

**Submission to the independent review into regional, rural and remote education**

*From*

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## 1. Introduction

This submission focuses on the gap in higher education achievement between rural and metropolitan students and the barriers to improved outcomes for rural students. Its emphasis is on bachelor degrees. Rural students have lower participation rates than metro students. Their attainment gap is larger because rural students also have higher attrition rates. Our analysis identifies aspects of how rural students engage with study that contribute to these gaps. It is clear that full-time and on-campus study soon after leaving school maximises a student's chance of completing a degree, whether they are from a metro or rural area.

## 2. Trends in higher education attendance by rural students

Enrolments in higher education are growing. Since 2005, the number of commencing bachelor degree students has grown by over half.<sup>1</sup> The majority of this growth has occurred since the government lifted the caps on the number of students universities can enrol.<sup>2</sup>

The growth has been stronger in the cities than in rural areas (Figure 1). Between 2005 and 2015, student numbers from major cities grew by 60 per cent.<sup>3</sup> Those aged 20 or over grew marginally quicker. Inner regional students aged 20 or over grew much faster than the younger group. Overall their numbers increased by about 40 per cent. Outer regional student numbers grew by 17 per cent over the same period, but unlike in other areas the younger cohort grew most. While younger remote students grew by nearly 10 per cent, the number of older students fell. Overall there was no growth in the number of remote students.

By 2015, across both age groups students from major cities represented three-quarters of commencing students. The rest were mostly regional students at 20 per cent. Less than five per cent of students were from a remote area. Their small share partially reflects the small proportion of Australians living in remote areas.

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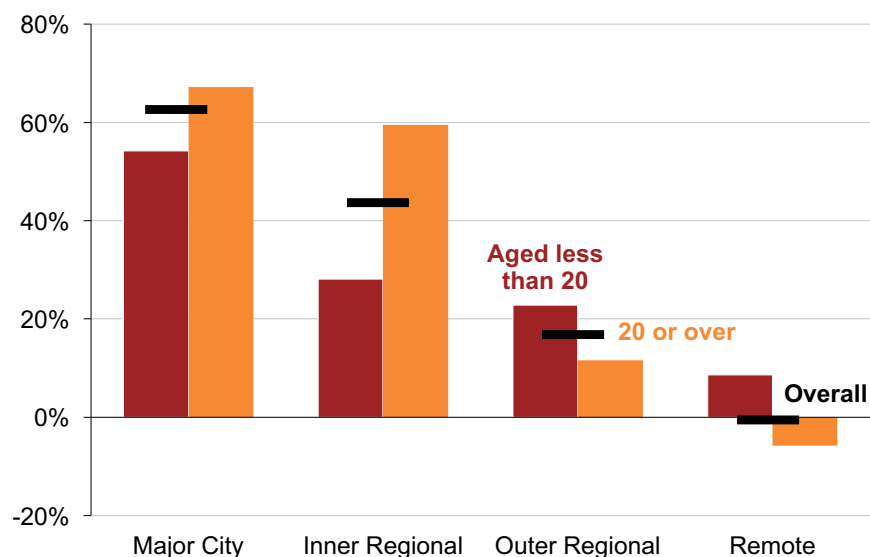
<sup>1</sup> Because some students are enrolled in multiple courses, the Commonwealth Higher Education Support Number (CHESSN) is used to remove duplicate enrolments from the same students per year. For those without CHESSN, their student identification is used. Growth between 2005 to 2015. Domestic students only, Department of Education and Training (various years)

<sup>2</sup> The growth between 2009 to 2015 was about 33 per cent.

<sup>3</sup> Metropolitan represents major cities in this submission. For details on how students' remoteness was classified, see section 5.

