Regional communities’ influences on equity participation in higher education

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Robin Katersky Barnes, University of Tasmania
Sue Kilpatrick, University of Tasmania
Jessica Woodroffe, University of Tasmania
Nicole Crawford, University of Tasmania
Sherridan Emery, University of Tasmania
Gemma Burns, University of Tasmania
Margaret Noble, University of Tasmania
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Key Terms and Acronyms

ABS Australian Bureau of Statistics

Equity higher education indicators:

- **Access**: Number of commencing domestic onshore students in each equity group
- **Attainment or completion**: Number of students completing an award in each equity group (e.g. Bachelor’s degree)
- **Participation**: Continuing domestic onshore students in each equity group
- **Retention rate**: Continuing domestic onshore students in each equity group as a proportion of all students in that equity group minus completed
- **Success rate**: Equivalent full-time student load (EFTSL) passed as a proportion of EFTSL passed, failed and withdrawn for each equity group

LGA Local Government Area

Low SES Socioeconomic status in lowest 25 per cent [of postcodes or SA1s] by SEIFA IEO

SA1 Statistical Area Level 1
SA1s are the basic building blocks in the Australian Statistical Geography Standard (ASGS) and are used for the aggregation of statistics to larger Census geographic areas (ABS Glossary, 2011; https://meteor.aihw.gov.au/content/index.phtml/itemId/659740).

SEIFA (IEO) Socio-Economic Indexes for Areas (Index of Education and Occupation)

VET Vocational Education and Training
Executive Summary

There has been a growing interest in challenges faced by students from regional and remote Australia as their higher education access, participation, retention, success and attainment indicators persistently remain below those of their metropolitan counterparts. However, many students from regional and remote communities do perform well on the indicators, and there are communities across Australia that stand out on the basis of higher education performance. This study adopted a strengths-based approach to identify and explore these higher performing communities’ characteristics, attitudes and expectations; programs, partnerships and interventions; and social capital and infrastructure in order to uncover key influencers that support their residents to embark upon, and succeed in, higher education.

The study confirmed that there are differences amongst regional and remote communities in terms of community assets and attitudes that affect higher education outcomes for regional and remote students and other equity groups in regional and remote communities. Positive community attitudes toward education, and employer support for higher education, have an important significant role in promoting higher education access and participation, and in student retention and success. Proximity to a university campus, and connections between campus and community are also factors that facilitate access and participation, particularly for younger students. Mature-aged students in regional and remote communities, many of whom are studying part time and through distance mode, are a largely invisible but important segment of higher education participants and the workforce of regional and remote communities, which could be better supported by policy and university practice.

This project utilised a mixed-methods explanatory sequential design. Regional and remote communities, defined by postcode, were analysed for student access, participation, retention, success and attainment (completion) indicators by equity group using Department of Education and Training higher education student data for all regional and remote students from 2011 to 2016. In this report, the attainment indicator is defined as award or degree completion. A survey of regional and remote students attending five universities with more than 30 per cent of student load from regional and remote areas sought to find community-related factors that influence and enable access, participation, retention and success. Case studies identified community infrastructure relevant to educational aspiration and key informants were interviewed to explore community factors that contribute to higher education participation and success in five communities, selected to represent a diversity of communities that performed well on access, participation, retention, completion and/or success indicators from the national data and survey phases.

Key findings

Which regional communities in Australia have higher equity student access, participation, retention rates and success rates? How does this vary according to equity group?

- Communities with higher rates of student equity group access tended to also have higher rates of participation and completion for that equity group but did not have higher retention rates and success rates.
- Communities with well-above-average retention rates and success rates tended to have smaller populations.
- Low and low-medium socioeconomic status (SES) communities are better represented among high-performing retention rate and success rate communities than among communities which perform highly on access, participation and/or completion.
Communities proximate to a university campus perform well on multiple higher education indicators for regional and remote students overall, and also for disability, Indigenous and Non-English Speaking Background (NESB) equity group students. Home community factors appear to influence completion mainly through their impact on initial access to higher education. This is because access is a necessary first step toward eventual award completion. There is little correlation between rates of progress through awards, as measured by retention rate and success rate indicators and access, participation or completion. Communities with larger proportions of their populations that commence higher education, also have larger proportions of students participating in higher education, and going on to complete an award. This lack of correlation suggests that higher education institution factors and individual student factors have a much greater influence on rate of progress through an award than home community factors.
What are the community-related factors reported by regional students, that influence their higher education access, participation, retention and success? How does this vary according to equity group?

Findings from survey responses from 3,180 regional and remote students revealed:

- Home community factors most frequently reported as contributing to awareness of university included teachers and school staff, others who have studied at university, and friends and family.
- Family, friends, teachers and school staff were the most commonly reported contributors of information and support that led to higher education participation, and the most commonly reported contributors to students’ success at university.
- Over half agreed that friends from their home community studying at university helped or supported their retention or success at university. Case study interviewees confirmed that students studying away from home formed close, supportive bonding networks.
- The presence of a university campus, visits from university staff and organised visits to a campus contributed to awareness and participation for almost half the respondents.
- Home community factors that contributed to awareness, information and support for participation, retention and success in higher education varied by age group, particularly between those aged under 30 and those aged 30 and over. This is important because higher education students from regional and remote areas as a whole are older than those from metropolitan areas.
  - A local university campus and visits to a campus contributed more frequently to younger students’ awareness and provision of information and support to get into university.
  - Local libraries or study centres and community organisations more frequently contributed to awareness of university for older students.
  - Employers provided information and support for students in all age groups under 50 years, suggesting that employers play a role in higher education participation and upskilling the regional workforce.
  - Students aged 21 years and over are more likely to agree they received help that contributed to university retention and success from a university preparation program.
  - Younger students were more likely to agree that they received assistance to continue with and succeed in their studies from a wide range of home community factors including teachers, local study groups and friends also studying at university.
  - Older students reported fewer home community factors contributing to their access, participation, retention and success.

- A quarter of survey respondents do not have affordable internet in their home community and less than two thirds have reliable high-speed broadband, both essential infrastructure for higher education study.
- Most survey respondents’ home communities have a library or other quiet study place but less than half have public online access facilities.

How do measures of regional community assets that support competitiveness including: human capital, institutional foundations, infrastructure, technological readiness, labour market efficiency and innovation align (or not) with access, participation, retention rates and success rates of equity students?

Communities which performed well on higher education indicators for regional and remote and/or other equity group students have more university-educated residents and more employment in technology-related industries than regional and remote communities overall.
This means that people in these communities have better access to people who can demystify higher education and are more likely to be familiar with jobs of the future that require higher education qualifications.¹

What are the enabling community factors that are not measured by existing datasets, including individuals, social capital and other factors such as university partnerships, that influence access, participation, retention rates and success rates of equity students, and how do they work?

Case studies of five regional and remote communities were undertaken. They were selected because they performed well on the national data collection higher education indicators and/or because survey respondents reported strong home community influencing factors. The study found that the communities encouraged and supported higher education access, participation, retention and success through:

- valuing education
- having a strong sense of connectedness
- explicitly acknowledging higher education as part of the community narrative of success.

Mature-aged students were rarely mentioned and thus were largely invisible in key community informant interview data. This is consistent with the survey data that found that older students reported fewer community factors contributing to their awareness, information and support, and help with university studies.

Case studies revealed that employers played a role as enablers within regional and remote communities through encouraging participation and success in higher education amongst both younger and mature-aged community members, within both a local and national context. This supports the survey finding that employers provided information and support that assisted students of all ages to participate in higher education.

Policy and practice

What are the implications for policy and practice of enabling factors and regional community assets which influence access, participation, retention rates and success rates of equity students?

- **Mature-aged students** make up a larger proportion of the regional and remote cohort than the metropolitan student cohort, but tend to be invisible in policy and university outreach activities. Regional and remote mature-aged students are more likely to have work and/or family commitments that reduce both their ability to move to study and their time available for study, and therefore are more likely than younger and metropolitan students to be studying part time and fully or partly in distance mode.

- **Employers** are enablers of higher education access, participation and success amongst community members of all ages within regional and remote communities. They have a vested interest in ensuring that regional and remote communities have the higher education qualified workforce they need to support modern knowledge-intensive agriculture, mining and competitive manufacturing industries which are prevalent in regional and remote Australia.

- **University partnerships** that are people-rich and draw on regional and remote community social capital and other assets such as employers, local libraries, study

¹From 54 communities selected to represent those performing highly on higher education indicators rankings for human capital and technological readiness indices from the Regional Australia Institute Insight Index http://insight.regionalaustralia.org.au/.
centres and community organisations should be developed and expanded and include strategies to engage both younger and mature-aged students.

- The lack of visibility of mature-aged students suggests that regional and remote communities, local and other levels of government and universities must find ways to recognise, support and celebrate the success of mature-aged and distance students in regional and remote Australia.

There is a common misconception that access and participation in higher education is a linear pathway involving predominantly younger students. This study shows it is not uncommon for rural and regional students to have attempted a higher education qualification previously. It is important that alternative and non-linear pathways to higher education are promoted and celebrated, particularly regarding increasing access, participation, retention and success of mature-aged students in higher education.

- Provision of appropriately designed university preparation programs is needed for regional and remote students considering studying at a distance that take account of the mature-aged cohort and equip students to study in a fully distance mode.

University campuses, visits from university staff and organised visits to campuses are important sources of awareness that inform aspiration and provide information and support that assist students to access university, particularly for younger students.

- Many communities with high numbers of Indigenous students do not benefit from the proximity of a university campus, suggesting the need for outreach and engagement strategies for regional and remote Indigenous students not living near a campus.

**Further research**

Findings suggest further research to:

- explore factors influencing regional mature-aged student higher education access, participation and success especially considering that participation in this cohort is an important part of the regional and remote student cohort
- investigate the relationship between home community skill profile, workforce needs and employer roles in encouraging and supporting higher education access, participation and success so that higher education is able to meet the workforce needs of regional and remote Australian industries and business
- determine whether this geographic distribution is due to state-specific educational and/or other socio-cultural factors which influence higher education participation and success rates or whether community size has some independent influence on higher education participation.
Introduction

This study adopts a strengths-based approach to the 'problem' of students from regional and remote areas performing poorly in regard to the performance indicators of access, participation, retention, attainment and success in higher education, particularly in comparison to their metropolitan counterparts. While the national performance data for students in the regional and remote equity group participating in higher education are indeed sobering, it needs to be noted that it is not the experience of all regional and remote students in all regional and remote communities across Australia. In fact, it is the case that many individual communities in regional and remote areas do perform well on higher education indicators. Having identified 'successful' regional and remote communities, the study’s aim was to explore their characteristics, attitudes and expectations; programs, partnerships and interventions; and social capital and infrastructure to identify key community influencers that support their people to embark upon, and succeed in, higher education.

Such insights will ultimately be of benefit to regional and remote communities that perform less well in engaging their people in higher education. Underpinning the approach of seeking insights from within regional and remote communities is that instead of a regional community replicating successful approaches that are characteristic of metropolitan contexts, the community aiming for improvement in higher education participation and success could find models, exemplars and inspiration from a context more familiar to them—that is, another regional or remote community. Findings from this study are intended to assist regional and remote communities to learn from each other and to identify potential changes to policy and practice.

Research investigating the impact of regional community factors on higher education aspiration and participation typically takes a deficit-based approach. As a result, less is known about nuanced and enabling local community-level factors that influence higher education access, participation, retention, attainment and success. In employing a strengths-based approach to investigate the impact of regional community assets and factors that enhance equity student participation and success, this project has uncovered both key community influencers and influences.

The project was national in scope and employed a mixed-methods explanatory sequential design. It used data from the Higher Education student data collection; Regional Australia Institute Insight indices; a survey of regional students at selected universities; and community case studies together with an international literature review. Analyses of the quantitative and qualitative data gathered enabled a nuanced understanding of community factors. An overarching intention of the project was to provide recommendations and guidelines for policy and practice to improve access, participation and success of regional and remote students, across all equity groups, in higher education. More specifically, the project aimed to answer the following research questions:

1. Which regional communities in Australia have higher equity student access, participation, retention rates and success rates? How does this vary according to equity group?
2. What do regional students report are the community-related factors that influence their access, participation, retention and success? How does this vary according to equity group?
3. How do measures of regional community assets that support competitiveness including human capital, institutional foundations, infrastructure, technological readiness, labour market efficiency and innovation align (or not) with access, participation, retention rates and success rates of equity students?
4. What are the enabling community factors that are not measured by existing datasets, including individuals, social capital and other factors such as university
partnerships, that influence access, participation, retention rates and success rates of equity students, and how do they work?

**What are the implications for policy and practice of enabling factors and regional community assets which influence access, participation, retention rates and success rates of equity students?**

The project was funded by the National Centre for Student Equity in Higher Education (NCSEHE). The research team is from the University of Tasmania.
Literature Review: Community enablers of regional and remote students’ participation in higher education

This literature review provides insight into the factors that can influence access to, and participation in, higher education by regional and remote residents and investigates research into the enabling community-level factors that can influence higher education participation and success. The focus is particularly on understanding the community influences on prospects for success amongst rural and regional students in Australia. This is pertinent given that unlike other equity groups (for example, students with disability, Indigenous students and low socioeconomic status [SES] students) who have increased rates of enrolment in recent years, participation amongst regional and remote students has grown more slowly (Koshy, 2017). The social capital and place qualities of communities are central to this review which employs sociological perspectives to consider the challenges and opportunities for enhancing access to and participation in higher education for regional and remote students within diverse community contexts.

According to education participation data, the regional and remote student equity group is among the least likely to complete a university qualification (Lim, 2015). A recent National Centre for Student Equity in Higher Education (NCSEHE) briefing note by Koshy (2017), outlining Equity Student Participation in Australian Higher Education: 2011 to 2016 by enrolment of students by equity groups, reports on the change in undergraduate enrolment figures in Australian public universities. Koshy (2017) detailed the multiple changes in the ways equity group indicators are measured and reported on these for low SES, regional and remote students. For example, Koshy (2017, p. 19) reports that there has been an increase of 21.8 per cent in enrolments across equity groups between 2011–2016. Low SES student participation grew by 28.8 per cent; students with disability participation grew by 57.4 per cent; and Indigenous student participation rose by 54.6 per cent. Regional student growth was slower, at 18.6 per cent, while remote student participation grew by 20.6 per cent (Koshy, 2017, p. 19). Of concern is that both the regional and remote growth rates were below the overall rate of increase in undergraduate enrolments nationally, although it is noted that a change in the way students’ first or home addresses are reported may have distorted the regional and remote student data.

While these statistics are concerning, this research is interested in the positive and enabling community factors which may contribute to greater access, participation and success in higher education within this equity group. There are gaps in knowledge and research around community factors in regional and remote areas and this study aimed to generate insights into the area of community-level enablers. It is well accepted that the community contexts in which young people grow up influence their opportunities and aspirations to participate in higher education (Abbott-Chapman, 2011; Corbett, 2007; Skattebol & Redmond, 2018; Vinson, 2007). Research has found that personal and family factors are highly influential in this area (Lim, 2015; Stone, 2017a), however, there still remains little published about the influence of community-related factors on engagement with higher education. There is also little evidence published about the effect of community on mature-aged students’ propensity to participate in higher education.

Recent research conducted in Australia by Skattebol and Redmond (2018) identifies that access to community facilities, including physical facilities (e.g. libraries, community centres), institutional support and social networks, shapes the opportunity structures that impact upon young people’s prospects for participating in higher education. Skattebol and Redmond’s research found that young people growing up in disadvantaged communities are less likely
to have access to the types of community facilities available to young people in more affluent areas which enable higher education participation.

Community-related factors have been found to influence aspiration, perceived attainability and success of higher education participation (James, 2001; Webb, Black, Morton, Plowright, & Roy, 2015). The Review of Higher Education Access and Outcomes for Aboriginal and Torres Strait Islander People Final Report (Behrendt, Larkin, Griew, & Kelly, 2012) called for universities to develop stronger relationships with schools and communities to ‘build aspiration’ to participate in higher education. In recent years, outreach programs designed to increase aspirations have been implemented across Australia. One example is Aspire UWA (https://study.uwa.edu.au/how-to-apply/alternative-entry-pathways/equity-outreach/aspire-uwa), a widening participation program through which the University of Western Australia works with 63 partner secondary schools in regional and remote areas of Western Australia and in Perth. The program aims to raise aspirations for higher education through its combination of on-campus, in-school and community-based activities.

