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Equity in the Australian Higher Education System: An Examination of Trends in Policy Affecting the Participation and Outcomes of Higher Education Students

Jenny Dean

Faculty of Education, University of Canberra, Canberra 2603, Australia; jenny.dean@canberra.edu.au

Abstract: This paper reviews policies affecting domestic students in the higher education system in Australia over the last several decades. It examines the implementation and expansion of Australia's student loan program and policies to encourage widening participation in the higher education sector among equity or target groups, including those from low socioeconomic backgrounds. Using quantitative data from Australian government and university sources as well as the Household Income and Labour Dynamics in Australia survey, this research seeks to assess whether equity and inclusion in higher education over this period has improved or been maintained. The findings show that while the conditions under which students are able to access higher education in Australia remain relatively generous, the participation rates of equity groups have not substantially improved over the last two decades. Further, the less advantaged circumstances of equity students continue to predict their outcomes prior to and beyond degree completion.

Keywords: higher education; equity; education policy; widening participation; university completion; higher education outcomes



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1. Introduction

Improving the representation of equity students in higher education has been a component of Australian policy for many decades. Policy has been guided by the definition of equity in higher education that appeared in the 1990 policy framework *A Fair Chance for All* [1], which states:

The overall objective for equity in higher education is to ensure that Australians from all groups in society have the opportunity to participate successfully in higher education. This will be achieved by changing the balance of the student population to reflect more closely the composition of the society as a whole. [1] (p. 2)

Policy initiatives in the late 1980s [2,3] confirmed the Australian Government's commitment to improving access of all Australian students to higher education while at the same time recognizing that there were structural barriers to widening participation in the sector. This recognition was further cemented through the publication of *A Fair Chance for All* [1], which has continued to promote equity in the sector and provide the impetus for changes to funding and strategic directions for universities since this time. The Australian Government has responded more recently to initiatives by the OECD to define equity along the lines of both fairness and inclusion [4,5]. Fairness relates to the objective to ensure that people's circumstances are not an "obstacle to achieving educational potential" and inclusion relates to "ensuring a basic minimum standard of education for all" [4] (p. 2). Such policies are charged by a worldwide trend towards high participation systems [6] in which the "scramble for relative advantage" [6] (p.414) puts inevitable pressure on nation-states to balance social competition and exclusivity in education against the combined impacts of educational opportunity, social outcomes, and family background [6,7]. In Marginson's terms, higher education is a "positional good" for which both institutions and

students compete [6] (p. 415). Those from disadvantaged backgrounds struggle to compete in the higher education context [8,9] even when there are strong equity policy incentives encouraging them to do so.

Australia provides a good example of these tensions. Targets to increase levels of higher education attainment have been proposed in most major Australian reviews associated with the higher education system [1,10–12]. These initiatives mirror policies in other OECD countries and generally align with objectives to obtain “a competitive edge in the global knowledge economy” [13] (p. 240). Increases in higher education attainment have been realised, with Australia now ranking fifth of all OECD countries in terms of the proportion of the adult population with higher education qualifications [14]. However, although the cohort of higher education students since 1990 has come to encompass increasing diversity [15], a pattern of underrepresentation in the sector still holds for most equity categories, particularly for three groups: Indigenous people, those of low socioeconomic status (SES), and those from rural and remote areas [11,13,16] (In this paper, the capitalised term “Indigenous” refers to those Australians who identify as being of Aboriginal and/or Torres Strait Islander status). While there has been a rapid expansion in the higher education sector, much of this growth has come from students of more advantaged backgrounds [17]. It could be concluded that there is considerable ambiguity in Australian equity policy, and embedded issues that constrain higher education access and equity for certain students [18–20].

Many of these issues in Australia are paralleled by equivalent issues across international higher education systems, including a long-term shift towards the massification of higher education, decreasing levels of government direct support for higher education, and inequality among student groups seeking to gain access [6,8,20,21]. Using Australia as an example, this paper explores the factors that influence equity students’ higher education participation, completion, and outcomes, specifically focusing on the key equity categories of low SES, rural/remote, and Indigenous students.

2. Literature Review

2.1. Australia’s Higher Education System

The last two years of schooling in Australia enable students to attain a record of achievement that may then be used to gain admission to university through a competitive process. Certification of these final two years of achievement is the responsibility of the individual state and territory authorities, with similar systems operating throughout Australia, although there are some differences in processes of assessment in different states and territories [22]. Entry into most university courses is based on a selection rank known as the Australian Tertiary Admission Rank (ATAR). The ATAR is a measure allowing the achievement of students in secondary school to be compared to, and ranked against, that of other students [22,23]. Overall, receipt of an ATAR is considered to be an indicator of the capacity to progress successfully to university study and is used to ensure there are ways to select students for university courses, particularly those courses for which there is a high demand [24]. However, while between half and two-thirds of university applicants in Australia have obtained an ATAR at the completion of Year 12 [25], most Australian universities have more recently offered enabling programs and other systems that allow prospective students who have low or no ATARs to enter and progress through university [24]. Alternative pathways have resulted in an increasingly diverse student population in the Australian higher education sector and include enabling, bridging, and diploma programs offered by alternative pathway providers as well as vocational education and training programs [26]. These programs have provided pathways for equity students who otherwise would not be able to gain access to university. One of the main reasons there has been a need to develop alternative pathway programs has been as a response to demand from mature-aged students, because most of these students do not have an ATAR [27]. Studies have confirmed that mature-aged students are likely to be first in family and from less-advantaged backgrounds [28] and have benefited from the expansion of alternative

pathways programs and direct admissions processes [27]. A majority (about three-quarters) of all Indigenous students also enter university via alternative pathways [29].