**Figure 1: Growth in student numbers has been imbalanced by age and remoteness**

Growth in student numbers by their home location, 2005 to 2015



Notes: Commencing domestic students. Where CHESSN is available, only one enrolment per CHESSN is counted per year. When CHESSN is not available, student ID is used per year. Only major course of combined degrees is counted. See section 5 for details on remoteness classifications

Sources: ABS (2006); (2011); Department of Education and Training (various years)

Even after accounting for the population share, students from rural areas are under-represented at universities. The government calculates participation ratios based on the share of rural students at universities as a proportion of the share of rural population aged 15-64. Figure 2 shows how well rural students are represented compared to non-rural students. In 2015, regional students participated in higher education at about 70 per cent of the rate of people living in non-regional areas. Regional students are therefore under-represented by about 30 per cent and remote students by 60 per cent.

While Figure 2 shows little progress in rural student participation ratios between 2009 and 2015, in reality it is likely to have improved.<sup>4</sup> The government uses each student's nominated permanent address to identify their remoteness location. Because many rural students move to the city and choose to change their permanent home address to reflect their new location, the number of rural students is likely to be under-represented and therefore any improvements in participation under this measure are understated.<sup>5</sup> Since an increasing share of rural students move to the city, the problem is likely to be larger in the recent years.<sup>6</sup> Yet rural students are likely to still be under-represented compared to metro students.

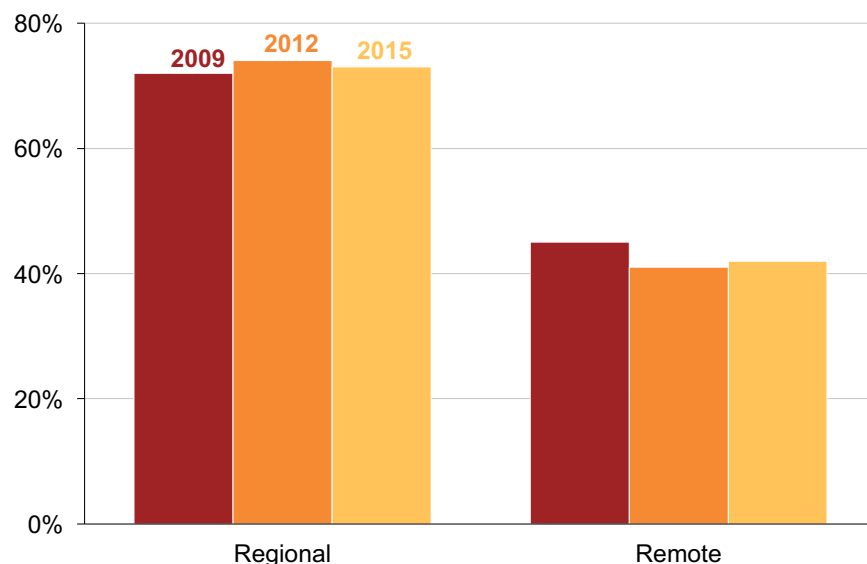
<sup>4</sup> This is supported by our analysis based on a restricted age group of 18 to 19 year olds enrolled at a university. We used student original location based on Census data from 2006 and 2011 at the age of 17 to 18. While participation grew the most for metro students, inner regional, outer regional and rural students also had some improvements, ABS (2009); ABS (2012); Department of Education and Training (various years).

<sup>5</sup> Cardak, *et al.* (2017), vi

<sup>6</sup> Google Maps API was used to calculate driving distance between students' permanent address to the university campus. Driving distances greater than 200 kilometres were considered too long and students were assumed to have moved from their permanent address.

**Figure 2: Participation ratios of regional and remote students remain largely stable**

Participation ratios of regional and remote students in undergraduate study at universities



*Notes: Only Table A and B institutions. Remoteness area classifications are based on MCEETYA. The MCEETYA codes are derived from the ABS Australian Standard Geographical Classification (ASGC) with some adjustments. Data is based on students' permanent postcode at the time of enrolment rather than commencing address.*

*Sources: Department of Education and Training (2016a), appendix: 5.5*

### 3. Attrition

High attrition exacerbates the eventual higher education attainment gap between people living in metro and rural areas. Figure 3 shows the second-year attrition rate by region and year of commencement.<sup>7</sup> The attrition rate fluctuates year to year but the relationship persists. The more remote a student's home the higher their risk of attrition.<sup>8</sup> Nearly one in four remote students were not enrolled in their second year.<sup>9</sup>