Similarly, the Aspire UC program developed by the University of Canberra has a goal of widening participation amongst regional students in the Australian Capital Territory (ACT). Fleming and Grace (2014) conducted an evaluation of the Aspire UC schools outreach program, which was delivered to almost 3,000 students in Years 7–10 at 23 high schools in the ACT. The sessions were led by University of Canberra staff and university students, mostly from low SES and rural backgrounds, who presented interactive sessions tailored to each year group which focused on post-school higher education and employment pathways. Students completed brief surveys about their future post-school plans at the commencement of the program and again at the end. The findings showed increased considerations of post-school study and work options amongst students in all year levels following participation in these sessions. The greatest increases were reported for university aspirations, and by Year 10 students. Fleming and Grace (2014, p. 492) conclude: “engaging with rural and regional young people, along with their families and communities is an essential first step to widening their participation” (emphasis added).

Informed by recent findings about regional and remote student participation in higher education, this project focused on understanding community enabling factors with the aim of building the evidence base to help communities play a role in access, participation and success in higher education.

**Background and context**

**Regional participation in higher education**

The Australian Government has identified growth in the higher education sector as a priority, with particular emphasis on opportunities for lifting participation and completion by students from rural, regional and remote areas. The report *Driving innovation, fairness and excellence* (Australian Government Department of Education and Training [DET], 2016) states that “the proportion of people from regional and remote Australia who participate in higher education continues to decline in relative terms” (p. 11). It further notes that regional underrepresentation in higher education is a focal point for federal education policy interventions. Recent analysis of the Longitudinal Surveys of Australian Youth (LSAY) data from the 2006 cohort of school leavers² conducted by Cardak and colleagues (2017) revealed that regional and remote students are on average slightly less likely than metropolitan students, after controlling for the impact of SES, to have plans to complete high school, attend university and graduate from university.

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A 2019 DET issues paper highlights an array of challenges which make participating in and completing tertiary study more challenging for rural and remote students than for metropolitan students. These include financial considerations, with regional students being twice as likely as metropolitan students to relocate for their tertiary education (Baik, Naylor, & Arkoudis, 2015) which can double the cost of a degree (DET, 2019). Additionally, educational attainment rates for university qualifications are significantly lower in regional and remote areas than in metropolitan areas. Lower attainment levels may be a consequence of the presence of fewer study options, particularly in smaller towns (DET, 2019). The DET issues paper notes that while online access to tertiary study is increasing in regional and remote areas, completion rates for online students are lower.

Students within the regional and remote equity group are “more likely than average to possess the enrolment and demographic characteristics that have been found to be associated with lower completion rates” (Edwards & McMillan, 2015, p. 10). Edwards and McMillan’s (2015) research explored outcomes for students who have successfully accessed university. In particular, they compared the success outcomes for equity students against national student completion data. Edwards and McMillan (2015, p. 10) found “the main variables indicating higher likelihood of non-completion were part-time enrolment, external enrolment, ATAR below 60, and age over 25”. Further, Edwards and McMillan (2015) found that “students who fit into an equity group have a higher likelihood of belonging to one or more of the other equity groups in addition” (p. 10).

Further insight into the patterns of completion of university qualifications is revealed through the recent NCSEHE Equity Fellowship study by Pollard (2018) who found that completion rates are lower for regional students (69.37 per cent) and more particularly for remote students (60.33 per cent) in contrast to their metropolitan peers (74.87 per cent). While remote students are frequently classified together with regional students under the ‘regional and remote’ label, Pollard’s study finds that remote students are a category with quite distinct characteristics. For example, Indigenous students make up a higher proportion of the remote student category (almost 9.59 per cent) in contrast to comprising 3.55 per cent under the ‘regional and remote’ classification. In addition, remote students are much more likely to study in online delivery mode (45.3 per cent) than are regional students (31.29 per cent) and metropolitan students (16.75 per cent). Pollard recommends that remote students be valued and understood as distinct from regional students in policy and practice.

Like Edwards and McMillan, Pollard (2018) found that remote students were more likely to belong to multiple equity groups and possess student characteristics that have higher risks of non-completion, namely part-time enrolment and online study. While these enrolment and attendance characteristics are most pronounced for remote students, they are also more prevalent for regional students than metropolitan students. These recent studies help to build a more complex picture about regional and remote student participation in higher education and the study was interested to learn how community-level influences in regional and remote communities might impact on higher education outcomes for students. Pollard implores universities to do more to mitigate the effects of the factors that make completing university studies more challenging for equity group students. The study sought to investigate whether there is potential too for community-level support as important for regional and remote students to participate successfully in higher education.

The findings of Pollard’s report into regional and remote completion patterns led to some specific recommendations related to the diversity of these equity groups, including broadening support that responds to the diversity of remote students’ characteristics and needs. Further specific recommendations include a greater presence of Indigenous knowledges and cultures in tertiary studies and recognising the internet connectivity challenges experienced by remote students (NCSEHE, 2018).
Increasing higher education participation requires building people’s aspiration and their intention to participate. This is a complex phenomenon as traditionally aspiration has been viewed in individualistic terms (i.e. a person should aspire to achieve a university qualification) (Gale & Parker, 2015); however, Gale and Parker have revealed nuances surrounding the interplay between desire and possibility of higher education participation. They argue that aspiration alone is not enough, that there needs to be both a perception that higher education is a possibility and the desire to undertake higher education. They further note that recent critiques of individualistic representations of aspiration identify the importance of culture in building higher education aspirations. Here the higher education imaginary (the system of meanings that make up social structures) becomes relevant to producing a long-term cultural shift in community disposition towards higher education (Lee Dow, Adams, Dawson, & Phillips, 2009). Recent literature has identified the importance of university student ambassadors as role models in contributing to such shifts (Cranston et al., 2014). Student ambassadors have been shown to provide school students with real-life mentors around participation in university study (Curtis, Drummond, Halsey, & Lawson, 2012). The role of these ambassadors is to provide authentic examples of accessing, participating and succeeding at higher education through sharing their stories and efforts. This peer mentoring has been shown in the literature to be particularly effective in outreach and engagement amongst schools and cohorts with traditionally lower levels of exposure and participation in tertiary education, including low socioeconomic and rural and regional schools (Abbott Chapman 2011; Curtis et al., 2012).

Gale and Parker contend that aspiration is “formed in the ‘thick of social life’” (Appadurai, 2004, p. 67; cited in Gale & Parker, 2015, p. 82). Recent developments in understanding formation of aspiration, and of strategies to raise aspiration, suggest the importance of coming to understand what occurs in the ‘lifeworlds’ of regional and remote students that both helps build their desire to participate in higher education, and to realise that higher education is both desirable and within their reach. It is also important to understand how the place qualities of regional communities influence access to and participation in higher education.

Conceptual frameworks

Regionality and remoteness have been viewed in deficit ways in earlier research in relation to higher education participation. Recent research, however, has focused on strengths-based approaches (Devlin & McKay, 2017; Webb et al., 2015), and the conceptual frameworks that have been employed in this study adopt this orientation.

Choosing a strengths-based approach led to the employment of an equity-based conceptual framework for this study, the Equity Initiatives Map (Bennett et al., 2015) described below. In addition, approaches were drawn upon from Kilpatrick, Field and Falk (2003) whose work investigates social capital theory at the community level.

The Equity Initiatives Map

The Equity Initiatives Map (EIM) (Bennett et al., 2015) was employed to focus on people's access to and participation in higher education, as it considers the phases that regional and remote people typically proceed through to successfully complete an undergraduate qualification. These phases are described by Bennett and colleagues (2015) as:

- pre-access (outreach to schools and communities)
- access (pathways and admissions to university, including enabling pathways)
- participation (transition, engagement and progression through university)
- attainment and transition out (undergraduate).

The focus in this study was to investigate the community support that helps people in regional and remote areas to navigate these phases and successfully access and undertake
tertiary studies. The major aim of the pre-access phase was to increase awareness of higher education pathways, opportunities and associated careers by building aspirations and expectations, while the aim of the access phase was to provide opportunities for people to access and achieve at university (Bennett et al., 2015). The EIM was employed to consider the typical stages through which people in regional and remote areas proceed when undertaking higher education studies.

Social capital and Yosso’s Community Capital Wealth Framework (CCW)

Webb et al. (2015) have argued that shaping the higher education imaginary is a complex challenge, not least because it requires overcoming the “pragmatic rationality” with which people justify the decisions they make, a justification borne out of normalised restriction of opportunities. Understanding the forms of social and cultural capital present in regional and remote communities, and how social capital is activated, may thus be valuable for advancing regional and remote access to higher education.

The concepts of social and cultural capital have been employed to explore the various access options available within communities from an equity perspective. This study has drawn on this work to help better understand the enablers that support regional and remote students to access and succeed in higher education.

Several different social and cultural perspectives could be applied to investigate the enabling community-level factors that can influence higher education participation and success. For the purposes of this literature review (and the wider project), regional and remote communities were considered as places where social capital (Bourdieu, 1984), encompasses infrastructure, resources and relational qualities that can influence regional and remote people’s access to and successful participation in higher education. Research has theorised community infrastructure as a form of social capital “comprised of two types of social infrastructure: interactional infrastructure and values and attitudinal infrastructure” (Kilpatrick & Loechel, 2004, p. 7). Interactional infrastructure is summarised as: relational networks; events and meetings; communications sites; procedures, rules and precedents; and leadership in a community. Attitudinal and values infrastructure on the other hand includes “the underlying, often assumed aspects of social interactions” (Kilpatrick & Loechel, 2004, p.8) such as trust, shared vision and shared values that are essential for social capital. Physical assets (or infrastructure) of a community can also be considered as social capital. In this project, these three forms of infrastructure were depicted as social capital in order to conceptualise how communities support regional and remote people to access and participate in higher education.

Scholarship relating to access to and participation in higher education continues to emphasise the role of social and cultural capital, and so extensions of these concepts by O’Shea (2016) and Yosso (2005) were also considered. Yosso’s strengths-based Community Capital Wealth Framework explores the concept of community cultural wealth in order to understand the “array of knowledge, skills, abilities and contacts possessed and utilized by communities” (2005, p. 77), particularly those within the community who are marginalised or disenfranchised. The Community Capital Wealth Framework (CCW) was developed by working with Hispanic students and students of colour to interpret cultural capital from a strengths-based perspective. More recently, O’Shea (2016) recognises that students bring a range of capitals into their higher education studies. O’Shea’s (2016) revision of the CCW framework encompassed the six forms of capital identified by Yosso (2005) (aspirational, resistance, linguistic, navigational, social, and familial capitals) and adds a seventh, experiential capital.

Aspirational capital relates to an ability to hold hope and dreams for the future despite real and perceived obstacles. Resistance capital refers to the qualities and behaviours used to inform oppositional behaviours whilst linguistic capital recognises the value of both oral and visual forms of communication. Navigational capital acknowledges an
individual’s ability to negotiate and move through social institutions, which may be both intimidating and hostile. Whereas social capital refers to the networks that surround people that provide both concrete and emotional support. Finally, familial capital identifies the knowledges that family and community relationships provide. (O’Shea, 2016, p. 39).

O’Shea’s description of experiential capital is discussed by O’Shea (2016) as the range of capitals that students bring to the higher education environment. This project particularly focused on these capitals as they pertain to the community, rather than at the individual level.

In this project, ideas of mobilising capital and mobilising understandings of capital have been drawn upon in advocating for higher education institutions to recognise students from regional and remote locations in ways which value the diverse range of capital that students bring to higher education (O’Shea, 2016; Yosso, 2005). Emphasis has been placed on mobilising understandings of capital to encourage thinking about the relational qualities, resources and infrastructure of regional and remote places that support people from these areas to access and successfully participate in higher education.

Navigating access to higher education

Conceptions of what it means to participate in higher education and/or to “attend university” are changing as universities reshape their courses to increasingly provide options for on-campus, external or blended attendance models. The present study argues that this changing landscape has implications for regional and remote students which warrant further exploration, particularly as this relates to the technological skills, capabilities and assets. Continuous technological learning is an important capability for success in higher education studies, particularly for regional and remote students.

Recent research shines light on some of the many difficulties that regional and remote students experience in attempting to undertake tertiary studies through blended and online models. Studies by Nelson et al. (2017) and Pollard (2018) reveal that reliable high-speed internet access is essential, particularly for regional and remote students undertaking higher education. Regional and remote students participate in online course delivery modes at higher rates than their metropolitan peers and yet have lower levels of internet access than their metropolitan peers. This is an area that it is argued needs to be urgently addressed since it further compounds regional and remote disadvantage (Nelson et al., 2017), with the challenges being particularly acute for remote students (Pollard, 2018). The Independent Review into Regional, Rural and Remote Education (Halsey, 2018) has identified access to reliable high-speed internet as an equity issue for Australia’s higher education sector. Stone’s (2017b) NCSEHE Equity Fellowship investigated online learning systems in Australia and the United Kingdom to identify best practice principles and made recommendations for improving institutional frameworks to support the ongoing growth in online learning which is highly relevant for regional and remote students.

“Navigational capacity” (Appadurai, 2004) and “navigational capital” (Yosso, 2005; O’Shea, 2016) have been emphasised in the literature as necessary in order to expand the agency of regional and remote groups to participate in higher education. For many regional and remote students, their understanding of the process of articulation to higher education are unclear. This is in part due to limited access to the experiences of others who may have participated in higher education (i.e. from family and friends).

Another consideration for regional and remote people is their perception of what is possible given differentiated locations and access to resources, including their familial and sociocultural groups (Gale & Parker, 2015). In Appadurai’s (2004) account, “navigational capacity”, or the capacity to navigate the intermediary steps between past and future relies on a range of economic, social and cultural resources that are unevenly distributed. In
relation to the achievement of higher education aspirations, Gale and Parker (2015) observe that “without knowledge of intermediary aspirational nodes” people “are more likely to aim directly for their ultimate destination...rather than relatively close ‘stepping stones’ along the way” (p. 89). Student ambassadors and peers have been identified as important sources of information for potential students (Cranston et al., 2014). Findings from an evaluation by Relf, Crawford, O’Rourke and Hamilton (2018) suggest that regional and remote people often experience difficulties understanding the access pathways into university programs, and there are challenges presented by the persistence of an urban and metropolitan lens which dominates higher education participation discourses. The complexity of university pathways warrants offering clear steps for people in regional and remote communities to guide their access higher education.

Regional and remote people often have an array of factors to navigate and weigh up in making the decision to participate in higher education. Known challenges of higher education participation for regional and remote students include: attachment to home; desire to remain close to family and friends; and the cost of studying away from home (Alloway & Dalley-Trim, 2009). Other considerations include locating emotional support, accessing appropriate learning spaces, and mobility between home and place of study.

Research which has focused on individual aspects of success in higher education has built understanding of individual factors, such as students’ own attitude, motivation, determination and resilience (Devlin and McKay (2017). However, little research has been conducted which focuses on the community-related factors that contribute to regional and remote students’ successful participation in higher education.

Support for accessing higher education

Family enablers

The influence of the family is noted as highly important for establishing expectations of higher education participation and perceptions of university attainment being achievable (Fleming & Grace, 2014). Family support has been well explored in the literature and its importance for regional and remote students participating in higher education has been emphasised in recent Australian reports (Stone, 2017a).

While the researchers in this study were interested in community-level enablers of higher education access and participation, attention was also given to the findings from Gale and Parker (2015) of the importance of family experiences of higher education as a navigational aid for people considering university participation. Their study revealed that families remain the number one source of information for people considering undertaking university studies. Accordingly, Gale and Parker (2015) describe the importance of providing families with information and access to resources about higher education and training pathways. This project sought to understand how such information provision can be supported effectively at the community level.

School-based enablers

Webb et al. (2015) advocate raising awareness of higher education opportunities within schools through initiatives such as:

- careers advisory services and facilitating access to careers expos
- provision of meaningful work experience
- careers advice offered by university personnel
- mentoring initiatives in regional areas.