Since 1989, the Australian Government has assisted students to finance their higher education costs through the Higher Education Contribution Scheme and, later, the Higher Education Loan Program (HELP) system. Over time, this system has been retained in essence but has been substantially broadened in scope [30]. Initially, most domestic students undertaking a bachelor degree course in a public university were eligible to defer contributions to a loan from the government, with a direct public subsidy covering a substantial component of the total university charge for many courses [31]. However, this system was not available for those undertaking postgraduate higher education courses; it was also not available to Australian students studying overseas, or those studying through private education providers or in the vocational sector. Over time, most of these providers and students have been consolidated into the HELP system, including the addition of most courses offered by private providers through the loan scheme known as FEE-HELP [32] as well as postgraduate students, Australian students studying overseas, and students in higher level vocational courses [30,33]. Most of the components of the original arrangements under the various schemes have been maintained over time, with loan repayments contingent on a debtor's income exceeding certain threshold amounts and annual debt levels only adjusted by the Consumer Price Index [31]. Further, the Australian Government still provides a direct public subsidy to both public universities and also now to a range of other higher education providers to cover domestic, undergraduate tuition costs for "designated courses" [34] (n.p.) over and above the student contribution through HELP. While there has been concern that the level of student contributions via the HELP system may be a deterrent to participation for those in some equity groups [35], most research suggests that the HELP scheme removes most potential financial barriers that students might have to attend university [36–38]. The scheme thus remains one of the most generous in the world [32] and has provided a model for the adoption of universal or partial income-contingent loan systems in more than ten other countries, including the United Kingdom, New Zealand, Thailand, the Netherlands, and Canada [39]. In addition, the Australian Government provides support for living expenses for university students and, from 2004, equity scholarships to finance the broader costs of attending university [17,40]. These initiatives are to be strengthened through the recently released *Australian Universities Accord* final review [10]. The following section of this paper briefly documents the policies that have been designed to increase representation in the university population and the major higher education reviews which have spurred additional change to the sector.

2.2. Context and History of Higher Education Policy in Australia

Several policies and reviews of higher education have sought to encourage not only the expansion of the sector overall, but also patterns of recruitment, selection, and admission of equity students into the sector. In Australia, the number of enrolments in higher education have been restricted by limitations placed on the overall levels of funding provided to individual universities by the Australian Government [41,42], with universities receiving an overall allocation of student places and the number of domestic undergraduate places in specific disciplines being controlled through funding allocations [41]. Calls for these restrictions to be lifted were made as early as the 1990s [43] but it was not until 2009, when the Australian Government accepted the Review of Australian Higher Education [11], that the removal of restrictions on domestic undergraduate student numbers became a reality [41]. Theoretically at least, this meant that a much broader segment of the Australian population could attend university, constrained only by universities' specific admission requirements [44]. The uncapping of limits formally happened in 2012 but was preceded by a period where the cap was increased for domestic undergraduate places by 5% in 2010 and 2011 [45]. The demand-driven system, as it was called, thus effectively operated from 2010, with some restrictions retained in the number of places offered in certain disciplines such as medicine [44]. While it was intended to increase domestic student participation at university

and provide underrepresented groups greater access to university, the demand-driven system was criticised on several grounds, including that students were underprepared for university and that university attrition rates and government expenditure rose during the period. Due to a series of political decisions and cuts, the system ceased in 2017 [46].

The Bradley review [11] was regarded as a crucial milestone in the history of Australian higher education because it set a national target for growth in the higher education sector and galvanised action to support increased participation in higher education by equity groups through equity performance targets [47]. Two other reviews have supported growth in higher education access and participation, particularly for low SES and Indigenous people [16,20]. These reviews stressed that there are significant issues associated with schooling that affect the potential progression of students from school to university. Research supports this view. For example, an analysis of data from the Longitudinal Surveys of Australian Youth found that school characteristics, including the sector of the school, school selectivity, and school composition (higher or lower proportions of low SES students), were responsible for almost 20% of the variation in tertiary entrance scores and 9% of the variation in the probability of students going on to university [48]. Studies by Dean and Roberts [18] and Dean et al. [19] found that school factors, including the segregation of students by SES and Indigenous status across the government and private school sectors, influence students' capacity to gain the prerequisite requirements to enter university upon school completion.

Another initiative of the Australian Government has been the Higher Education Participation and Partnerships Program (HEPPP), which is a funding base for universities to conduct a range of equity-related initiatives with additional incentives to enrol students from equity backgrounds [42,49,50]. Initially, the HEPPP only covered people from low SES backgrounds [51] but was later formally broadened to cover Indigenous people, those from regional and remote areas, and other equity categories [52]. Not only is HEPPP's brief to assist equity students once they enter university, but also to address access issues related to schooling and earlier educational achievement [49]. Initiatives in this latter category tend to be mainly those seeking to raise student aspirations to attend university rather than those exploring issues of a systemic nature [51].