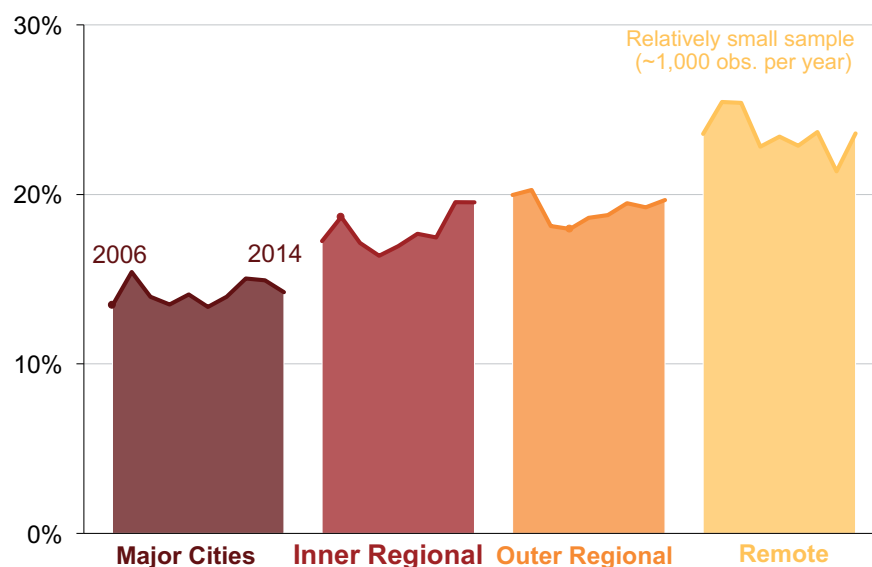
<sup>7</sup> The government has previously published this information by equity group. But it did not include remoteness location and does not account for students moving institutions, Department of Education and Training (2016b). More recently, the Higher Education Standards Panel released attrition data that accounts for cross-institution movements. But the data was not broken down by students remoteness home location, Higher Education Standards Panel (2017).

<sup>8</sup> Our result does not control for individual differences. But remoteness has been shown to negatively impact attrition even after controlling for other personal characteristics, Li and Carroll (2017)

<sup>9</sup> Only domestic bachelor degree students at a Table A institution with CHESSN. For the full list of institutions, see Department of Education and Training (2017).

**Figure 3: The proportion of students who did not return in second year increases the more remote their permanent home was**

Proportion of students not enrolled in their 2<sup>nd</sup> year by their home location



*Notes: Only the first commencing enrolment of each CHESSN is included. Domestic commencing bachelor-degree students only. CHESSN is used to track students. Students without a CHESSN are excluded (less than 1 per cent). Second year attrition represents when a student was not enrolled in their second year. A student may not be enrolled at the same course or at the same university but must be enrolled in a bachelor degree. See section 5 for details of remoteness classifications.*  
*Sources: See Figure 1*