Such school-based enablers are important in regional and remote schools. There is a gap in the literature regarding whether community-level enablers of higher education access provide support for regional and remote people who have limited access to school-based
pathways. Indeed, Lee, Dow and colleagues (2009) argue “new models of outreach should shift focus substantially from school-based to community-based activities through multiple sites of engagement” (p. 105). A recent study by Cuervo, Chesters and Aberdeen (2019) found that being located in regional or rural areas was likely to limit the availability of, and access to, extracurricular activities.

Woodroffe, Kilpatrick, Williams and Jago (2018) draw attention to the ways in which universities and schools can partner more collaboratively to engage with students, and to expose them to future pathways and higher education. Bourke and Jayman have observed in Canada “an intensified interest in the possibilities that school–university partnerships hold for enhancing equity and accessibility in education” (2011, p. 77), particularly relating to an increase in programs which aim to demystify the education process and facilitate transitions of students from compulsory schooling to further education (Bourke & Jayman, 2011). Woodroffe et al. (2018) discuss evidence which suggests that there are many diverse opportunities for rural schools to partner (formally or informally) with universities, local industry and other community stakeholders to provide authentic educational experiences that enhance aspirations, strengthen transitions and prepare rural students for higher education (Kilpatrick, Johns, Mulford, Falk, & Prescott, 2002).

**Mature-aged enablers**

The topic of enablers of higher education access and participation for mature-aged students has been little researched in the Australian context, however recent studies have begun to address that gap. Fleming and Grace (2014) found that regional university student populations are more likely to be female, older than their metropolitan counterparts, and be caring for dependent children. Mature-aged students’ experiences of accessing and participating in higher education are shaped by gender according to Stone and O’Shea (2013). In particular they found that women with low incomes have limited opportunities to participate in higher education, with single mothers facing the greatest disadvantage.

Cardak and colleagues (2017) report strong growth in regional mature-aged student participation in higher education between 2008 and 2014, and Stone (2017a) indicates that a growing proportion of mature-aged students are relocating from regional and remote areas to attend university. Further research is needed to better understand the enabling factors propelling the growth in mature-aged student cohorts in Australia.

In the United Kingdom, mature-aged students are less likely than younger ones to complete longer, qualification-bearing programs (McGivney, 2004). Further, McGivney’s research reveals that older students are more likely than younger ones to attend a higher education institution near their home or work, and to live at home during their studies.

**Community-level enablers**

Little is known about the community-level enablers of higher education access and participation for regional and remote people although there are pockets of knowledge about approaches that are insightful and productive. For example, university outreach activities have been found to be useful for changing perceptions of attainability and preparation for success in higher education. O’Shea (2016) however, notes they may not achieve their potential due to family members having limited awareness of university life and/or how to effectively support a family member in participating.

Key interventions for improving regional student participation rates include “investment in regional families, regional schools, partnerships between regional schools and higher education providers, and in regional school outreach programs” (Cardak et al., 2017, p. 8). Further, Webb and colleagues (2015) suggest a broad range of initiatives to help shape the higher education imaginary. These include better coordination across organisations in regions including schools, colleges, universities and not-for-profit agencies (for example, school and university partnerships which promote careers and access to information).
Meanwhile, local social networks and cultural values can influence dispositions towards participating in university (Marks, Underwood, Rothman, & Brown, 2011), and these aspects are of particular interest to this study.

**Macro-structural enablers**

This project has sought to develop insights into productive forms of community capital, considering broadly the types and range of social and cultural capital that students draw upon in regional and remote areas (for example, libraries; community leaders who actively support higher education access and participation; teacher advocates; successful graduands sharing their pathways to success).

Ultimately, for representation of regional and remote students in higher education to increase, a multi-layered approach is required involving both schools and universities. Improving education outcomes in regional and remote schools is an essential step in raising participation and graduation in higher education (Cardak et al., 2017). Change is also required within universities themselves so that universities become more inclusive of other ways of ‘being and doing’ (Gale & Parker, 2015). This challenges the structural constraints that affect the possibility for regional and remote students to aspire to higher education participation and “requires willingness by the dominant to change and in ways that are seen to be mutually beneficial to the advantaged and disadvantaged” (Gale & Parker, 2015, p.93).
Methodology

This project utilised a mixed-methods explanatory sequential design (Creswell & Clark, 2011) covering five phases (Figure 1). Ethics approval was obtained from the Tasmania Social Sciences Human Research Ethics Committee (H0017005).

Figure 1. Project design: mixed-methods explanatory sequential design using five stages.

**Phase 1: Literature review**

The literature review helped inform the researchers’ decisions around research tools, including the interview schedule. Searches of electronic literature databases for enablers and constraints for access and participation in higher education by regional and remote students, a general scoping of NCESHE and other reports and discussions amongst the project team led to a list of reference literature which was reviewed.

**Phase 2: National data analysis: Department of Education and Training higher education student data collection**

Higher education student data were obtained from the Department of Education and Training Higher Education student data collection (Department of Education and Training, 2017). The data were obtained at postcode level for regional and remote students attending all Australian higher education providers to identify all equity group rates of access, participation, retention, attainment and success for all regional and remote postcodes over six years (2011–2016). The data obtained and used to derive the performance indicators to identify top performing post codes are defined as follows:
• Access – numbers of commencing domestic onshore students in each equity group
• Participation – continuing domestic onshore students in each equity group
• Attainment or completion – numbers of domestic students completing awards (bachelor degrees)
• Retention rate – continuing domestic onshore students in each equity group as a proportion of all students in that equity group minus completed
• Success rate – equivalent full-time student load (EFTSL) passed as a proportion of EFTSL passed, failed and withdrawn for each equity group.

The equity groups examined were:

• low SES students
• students with disability
• Indigenous students
• regional students
• remote students
• NESB students.

Data were obtained by permanent home postcode\(^3\). Low SES by postcode and low SES by statistical area 1 (SA1) were analysed at the level of postcode. Koshy (2017) detailed the multiple changes in the ways equity group indicators are measured and reported on for low SES, regional and remote students. The Australian Statistical Geographic Standard (ASGS) classification of metropolitan, regional and remote assigned to each postcode as a percentage (by area) was used to remove metropolitan contributions from the higher education statistics as they were not relevant to this study (Australian Bureau of Statistics, 2016). Accordingly, all data were adjusted by removing the metropolitan fraction to obtain values reflective of regional and remote contributions only.

Population data by postcode availability was limited to the years 2011 and 2016. The proportional contribution of each equity group to higher education statistics in each postcode or SA1 (for low SES SA1 statistics only) was calculated over the first three years 2011–2013 and the later three years 2014–2016 using the 2011 and 2016 population data respectively, (with the exception of those data already supplied as rates, proportions or percentages) to produce post code performance indicators. The top 50 postcodes, by average proportional contribution over the 2011–2016 period, were extracted for all equity groups across all higher education metrics from the filtered and adjusted datasets.

Australia Post allocates postcodes to geographic areas to assist in mail processing and delivery. State and local government boundaries and naming conventions influence postcode boundaries and names (Australia Post, n.d). For these reasons, postcodes vary considerably in geographic area and population size. For the same reasons, postcodes could be regarded as approximating community areas. Community is a slippery concept, and the boundary of a geographic community is notoriously difficult to define (Yosso, 2005). The use of postcode to represent ‘community’ is a limitation of this study.

The first of the four digits represents the state or territory and the following digits relate to particular areas. This means that adjacent areas tend to have postcodes with common two or three initial digits. More closely settled areas such as regional Victoria and Tasmania tend to have smaller postcodes in terms of both area and population than more sparsely settled areas such as outback Western Australia, Northern Territory and Queensland.

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\(^3\) Permanent home location refers to the student’s physical address which is to be provided by the student each year (Department of Education and Training, 2018).
Mapping

The top 50 postcode locations for each equity group (regional and remote, low SES, disability, remote, NESB, Indigenous) in each of the indicator groups (access, participation, retention, attainment and success) were pinned to a Google Earth Pro Map. Each indicator was given a colour (access – blue, participation – light blue, retention – pink, attainment – yellow, success – green), and tagged for each equity group: all regional and remote (combined – hereafter all regional and remote) (A), low SES (L), disability (D), remote (R), NESB (N), Indigenous (I). The maps were created to provide a visual picture of their geographical locations.

Phase 3: Regional and remote student survey

Universities with high student load (>30 per cent) from regional and remote areas (ASGS) were invited to participate in a student survey. Questions focused on the community-related factors that influence and enable access, participation, retention and success in higher education. The survey was piloted on a group of regional university students. As a result of the pilot, the term university was used in the survey instead of higher education as it was clearer for students. Invitations were sent to the Deputy Vice Chancellor (Academic) or equivalent for each of the universities, inviting their university to participate in the project. If they accepted, they were sent a draft email proforma to then be sent to their student cohort with the link to the online survey. The online survey was administered via Qualtrics software (Appendix D).

Prior to analysis, survey data were filtered to remove any responses from metropolitan postcodes. The remaining data were analysed by postcode and demographic characteristics using SPSS software (Version 22.0). Pearson Chi-squared analysis and z tests were conducted to assess significant differences between study variables (significance level <.05).

Phase 4: Identification of communities of interest for desktop audit

The top 50 regional and remote communities were identified from Phase 2. These communities had the highest rates of equity student access, participation, retention, attainment and success (‘communities of interest’) for each equity group. The average proportion of population of each postcode appearing in the higher education tables for each year from 2011 to 2016 inclusive was calculated for each of the five indicators: access, participation, retention rate, success rate and attainment, for each of the six equity groups (all regional and remote, disability, Indigenous, NESB, low SES and remote). This resulted in 30 indicator tables (Appendix A).

There were a number of limitations with this approach which include that: (1) distributions by disability and Indigeneity in particular are not necessarily the same for each postcode, meaning that population proportions may not reflect the proportion of those equity groups in a postcode; (2) age distributions vary across postcodes and, given that higher education student age distribution is biased toward younger age groups, postcodes with older age distributions may be under represented.

Each of the 30 tables were ranked by postcode from highest to lowest according to average population proportion. Tables were visually inspected for postcodes with consistently rising average proportions. There were few postcodes outside of the top ranked 50 in each table with consistently rising proportions; these few postcodes had a prevalence of high standard deviations and very small populations (less than 1,000 people). It was determined that the top 50 postcodes in each table reflected those communities most likely to support higher education access, participation, retention, success and/or attainment for regional and remote student equity groups.
The 30 lists of top 50 postcodes identified as described above were consolidated into two sets of tables: five tables of all indicators by equity group and six tables of all equity groups by indicator (total 11 tables, each comprised of 250 non-unique postcodes). Each of these 11 tables was sorted by postcode. Postcodes appearing three or more times in each of the 11 tables were noted, along with any postcodes geographically adjacent to these (often in the same local government area) that appeared in that indicator or equity group table. This yielded 135 postcode groupings, including some with two or more individual postcodes appearing three or more times, and many appearing two or more times among the 11 table lists (see Table 1 below). There were 85 different postcode groupings; these postcode groupings were ranked according to the number of different indicators and equity groups on which they appeared in the top 50 postcodes. This enabled the list to be reduced to 46 postcode groupings using criteria including:

- presence of high ranking (ranks 1–20) by indicators and/or equity groups within each of the 30 tables
- representation of a mix of different indicators and equity groups
- range of community population sizes
- range of locations from regional cities with university campuses to isolated communities
- range of states and territories
- ensuring that low and low-medium SES postcodes were well represented. High and high-medium SES postcodes dominated the list and, as family educational cultural capital associated with SES is known to be a significant predictor of higher education participation and success, selections made ensured that low and low-medium postcodes were well represented.

Table 1. Postcode groupings from top 50 indicator lists.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Number of postcode groupings with 3 or more indicators/equity groups</th>
<th>Number of postcode groupings with 5 indicators/equity groups</th>
<th>Number of postcode groupings with 4 indicators/equity groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>All regional and remote</td>
<td>16</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Disability</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Indigenous</td>
<td>17</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NESB</td>
<td>14</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Low SES</td>
<td>15</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Remote</td>
<td>20</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Access</td>
<td>13</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Participation</td>
<td>10</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Retention</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Success</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Attainment</td>
<td>13</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>135</strong></td>
<td><strong>3</strong></td>
<td><strong>21</strong></td>
</tr>
</tbody>
</table>

The student survey data from questions relating to community factors that positively influenced higher education participation and success were considered alongside the Higher Education student data collection top postcode grouping in Table 1, and an additional six
postcodes which featured in the survey, and also appeared in at least one top 50 list, were added to the desktop analysis (n=55 postcodes).

**Desktop audit**

The desktop audit was a web search that gathered the following data for each of the 55 postcode groups identified in Phase 2:

- Local Government Area (LGA) title(s) which may include multiple postcodes and single postcodes may include multiple LGAs
- LGA area from Australian Bureau of Statistics (ABS) data
- distance from state capital from Google maps search
- postcode population sizes for 2011 and 2016 from ABS census data (from Phase 2)
- equity and indicator rankings (**Phase 2, Appendix A**)
- main settlements in LGA from LGAs’ own websites
- *Socio-economic Indexes for Areas (Index of Education and Occupation)* (SEIFA)
- education infrastructure
- number and type of schools by postcode grouping from Australian schools directory (https://australianschoolsdirectory.com.au/search.php)
- university and TAFE presence by postcode or LGA search
- employment industries determined through a web search of the postcode and LGA
- Regional Australia Institute’s *Insight Regional Competitiveness Index* (Regional Australia Institute, n.d.) searched by LGA for rankings on the following indices, chosen for their relevance to higher education participation: human capital, technological readiness, infrastructure essential services, and innovation.

There are 563 LGAs in Australia. The highest-ranked LGA on an index has a ranking of 1 and the lowest 563. The human capital index includes measures of workforce skills and human capital development. The technological readiness index includes measures of technology and connectivity infrastructure, uptake and skills. The infrastructure essential services index includes measures of transport, education, and health. The innovation index includes measures of research and development, business dynamics and knowledge-based industries. More information on the composition and data sources for each index can be gained from the *Insight User Guide* (Regional Australia Institute, 2017).

Sub-indices relevant to higher education access, participation, retention and success were also searched. They are human capital sub-indices university qualification and technical qualification; technological readiness sub-index internet connections; and infrastructure essential services sub-indices access to tertiary education services, access to technical or further educational services, and access to secondary educational services. Access to education sub-indices measure the proportion of the population of the LGA being studied.

**Phase 5: Communities of interest case studies**

**Selection of communities**

This phase of the project involved using the data from the previous phases (1–4) to identify ‘communities of interest’ which would be investigated in more detail. Figure 2 provides an overview of the process and stages used by the team to identify these communities.
The communities were chosen to represent diversity in: equity and indicator ranking; population size; Regional Australia *Insight* indices; geographic location (i.e. state; coastal versus inland; distance from capital city); SEIFA index; and educational infrastructure. The communities were selected both on their performance and also to include a range of equity groups:

- **Community Central**: remote town, population <2,000, inland, mid SEIFA
- **Community North**: regional city, population <50,000, coastal, low quartile SEIFA
- **Community South**: regional town, population <1,000, inland, low to mid SEIFA
- **Community West**: regional town, population <15,000, coastal, low to mid SEIFA
- **Community East**: regional town, population <26,000, coastal, low quartile SEIFA

Key informants were identified through Regional Development Australia (RDA), local government and schools and, where relevant, the local university. Between three and four key informants were interviewed via telephone for each community. Key informants were initially contacted by email to invite them to participate in the project. Interviews were
between 20- and 30-minutes’ duration and, with participants’ consent, they were audio recorded and then transcribed verbatim. Transcripts were analysed thematically with NVivo version 11. Themes were informed by the literature review and additional themes emerged through the analysis. Interview questions (Appendix E) focused on the community, attitudes and support towards education, perception of the impact of higher education study on the community, and actions and impacts of key influencers, that is, influential people and institutions.

Limitations

The study used postcodes and clusters of adjacent postcodes to represent communities, however, postcodes vary considerably in geographic area and population size. While postcodes are based on local government boundaries and postal delivery areas which are arguably related to community areas, the use of postcode to represent ‘community’ is a limitation of this study.

