the highest quintile receive the highest score (100), and receive progressively lower scores as they occupy lower Value of Expenditure quintiles (i.e., 80, 60, etc.). Also, because a fully excluded person does not have any data allowance, and is thus assigned a zero score, those respondents with 0% Value of Expenditure receive a score of 0. Value of Expenditure quintiles (and scores) are: 0 GB/\$ (0); 0.01–0.1 GB/\$ (20); 0.11–0.7 GB/\$ (40); 0.71–2.6 GB/\$ (60); 2.61–6.8 GB/\$ (80); 6.81 GB/\$ or more (100).
- ³⁶ 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.
- ³⁷ General browsing and email; scores for each of these activities are averaged to arrive at the basic internet skills score.
- ³⁸ 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.
- ³⁹ Checking bank account balance, or viewing online bank statements (either/or).
- ⁴⁰ 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).
- ⁴¹ 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).
- ⁴² 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).
- ⁴³ Streaming, playing, or downloading games, music, radio, video, TV, movies, podcasts, or software/programs.
- ⁴⁴ Instant messaging (e.g. Google Hangouts), making telephone calls via internet (e.g. Skype, VoIP), or business video conferencing (either/or).
- ⁴⁵ 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).
- ⁴⁶ Purchasing or selling a product online.
- ⁴⁷ Creating or managing an online journal or blog, registering a website, or creating/managing own website (either/or).
- ⁴⁸ 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

References

- 'Australian Digital Inclusion Index' (n.d.). Digitalinclusionindex.org.au.
- Australian Communications and Media Authority (2015). 'ACMA Research Snapshot: Australians get mobile'. Acma.gov.au.
- Australian Communications and Media Authority (2017). 'Research Index'. Acma.gov.au.
- Alam, K. and Imran, S. (2015). The digital divide and social inclusion among refugee migrants. *Information Technology & People*, 28(2), 344–365.
- Atkinson, J., Black, R. and Curtis, A. (2008). Exploring the digital divide in an Australian regional city: a case study of Albury. *Australian Geographer*, 39(4), 479–493.
- Australian Bureau of Statistics (2016). *Household Use of Information Technology 2014–2015*. Catalogue number 8146.0, Canberra.
- Australian Bureau of Statistics (2017). *National Aboriginal and Torres Strait Islander Social Survey, Australia (2014–15)*. Catalogue number 4714.0, Canberra.
- Australian Communications Consumer Action Network (2015). *Access to the internet for persons with disabilities and specific needs. Submission by the Australian Communications Consumer Action Network to the ITU CWG – Internet*. ACCAN.
- Australian Communications Consumer Action Network (2016). *Affordability Map*. ACCAN.
- Dobson, P., Jackson, P. and Gengatharen, D. (2013). Explaining broadband adoption in rural Australia: modes of reflexivity and the morphogenetic approach. *MIS Quarterly*, 37(3), 965–991.
- Ellis, K. and Kent, M. (2003). Digital disability: the social construction of disability in new media. *Choice Reviews Online*, 41(01), 41-0382–41-0382.
- Ellis, K. and Kent, M. (2011). *Disability and New Media*. 1st ed. New York: Routledge.
- European Commission (2017). 'The Digital Economy and Society Index (DESI)'. Europa.eu.
- EY Sweeney (n.d.). 'Digital Australia: State of the Nation (2015–16)'. Digitalaustralia.ey.com.
- Freeman, J. and Park, S. (2015). Rural realities: digital communication challenges for Australian local governments. *Transforming Government: People, Process and Policy*, 9(4), 465–479.
- Garrett, R. and Nguyen, T. (2012). Together we can find telecommunication solutions for people with complex communication needs. *Telecommunications Journal of Australia*, 62(2), 26.1–26.13.
- Go On UK (n.d.). 'The Digital Inclusion Outcomes Framework'. Go-on.co.uk.
- Goggin, G. (2003). Wiring the Country: Local Telecommunications and Australian Rural Communities. *Southern Review: Communications, Politics and Culture*, 36(1), 36–47.
- Goggin, G., Hollier, S. and Hawkins, W. (2017). Internet accessibility and disability policy: lessons for digital inclusion and equality from Australia. *Internet Policy Review*, 6(1).
- Humphrey, J. (2014). *Homeless and Connected: Mobile phones and the Internet in the lives of homeless Australians*, Australian Communications Consumer Action Network, Sydney.
- Infoxchange, Connecting Up and TechSoup New Zealand (2016). *Digital technology in the not-for-profit sector*.
- Leung, L. (2014). Availability, access and affordability across 'digital divides': Common experiences amongst minority groups. *Australian Journal of Telecommunications and The Digital Economy*, 2(2), Article 38.
- Morsillo, R. (2011). One down, two to go: public policy in service of an available, affordable and accessible National Broadband Network for people with disability. *Telecommunications Journal of Australia*, 61(2), 28.1–28.13.
- Ogle, G. and Musolino, V. (2016). *Connectivity Costs: Telecommunications Affordability for Low Income Australians*, Australian Communications Consumer Action Network, Sydney.
- Park, S. (2016). Digital inequalities in rural Australia: A double jeopardy of remoteness and social exclusion. *Journal of Rural Studies*.
- Pew Research Center (2016). 'Smartphone Ownership and Internet Usage Continues to Climb in Emerging Economies'. Pewglobal.org.
- Rheingold, H. (2012). *Net Smart: How to Thrive Online*, MIT Press.
- Rennie E., Hogan, E., Gregory, R., Crouch, A., Wright, A. and Thomas, J. (2016). *Internet on the Outstation: The digital divide and remote Aboriginal communities*. Institute for Network Cultures: Amsterdam.
- Roy Morgan Research (n.d.). 'Margin of Error Table'. Roymorgan.com.
- Roy Morgan Research (n.d.). 'Single Source: the pinnacle of market research' Single Source: the pinnacle of market research. Roymorgan.com.
- Swinburne Institute for Social Research, Centre for Social Impact, Telstra Corporation Ltd (2015). *Australian Digital Inclusion Index: Discussion Paper*.
- The Salvation Army (2017). *Economic and social impact survey 2017: The hard road*. Blackburn, Victoria.