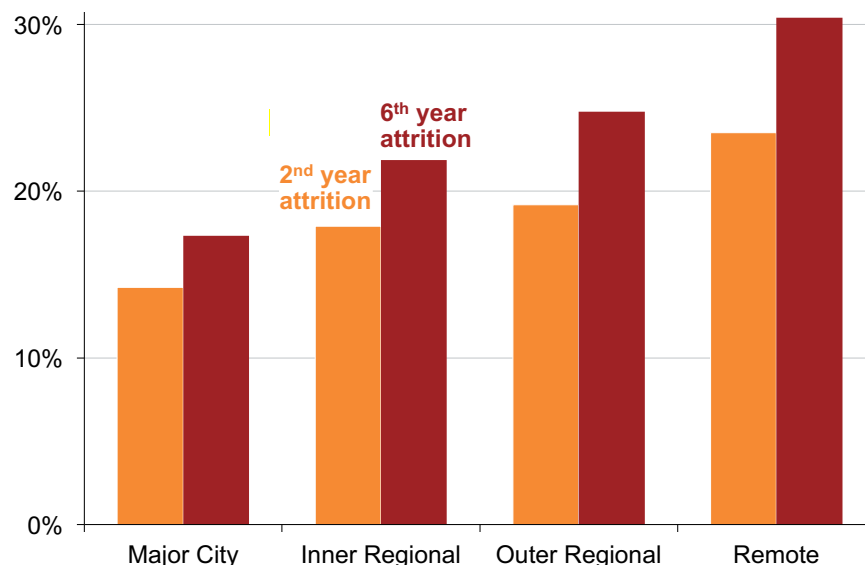
Although second-year attrition can be a good indicator of potential problems, some students return after second year and complete while many leave after second year. To identify a long-term trend, we count as attrition students who have not completed by year 6 and were not enrolled during at least the last 3 years. Figure 4 compares the 2<sup>nd</sup> and the 6<sup>th</sup> year attrition rates by the remoteness of student permanent home address.<sup>10</sup> As with 2<sup>nd</sup> year attrition, the 6<sup>th</sup> year attrition rate increases with remoteness. The difference between the two measures shows many more students leave after second year than return after second year. The gap also increases with remoteness of student addresses, suggesting that rural students are more likely to drop out after the second year than metro students.<sup>11</sup>

<sup>10</sup> The 2<sup>nd</sup> year attrition includes 2006 to 2014 commencing students while the 6<sup>th</sup> year attrition rate includes 2006 to 2009. Because the latest records we have are from 2015, the latest year of data to be included in the 6<sup>th</sup> year attrition is 2010. Our focus is on 6 years rather a longer time frame to maximise the sample size and therefore the robustness of our results. Based on 2006-2007 cohorts, less than 2 per cent of students returned between year 7 and year 9. The trends presented in this submission remain consistent.

<sup>11</sup> A study from NCSEHE found that being rural has no effect on drop out for commencing students but has a statistically significant negative impact for continuing students. Note that their measure of remoteness is based on student's ongoing permanent home address rather than commencing home address, Li and Carroll (2017). Another analysis found that high-SES students are 25 per cent more likely to be recruited back after a two-year absence than low-SES students, Harvey (2017). This is consistent with our results as SES and remoteness are correlated.

**Figure 4: Chances of students leaving after second year increase the more remote their permanent home address**

Proportion of students not enrolled in their 2<sup>nd</sup> year, and 6<sup>th</sup> year with at least the last 3 years not enrolled



*Notes: Only the first commencing enrolment of each CHESSN is included. Domestic commencing bachelor-degree students only. CHESSN is used to track students. A student may not be enrolled at the same course or at the same university but must be enrolled in a bachelor degree. Students without a CHESSN are excluded (less than 5 per cent). See section 5 for details of remoteness classifications. Second year attrition includes data from 2006 to 2014. Second year attrition represents when a student was not enrolled in their second year. Sixth year attrition includes data from 2006 to 2010. Sixth year attrition represents when a student has not completed a degree, was not enrolled in the 6<sup>th</sup> year and was not in any of the prior two years.*