Ranking of postcode communities was by population proportion. Distributions of population by disability and Indigeneity, in particular, are not necessarily the same for each postcode, meaning that population proportions may not reflect the proportion of those equity groups in a postcode. Similarly, age distributions vary across postcodes and, given that higher education student age distribution is biased toward younger age groups, postcodes with older age distributions may be under represented.

Data from the Regional Australia Institute’s Insight Regional Competitiveness Index (Regional Australia Institute, n.d.) is only available at LGA or regional level. LGAs generally covered a larger area than the postcode communities and therefore rankings on the various indices may not precisely reflect the characteristics of individual postcodes.

The vast majority of survey responses were received from only five universities. Only universities based in Victoria, New South Wales, Queensland and Tasmania were represented, although students from home communities in all states and the Northern Territory responded.

Five communities of interest were selected as high performing communities to explore community factors contributing to higher education access, participation and success. While every effort was made to select a diversity of high performing communities on a range of characteristics, it is possible that the selected communities are not representative of regional and remote communities that perform well in higher education access, participation and success. Community of interest case study data were drawn from only between three and five key informants per community. While every effort was made to identify people knowledgeable about community factors that influence higher education access and participation in their community, it is possible that their views are not representative of the views of all community members.
Results

Phase 2: Department of Education and Training Higher Education student data collection

The top-ranked 50 postcodes, by average proportional contribution over the 2011–2016 period, for all equity groups across all higher education indicators (access, participation, attainment, retention rate and success rate) are presented in Appendix A. The characteristics of the top 50 postcodes for each of the higher education indicators by equity group are listed in Appendix B.

Access

Access to higher education top 50 postcodes for the all regional and remote student equity group are predominantly small population and high or high-medium SES postcodes. Few postcodes from the Northern Territory, South Australia and Western Australia appear in the list, perhaps because there are few small higher SES regional postcodes in these jurisdictions. Twelve of the postcodes have university campuses in the postcode or neighbouring postcode. Some postcodes appear on other equity group top 50 attainment lists: 11 on disability, three on Indigenous, six on NESB and two on low SES.

The top 50 access postcodes for the disability equity group have larger populations and comprise fewer high SES postcodes than the all regional and remote group. There are more New South Wales postcodes than in the all regional and remote top 50 group. Fifteen of the disability postcodes also appear in the top 50 access postcodes for the NESB group.

Most Indigenous top 50 access postcode populations are between 4,000 and 40,000 people. Half are low SES, and New South Wales, Queensland and the Northern Territory dominate, as could be expected given the population distribution of Indigenous people.

Most NESB top 50 access postcodes have populations of over 10,000 and are low-medium SES, with the majority being from Victoria, New South Wales, Queensland and the Northern Territory. Half have university campuses in the postcode or neighbouring postcode.

One third of low SES top 50 access postcodes have less than 4,000 people. While 70 per cent are wholly low SES postcodes, the remainder include a mix of low and low-medium SES. Tasmania and New South Wales postcodes dominate the list.

Most remote top 50 access postcodes are low and low-medium SES postcodes of less than 1,000 people. All states and the Northern Territory are represented, although most are in New South Wales and Queensland.

Participation

Participation in higher education top 50 postcodes for all regional and remote students are predominantly high and high-medium SES, small population postcodes, as for access. Over half are in Victoria. Some postcodes appear on other equity group top 50 attainment lists: 11 on disability, two on Indigenous, four on NESB, two on low SES and five on remote.

Disability top 50 participation postcodes include fewer high SES postcodes and fewer very small postcodes, most have populations of between 1,000 and 40,000. There is a spread of states, although only one Western Australia and no Northern Territory postcodes are in the list. Twenty-one of the top 50 disability postcodes contain or are adjacent to a university campus.

4 Low SES is measured at SA1 level in the Higher Education student data collection.
More than three-quarters of Indigenous top 50 participation postcodes are low SES and have populations between 4,000 and 40,000. New South Wales and the Northern Territory dominate.

Most NESB top 50 participation postcodes are low-medium SES and are large towns and cities with populations over 10,000. Victoria, New South Wales, Queensland and the Northern Territory postcodes dominate. Over half the postcodes contain or are adjacent to a university campus.

Two thirds of low SES participation postcodes are wholly low SES postcodes, and the remainder are a mix of low and low-medium SES. Three quarters are small postcodes of less than 4,000 people. New South Wales and Victoria dominate the list. Only five of the postcodes contain or are adjacent to a university campus.

As would be expected, most remote top 50 participation postcodes have small populations of less than 1,000 people. They are all low or low-medium SES, most in Western Australia and Queensland and none in Tasmania. Only two, both in the Northern Territory, have university campuses.

**Attainment (completion)**

**Attainment** top 50 postcodes for all regional and remote students are 40 per cent high SES and only 14 per cent low SES. Over half have populations of less than 10,000. There are no postcodes in the Northern Territory, Queensland and Western Australia and only six contain or are adjacent to a university campus. Relatively few postcodes appear on other equity group top 50 attainment lists: nine on disability, four on Indigenous, three on NESB and one on low SES.

Fewer disability top 50 attainment postcodes are high SES, and all have populations of more than 4,000. New South Wales and Victoria make up 36 of the top 50 disability postcodes. Twenty-one contain or are adjacent to a university campus. Many postcodes also appear on the Indigenous (19) and NESB (11) top 50 attainment postcode lists.

Half of the Indigenous top 50 attainment postcodes are low SES, with the majority having populations between 4,000 and 40,000. New South Wales postcodes dominate, with none in Victoria and only one each in Tasmania and South Australia. Twenty-one postcodes contain, or are adjacent to, a university campus. Thirteen postcodes are also on the NESB attainment top 50 list, but only four each are on the low SES and remote lists.

The vast majority of NESB attainment top 50 postcodes are low or low-medium SES and are towns and cities of over 10,000 people. Victoria and New South Wales postcodes dominate, with just under half containing, or being adjacent to, a university campus. Twenty-three postcodes are also on the low SES top 50 attainment list.

Of the low SES attainment top 50 postcodes, 76 per cent are wholly low SES postcodes, and the remainder are low-medium SES. All but one postcode population have less than 4,000 people and 40 per cent are in Victoria. Only one of the low SES attainment top 50 is also in the remote top 50 attainment postcode list.

Most remote top 50 attainment postcodes are medium SES and have populations of less than 1,000 people. Most are in Queensland and Western Australia, and only one, in the Northern Territory, has a university campus. There is only a very small overlap with other top 50 equity group attainment lists.

**Retention rate**

The characteristics of the top 50 postcodes for retention rate are quite different to those of the access, participation and attainment top 50 lists. Very small population postcodes of less than 1,000 make up 49 of the top 50 retention-rate list for all regional and remote students,
with almost half of the postcodes being high and high-medium SES, and only four being low SES. Few or no postcodes in the Northern Territory, Tasmania and Queensland appear in this list. No postcode has, or is adjacent to, a university campus and 11 are in the top 50 retention-rate list for remote students. There is little overlap with other equity group top 50 retention-rate lists.

The disability top 50 retention-rate list has fewer higher SES postcodes, with almost two-thirds low or mid-low SES. All but three postcodes have small populations of less than 4,000. All states except the Northern Territory are represented in roughly similar distribution to population. As for all regional and remote students, no postcode is proximate to a university campus and there is little overlap with other equity group top 50 retention-rate lists.

Half of the Indigenous top 50 postcodes for retention rate are low SES postcodes. Most have populations between 1,000 and 10,000 and are in New South Wales or Queensland. Again, no postcode is proximate to a university campus and there is little overlap with other equity group top 50 retention-rate lists.

Most NESB retention-rate top 50 postcodes are in the lower half by SES, with 15 being low SES. The vast majority are small- to medium-sized populations of 4,000 to 40,000. More are Queensland and Western Australia postcodes than for all regional and remote students. Unlike the other equity groups, 13 NESB retention-rate top 50 postcodes contain, or are adjacent to, a university campus. There is no overlap with other equity group top 50 retention-rate postcodes.

Of the top 50 retention-rate postcodes for low SES students, 70 per cent are wholly low SES postcodes. All have less than 4,000 people and most are in Victoria, with none in the Northern Territory or Tasmania. Queensland, South Australia and Western Australia are better represented than for other equity groups. No low SES top 50 retention-rate postcodes have a university campus nearby. Eight are also in the remote top 50 retention-rate list.

Most remote top 50 retention-rate postcodes are medium SES with less than 1,000 people. Western Australia is the best represented state, with none in the Northern Territory, South Australia or Tasmania.

Success rate

The top 50 success-rate postcodes are all very small, with populations of less than 1,000. They are split roughly equally into the top and bottom halves of the Index of Education and Occupation with 11 being low SES. There are few or no postcodes in the Northern Territory, New South Wales, Tasmania or Queensland. None are near a university campus. Fourteen are also on the low SES top 50 success-rate list, 11 on the remote list and one on the disability list.

The disability top 50 success-rate list includes fewer high SES postcodes, more in New South Wales and fewer in South Australia. They have larger populations, although no postcode has a population over 40,000. Few postcodes are also on other equity group top 50 success-rate lists.

Half of the Indigenous top 50 success-rate postcodes are low SES and most have populations between 4,000 and 40,000. New South Wales postcodes dominate the list, with none in Victoria and only one each in Tasmania and South Australia. Three postcodes contain or are adjacent to university campuses. Only four postcodes are also on the NESB top 50 success-rate list, and none are on the remote list.

The vast majority of NESB top 50 success-rate postcodes are low-medium SES and have populations of over 10,000. Victoria, New South Wales, Queensland and Northern Territory postcodes dominate. Eleven contain or are adjacent to university campuses. There is little overlap with other equity group top 50 success-rate lists.
Three-quarters of low SES top 50 success-rate postcodes are wholly low SES postcodes, the remainder are low and low-medium SES. All but one have populations of less than 4,000 people. Victoria postcodes dominate the low SES list and none are near a university campus. Eight are also on the remote top 50 success-rate list.

Most of the remote top 50 success-rate postcodes are medium SES postcodes in South Australia and Western Australia. None are in the Northern Territory or Tasmania. The majority are postcodes of less than 1,000 people.

**Key points by indicator**

There is considerable overlap between access, participation and attainment (completion) top 50 postcodes for each equity group. Correlation analysis of the total data set of all regional and remote postcodes confirms that postcode communities' six-year average rates of access, participation and award completion (attainment) are strongly correlated (Appendix A). Further analysis using success rate expressed as a raw number (student load successfully completed in a postcode) shows very strong correlations between success-rate number and both access and participation. This means that postcodes with the highest proportion of their population accessing or commencing higher education not only also have the highest proportion participating in higher education, they also have the highest number of successfully completed units and the highest proportion of their population completing awards.

There is little overlap between the top 50 postcode communities that perform well on access, participation and completion (attainment) and those that perform well on retention rate, and even less overlap with those which perform well on success rate. Retention rates and success rates are correlated for the whole set of all regional and remote communities, although not as strongly as access, participation and completion (Appendix A). Retention rate, and particularly success rate high performing postcodes, tend to have smaller populations and low and low-medium postcodes are better represented than among the other three indicator high performing postcode communities.

Examination of the five top 50 postcodes indicator lists revealed the high performing communities of single postcodes or clusters of adjacent postcodes for each equity group. Features of the high performing communities for each equity group are described in Table 2.
Table 2. Fifty highest performing communities by indicator for each equity group.

<table>
<thead>
<tr>
<th>Indicator clusters</th>
<th>All regional and remote</th>
<th>Disability</th>
<th>Indigenous</th>
<th>NESB</th>
<th>Low SES</th>
<th>Remote</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 community clusters, all of access, participation and attainment. Top retention rate and success rate communities are not on the top 50 lists for any other indicator.</td>
<td>16 clusters, all of access, participation and attainment. Top retention rate and success rate communities are not on the top 50 lists for any other indicator.</td>
<td>14 clusters. 12 have access, participation and attainment indicators. Participation, retention rate and success rate indicators appear together for 2 communities.</td>
<td>18 clusters, one with all 5 indicators and 3 clusters with 4 indicators. Retention rate appears more often than other indicators. Success rate appears in 7 clusters.</td>
<td>16 clusters, one with 5 indicators and 2 with 4 indicators.</td>
<td>21 clusters, one with 5 indicators and four with 4 indicators.</td>
<td></td>
</tr>
<tr>
<td>SES, population and location</td>
<td>High and high-medium SES communities dominate. Clusters are in NSW (4) VIC (8) SA (1) TAS (3)</td>
<td>Many are high SES. Clusters are in NSW (8) VIC (4) SA (1) QLD (1) TAS (3)</td>
<td>Majority are low and medium SES. Clusters are in NSW (7) QLD (1) TAS (2) WA (2) NT (2)</td>
<td>Majority are low and medium SES. Large regional centres dominate. Clusters are in NSW (2) VIC (6) QLD (3) SA (1) TAS (1) WA (3) NT (2)</td>
<td>All low SES. Very small and small populations over-represented. Clusters are in NSW (5) VIC (7) QLD (1) TAS (3)</td>
<td>Most are medium SES and few low SES. Smaller populations dominate. NSW (3) VIC (4) SA (4) QLD (3) WA (5) NT (2)</td>
</tr>
<tr>
<td>Presence of a university campus</td>
<td>6 clusters</td>
<td>12 clusters</td>
<td>6 clusters</td>
<td>17 clusters</td>
<td>3 clusters</td>
<td>None</td>
</tr>
</tbody>
</table>

The top 50 postcodes for each indicator (access, participation, attainment, retention rate, and success rate) for each of the six equity groups were examined for overlap of indicators, population size SES, location and whether a university campus was located in or near the postcode clusters. An indicator cluster is defined as a postcode community or group of adjacent postcodes forming a community which appears on 3, 4 or 5 of the top 50 community indicator lists.
Key points by equity group

Proximity of a university campus appears to be related to access, participation and attainment for the disability, Indigenous and NESB equity groups. NESB, low SES and remote high performing communities are more likely to perform well on retention rates and success rates than the highest performing regional and remote communities overall. Correlation analysis of the whole data set for each equity group finds that retention rates and success rates are even more strongly correlated for disability, Indigenous, NESB, low SES and remote group home communities than for the regional and remote communities overall (Appendix A). Home communities with high/low rates of access are also those with high/low rates of completion of an award for all groups except disability, although the relationship is not as strong for the Indigenous group.

Mapping the highest performing equity group communities

Spatially representing the data through locating postcodes on a map using a different pin colour for each performance indicator gave a strong visual picture of their geographical locations and also allowed the data to be viewed by equity group (across all indicators) or by individual indicator. Sample maps for each state as well as the Australian Capital Territory and the Northern Territory are included as Appendix C. This has allowed the data to be scrutinised for any geographical clusters or other emerging patterns based on the pin location.

New South Wales and Victoria, states with larger and more closely settled populations, are better represented among high performing communities, and Western Australia and the Northern Territory are better represented for remote and Indigenous than other equity groups, as could be expected. Tasmania has few retention rate or success rate high performing communities. Other states have a more even distribution of indicators.
Phase 3: Regional and remote student survey

Ten universities were invited to participate in the student survey. Responses were received from students who were enrolled at nine universities, with 4,309 responses (Table 3). Not all universities actively participated; students may have received the email to participate in the student survey as a result of cross-institutional enrolments. After the data were filtered for non-regional and remote postcodes, a total of 3,180 responses were analysed.

The student survey focused on four main areas:

- factors that contributed to their awareness of university
- factors that provided students with information and support to get into university
- factors that helped them to succeed and continue with their university studies (help with studies)
- community attitudes towards education.

The students’ responses showed differences between states, age, mode of study delivery and between full-time and part-time students.

Table 3. Survey responses by participating university.

<table>
<thead>
<tr>
<th>University</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Queensland University</td>
<td>74</td>
</tr>
<tr>
<td>Charles Darwin University</td>
<td>2</td>
</tr>
<tr>
<td>Charles Sturt University</td>
<td>6</td>
</tr>
<tr>
<td>James Cook University</td>
<td>2</td>
</tr>
<tr>
<td>La Trobe University</td>
<td>507</td>
</tr>
<tr>
<td>Southern Cross University</td>
<td>474</td>
</tr>
<tr>
<td>University of Southern Queensland</td>
<td>953</td>
</tr>
<tr>
<td>University of New England</td>
<td>727</td>
</tr>
<tr>
<td>University of Tasmania</td>
<td>1,564</td>
</tr>
<tr>
<td><strong>Total responses</strong></td>
<td><strong>4,309</strong></td>
</tr>
</tbody>
</table>

Student demographics

Of the students who responded to the survey, over three quarters (77 per cent) were female (Table 4). The majority were mature-aged students and less than 25 per cent were 18–20 years old; however, 54 per cent were under the age of 31 (Table 4). All students’ home communities were in a regional or remote area. A relatively small proportion of respondents represented minority equity groups; 6.5 per cent of the students identified as having a disability, 4.4 per cent of the students who responded identified as Aboriginal or Torres Strait Islander and 3.5 per cent were from an NESB background.