Despite all the above initiatives, most equity groups are still underrepresented at university [50,52], and Australia's undergraduate attainment rates in 2021—represented by the percentage of the Australian population that reached an undergraduate level of university education—were at their lowest level since 2014 [53]. As a consequence, more recent policy goals to expand higher education have again looked to an increase in equity group representation to assist meeting targets for higher education attainment. The most recent reform proposals in the Universities Accord Final Report [10] include targets for 55% of 25- to 34-year-olds to have a bachelor degree or higher by 2050. This overall improvement in attainment is only seen to be possible through “much higher participation among groups historically under-represented in higher education” [10] (p. 2), which is elaborated in the interim report in the following words:

Without increasing participation from equity cohorts, Australia will find it harder to reach the education attainment levels needed to boost social mobility and equality and address the forecast skills gaps and shortages. [53] (p. 24)

This study considers the higher education participation, completion levels, and outcomes—defined as both the financial and non-financial benefits from higher education—of those in the key equity categories of low SES, rural/remote, and Indigenous backgrounds with the aim of understanding whether inequities have persisted in higher education over the last two decades, and if so, what implications there are for higher education policy. The study has the following research questions:

1. What issues of access and participation have affected students in equity groups—specifically Indigenous students, those with a rural/remote background, and those from low SES backgrounds—over the previous two decades?

2. What are the odds of completion of a qualification of students in the above equity groups, now and over the previous two decades?
3. How do the outcomes of people in the above equity groups differ according to a range of selected indicators for the 2019 cohort?

3. Materials and Methods

3.1. Data Sources

The data for this study come from three main sources. Data on participation and student numbers over time are contained in Higher Education published equity statistics provided by the Australian Government Department of Education [54,55]. Data on participation rates earlier than 2009 are provided through published reports [11,20] for comparative purposes.

The second source is unit record data on completion and non-completion analysed from an unpublished longitudinal administrative dataset provided by the Australian Government Department of Education, known as the HELP dataset. The Department is required to keep records of all debtors and repayment details as calculated from individual tax returns and university enrolment records. These records are regulated by provisions in the *Higher Education Support Act* [56] (Commonwealth of Australia, 2003), administered by the federal Department of Education, with repayments managed by the Australian Taxation Office. As all students must repay any debt to the government for study they have undertaken, essentially, the dataset provides records of all domestic students who have entered any Australian university, regardless of whether they complete their study. Students who have commenced at least one course since 2000 and/or completed at least one course since 2005 and up to 2017 are included in this study. Multiple courses over this time may have been undertaken and in these cases, only the earliest course undertaken by each student since 2000 has been analysed, with details of the earliest course completed being retained if at least one course had been completed. Characteristics of courses undertaken, including field of education, have been merged with student characteristics and examined for the period 2000 to 2017. For analysis purposes, the scope of the dataset is limited to domestic students with HECS-HELP and/or FEE-HELP debts only (student records for debts that have been written off have been deleted from the dataset). Two broad periods of time are examined—2000 to 2009 and 2010 to 2017. Generally, researchers examining issues relating to completion at university adopt a cohort approach, where student paths to completion are considered from a single year of commencement. It has not been possible to adopt a cohort approach in the current study, because it is not possible to identify with absolute certainty when students in the HELP dataset either commenced or completed their course. Rather, two broad periods only are examined—2000 to 2009 and 2010 to 2017. For these reasons, only students up to 2017 have been included in the dataset because they could reasonably be expected to have completed their degree. On the other hand, because the HELP dataset effectively comprises a census of all students who, over time, have been enrolled in a university course since as early as 2000, it is an effective source of data from which to analyse completions and non-completions. Table 1 shows the demographics and other characteristics of students in the HELP dataset.

Table 1. Characteristics of respondents in HELP dataset, 2000 to 2017 [57].

Variables	Number	%
Gender		
Male	783,152	42.6
Female	1,056,397	57.4
Age		
25 and under	1,327,913	71.83
26 and over	520,836	28.17
Region		
Metropolitan	1,467,908	80.3

Table 1. Cont.

Variables	Number	%
SES		
High SES	577,571	31.7
Medium SES	908,879	49.8
Low SES	337,252	18.5
Indigenous status		
Non-Indigenous	1,797,368	98.5
Indigenous	28,191	1.5
Education qualifications		
Postgraduate degree by research/coursework	98,554	5.3
Graduate diploma	45,091	2.4
Graduate certificate	40,864	2.2
Bachelor Honours	82,841	4.5
Bachelor Pass	1,498,511	81.1
Advanced Diploma	67,032	3.6
Graduate entry/enabling course	15,856	0.9
When higher education qualification acquired		
Acquired before 2010	371,726	20.1
Acquired 2010 or later	877,519	47.5
Course not completed	599,504	32.4
All students ¹	1,848,749	100.0

¹ Numbers for individual characteristics may not add to totals because of item non-response.

The third source is the Household, Income and Labour Dynamics in Australia (HILDA) survey [58]. The HILDA is a nationally representative longitudinal panel survey which collects data annually from respondents in the same households. The survey was first collected in 2001. All members of the households in Wave 1 who completed at least one interview form the basis of the panel collected in each subsequent wave, with a replenishment of the sample in Wave 11 [58]. The HILDA data used in this analysis are largely examined cross-sectionally, with data presented at two time points: 2010 and 2019 (survey Waves 10 and 19). A total of 13,526 individuals aged 15 years or older living in those households responded in the 2010 sample. A total of 17,462 individuals aged 15 years or older responded in the 2019 sample, with the response of one individual deleted because there were insufficient data to comprise a useable record. Wave 19 is included in the study as the second time point rather than later waves to avoid any bias in the sample due to COVID-19. Cross-sectional weights are included in the HILDA survey to facilitate the creation of population estimates for key estimates. These can also be used to adjust for differential probabilities of selection and non-response, and to calculate standard errors using the weights [59].