*Sources: See Figure 1*

### Age

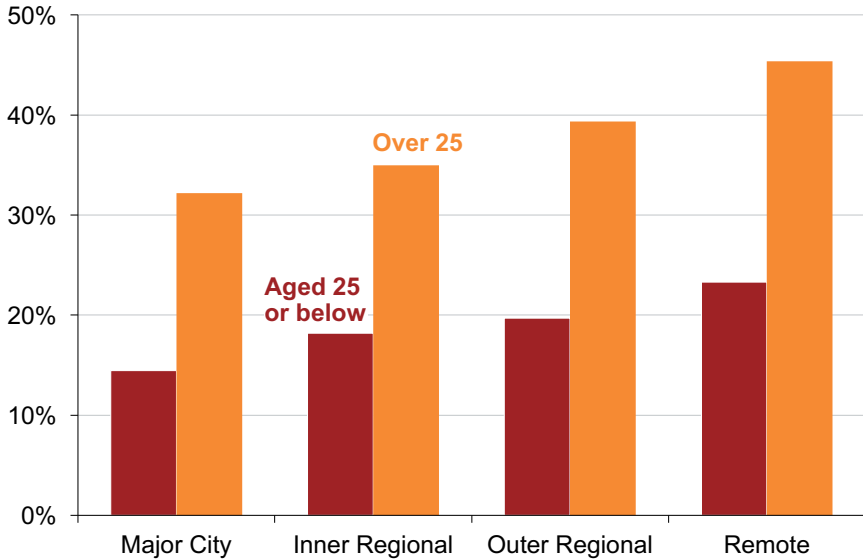
When, how and where students choose to study seems to affect attrition more than the remoteness of their permanent home address. Figure 5 shows the long-term attrition rate by age group. Students older than 25 were twice as likely to leave without a degree than the younger cohort regardless of how remote their homes were. While the rate increased with remoteness, the largest gap was between older and younger students. Fewer than one in four rural students *aged 25 or below* left without a degree whereas the rate was one in three for metro students *aged over 25*.

A larger share of older rural students contributes to their higher attrition rate. Less than 20 per cent of metro students were older than 25.<sup>12</sup> The share of older students increases with the remoteness of students' location up to about 35 per cent of remote students.

<sup>12</sup> Age at commencement

**Figure 5: Older students have a higher rate of attrition than younger students regardless of remoteness**

Proportion of students not enrolled long term



Notes: Age at commencement. See notes to Figure 4  
Sources: See Figure 1

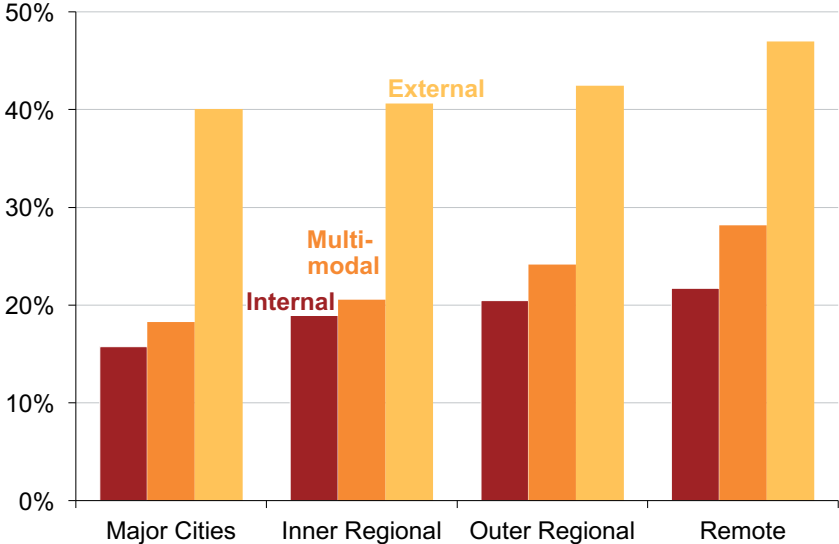
**Mode and type of study**

Whether a student chooses to study internally or externally shows a stronger difference in attrition than remoteness. An internal student is half as likely to leave without a degree than an external student despite their remoteness, as Figure 6 shows. While attrition increases with remoteness rises within the same mode of study, there is a larger gap between internal and external study. For comparison, a metro student studying *internally* has an attrition rate of 16 per cent while a remote student who also studies *internally* has a rate of 22 per cent. The rate was 40 per cent for a metro student studying *externally*. Since older students tend to also study externally, the trend is unsurprising. The worst outcome is for remote students studying externally where nearly half left without a degree.