Over half of the respondents (51.3 per cent) had tried university before. A total of 25.7 per cent already had an undergraduate degree, 17.5 per cent had started but not completed an undergraduate course and 8.2 per cent had completed a pre-degree or university preparation course.

Full-time study was being undertaken by 60 per cent of the students, 43 per cent studied fully online while 69 per cent studied fully or partially online. Over a third of survey respondents were in their first year of study. The predominant fields of study were health, arts, humanities and social sciences and education with much lower levels of participation in
STEM areas. This reflects findings from other research where health and education were found to be a popular choice for students who are either first in family to attend higher education and/or are from non-traditional higher education family backgrounds (Bradley, Noonan, Nugent, & Scales, 2008).

The motivation to study was dominated by future job opportunities (82 per cent) and personal accomplishment (75 per cent). One third of students (33 per cent) who responded to the survey were motivated to study at university to experience something different. Only 23 per cent of students were motivated by family expectations, 16.6 per cent were motivated by school expectations and 11 per cent by community expectations.

**Sample demographic comparison with national student profile**

The characteristics of survey respondents were compared to Higher Education Statistics Data (Table 4).

Table 4. Comparison of survey sample and Higher Education student data.

<table>
<thead>
<tr>
<th></th>
<th>Student survey</th>
<th>2017 Full-year Higher Education student collection regional and remote students*</th>
<th>2016 National regional and remote student profile^</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>77.6%</td>
<td></td>
<td>63.0%</td>
</tr>
<tr>
<td>18–20 years</td>
<td>24.6%</td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td>Under 30 years</td>
<td>54.0%</td>
<td></td>
<td>34% 20–24 yrs; 22% 25–34 yrs</td>
</tr>
<tr>
<td>Identify as ATSI</td>
<td>4.4%</td>
<td></td>
<td>3.8%</td>
</tr>
<tr>
<td>Disclose a disability</td>
<td>6.5%</td>
<td></td>
<td>7.4%</td>
</tr>
<tr>
<td>NESB</td>
<td>3.5%</td>
<td></td>
<td>1.4%</td>
</tr>
<tr>
<td>First year</td>
<td>36.1%</td>
<td></td>
<td>40.2%</td>
</tr>
<tr>
<td>Full time</td>
<td>59.8%</td>
<td></td>
<td>33.0%</td>
</tr>
<tr>
<td>Mode of attendance</td>
<td>43.2% fully online; 69.1% fully or partially online</td>
<td></td>
<td>31.3% fully online</td>
</tr>
</tbody>
</table>


The survey sample is broadly similar to the national regional and remote cohort in terms of age, Aboriginal and Torres Strait Islander status, proportion disclosing a disability and proportion in the first year of study. There are slightly more female, and NESB students. More survey respondents are studying full time and fully online. Differences between the survey sample and national profile of regional and remote students are likely to be due to characteristics of the student population of the regional universities which participated in the survey. The survey universities have a higher proportion of their total load studying online, with all but La Trobe University having between 40.45 per cent and 82.84 per cent of students studying fully online compared to the national average of 15.55 per cent (Department of Education and Training, 2017). The slightly higher proportion of NESB students can be explained by their concentration around survey university campuses. While
survey results by mode of attendance and full-time/part-time status reflect the experience of those cohorts, the underrepresentation of part time and overrepresentation of fully online students should be considered when interpreting any whole-sample results.

Factors that contributed to students’ awareness of university

To understand how students gained an awareness of university, the survey instrument contained a table of statements (with Likert-scale responses) to investigate the role of community members (such as family, friends, teachers) and organisations (Appendix D) in their participation in higher education study. The graph ‘Home Community Factors’ (Figure 3) shows that more than 50 per cent of the respondents selected “agree” or “strongly agree” for family (53.1 per cent), friends (54.8 per cent), other people from their community who had studied at university (54.5 per cent), and teachers and school staff (54.2 per cent). Having a local university campus was the next most important factor, with 46.8 per cent selecting “agree” or “strongly agree”.

When the factors that contributed to awareness of university were examined by home state (i.e. state where the student lived before attending university), significant differences were revealed between the states.

- Tasmanian students were more likely to agree that they gained awareness of university through family, friends, teachers and school, and local university campuses (Figure 4i, ii, iii, iv respectively).
- Students from the Northern Territory, South Australia and Western Australia were more likely to agree that employers contributed to their awareness of university (Figure 4iv).
- Students from Victoria, New South Wales and Western Australia agreed more than other states that TAFE or other adult learning centre contributed to their awareness of university (Figure 4v).
- Students from Victoria and Tasmania agreed that they received awareness about university from local government, local media, and from visits by a university or other educational provider (Figure 4vii, viii, ix respectively). Students from Queensland and New South Wales also reported that they received awareness about university from local government (Figure 4vii).
- More students from Tasmania, Victoria and New South Wales than from other states agreed that visits to university campuses were a factor that influenced their awareness of university (Figure 4x).

Community factors that contributed to the awareness of higher education were compared between regional and remote communities (Appendix F, Figure F1). Community factors such as family, friends, teachers and school, businesses and industries, local government, and local media were not significantly different between regional and remote communities. However:

- Students who were from a remote area were more likely than regional students to agree that their employer contributed to their awareness of university (Appendix F, Figure 1i).
- Students from remote areas were less likely than regional students to become aware of university through a TAFE or other adult learning centre (Appendix F, Figure F1ii), local university campus (Appendix F, Figure F1iii), visits from university or other educational providers (Appendix F, Figure F1iv), or visits to university campuses (Appendix F, Figure F1v).

Community factors that contributed to the awareness of university were also analysed by age category (Appendix F, Table F1).
• Family, friends, teachers and schools, businesses and industries and others in the community who studied at university contributed most to awareness of university for those aged 18–20 years.
• The majority of younger students (88 per cent) agreed that teachers and schools contributed to their awareness of university. Students aged 18–20 years were more likely than older students to agree that a local library or study centre or community organisations and groups contributed to their awareness of university.
• A local university campus contributed less to awareness for older students than younger students.
• Students aged 18–20 years were more likely than older students to agree that visits to a university campus and visits from a university or other educational provider raised their awareness of university.

Mode of delivery revealed significant differences in factors contributing to awareness of university.

• Students who studied in a fully on-campus mode were more likely to agree that family, friends, others who had studied at university, community organisations and groups, library or study centre, local government, local media and local university campuses contributed to their awareness of university (Appendix F, Table F2).
• Over a quarter of fully distance students agreed that their employer contributed to their awareness of university. More on-campus students agreed that they gained awareness of university from teachers and school than fully distance students.
• Students studying through mixed mode were more likely to agree that TAFE or other adult learning centres contributed to their awareness of university. Fully on-campus and mixed mode students were most likely to agree organised visits to a university campus contributed to their awareness.

There were some differences in factors contributing to awareness of university between full-time and part-time students (Appendix F, Table F3).

• Full-time students were more likely to agree that family, friends, teachers and schools, organised visits from university or other educational providers to the community and organised visits from the community to a university campus contributed to their awareness of university.
• Part-time students were most likely to agree that their employer contributed to their awareness of university but were less likely to agree that others who had studied at university, community organisations and groups, a local library or study centre, local government, local media and local university campuses contributed to their awareness.
Figure 3. Home community factors contributing to awareness of university and provision of information and support.
(i) Awareness from family

(ii) Awareness from friends

(iii) Awareness from teachers and school

(iv) Awareness from employer

(v) Awareness from TAFE or other adult learning centre

(vi) Awareness from local university campus

- NSW
- NT
- QLD
- SA
- TAS
- VIC
- WA
- total

Awareness from family:
- a,b
- a,b
- a,b,c
- c
- b,c
- a

Awareness from friends:
- a,b
- a,b
- a,b
- c
- a,c
- a,b,c

Awareness from teachers and school:
- a,b
- b,c
- a,b
- d
- a,d
- c

Awareness from employer:
- a,b,c
- a,b,c
- d
- c,d
- a,c,d
- a,b

Awareness from TAFE or other adult learning centre:
- a,b
- b,c
- a,b,c
- c
- a

Awareness from local university campus:
- a
- b,c
- d
- e
- d
- a,b

Data values:
- n=451
- n=15
- n=467
- n=24
- n=358
- n=277
- n=29
- n=1621
- n=460
- n=15
- n=489
- n=20
- n=364
- n=278
- n=25
- n=1671
- n=189
- n=17
- n=193
- n=16
- n=109
- n=98
- n=20
- n=642
- n=191
- n=4
- n=152
- n=9
- n=87
- n=126
- n=19
- n=588
- n=367
- n=8
- n=431
- n=6
- n=346
- n=237
- n=21
- n=1416
- n=367
- n=8
- n=431
- n=6
- n=346
- n=237
- n=21
- n=1416

(i)

(ii)

(iii)

(iv)

(v)

(vi)
Figure 4. Awareness of higher education by source of awareness*.

* Information was reported as gained from (i) family, (ii) friends, (iii) teachers and school, (iv) employer, (v) TAFE or other adult learning centre, (vi) local university campus, (vii) local government (viii) local media, (ix) visits from university or other educational provider, (x) visits from the community to a university. Survey respondents were currently enrolled domestic Australian students at six universities with large proportions of regional and remote students by the students’ home state (i.e. normal residence the year before they started university). Significant differences between state responses are represented with different letters on each panel. No attempt should be made to compare results across panels.
Factors that provided students with information and support to get into university

When the community factors that provided students with information and support to get into university (i.e. financial or practical support, explaining what it is like to study at university, advice about finding accommodation or transport) were examined, family (62.3 per cent), friends (51.4 per cent), teachers and school staff (44.1 per cent), local university campus (42.9 per cent) and people from the home community who had studied at university (38.5 per cent) received the most “strongly agree” or “agree” responses (Figure 3).

Community factors that provided students with information and support to get into university were examined by home state and significant differences were revealed between the states (Figure 5).

- Tasmanian and Victorian students were more likely to agree that teachers or school (Figure 5i), local media and visits from the university to the community (Figure 5vii, viii respectively) provided them with information and support to get into university.
- Tasmanian students were more likely to agree than respondents from any other state that they received information and support to get into university from local university campuses (Figure 5vi); however Tasmanians were less likely to agree than other states that they received information and support from TAFE or other adult learning centre (Figure 5v).
- Students from the Northern Territory and Western Australia agreed that their employers provided information and support needed to get into university (Figure 5ii).
- There was no difference between states, and students were in agreement, that people from their home community who had studied at university provided them with information and support to get into university (Figure 5iii).
- Students from Victoria, Tasmania and New South Wales were less likely than students from Western Australia to agree that local government contributed information and support (Figure 5iv).
- Students from Western Australia, South Australia and the Northern Territory were less likely to agree than students from other states that visits to university campuses contributed to information and support to get into university (Figure 5ix).

Community factors that provided students with the information and support that helped them to get into university were compared between regional and remote communities (Appendix F, Figure 2).

- Students from remote communities were less likely to receive information and support from family, local university campuses, visits from university or other education providers and organised visits from the community to a university campus (Appendix F, Figure 2i, ii, iii, iv respectively).

Community factors that provided students with the information and support that helped them to get into university were also analysed by age category (Appendix F, Table F4).

- Younger students were significantly more likely to agree that family, teachers or school, local university campuses, and visits from a local university campus or other educational provider provided them with information and support to get into university.
- Students aged 18–20 years were more likely to agree that they received information and support to get into university from local media and the local library or study centre.
- Younger students were more likely to agree that information and support was received from others in the community who had studied at university, businesses and industries as well as local government.
• Students age 18–30 years were most likely to gain information and support from their friends.
• Students under 50 years old were most likely to gain information and support from their employers.

**Mode of delivery** was determined to have a significant effect on the community factors that provide students with the information and support to go to university (Appendix F, Table F4).

• Students who study fully on-campus were more likely to receive information from friends and others from their community who have studied at university. They were also more likely to receive information and support from community groups and organisations (e.g. Rotary). Fully distance students were most likely to gain information and support from their employer.
• Students studying in a mixed mode were most likely to receive information and support from local university campuses.

There were some differences between **full-time and part-time** students’ sources of information and support to get into university.

• Full-time students were more likely than part-time students to receive information and support to get to university from family, friends, teachers or school, businesses and industries, others in the community who have studied at university, local library, local media and local university campuses (Appendix F, Table F6).
• Full-time students were more than twice as likely to receive information and support to get to university from community organisations and groups (e.g. Rotary), local government, visits from the community to a local university campus and visits to the community from a local university campus.
• Conversely, part-time students were significantly more likely to receive information and support from their employer than full-time students.
(i) Teachers and school

(ii) Employer

(iii) Others who had studied at university

(iv) Local government

(v) Local TAFE or other adult learning centre

(vi) Local university campus
Figure 5. Sources of information and support to get to university received by survey respondents*

* Information and support was reported as received from (i) teachers and school, (ii) employers, (iii) others who had studied at university, (iv) local government (v) local TAFE or other adult learning centre, (vi) local university campus that students reported to help them get into university, (vii) local media, (viii) visits from university or other educational provider and (ix) organised visits from the community to university. All survey respondents were currently enrolled domestic Australian students at six universities with large proportions of regional and remote students by the students’ home state (i.e. normal residence the year before they started university). Significant differences between state responses are represented with different letters on each panel. No attempt should be made to compare results across panels.
Help with studies

The survey asked students about factors that helped them to succeed and continue with their university studies, that is what or who provided academic or practical support or encouragement (Appendix D). Family (69.4 per cent), friends (65 per cent), teachers and other school staff (56.3 per cent) and friends studying at university (52.5 per cent) were significant to regional and rural students and received “strongly agree” or “agree” responses (Figure 6. Home community factors that help students with university study (Figure 6). The factors that provided students with study help were examined by home state (i.e. where the student lived before attending university) and significant differences were revealed between the states (Figure 7).

- Students from Tasmania and Victoria agreed more than those from other states that teachers and other school staff provided study help (Figure 7i).
- Victorian students agreed more than those from other states agreed that friends in the community studying at university helped with their study (Figure 7ii).
- Nearly 50 per cent of students from New South Wales, Queensland and Tasmania agreed that friends in the community who were also studying helped them with university studies (Figure 7ii).
- Local study groups (Figure 7iii) and local university mentors (Figure 7iv) were significant factors for students from Victoria.

When factors that help students to study and continue at university were examined between remote and regional communities the only factor that was significant was friends in the community who were studying at university (Appendix F, Figure 5).

- Nearly 50 per cent of regional students agreed that friends in the community also studying at university helped them with their studies compared to 38.5 per cent of students from remote communities.

The community factors that provided students with help at university were analysed by age category (Appendix F, Table F7).

- Younger students aged 18–20 years were more likely than older students to agree that they received study help from friends, teachers and other school staff, preparation received in the community, local study groups, local university mentors and from friends in the community who were studying at university (Appendix F, Table F7).
- Students aged 18–20 years were less likely than older students to agree that they received help from a pre-degree or preparation program.

The mode of delivery was found to make a significant difference in terms of the factors that students agreed help them with their study at university.

- Fully distance students were least likely to agree that local study groups, local university mentors and friends in the community studying at university helped them at university (Appendix F, Table F8).
- Fully distance students were more likely than fully on-campus students to agree that the help received from a university pre-degree or preparation program helped them to succeed and continue with their university studies (Appendix F, Table F8).

Full-time students were more likely than part-time students to agree that they received study help from friends from their community, teachers and other school staff, people and friends in the community who had studied at university, preparation received in their home community, local study groups.
Figure 6. Home community factors that help students with university study.
Figure 7. Home community factors that survey respondents report assist with university study*.