However, as the primary purpose for weights in the HILDA is to estimate numbers at the Australian population level, they have not been applied in this study. See Table 2 for the demographics and other characteristics of the respondents in Waves 10 and 19.

3.2. Dependent Variables

The dependent variable used to examine research question 1 is the proportion of domestic undergraduate students in the various equity categories who have been enrolled in these categories over the period 2001 to 2021 (that is, the participation rate calculated for each equity category).

The dependent variable used to examine research question 2, using Department of Education administrative data, is whether any course has been completed by students over the period 2005 to 2017. This information is compiled based on whether there is an extant value for year of completion relating to each course a student has undertaken and, where completed, the year of completion of a course or where not completed, the year from which a student has ceased a course, based on the last census date for which there are student data or other data in the student file (if there are no census date).

Table 2. Characteristics of respondents in HILDA Waves 10 and 19 [60].

Variable	2010 (10th Wave)		2019 (19th Wave)	
	Number	%	Number	%
Gender				
Male	6414	47.4	8280	47.4
Female	7112	52.6	9181	52.6
Age				
15–29 years	3887	28.7	4448	25.5
30–39 years	2099	15.5	3120	17.9
40–49 years	2416	17.9	2558	14.7
50–59 years	2088	15.4	2652	15.2
60+ years	3036	22.5	4683	26.8
Region				
Metropolitan	8444	62.4	10,969	62.8
Rural/remote	5082	37.6	6492	37.2
SES				
High SES	4493	33.2	5855	33.5
Medium SES	4480	33.1	5878	33.7
Low SES	4553	33.7	5728	32.8
Indigenous status				
Non-Indigenous	10,477	96.7	13,368	96.0
Indigenous	360	3.3	562	4.0
Education qualifications				
Didn't complete school	4554	33.7	4228	24.2
Completed school	2187	16.2	2657	15.2
Vocational certificate/diploma	3872	28.6	5767	33.0
Bachelor degree	2396	17.7	3698	21.2
Postgraduate degree	509	3.8	1102	6.3
When higher education qualification acquired				
Acquired in/before 2000	1793	13.3	1485	8.5
Acquired 2000–2010	1112	8.2	817	4.7
Acquired 2011–2019	na	na	2498	14.3
No higher education qualification	10,613	78.5	12,661	72.5
Labour force status				
Employed full-time	5859	43.3	7382	42.3
Employed part-time	2806	20.8	3696	21.2
Unemployed	530	3.9	699	4.0
Not in the labour force	4331	32.0	5684	32.6
All respondents ¹	13,526	100.0	17,461	100.0

¹ Numbers for individual characteristics may not add to totals because of item non-response.

There are a range of dependent variables from the HILDA survey to examine research question 3. Five indicators are selected to assess a range of outcomes for individuals in the three selected equity groups: whether in good health, satisfaction with feeling part of the local community, satisfaction with employment opportunities, whether employed, and mean annual personal income. The HILDA contains a variety of health variables, including a preference-based measure known as the health state classification [61]. The health measure is based on the Short Form (SF)-36 Health Survey, which is a standardised set of questions used to assess patient health across eight dimensions [62]. This is reduced to six dimensions to derive a preference-based measure referred to as a “health state classification” [61] (p. 4). The variable is converted to range between 0 and 10 and is then divided into a dummy variable coded 0 for values between 0 and 3.7 and coded 1 for values between 3.8 and 10. These threshold values are used in HILDA statistical reports to represent those in poor general health versus those in good general health, respectively [63]. Satisfaction with feeling part of the community and employment opportunities are both variables developed in response to the question: “I want you to pick a number that indicates your level of satisfaction with some of the things happening in your life”. These variables are each measured on a ten-point scale from lowest to highest satisfaction. The employment

variable divides respondents based on whether or not they are employed (either full-time or part-time) and uses a dummy variable coded 1 for employed. The income variable is a derived measure for the total weekly income received by each respondent, imputed for missing values according to procedures outlined by Summerfield et al. [58]. For all data considered from the HILDA, only those aged 20 and over have been analysed to be able to compare outcomes for those with and without a degree.