With a growing share of students studying externally, attrition is likely to worsen especially among rural students. As Figure 7 shows, the share of students studying externally increased substantially across all groups between 2005 and 2015. Most of the growth occurred since 2009 when the caps on students started to lift. By 2015, about a quarter of regional students and 40 per cent of remote students studied externally.

**Figure 6: Attrition is high for students studying externally irrespective of home location**

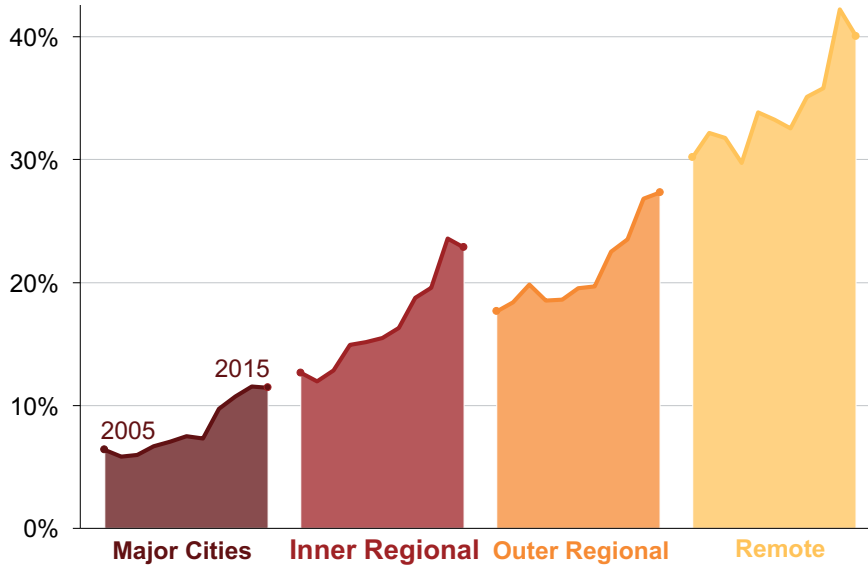
Proportion of students not enrolled long term



Notes: Mode of study at commencement. See notes to Figure 4  
Sources: See Figure 1

**Figure 7: Students in all locations are increasingly studying externally**

Proportion of students enrolling externally by commencing year and permanent home location



Notes: Mode of study at commencement. Only the first commencing enrolment of each CHESSN is included. Domestic commencing bachelor-degree students only. CHESSN is used to track students. Students without a CHESSN are excluded (less than 1 per cent). See section 5 for details of remoteness classifications.  
Sources: See Figure 1

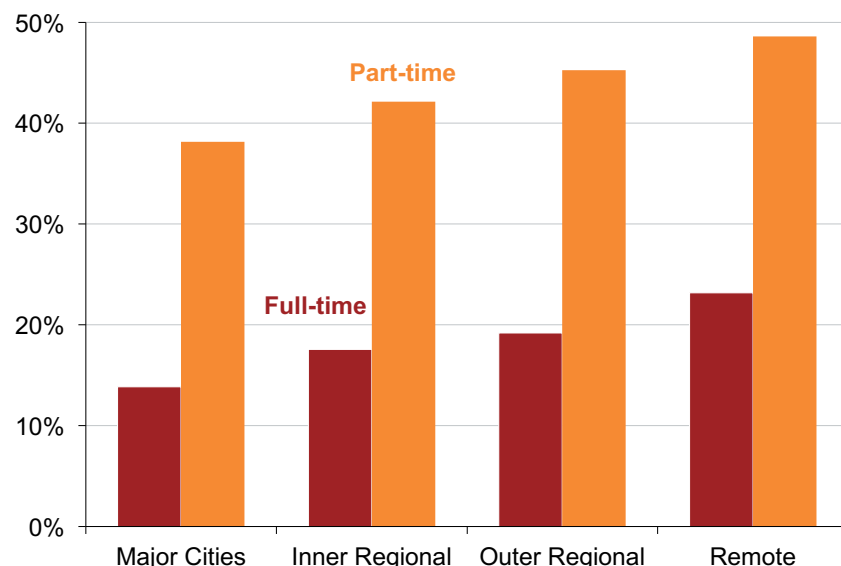
As with mode of study, whether a student is studying full- or part-time is associated with very different attrition outcomes. Part-time students are more than twice as likely to leave without a degree than full-time students regardless of how remote their home was, as Figure 8 shows. While the attrition rate increases with remoteness, a larger gap is between full-time or part-time.