* Students received study help from (i) teachers and other school staff, (ii) friends in the community studying at university, (iii) local study groups, (iv) local university mentor. This survey reported information for currently enrolled domestic Australian students at six universities with large proportions of regional and remote students by the students’ home state (i.e. normal residence the year before they started university). Significant differences between state responses are represented with different letters on each panel. No attempt should be made to compare results across panels.
Community attitudes towards education

Students were asked about their home communities' value placed on education and training and attitudes to post-school work and education options.

**Home community attitudes to education**

- **My community values education**
- **People prefer to get a job**
- **People tend to go to TAFE rather than uni**
- **People are expected to study at uni if they have the ability**

![Figure 8. Home community attitudes to education.](image)

There were differences according to home state, student location, age, mode of delivery and full- or part-time status.

- Students from all states agreed or strongly agreed that their home community values education (Appendix F, Table F10).
- More Tasmanian students agreed that students tended to go to TAFE rather than university than students from any other state (Appendix F, Table F10).
- Remote students were less likely to agree than regional students that people from their community with the ability to go to university were expected to go to university (Appendix F, Figure F4).
- Remote students were more likely to agree that people from their community tended to go to TAFE rather than university. Students from both regional and rural communities agreed that their communities valued education, with nearly 60 per cent of students agreeing.
- Students aged 18–20 years were more likely than older students to agree that their communities valued education (Appendix F, Table F11).
- Students 18–30 years old were more likely than older students to agree that if people in their community had the ability to go to university they were expected to do so (Appendix F, Table F11) but they also were significantly more likely to agree that people from their community tended to go to TAFE rather than university (Appendix F, Table F11).
- More than half of the students aged 40 years or under agreed that people from their community tended to go to TAFE rather than university.
• The proportion of students that agreed that people in their community preferred to get a job rather than go to university declined with age.
• Fully distance students were less likely to agree that people from their home community who had the ability were expected to go to university.
• Students studying in a fully distance mode were also less likely to agree that people tended to go to TAFE rather than university (Appendix F, Table F12).

Full-time students were more likely to agree than part-time students that their home community valued education and that people: were expected to study at university if they had the ability; preferred to get a job when they finished school; and tended to go to TAFE rather than university (Appendix F, Table F13).

In summary, the results showed that teachers and school staff, others who have studied at university, friends and family were the home community factors most frequently reported as contributing to awareness of university. Family, friends and teachers and school staff were also the most commonly reported contributors of information and support that led to higher education participation, and also the most commonly reported contributors to students’ success at university.

Home community factors that contributed to awareness, information and support for participation and retention and success in higher education varied by age group, particularly between those aged under 30 and those aged 30 and over. This is important because higher education students from regional and remote areas as a whole are older than those from metropolitan areas.

• A local university campus and visits to a campus contributed more frequently to younger students’ awareness and provision of information and support to get into university.
• Local libraries or study centres and community organisations more frequently contributed to awareness of university for older students.
• Employers provided information and support for students in all age groups under 50 years, suggesting that employers play a role in higher education participation and upskilling the regional workforce.
• Students aged 21 years and over were more likely to agree they received help that contributed to university retention and success from a university preparation program.
• Younger students were more likely to agree that they received assistance to continue with and succeed in their studies from a wide range of home community factors including teachers, local study groups and friends also studying at university.
• Older students reported fewer home community factors contributing to their access, participation, retention and success.

Phase 4: Community Assets

A desktop audit explored the community assets of 54 postcode communities selected for further analysis and their LGA(s) through web searches as described in the Methodology. Of the 54 postcodes, 21 are coastal (part of the postcode encompasses a coastal stretch) and 33 are inland (Appendix G, Table G1). With the exception of two postcodes (5731 and 0870), all postcode populations had grown between 2011 and 2016, with some almost doubling in size (namely postcodes 6450, 2541, 4350, 4655, 7310, 3280 (Appendix G, Table G1).

Of the 54 postcodes, 25 had a university presence, five having two universities in their LGA, and 22 postcodes had a TAFE campus (Appendix G, Table G2).
Given that the study was examining regional and remote communities it is of no surprise that 43 of the 54 postcodes have agriculture as one of their main employment industries. Other employment industries of note are tourism (33 postcodes), government services (15), mining (9) and manufacturing (8) (Appendix G, Table G3).

The Regional Australia Institute’s Insight Regional Competitiveness Index was searched by the LGA of the 54 communities for rankings on human capital, technological readiness, infrastructure essential services and innovation indices which were deemed the indices most relevant to informing and/or supporting higher education access and participation. Sub-indices of post-school qualifications, internet access and proximity to secondary school, TAFE and university campuses were also included. Postcode 5731 is served by the South Australian Outback Communities Authority which is not formally an LGA and not included in the Insight index. The remaining 53 postcodes are covered by 50 LGAs. Table G2 (in Appendix G) shows communities and LGA rankings from the Insight index according to quartile within each index and sub-index.

The group of communities which perform highly on higher education indicators are located in LGAs which, compared to the national average of 25 per cent in each quartile, are more likely to be in the middle two quartiles.

The communities as a group include fewer LGAs in the top quartile than the national average, and fewer LGAs in the bottom quartile on all indices (Figure 9). This is as expected as the highest ranked LGAs on each index are metropolitan, predominantly inner capital city LGAs. The exceptions are access to tertiary education and technical education indices where the proportion of the communities in the top quartile exceeds the national average. Analysis of the higher education student collection data presented earlier found that communities that are geographically proximate to a university campus were well represented among the highest performing communities on the higher education indicators. It is, therefore, not surprising that good access to tertiary education is a characteristic of the selected communities.

The infrastructure and essential services index includes the access to tertiary and technical education sub-indices, which helps explain why more than two-thirds of the desktop audit group are in the upper two quartiles on this index. Access to secondary education is measured by distance and therefore not surprisingly lower than the national average. Human capital is slightly above the national average, again being partly explained by the sub-indices of university and technical qualifications. The innovation index for the group of communities of interest LGAs as a whole is below the national average. Technological readiness for the group shows a lower than national average proportion in the top quartile, but an above national average proportion in the top half of LGAs, despite the group’s below average performance on the sub-index internet connection.

Further examination of rankings found that these communities selected to represent communities which performed well on the higher education indicators for equity group students had a larger proportion of university-educated residents and more employment in technology-related industries than regional and remote communities overall. Technical non-higher education qualification levels were above the national average, consistent with those for regional and remote Australia as a whole. This employment pattern is also consistent with the human capital needs of modern knowledge-intensive agriculture, mining and competitive manufacturing industries which are prevalent in regional and remote Australia. The findings mean that people in these communities have better access to people who can demystify higher education and are more likely to be familiar with jobs of the future that need higher education qualifications than regional and remote communities in general. It is also worth noting that index rankings for innovation, internet and mobile coverage, and internet connections were below the national average in the LGAs of the communities of interest.
Phase 5: Communities of interest case studies

In this section, community attitudes, expectations and initiatives in regional and remote communities that support successful access to, and participation in, higher education are presented. The qualitative findings are from analysis of the interviews undertaken with key stakeholders in the five case study communities of interest.

The case study communities will be referred to by the pseudonyms in the following table which also provides characteristics of each community.

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Figure 9. High performing communities (n=53) by selected *Insight Regional Competitiveness* indices at LGA level.
Table 5. Characteristics of case study communities of interest.

<table>
<thead>
<tr>
<th>Community pseudonym</th>
<th>Size</th>
<th>Remote/ regional</th>
<th>Industries</th>
<th>SES</th>
<th>Educational infrastructure in community</th>
<th>Proximity to a university campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inland North</td>
<td>Very Large</td>
<td>Regional</td>
<td>Agriculture, Tourism, Australian Defence Force</td>
<td>Mid SES</td>
<td>5 Primary Schools, 4 Secondary Schools, 6 Combined Schools</td>
<td>In town</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Primary/ Secondary) TAFE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 University</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5 Libraries</td>
<td></td>
</tr>
<tr>
<td>Ocean Central</td>
<td>Small</td>
<td>Remote</td>
<td>Agriculture</td>
<td>Mid to High SES</td>
<td>1 Combined School (Primary/ Secondary) Library</td>
<td>&gt;600 km</td>
</tr>
<tr>
<td>Ocean East</td>
<td>Medium</td>
<td>Regional</td>
<td>Health Care &amp; Social Assistance, Retail, Construction, Hospitality and Tourism, Local Government Services, Manufacturing, Agriculture, Viticulture</td>
<td>Low SES</td>
<td>3 Primary Schools, 2 Secondary Schools, TAFE Library</td>
<td>In town</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 University Library</td>
<td></td>
</tr>
<tr>
<td>Ocean West</td>
<td>Medium</td>
<td>Remote</td>
<td>Tourism, Agriculture, Fishing</td>
<td>Low to Mid SES</td>
<td>5 Primary Schools, 2 Secondary Schools, TAFE Library</td>
<td>&gt;700 km</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 University Library</td>
<td></td>
</tr>
<tr>
<td>Inland South</td>
<td>Very Small</td>
<td>Regional</td>
<td>Tourism, Agriculture, Local Government Services</td>
<td>Mid SES</td>
<td>1 Primary School</td>
<td>&gt;80 km</td>
</tr>
</tbody>
</table>
The key stakeholders interviewed for this case study are outlined in the table below.

Table 6. Participant sample by case study community.

<table>
<thead>
<tr>
<th>Pseudonym/community location</th>
<th>No. of participants</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Inland North (North)</td>
<td>4</td>
<td>School informant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University informant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Business committee informant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Local government informant</td>
</tr>
<tr>
<td>Community Ocean Central (Central)</td>
<td>4</td>
<td>School informant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Business committee informant x 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Local government informant</td>
</tr>
<tr>
<td>Community Ocean East (East)</td>
<td>4</td>
<td>University informant x 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Business committee informant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Local government informant</td>
</tr>
<tr>
<td>Community Ocean West (West)</td>
<td>3</td>
<td>School informant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Business committee informant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Local government informant</td>
</tr>
<tr>
<td>Community Inland South (South)</td>
<td>3</td>
<td>School informant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Local government informant x 2</td>
</tr>
</tbody>
</table>

(n = 18)

Whilst the number of interviewees may be considered relatively small, the key stakeholders were selected because of their positions in the community, and in some cases nominated, by their communities as being able to provide key insights and information pertaining to participation in higher education in their respective communities.

Qualitative findings

Three key themes that arose from the qualitative coding and analysis of the interview transcripts were:

- the valuing of education
- a strong sense of connectedness
- higher education as part of the success of regional and remote communities.

These themes were explored through community informants' insights into the community-enabling activities and practices employed in the five case study communities.

Two of the case study communities have regional campuses located within their township (North and East). The other three communities are at varying distances from their nearest university campus. Two communities (West and Central) are approximately 700 km away while one (South) is approximately one hour's drive from a regional university campus and has multiple universities within a three-hour drive. Regardless of whether the community had its own university campus, informants from all five case study communities described their communities as places where education is valued and where a "can do" attitude prevails.
Places where education is valued

The communities placed a strong value on education with a general sentiment expressed through the interviews that education not only benefited their young people but contributed to the overall success of their town or city. This created a common discourse of valuing education amongst different members of the community as the following comments reveal:

... the general community feel [that] pervades through the kids and the parents as well is that education is important. It's highly valued. There's expectation around kids attending school ... So, we tend to have a very positive and very committed feeling. And it's very supported, the community values education as a whole. Lots of the businesses in town will take on students for school-based apprenticeships ... knowing that's one way to help kids stay at school and complete their education. So, lots of expectations on the school as far as what they expect as far as quality education and educational opportunities for kids. It's very highly supportive.

(School informant, Community Central)

I think, generally, the attitude towards education is good. Everybody works together to make sure young people and the community can access education and use it ... I think generally, everybody values it and appreciates it, especially in the sector I work in [higher education]. We work together a lot, like in the community development area and community services sector. We have that theoretical background and knowledge that we know that education is one of the best ways to break out of poverty and to break out of those cycles of disadvantage. So, everybody pulls together a lot to support people, and especially young people, to be able to finish schooling and go onto further education.

(University informant, Community East)

There's an intuitive belief that the secret to removing people out of poverty is to improve their education. To the extent that that's true, then the more people who have a better education then, arguably, the better off we'll all be.

(Business committee informant, Community North)

These comments convey the strong cross-sectoral valuing of education in the case study communities. This valuing of education appeared to also be shared by families in these communities, with school informants reporting strong parental engagement with their local school.

I have to say we have a pretty good parent and community involvement here at the school.

(School informant, Community South)

... the community's attitude is, in general, let's get the best outcomes that we can for our kids through school. So, we're talking about, you know, like, 95 per cent, rounding it up, of the students have actually got a vested interest in wanting to do well, and their parents have too.

(School informant, Community West)

Schools likewise were perceived as having high expectations of their students and supporting students to experience success and achieve educational goals.

There's a high focus on finishing Year 12. There's a clear focus on supporting those students that genuinely believe they have the potential to do well through
ATAR and go to uni to do that. There’s also a real focus on probably trying to make sure that those kids that aren’t going to be able to achieve that are heavily supported through their programs to still come out and be focused on getting qualifications and opportunities within, in the tertiary sector, but more through the TAFE stream.

(Local government informant, Community West)

In addition to supporting people out of poverty, higher education was also valued as a means for growing local economies. At a time when many rural regions are losing young and educated people to cities, university and business informants saw the benefit of a rural community which valued education as a place where people want to live and work:

‘Advance [city name]’ [which is the community’s business development association] places a heavy emphasis on education. Because of all of the boarding schools and that service hub, education’s one of the pillars of our strengths of the city, and one of our key industry economic drivers. So, I think that has sort of made people sit up and take a little bit of notice. We’ve got a quality university and that education is important. It’s talked about a lot more now. I would say it’s positively received by the community.

(University informant, Community North)

I guess it builds the capability of the region. It’s building, obviously, that knowledge and expertise in specific areas. The benefit is that it’s actually, I guess, building stability across the community by having people wanting to come here and stay here.

(Business committee informant, Community East)

The case study communities were cohesive communities typically with active community progress associations. While many of the comments made related to education of young people, a skilled, educated workforce was recognised as essential for a competitive modern economy. One local business committee leader described education as “the future” of the region, explaining:

…whilst there is increasing number of those working in the resource sector, it’s primarily an agricultural, marine, port environment, which requires fairly high levels of skill and academic capacity to undertake their duties.

(Business committee informant, Community West)

In sum, the case study communities viewed education generally, and higher education in particular, as highly important. Education was valued for its capacity to improve life outcomes for community members, to enhance regional communities and the economy of the region. The common valuing of education across a range of sectors was a basis from which other types of support, activities and opportunities could grow.

Communities with a “can do” culture

Community informants from the five case study communities shared some of the history of their town or regional city. In some places the region’s success in higher education was linked to intentional efforts amongst community members to revitalise a region. University informants from two of the case study communities, which were regional towns that had a university campus located there, revealed how local associations of community members had agreed to make higher education a core goal in their community and to focus their actions around realising this goal.

It’s accurate to say that you had a confluence of community, business, three layers of government, so councils, state, federal government, all meeting in a desire to bring
higher education to this community. ... We've got a desire from those in the education community, a desire from the business community, and then a desire, or you know, a willingness for three layers of government to work together to make things happen.

(University informant, Community East)

It started from the foresight of the mayor at the time, and other business people. They really, really pushed for it and they actually collected small donations and larger donations of money to sort of help fund it and kickstart it. We'd call it crowdfunding these days. But that's what they essentially did. So, I think those business people had that vision, that they needed to educate the local people.

(University informant, Community North)

It was notable that interviewees from three of the case study communities described these regions as “can do” communities. They shared stories of how their communities had bounced back from the regional decline that had been encountered by other towns in the region. Recognising the likelihood of a similar fate for their town too, these informants described how collaboration amongst active members of the community had been key to their town’s reinvigoration. Sometimes this involved lobbying for or seeking investment in infrastructure, such as working to get a bank back in the town in the wake of a “big four” bank closing down in the region, as one local government leader explained:

You see a range of things gradually decreasing, and the same with the little CBD that’s in [community]. There’s not as many shops as there once was. They gradually decreased. But the community are now starting to stand up. They were very active in development of the Business Centre...So, they’ve done a lot of work in trying to make the town sustainable in that space...the locals got together, and they have been able to put a branch of the Bendigo Bank into that former bank. I’m not sure which one it was previously, one of the big four. But they also, as part of that, have other community programs and things that operate from that business centre.