3.3. Independent Variables

The main independent variables comprise the equity characteristics of all people aged 15 years and over and of university students, respectively. Equity characteristics are defined somewhat differently across the three collections included in the study. In the HILDA, respondents' SES is based on the Australian Socioeconomic Index 2006 (AUSEI06) of their father and/or mother when the respondent was about 14 years of age, combined to a single average parental occupation value [58,64]. The scale is a continuous measure ranging from 0 to 100 (lowest to highest values, respectively) which, for the purposes of this study, has then been grouped into the categories of "Low", "Medium", and "High" SES, with respondents of low SES being of particular interest. Where there is some non-response for this variable, missing values in these cases have been coded to respondents' Socio-Economic Index for Areas (SEIFA) Index of Education and Occupation (IEO) scores, which have also been grouped and coded to the categories of "Low", "Medium", and "High" [65,66]. The measure of rural/remote location is defined according to the Australian Standard Geographical Classification Remoteness Structure [67,68] and then, for this study, these categories are collapsed to two: major cities and rural/remote areas, the latter category encompassing inner regional areas, outer regional areas, remote areas, and very remote areas (Remoteness structure is based on the Accessibility Remoteness Index of Australia, which measures the remoteness of a point of accessibility to the nearest services and/or urban centre [67,68]). There are five categories of remoteness: major cities of Australia; inner regional Australia; outer regional Australia; remote Australia; and very remote Australia). To replicate respondents' original location before they have begun any degree course at university, respondents were coded to these categories for the earliest survey wave possible. Indigenous status in the HILDA is classified by respondent definition, using the same wording as for the comparable question on Indigenous status in the Census of Population and Housing [58].

In departmental collections, socioeconomic status is an area-based measure using SEIFA [65,66] IEO scores, where students in the lowest quartile of the index are defined as being in the 'low SES' category (Four different SEIFA indexes are compiled by the ABS after each Census of Population and Housing, including the IEO. These indexes measure various aspects of relative socioeconomic advantage and disadvantage, covering access to material resources, social resources, and participation in society [65,66]). This relates to the postcode area of a student's earliest home address on or prior to when they commenced study [69]. There are acknowledged definitional issues in using an area-level measure for student SES in that it does not necessarily represent individual circumstances and can result in measurement error [69,70]. In this study, this definition is differently calculated and constructed from that in the HILDA dataset; however, this is currently what is used in most departmental and university sources. Regional/remote status is derived from students' postcode of home address, which is then mapped to the categories of inner regional areas, outer regional areas, remote areas, and very remote areas, based on the Australian Standard Geographical Classification Remoteness Structure [67,68]. Indigenous status is by self-identification of Aboriginal and/or Torres Strait Islander students at the time they enrolled at university.

3.4. Analytical Strategy

The focus of this study is on the analysis of current and historical data over the last two decades, to examine what patterns and characteristics of equity students exist in comparison to other students and the Australian population. Three areas are considered: access and participation; degree completion; and higher education-related outcomes. A variety of descriptive data and regression models are used for the analysis and the data have been examined in Stata 17 [71]. To answer research question 1, the access and participation of students in higher education over time are explored through descriptive analysis of administrative data. Research question 2 is again examined through descriptive analysis and logistic regression modelling to explore university completion and non-completion for students in equity groups. In the latter case, analysis of the different year cohorts of 2000–2009 and 2010–2017 enables a comparison of any changes in levels of completion for students in the respective cohorts over these periods. To answer research question 3, the potential private and non-private benefits of having a university degree are examined through a range of regression modelling techniques. Outcome variables include the financial benefits that individuals receive from higher education via employment and income [72–74] and non-financial benefits to the individual that may not have immediate returns to the market [75,76], for which the included measures are health, satisfaction with feeling part of the community, and satisfaction with employment opportunities.

4. Results

4.1. Participation

Since 1990, data on participation have been compared through the notion of representation, where the proportion of students in the various equity groups should be the same as their proportion within the Australian population. The Bradley review [11] identified that low SES, regional/remote, and Indigenous students were the most underrepresented groups at university and recommended enrolment targets to lift participation. From this time, student participation rates have been produced to monitor the targets set in place in the Bradley review and in later reviews, with some changes in the definitions used over time (the definition for participation largely reflects the OECD definition for inclusion [5] (outlined earlier in this paper). Table 3 lists the target group reference values in 2009 and 2021, respectively, for the equity groups considered in this paper.

Table 3. Target group reference values of equity groups as a percentage of the Australian population, 2009 and 2021 [54].

Age Group and Year	Low SES Students	Regional Students	Remote Students	Indigenous Students
Aged 15–64 in 2009	25.0	23.2	0.6	2.0
Aged 15–64 in 2021	25.0	22.6	0.5	3.0

Figure 1 gives the proportion of domestic undergraduate students enrolled in these categories over the period 2009 to 2021, which includes students at all levels of their course. Earlier participation rates have been added to the graph for the period 2001 to 2008 to take the comparison to a 20-year time series, noting that not all data for earlier periods are compiled using precisely the same definitions [11,20]. While there is some fluctuation, the figure shows that the participation rates for most of these equity groups have remained relatively static over the period and have generally not reached the proportions required to achieve parity with the Australian population. This is particularly the case in regard to participation rates for low SES students which have remained at about 15 to 16% since 2001.