Less than a quarter of remote students studying full-time left early while nearly half of those studying part-time did.

**Figure 8: In all locations, part-time students are more than twice as likely to leave without a degree than full-time students**

Proportion of students not enrolled long term



Notes: Type of study at commencement. Full-time represents 75 per cent or more of a full load in a year. See notes to Figure 4  
Sources: See Figure 1

Overall while attrition increases with remoteness, the disparity in the results suggests that student choices of when and how to study could significantly change their chances. We acknowledge that these results could be expanded to include other characteristics. More comprehensive results will be presented in an upcoming Grattan Institute report.

If rural students could choose to study earlier in life and do so full-time and on-campus, their chances of leaving with a degree should improve significantly. This option is not realistic for all students, and study options that are flexible around time and place help many people to get degrees later in life. But where possible government policy and student advisers should encourage engagement with study in ways most likely to lead to success.

#### 4. Completion

Another way of examining educational achievement of rural students is through completion. Ultimately many students enrolled to gain a degree. Graduates generally earn more and get a better job.<sup>13</sup>

Based on the Department's analysis, regional and remote students are less likely to complete a degree than metro students.<sup>14</sup> Given the trends in attrition, this is unsurprising. As Figure 9 shows, 60 per cent of remote students completed a degree within 9 years compared to about 75 per cent of metro students. While the gap is significant, the disparity is stronger when comparing

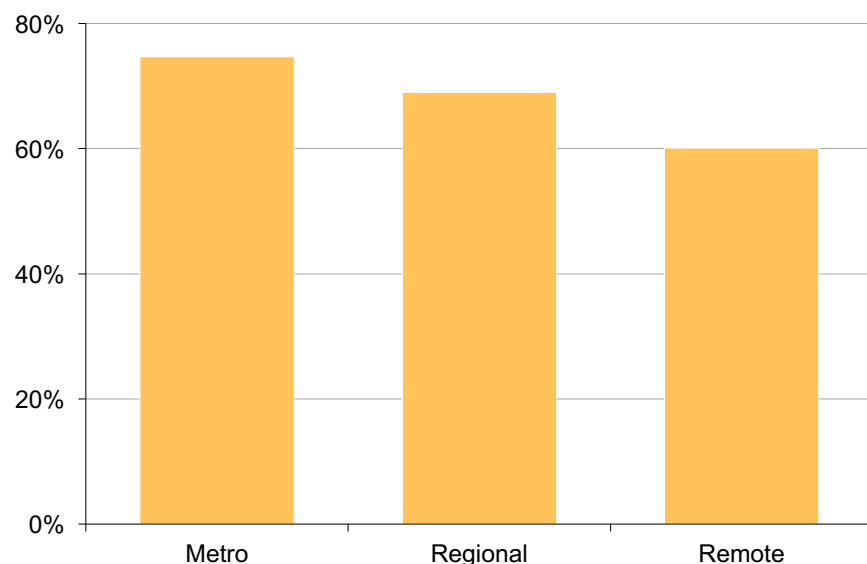
<sup>13</sup> Cherastidtham (2017)

<sup>14</sup> Based on MCEETYA classification of remoteness, Department of Education and Training (2016a)

how students studied and when they chose to study (Figure 10). Nearly four in five full-time students completed a degree within 9 years whereas about half of part-time students did.