(Local business committee leader, Community South)

In addition to this type of community commitment to rebuilding infrastructure within the region, community informants acknowledged the importance of the culture of the region as part of their higher education success story.

I think as a community we value success. There’s a high level of engagement within our community. Most people are volunteering in some aspect. So, there’s a lot of ownership, there’s a lot of involvement, there’s a lot of community work that happens. People are invested in our community and they’re invested in our school and they’re invested in their businesses and they’re invested in making our community a success.

(Local government informant, Community Central)

There was an understanding that communities with highly skilled and qualified residents thrive, as one local business committee leader explained:

We wanted to respond to community concern about giving young people the opportunity to stay and study in the local area. But on top of that, the business, the industry community wants something … to draw quality people to the region. And obviously, you want facilities and services locally that are going to also value add and draw people and attract them to want to live here. Because, you know, they want to bring in the younger generation with young families, or professional people with partners that really want a good quality of living. That’s why we work,
you know, we see the importance of, as a regional community, to work collaboratively to provide that.

(Local business committee informant, Community East)

In addition to acknowledging their community’s culture of higher education aspiration, participants also drew attention to the qualities of students from regional and remote areas.

**A strong sense of connectedness**

Community informants describe resilience and independence as personal qualities that students from regional and remote areas draw upon and develop in navigating the transition to higher education, particularly when this involves studying away from home. One participant from a town that was over 700 km away from the nearest university suggested that a sense of independence often developed in young people who grew up in the country, especially those who boarded during their schooling years:

> All of those kids [who] are in some sort of boarding situation are used to being out of home. I think that makes the transition for that community … or for the kids involved, easier. Because they're not starting out with a whole new thing where they're not used to being out of home and starting a new educational experience. They're actually stepping into a new educational experience in Perth where they have to be self-reliant, having already been used to not having Mum and Dad around to pick everything up for them. And I think that makes a significant difference.

(Local government informant, Community West)

Being “country kids” also meant that when they arrived in the city for university they tended to support each other, as a school-based informant pointed out. This included the “strong threads” that develop with key people such as school and university staff, as one school principal noted. Emphasising the importance “just for kids to know that they’re supported”, she continued:

> A lot of the kids, when they get together in Adelaide … tend to still keep some pretty strong threads with each other, even as they make new friends. But they still are pulled to each other quite a lot. That’s almost that sort of country personality, where they just have such a strong connection to home, that even when there is a city and they’re all going out and seeing each other, it’s a different relationship, they’re much more together and look after each other a lot more too, so, that’s certainly important.

(School informant, Community South)

Strong connections and relationships within communities appeared to be part of the success stories of the regional and remote communities that were case studies in this research. One university informant commented on the foundational importance of the relationships that the university staff build with students. She told of attending sector meetings and hearing university staff from other states and regions report that they did not know why students leave or how to get them to return to higher education:

> And I’m sitting there going, well, if you talk to us in the regional campuses, we can tell you. Because nobody here just walks out. When somebody on a small campus is in trouble, they will actually come and talk to somebody and discuss their options. So, you don’t get that thing of people just dropping out. You might get people who decide to defer. But they do all the paperwork and all those things because they’re actually coming and getting advice, because they have relationships with the staff and they feel that they’re not just a number. And they
can come and be vulnerable and they can say what they’re thinking and what they’re feeling.

(University informant, Community East)

Community informants described some of the practices they perceived to be influential in supporting strong connections with young people from the region who pursue higher education qualifications. These included activities initiated by a range of different organisations, including sports clubs, charity organisations, schools and universities. One local government association representative discussed the role that sporting clubs can play.

You tend to find a lot of these clubs tend to use sport as the rationale to return back, especially when the kids are going to uni … So, those kids who are quite athletic and get some money for coming back home, see family and friends, stay socially connected with people they’ve grown up with, and at the same time they keep playing sport and keep that sort of home grown town thing alive. So, that’s pretty common in regional Victoria.

(Local government informant, Community South)

These practices included forming and supporting connections with Indigenous communities. One local government informant described how the university had consulted with Indigenous communities in the area to identify a suitable site for its regional campus and offered programs to support university access and participation for Indigenous and other students.

We have a really high, well, a higher than state and national average Aboriginal population. There’s been lots of work done in that area to support [the] Aboriginal community and Aboriginal young people too for educational attainment. Even the land our university campus is built on out here, that was via an understanding and a lot of work with the Aboriginal community for the land, to actually build the university on. At that university, there’s lots of school programs that are run. And, not only for the Aboriginal community, but just the general community, to raise the profile of the university, that it’s there, and that it’s available for people in this area.

(Local government informant, Community East)

Building university-community connections — at close range or at a distance

Schools and universities were highly active in initiating and taking part in activities and practices that enable regional students to succeed in higher education.

The proximity to a university was influential in the ways in which schools and universities worked together to help students navigate their pathways to higher education. Two of the case study communities had their own regional university campuses (communities North and East), while the other three communities were located at varying distances from their nearest university campus, and this appeared to influence the range and style of school-university familiarisation activities made available to prospective students. In communities located large distances from the nearest campus (communities Central and West), such activities tended to include a multi-day visit to the nearest university city for school students. Careers advisors and other school staff spoke of schools arranging student visits to universities (even where that involved travelling considerable distances with busloads of Year 10 students).

We take our Year 10 students who think they want to do ATAR [university admission] in upper school … to Perth for a week during August and visit all the universities and a few other institutions as well, just to try and open their eyes. Like, we took, I think it was 58 kids this year. And less than half of them had ever been on a university campus. So, you just try and give them really good insight.
to what’s out there, so that they can make informed, you know, reasonable decisions.

(School informant, Community West)

By contrast, in communities where a regional campus was located, the school-university visits or experiences appeared to be of shorter duration, with more frequent excursion/incursion opportunities available to school students. University informants within regional campus communities described activities they initiated both on campus and within schools to raise awareness of higher education opportunities. It was evident too that the nature of these types of university familiarisation activities is changing as the structure of schooling changes:

_We engage heavily with our secondary schools. And we do that in a number of ways from a number of different units and directorates at the university. Obviously, marketing is a big one that works in heavily with the schools. Academics will go out and do guest presentations or lectures or information sessions. We invite high school students in their school groups, and also with mixes of schools, onto campus. We start that at Year 9. We’re talking about starting that as low as Year 7 now, [since] you move into senior schooling in Year 10 now in Queensland. Year 7 is now middle school so, we’re talking about perhaps we need to start that at Year 7. But from Year 9, 10, 11 and 12, they come onto campus and we give them different experiences that showcase what we do have._

(University informant, Community North)

This university informant also underscored the importance of a regional campus being a vibrant and inviting place for students in order to attract them to higher education:

_One of my KPIs is campus life. We coordinate a lot of events for students and staff regularly. And so, there’s a lot going on for students during the day or it might be a movie at night and so forth. So, you know, we have a campus life committee. We meet once a month. It’s run by a lot of volunteer staff and students to coordinate and manage the events. But that has been a step-change for the university, from going from distance [education] to then online with, ‘oh gosh, there’s no students around. It’s all a bit dead. There’s more staff here than students’. So, that was critical to us, that campus life. Really important._

(University informant, Community North)

In addition, university staff from universities located in or near regional communities that record high success in higher education described participating in civic activities to connect with their local communities. One university staff member spoke of the university’s involvement in an annual charity relay event.

_I was kind of known in [community] because I’d done work with the Cancer Council. So that was with working on the Relay for Life, which is probably the biggest fundraiser in [community] annually. So, you know, a lot of people will go ‘where do I know you from?’ because I’ve got this familiar face, because they’ve seen me being interviewed on TV or they’ve seen me at the relay or whatever. But separate to that personal level, the university’s always had a team there. So, I think we do actually kind of make a commitment to go to community things and be part of that community, not kind of set ourselves up as a separate entity._

(University informant, Community East)

In these ways the community informants described strongly woven relationships between universities and local communities.
The proximity to a university campus also appeared to influence the ways in which students are prepared and supported by their schools to participate in higher education. For more remote communities without access to a regional campus, the pursuit of higher education often means leaving home. Some young people from remote communities struggle to make the transition to participating in university and city life. One school informant offered an example of some students from his school who encountered this difficulty:

One thing that we’re really mindful of is that our students sometimes have trouble adjusting to going to the city. And we do get a small percentage who come back within that first three to six months. And it’s a lot about the lifestyle...no traffic lights here, all pretty comfortable, easy to get around and all the rest. And sometimes that adjustment has just proven to be too much for the kids. Very, very rarely...we get students come home because sometimes, if you’re a real high-flying student, you don’t have the need to ask as many questions as maybe you should or could. But then when you get to uni and you’re lost, you don’t have the capacity or the wherewithal to ask. And so, I can think of one or two in the last five years who’ve come home because of that sort of situation. One has gone back. He’ll be fine now. The other one’s still here finding his feet.

(School informant, Community West)

This comment illustrated how difficulties in the transition to higher education could be experienced by students irrespective of their academic attainment levels. The emphasis on building aspirations and access pathways to higher education was evident both in communities that had a regional university campus and communities located at a distance from university campuses.

**Higher education as part of the success of regional and remote communities**

Community informants acknowledged that regional and remote towns and cities are changing as urban migration continues to impact upon population numbers. They emphasised the important role that infrastructure plays in sustaining these communities and how this was an integral part of the community’s strong performance in regional students’ participation in higher education. Banks, regional university campuses, regional business and housing developments help keep towns as living centres. Community informants in at least two of the case study communities commented on the importance of infrastructure within the town (such as a community bank, a university campus, or a large company/production facility):

It was a struggling town 20 years ago. And a few people sort of said, we’ve got to turn this around. And they have. They established a group and they said, well, what are we going to do? First thing we need to do is make sure, we lost our last bank. Let’s get another bank … That was part of it. Providing encouragement for developers, the local council provided financial assistance for a developer to literally develop vacant land in the town, to try and open up more development. One family has donated a whole lot of land for residential development and to expand the aged care centre. So those sorts of things have turned it around ... And probably, if it wasn’t for that group of people setting up that committee and saying, well, we’re not going to let this happen, it probably would have gone the same way as a lot of the other small towns around that have, that are now ghost towns.

(Local business committee informant, Community Central)

I see, I hear people who disparage our regional university because it’s not one of the group of eight, and it doesn’t have sandstone buildings. But also, it’s a very viable alternative for those people who don’t want to go to Brisbane, Sydney,
Melbourne to study, or can’t afford to do that. And our regional uni has some strong courses in certain niche areas, like allied health and mining engineering. So, it’s probably a better degree to get from here than from one of the sandstone unis for those types of things.

(Local business committee informant, Community North)

As this informant suggested, regional and remote communities have some advantages within particular sectors and universities and the case study communities appeared to be developing strategies such as regional development plans to leverage these advantages. At the same time, informants from some regional and remote communities reiterated the importance of some traditional employment sectors for attracting people with higher education qualifications back to the community to work.

… the world’s becoming smaller, so the students’ vision is opening up, but a lot of students will go to, and study at university, but they’ll be studying in fairly traditional sorts of fields. So, they might go and do nursing. They might do physiotherapy or chiropractic or teaching because that’s what they know and that’s what they’ve been exposed to. That is slowly changing with social media and internet access and the Year 11s go to Adelaide every year and have careers trips, so that vision is broadening. But it’s still those traditional mainstay of university degrees that the bulk of our students do. And they’re the ones that end up, not all of them, but many of them come back into our community at some point and might work … Wives of local people might work in a part-time environment or something like that. Because they’re the opportunities that are here, too.

(Local government informant, Community Central)

This study offered insights into macro-structural changes occurring in regional economies. Regional students are beginning to study courses that go beyond the more traditional courses and are moving into more technical and niche sectors, as one university informant explained.

The difficulty small communities have, is that the type of work that graduates might be able to have in [community] does restrict the number of people who can come back. We have a health and hospital sector and an ageing [aged care] sector. So, there’s nursing, allied health, doctors, you know, clinic managers, that type of work. You’ve got your teaching staff. There’s business consultants and agronomy consultants. They’re all sort of tertiary trained. And beyond that, then, you go to your trades. So, there’s not a great variety of opportunities for employment for people with tertiary skills.

(Local government informant, Community Central)

The changes in regional and remote communities present some opportunities for growth and development that centres around higher education; however, as this participant indicated, the jobs that would enable graduates to put their acquired skills to use are sometimes lacking in regional and remote communities.

There was also a strong sense that the case study communities were places that people want to come back to “to bring up their families”. This appeared to form part of the business case for regional and remote communities to value and support access to and participation in higher education.

I think this is the kind of community that the kids always want to come back to. And you know, small towns are a bit like this, I guess. But often in small towns you get those people who have never left. And what we see here is that so many
of them come back. So, it’s a community that people want to come back and live in...I think it’s the kind of community where people are happy to go away and know that they’re going to bring back skills to keep the community growing.

(School informant, Community Central)

It’s not unusual to find people coming back 10, 15 years [after leaving the community to go to university], when their families are coming along, because it is seen as a great place for them. They’ve really appreciated the opportunities they’ve had growing up here.

(Local council informant, Community West)

These comments alluded to patterns of demographic ebbs and flows in regional and remote communities where young people’s participation in higher education is understood and valued as a part of the ongoing invigoration of communities. There was a notable silence in the interview data around mature-aged students. While business and university informants spoke of the value of a skilled, educated population and workforce, and communities valued returning higher education graduates, study at a distance from a campus and by mature-aged students was largely invisible.

The qualitative analysis of the case study community interviews highlighted the many ways in which regional and remote communities support and in turn benefit from students participating in higher education. Community informants indicated that participation in higher education took many forms, including leaving the community to attend university, remaining in the community and studying at a regional campus, and other blended and flexible attendance options. The successful case study communities were supportive of higher education participation, and a picture emerged of multiple local community-level factors influencing access, participation, retention, attainment and success.
Discussion and Implications

Discussion

This study sought to identify the community-related factors that influence access, participation, attainment (completion), retention and success in higher education. Communities are defined as single postcodes, or groups of adjacent postcodes which appear to have similar higher education access, participation and/or success-rate profiles.

The following discussion responds to the five research questions which are broadly aligned to the phases of the project.

1) Which regional communities in Australia have higher equity student access, participation retention rates and success rates? How does this vary according to equity group?

This study identified that there is variation by equity group among the communities which rank most positively on higher education performance indicators. Counterintuitively, communities with the highest access, participation and attainment are not represented among the highest ranked retention-rate and success-rate communities. It appears that communities which are able to achieve larger proportions of their populations accessing higher education also have larger proportions participating in higher education and larger proportions going on to complete an award. Access, and therefore participation and completion, is not correlated with rates of progress through awards at a community level, as measured by retention rates and success rates. This suggests that higher education institution and individual student factors have a much greater influence than community factors on rates of progress through awards. Home community factors would appear to influence completion mainly through impact on initial access to higher education because access is a necessary first step to eventual award completion.

Regional and remote home communities which rank in the top 50 postcodes (Appendix A) for the indicators of access, participation and attainment have the following characteristics. They:

- tend to have relatively small populations of less than 10,000
- are likely to be in the top half of socioeconomic status according to the Index of Education and Occupation, which is consistent with the large body of literature which finds that family educational cultural capital influences higher education participation (O’Shea, 2016)
- tend to be near to university campuses, supporting findings on the influence of proximity to regional higher education campuses on participation (Zacharias et al., 2018).

Home communities which support retention rates and/or success rates have the following characteristics:

- communities with the highest retention rates tend to be high or high-medium SES but have very small populations of under 1,000. While the characteristics are similar to those which support access, participation and attainment, the postcode communities are not the same
- communities that rank highest on success rates are also very small but comprise a range of SES
- over a quarter of communities in the top 50 retention-rate and success-rate postcode lists are on both lists.
Equity groups

Communities which support access, participation and attainment for disability and NESB students are similar, and often rank highly for both equity groups on all indicators except retention rates. Compared to regional and remote students as a whole they tend to:

- have larger populations
- comprise fewer high SES communities
- be more likely to be in New South Wales
- be near a university campus.