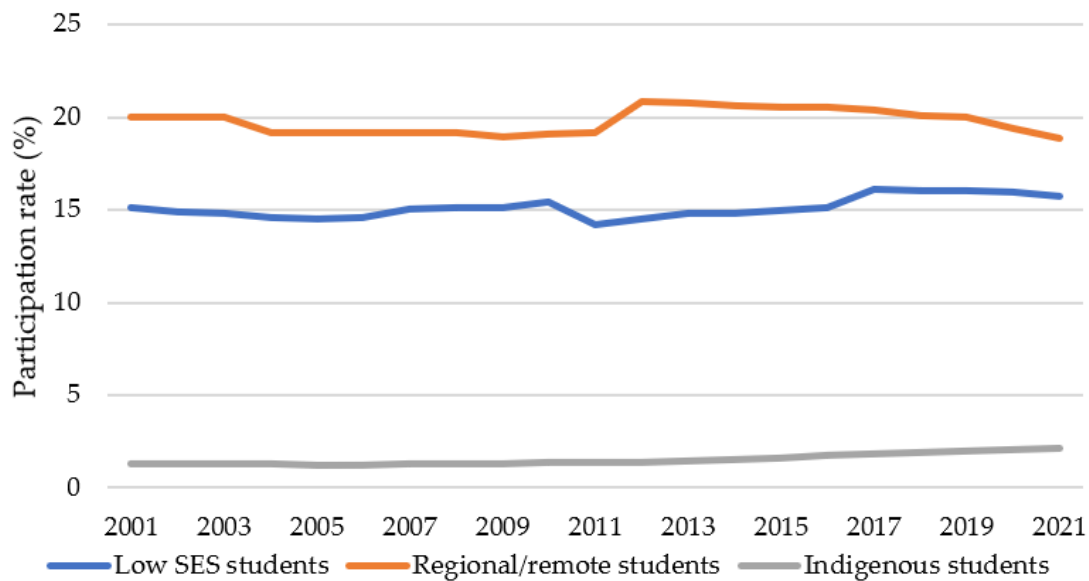


Figure 1. Higher education participation rates of domestic students by equity group [11,20,54].

In terms of student numbers, university participation has consistently increased over most of the last two decades (see Figure 2). This growth was particularly noticeable during the period in which the demand-driven system was in place (see previous sections of this paper for the policy context of this system). As shown in Figure 2, the demand-driven system resulted in a noticeable swell in commencing student numbers, with the bars in green in the graph highlighting the years in which the demand-driven system was in place. However, while the general growth in higher education student numbers far outpaced population growth in the Australian population in and prior to this period, in contrast, the number of students in most equity groups has remained relatively static over this period relative to the Australian population.

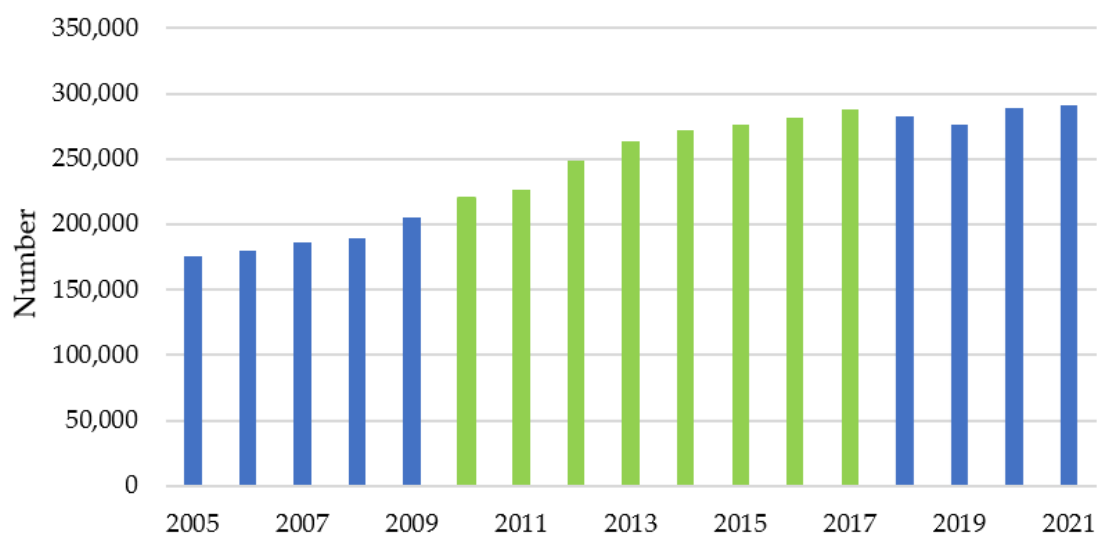


Figure 2. Number of commencing domestic undergraduate students, 2005 to 2021 [55].

In summary, although the demand-driven system brought undoubted benefits and success to some students [44] and drove up the level of growth in university enrolments to some extent, it made little dent in participation rates for students in equity groups.

4.2. Completion and Non-Completion

The dataset used in the analysis of completion and non-completion gives a longitudinal picture of all domestic students who entered any Australian university and completed or did not complete at least one course between the period 2005 and 2017. Slightly under a third of all Australian higher education students (32.4%) analysed over this period did not complete any higher education course—see Figure 3. By equity group, a little over a third of all low SES (37.0%) and rural/remote students (36.2%) did not complete any course, while more than half of Indigenous students (54.1%) over this period did not complete any course. This finding accords with other research literature on completion/non-completion [77,78], although different data sources and methods in other studies have been used to estimate non-completion. There has also been little research on why Indigenous non-completion at university is so high, although the *Universities Accord* final report aims to address issues of non-completion, including Indigenous non-completion, by “monitoring admission standards and completion outcomes” [10] (p. 121).