**Figure 9: Chances of completing a degree falls the more remote a student’s permanent home**

Proportion of 2006 commencing bachelor degree domestic students who completed a degree within 9 years



*Notes: Completion includes any award course. Data is based on students’ permanent postcode at commencement. Sources: Department of Education and Training (2016a), table 2*

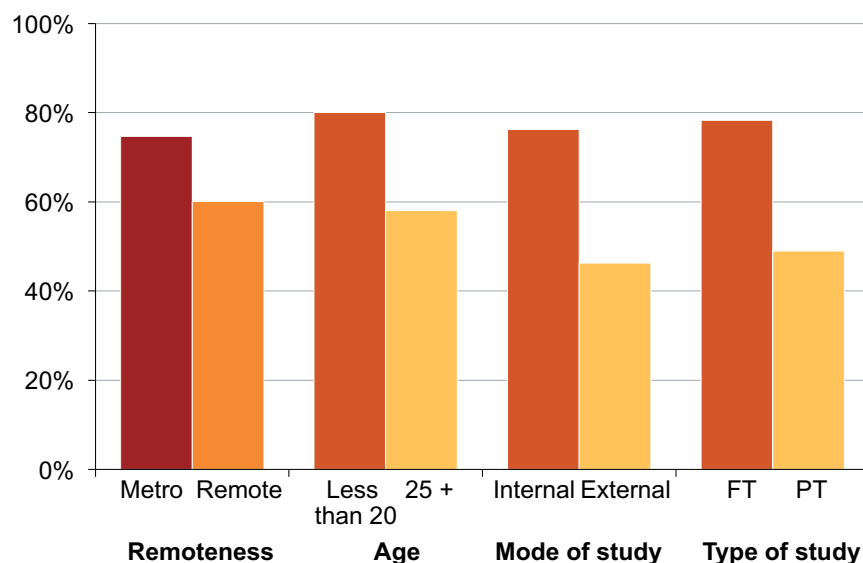
Along with employment outcomes, the government publishes completion information to help students make better decisions. Helping students understand the barriers to completing a degree could improve their decision making and reduce their impact.

While the government’s completions information is a step in the right direction, the results are too broad for students to make robust inferences. As discussed in the previous section, rural students are more likely to be older, studying part-time or externally than metro students. Because these characteristics are also associated with worse outcomes, students cannot disentangle the actual causes of low completion.

The Grattan Institute is working on a statistical model to help students improve their chances of completing a degree. It aims to predict individual completion rates and therefore the risk of non-completion. The model will take into account student personal characteristics like age, how remote their home was, and student choices like studying internally or externally. The project is at an early stage of modelling and will need thorough testing to ensure it can reliably predict completion.

**Figure 10: How and when students study is associated with a stronger movement in completion than remoteness**

Proportion of 2006 commencing bachelor degree domestic students who completed a degree within 9 years



Notes: Age, mode and type of study at commencement. See also Figure 9  
Sources: See Figure 9

## 5. Notes on remoteness classification

Our data comes from enrolment records collected by the Department of Education and Training.<sup>15</sup> Home postcodes are determined differently for two sets of students. Students aged 25 or younger are considered school leavers and home postcodes of their year 12 home address were used. Home postcodes are derived from the permanent home addresses of all students over 25, and for those without a year 12 home postcode.

The ABS remoteness structure classifies each postcode into one of five remoteness areas: major city, inner regional, outer regional, remote or very remote. Note that due to low numbers of very remote students, these are combined with the remote students. Home postcodes of students before 2011 are classified using the 2006 correspondence tables, while observations from 2011 and later use the 2011 correspondence.<sup>16</sup> When postcodes sit within multiple remoteness areas, the area containing the largest proportion of the postcode is chosen. Students with no recorded address or with a postcode that could not be classified using the correspondence tables are omitted. This resulted in omitting between 1,000 and 2,000 observations a year.

Remoteness area classifications require some caution. While Tasmania and Northern Territory do not feature any major cities, the regional centres of Geelong and Wollongong are themselves classified as major cities, meaning their residents are considered as such in Grattan's analysis.

<sup>15</sup> Department of Education and Training (various years)

<sup>16</sup> Correspondence tables can be found here: ABS (2006); ABS (2011).

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