Home communities which have higher retention rates and success rates of disability and NESB students, compared to those for all regional and remote students, are generally:

- lower SES
- have larger populations.

Home communities which support Indigenous student access, participation attainment, retention and success, as expected given the population distribution of Indigenous people, tend to be:

- low SES
- in New South Wales, Queensland and the Northern Territory
- not near a higher education campus.

This suggests that non-university community factors may be relatively more important in promoting access, participation, attainment, retention rates and success rates for regional and remote Indigenous students than for other equity groups.

Communities which support low SES student access, participation, attainment, retention and success, compared to those scoring highly for regional and remote students generally, tend to:

- have smaller populations
- be more likely to be located in Tasmania or New South Wales, although Victoria is well represented
- be less likely to have a university campus nearby, with no home communities ranking highly on retention rates or success rates being near a campus.

Communities which support remote student access, participation, attainment, retention and success, compared to those scoring highly for regional and remote students generally:

- have very small populations, as would be expected given the settlement pattern in remote Australia
- tend to be medium SES
- are not near a university campus.

There are more communities which perform well on three or more of the indicators for remote students than for any other equity group.

Influence of location

Postcode communities in Victoria appear most frequently in the highest ranked access, participation and attainment lists, and those in the Northern Territory, Western Australia and Queensland least frequently for all equity groups, including the all regional and remote student group. Victoria has more small-population higher SES postcode communities than any other state or territory. Whilst it is possible that a few very successful individuals from very small communities could skew results, particularly for retention rates and success rates, this risk is offset by using data averaged over six years.
Further investigation is needed to determine whether this geographic distribution is due to state-specific educational and/or other socio-cultural factors which influence higher education participation and success rates or whether community size has some independent influence on higher education participation.

In summary, the overwhelming absence of overlap between the top 50 ranked postcode communities on access, participation and completion (attainment) indicators and those ranked in the top 50 retention rate and success rate indicators suggests that home community factors may have very little influence on remaining at university and success in passing units of study, although eventual graduation (attainment) would be expected to be associated with access and participation. University and personal factors may be more influential in retention rates and success rates than in relation to the other indicators.

(2) What do regional students report are the community-related factors that influence their access, participation, retention and success? How does this vary according to equity group?

Community attitudes to education are an indication of community expectation of higher education participation (Haas & Nachtigal, 1998; Woodroffe et al., 2018). Of the regional and remote students surveyed in this study, 60 per cent agreed that their home community valued education, but less than a quarter agreed that people with the ability were expected to go to university. Getting a job on leaving school and going to TAFE were frequently reported amongst students as preferred alternatives to higher education participation.

These findings are consistent with research which found that many social, cultural, financial and socio-spatial barriers to higher education are faced by regional Australians (Wilks & Wilson, 2012). It also supports evidence that students from lower SES backgrounds are: more likely to enrol in VET than higher education compared to their high SES counterparts (Bradley et al., 2008); more likely to be undertaking technical study; and less likely to be undertaking university study than their metropolitan counterparts (Curtis, 2011). Such factors contribute to the under representation of regional and remote students in higher education (Bradley et al., 2008).

Just over one in ten of the regional and remote students surveyed for this project agreed that community factors contributed to their motivation to study at university, scoring behind a future job, personal accomplishment, desire to experience something different and school expectations. This is consistent with other studies that show a mix of intrinsic and extrinsic motivation for university study, including future career and family and friends’ expectations (Cote & Levine, 1997; Afzal, Ali, Aslam Khan, & Hamid, 2010). Literature on motivation that considers community factors beyond friends and family is lacking. There were also variations by state in the survey findings. Students from Western Australia were most likely to be motivated to study by community expectation, with South Australian students the least likely.

Home community factors which contributed most frequently to regional and remote students’ awareness of university were teachers and school staff, others who have studied at university, friends and family (Alloway, Gilbert, Gilbert, & Muspratt, 2004; O’Shea, 2016). Family, friends and teachers and school staff were also the most commonly reported contributors of information and support that led to higher education participation, and the factors students reported contributed to their success once they were at university. Over half agreed that friends from their home community studying at university helped or supported their retention or success at university. Case study interviewees confirmed that students studying away from their home community formed close, supportive bonding networks. Peer support networks are an important contributor to success in higher education (Kuh et al., 2011). Teachers tend to be more important in university access and participation for students whose families have lower levels of educational cultural capital and navigational capability (Zacharias et al., 2018).
The presence of a university campus was a contributor to both awareness and participation in higher education for almost half of surveyed students, with visits from university staff and organised visits to a campus contributing (Bradley et al., 2008; Zacharias et al., 2018). Local university campuses, and visits by universities and to universities, contributed to awareness and information and assistance to get into university most frequently in Victoria, and least frequently in South Australia, the Northern Territory and Western Australia. However, these findings should be viewed with a degree of caution as there were fewer responses from these three jurisdictions, and no university based within them distributed the survey to their students. More students from these places were over 30 years old, studying part time and in fully distance mode than in other jurisdictions.

There was variation in home community factors that contributed to awareness, information and support to participate in higher education and retention rates and success rates by age group, particularly between those aged under 30 years and those aged 30 years and over. This variation in influencing factors is consistent with other research that has found a diversity of sub-groups in the regional and remote cohort (Pollard, 2018). As noted in the results, the survey sample is older than the national student population, consistent with findings of Fleming and Grace (2014) that university students from regional and remote areas are generally older than those from metropolitan areas.

Most regional communities have a library or other quiet study place and almost half have public online access facilities. A quarter do not have affordable internet and under two-thirds have reliable high-speed broadband access, both essential infrastructure elements for higher education study for those remaining in, or visiting, their home community (Park et al., 2015).

Local libraries or study centres as well as community organisations more frequently contributed to awareness of university for older students. A local university campus and visits to a campus contributed more frequently to younger students’ awareness and information and support to get into university. Employers provided information and support for students in all age groups under 50 years, suggesting that employers play a role in higher education participation and upskilling the regional workforce. Overall, older students reported fewer home community factors contributing to access, participation, retention and success. This has implications for university outreach to regional communities.

A third of surveyed students agreed their studies benefited from academic preparation received in the community (Kuh et al., 2011). Students aged 21 years and over are more likely to agree they received help that contributed to retention and success at university from a university preparation program, while more younger students agree they receive assistance to continue with and succeed at study from a wide range of home community factors including teachers, local study groups and friends also studying at university.

Fully distance students and part-time students were less likely than other students to agree that most home community factors contributed to awareness or information and support, but more likely to agree that their employer was influential. They were also less likely than other students to identify home community factors that contributed to their retention and success at university. Fully distance students were more likely than other students to agree that a university preparation program had assisted in their retention and success.

The Productivity Commission (Hatt, Dolman, & Gillespie, 2018) has found that the demand-driven system for funding higher education has not resulted in an increase in the proportion of regional young people participating in higher education (Koshy, 2017). The survey findings about the importance of home community factors in access, participation, retention and success of younger students suggest that universities could work more closely with regional and remote communities to increase young people’s access, participation, retention rates and success rates.
The implications of these findings are diverse. They reinforce existing literature which points to the different influences on access and participation, and the tendency of rural and regional students to not consider a higher education pathway over a VET pathway. They also serve to support the importance of positive influences such as teachers, friends and other community groups on the aspirations of young people and, in particular, on their willingness to participate in higher education. They confirm the need for a better understanding of the regional and remote student cohort in order to design appropriate policy and programs to engage and support all students (NCSEHE, 2018).

The findings of the survey also strongly confirm the role of local campuses and active university partnerships in university access and participation for regional students (Bradley et al., 2008; Woodroffe et al., 2018; Kilpatrick et al., 2018). They also provide some insight into the mature-aged cohort, showing the influence of employees in encouraging higher education participation and retention. These results contribute to the limited understanding of factors influencing regional mature-aged student higher education access, participation and success at a time when participation in this cohort is growing (Cardak et al., 2017; Stone, 2017a).

(3) How do measures of regional community assets that support competitiveness including human capital, institutional foundations, infrastructure, technological readiness, labour market efficiency and innovation align (or not) with access, participation, retention rates and success rates of equity students?

The selected Insight Regional Competitiveness indices for the desktop audit group show that only the access to tertiary education and access to technical and further education indices are higher than the national average. Access is measured by the proportion of the population participating in university or technical education at the 2011 census (Regional Australia Institute, 2017). Technical education participation rates are higher in regional than metropolitan Australia, which may explain the higher technical access result (Bradley et al., 2008). It is not unexpected that home communities selected as communities of interest have higher rates of access to tertiary education, although many students who have moved from their home community to study will be recorded at their semester time address in the census. Tertiary education tends to be less geographically accessible for regional and remote than metropolitan students (Zacharias et al., 2018). This confirms the finding from the Regional Australia Insight indices that the communities of interest have higher than expected higher education participation rates, not only compared to regional Australian averages, but also the national average.

The communities of interest group has broadly similar university and technical qualification index profiles to the national average, with 50 per cent on both indices being in the top half of LGAs. This is not unexpected for technical qualifications but is less expected for university qualifications as regional residents generally have lower rates of university qualifications (Bradley et al., 2008). The desktop audit suggests that communities may benefit from the navigational capital provided by those familiar with negotiating pathways to and through higher education (Gale & Parker, 2015).

More communities of interest’s LGAs are in the top half of the technological readiness index than the national average (65 per cent compared to 50 per cent), but fewer are in the top half of the innovation index than the national average (40 per cent compared to 50 per cent). The relatively favourable technological readiness performance is not explained by index components related to internet and mobile coverage, and internet connections. Rather it is due to the component employment in technology-related industries. Modern agriculture, mining and competitive manufacturing industries which are prevalent in the desktop audit communities, and regional Australia in general, are knowledge-intensive (Beddie, 2014).

In summary, these findings suggest there is a relationship between home community skill profile and workforce needs and access, participation, retention rates and success rates in
higher education. They also emphasise the need for higher education to meet the workforce needs of regional Australian industry and businesses.

(4) What are the enabling community factors that are not measured by existing datasets, including individuals, social capital and other factors such as university partnerships, that influence access, participation, retention rates and success rates of equity students, and how do they work?

Analyses of data from the Higher Education student data collection and the student survey show that proximity to a regional campus, visits to home communities by universities and organised visits to a university campus all positively influence access and participation.

The communities of interest chosen for the case studies brought the data to life, providing examples of effective partnerships between communities and universities. Such partnerships created awareness of university, for example, through university participation in local events, and eased transitions, for example, helping regional students understand practicalities of living and studying in a city. The impact of university partnerships on access and participation is consistent with findings of previous studies (Cardak et al., 2017; Gale et al., 2010; Naylor, Baik, & James, 2013; Woodroffe et al., 2018). Partnerships between universities and communities which are people-rich and draw on rural community social capital have been found to be particularly effective in promoting higher education participation (Gale et al., 2010; Kilpatrick et al., 2018).

The communities of interest case studies identified three key themes that encouraged and supported higher education access participation and success. These are:

- the valuing of education at all levels from school to higher education
- a strong sense of connectedness and belonging among community residents, including young people and Indigenous residents
- community narratives of success included involvement in higher education

The case study communities had a “can do”, proactive attitude. They celebrated successes and actively developed resilience and navigational capital (Zacharias et al., 2018), for example, through sports clubs. They not only encouraged and supported young people to continue with their education, and if necessary to leave the community for higher education, they also welcomed their return. Young people were pleased to return to the case study communities when possible, often after some time working away and gaining additional skills post-university. This in contrast to studies such as Corbett’s (2007) Learning to leave which highlight the intrinsic cultural and social influences which discourage young rural people from both leaving their home community for post-school education, and from returning after they leave.

Although the case study communities provided examples of people studying at a nearby regional campus and from home through blended, flexible study options, there was silence in the data around mature-aged students. While business and university informants spoke of the value of a skilled, educated population and workforce, and communities valued returning higher education graduates, mention of study at a distance from campus and by mature-aged students was largely absent. This focus on younger students could be attributed to the greater visibility of university outreach work in targeting schools and younger students, such as organised visits to a university campus and outreach to schools by university staff, often supported by university-school partnerships. This points to the need for further research to develop understanding of the needs and profile of potential and current mature-aged higher education students in regional and remote areas (Stone & O’Shea 2013, McGiveny, 2004; Pollard 2018). Further research is also needed to explore the role of employers within regional and remote communities in encouraging participation and success in higher education amongst mature-aged community members.
Continued knowledge and skill development is essential if the regional Australian workforce is to remain competitive. Results from the desktop audit group of communities in relation to higher than average technological readiness confirms the need for a skilled regional workforce in industries including agriculture, mining and competitive manufacturing (Taylor et al., 2017). The lack of visibility of mature-aged students in the case study data, combined with the survey result of 54 per cent of respondents being under 30 years old compared to the national total of 17 per cent, suggests that regional and remote communities, local and other levels of government and universities need to find ways to recognise, support and celebrate the success of mature-aged and distance students in regional and remote Australia.

(5) What are the implications for policy and practice of enabling factors and regional community assets which influence access, participation, retention rates and success rates of equity students?

This study has identified a number of policy and practice recommendations and areas for further investigation.

Policy and practice

Mature-aged students make up a larger proportion of the regional and remote than metropolitan student cohort but tend to be invisible in policy and university outreach activities. Regional and remote mature-aged students are more likely to have work and/or family commitments that reduce their ability to move to study and time available for study, and therefore are more likely than younger and metropolitan students to be studying part time and fully or partly in distance mode.

- The lack of visibility of mature-aged students suggests that regional and remote communities, local and other levels of government and universities must find ways to recognise, support and celebrate the success of mature-aged and distance students in regional and remote Australia.

Employers are enablers of higher education access, participation and success amongst community members of all ages within regional and remote communities. They have a vested interest in ensuring that regional and remote communities have the higher education qualified workforce they need to support modern knowledge-intensive agriculture, mining and competitive manufacturing industries which are prevalent in regional and remote Australia.

- University partnerships that are people-rich and draw on regional and remote community social capital and other assets such as employers, local libraries, study centres and community organisations should be developed and expanded and include strategies to engage both younger and mature-aged students.

There is a common misconception that access and participation in higher education is a linear pathway involving predominantly younger students. This study shows it is not uncommon for rural and regional students to have attempted a higher education qualification previously. It is important that alternative and non-linear pathways to higher education are promoted and celebrated, particularly regarding increasing access, participation, retention and success of mature-aged students in higher education.

- Provision of appropriately designed university preparation programs for regional and remote students considering studying at a distance that take account of the mature-aged cohort and equip students to study in a fully distance mode.

University campuses, visits from university staff and organised visits to campuses are important sources of awareness that inform aspiration and information and support that assists students to access university, particularly for younger students.
• Many communities with high numbers of Indigenous students do not benefit from the proximity of a university campus, suggesting the need for outreach and engagement strategies for regional and remote Indigenous students not living near a campus.

The findings of the study suggest that further research is required to:

• explore factors influencing regional mature-aged student higher education access, participation and success especially considering that participation in this cohort is an important part of the regional and remote student cohort
• investigate the relationship between home community skill profile, workforce needs and employer roles in encouraging and supporting higher education access, participation and success so that higher education is able to meet the workforce needs of regional and remote Australian industries and business
• determine whether this geographic distribution is due to state-specific educational and/or other socio-cultural factors which influence higher education participation and success rates or whether community size has some independent influence on higher education participation.

Strengths and limitations

The strengths of this study include a strengths-based approach with a mixed-method explanatory sequential design with four data sources. It draws on six years of national higher education student data for six equity groups; a survey of 3,180 regional and remote higher education students; secondary data relevant to higher education access, participation and success from the Regional Australia Institute’s *Insight Regional Competitiveness Index* (Regional Australia Institute, n.d.); and rich qualitative data from key informants in five regional and remote communities.

Limitations include the use of postcodes to represent community; use of population proportion in analyses of the national higher education statistics that may not accurately represent equity group access, participation, attainment, retention rates and success rates; that no universities in Western Australia, South Australia or the Northern Territory participated in the student survey; the use of LGA boundaries to identify some postcode community characteristics; and the relatively small number of community key informants in the five community of interest case studies.
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