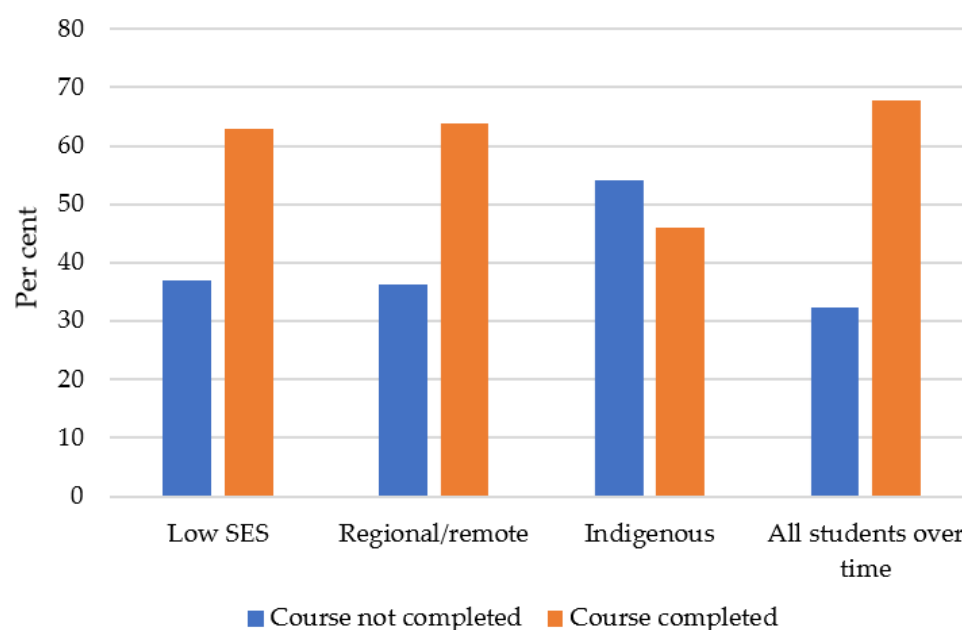


Figure 3. Non-completion and completion of university courses by equity group, 2005–2017 [57].

To provide further insight in answering research question 2, a logistic regression model has been constructed to examine the separate effects of independent variables on the odds ratios for students’ completion of a course (Table 4). For students in most fields of education, the odds of completion were greater than one and significant in terms of course completion, in particular, for those in the disciplines of Dentistry/Medicine (3.4), Nursing (1.7), and the Natural/Physical sciences (1.5). On the other hand, the model indicates that, net of the effects of other predictors, the odds of students in most equity groups having completed a course are generally less than one. This includes Indigenous students (0.5), low SES students (0.7), and rural/remote students (0.9). Odds ratios, compared to the reference group of those with higher degrees, are also less than one for those studying bachelor degrees (0.6) and are also slightly less than one for those studying entry or lower level qualifications (0.9). It is assumed that the latter category includes those undertaking enabling programs, although it is noted that the data on these qualifications are unlikely to identify all students in these programs.

Table 4. Logistic regression models estimating odds ratios for completing a university degree by selected characteristics [57].

Independent Variables	All Students	
	<i>n</i> = 1,422,213	
	Odds ratio	SE
Gender (ref = male)		
Female	1.33 ***	0.01
Whether mature age student (ref = aged 25 or less)		
Aged 26 or more	0.80 ***	0.00
Whether Indigenous (ref = not Indigenous)		
Indigenous	0.46 ***	0.01
Socioeconomic status (ref = high SES)		
Medium	0.82 ***	0.00
Low	0.72 ***	0.00
Region (ref = metropolitan)		
Rural/remote	0.90 ***	0.00
Number of dependents (ref = no dependents)		
1 or more dependents	0.86 ***	0.00
Field of education (ref = Agriculture/Environmental studies)		
Architecture/Building	1.35 ***	0.03
Creative Arts	1.35 ***	0.02
Teaching	1.20 ***	0.02
Engineering/related technology	0.97 *	0.02
Dentistry/Medicine	3.43 ***	0.10
Nursing	1.70 ***	0.03
Other health	1.44 ***	0.02
Information/Technology	0.89 ***	0.02
Management/Commerce	1.12 ***	0.02
Law	1.25 ***	0.02
Economics/Econometrics	1.33 ***	0.03
Natural/Physical sciences	1.45 ***	0.02
Society/Culture	0.92 ***	0.01
Study load (ref = full-time study)		
Part-time study	1.13 ***	0.01
Qualification level (ref = postgraduate degree)		
Bachelor degree including honours	0.64 ***	
Entry/lower level degree	0.88 ***	0.00
Provider type (ref = public university provider)		
Other provider	0.77 ***	0.01
Year course commenced (ref = 2000–09)		
2010 to 2017	0.33 ***	0.01
Constant	6.03 ***	0.11
Likelihood ratio (chi-square)	Prob > chi ² = 0.000	
Statistical significance	* <i>p</i> < 0.05, *** <i>p</i> < 0.001	

Previous research has indicated that many students who entered university during the period of the demand driven system were likely to have lower non-completion rates at university [77–80]. In regard to the timing of course commencement, the model confirms that, on average, students who commenced university over the period 2010 to 2017 have low odds of completing their course (0.3), net of all other factors. In summary, the risks of non-completion of a university degree do appear to have been greater than average for those who embarked on a university course during the period of the demand-driven system. In this regard, researchers [44,77] have found that additional students who enrolled during the demand-driven period have lower average ATAR scores and are less likely to achieve well at university than other students. More specific factors for equity groups include financial issues and family obligations as reasons for higher drop-out rates [77].