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

Telstra

Telstra is a leading telecommunications and technology company with a proudly Australian heritage and a growing international business. In Australia, Telstra provides 17.4 million retail mobile services, 5.5 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.

www.telstra.com.au

Centre for Social Impact, Swinburne University of Technology

The Centre for Social Impact (CSI) is an independent, not-for-profit research and education partnership spanning three of Australia's leading universities: UNSW Australia, Swinburne University of Technology, and The University of Western Australia. CSI acts as a catalyst for social change by creating knowledge through research, and transferring that knowledge through teaching and public engagement. 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.

www.swinburne.edu.au/research/social-impact

Roy Morgan Research

Roy Morgan Research has more than 70 years' experience tracking consumer and social trends, and developing innovative methodologies and new technologies. Proudly independent, we've built a reputation based on our accurate data and products which include our extensive Single Source survey, and new digital research technologies such as Helix Personas, and Roy Morgan Audiences. Single Source, Helix Personas, and Roy Morgan Audiences integrate together to provide a comprehensive digital and offline customer engagement, marketing and media strategy offering. For information on how Roy Morgan Research can help your business, contact: AskRoyMorgan@RoyMorgan.com

www.roymorgan.com

More information about the ADII is available at www.digitalinclusionindex.org.au

Email us: info@digitalinclusionindex.org.au

Follow us on Twitter: @digInclusionAU

Join the conversation: #digitalinclusionAU



Roy Morgan
— Research —

 **RMIT**
UNIVERSITY

 **CENTRE**
for **SOCIAL**
IMPACT

SWIN
BUR
NE UNIVERSITY OF TECHNOLOGY