4.3. Outcomes of a University Education

Improving the outcomes for “historically under-represented cohorts” [10] (p. 73) is an aspiration of Australia’s latest review, the *Australian Universities Accord* [10]. Aside from the challenge of economic competitiveness, the Universities Accord Review Panel notes the following:

Every Australian should have the opportunity to experience the life transforming benefits of tertiary education. This is vital for Australia’s future. [10] (p. 11)

This section examines a series of indicators to determine the influence of having an undergraduate or postgraduate degree on selected outcomes. As outlined in earlier sections of this article, the five indicators are selected to assess both the financial and non-financial benefits of higher education: whether in good health, satisfaction with feeling part of the community, satisfaction with employment opportunities, whether employed, and mean weekly personal income. Several types of regression techniques have been used to analyse these outcomes. Ordered probit and logistic regression have been used to estimate effects on the first four variables, while ordinary least squares regression (OLS) has been used to estimate effects on mean weekly income.

The regression results for all those aged 20 and over are presented in Table 5 and show that across the five tested dependent variables, there are positive and significant associations between higher education and each of these outcomes. This includes the more traditional economic areas of whether employed (odds ratio = 2.43) and personal weekly income (coefficient = 716.38) in models 4 and 5, as well as the non-financial benefits of whether in good general health (odds ratio = 2.04), satisfaction with feeling part of the community (coefficient = 0.15), and satisfaction with employment opportunities (coefficient = 0.24) (models 1, 2, and 3, respectively). Positive outcomes across most categories were generally not reported for the three identified equity groups in these models; however, it is not possible to identify the influence of higher education on these three groups because they focus on the whole population aged 20 and over.

Table 6 focuses solely on higher education graduates, so that the outcomes of graduates in key equity groups can be compared against the outcomes of those not in these groups. This table shows some equivocal findings on the outcomes of graduates in equity groups included in the models as well as some findings that do not have significance due to the small sample sizes for people in these groups who have a degree. In model 1 (whether in good general health) and model 4 (whether employed), the odds of graduates in equity groups are not statistically significant. However, for example, Li and Carroll [81] have found that most equity groups are “disadvantaged in the graduate labour market in terms of full-time employment” (p. 20). In models 2 and 3 (satisfaction with feeling part of the community and employment opportunities), the results for those in equity groups are generally lower than for those not in equity groups or are not significant. In model 5, statistically significant results for weekly personal income are lower for graduates in equity groups than for those not in equity groups (coefficients: low SES = −340.35; rural/remote = −334.34). For example, those who are low SES with a higher education qualification are less inclined to feel part of the community and to have employment opportunities than their higher SES counterparts. They also have lower incomes, on average, than their higher SES counterparts. Further, there is no distinct pattern of results for those who acquired their degree in the periods 2000 to 2010 or 2011 to 2019, which is included to show any effects on outcomes for graduates who acquired their degree during the period of the demand driven system.

Table 5. Regression models estimating effects on selected outcomes of all people aged 20 and over [60].

Type of regression	Model 1		Model 2		Model 3		Model 4		Model 5	
	Whether in Good Health n = 11,388		Part of Community n = 12,722		Employment Opportunities n = 10,182		Whether Employed n = 12,752		Weekly Income n = 12,752	
	Logistic		Probit		Probit		Logistic		OLS	
	Odd ratios	SE	Coefficient	SE	Coefficient	SE	Odd ratios	SE	Coefficient	SE
Gender (ref = male)										
Female	0.68 ***	0.03	0.07 ***	0.02	−0.06 **	0.02	0.57 ***	0.03	−517.53 ***	26.68
Age (ref = 20–29 years)										
30–39 years	0.84 *	0.07	0.13 ***	0.03	−0.03	0.03	1.05	0.07	456.08 ***	40.79
40–49 years	0.64 ***	0.06	0.22 ***	0.03	−0.10 ***	0.03	1.26 **	0.10	686.66 ***	43.78
50–59 years	0.57 ***	0.05	0.25 ***	0.03	−0.11 ***	0.03	0.86 *	0.06	667.45 ***	43.84
60+ years	0.40 ***	0.03	0.48 ***	0.03	0.00	0.04	0.08 ***	0.01	162.30 ***	38.78
Socioeconomic status (ref = high SES)										
Medium SES	0.94	0.06	−0.05 *	0.02	0.16 ***	0.03	1.01	0.06	−118.12 ***	33.86
Low SES	0.72 ***	0.05	−0.19 ***	0.02	0.17 ***	0.03	0.68 ***	0.04	−244.16 ***	34.97
Region (ref = metropolitan)										
Regional/remote	0.89 *	0.05	0.12 ***	0.02	−0.04	0.02	0.85 ***	0.04	−178.10 ***	27.66
Indigenous status (ref = non-Indigenous)										
Indigenous	0.68 **	0.08	−0.08	0.05	−0.18 ***	0.05	0.37 ***	0.04	−154.60 *	70.10
Whether has higher education qualification (ref = no higher education)										
Has higher education qualification	2.04 ***	0.14	0.15 ***	0.02	0.24 ***	0.02	2.43 ***	0.14	716.38 ***	31.61
Constant	9.58 ***	0.81					5.75 ***	0.39	1229.49 ***	39.07
Likelihood ratio or adjusted R ²	Prob > chi ² = 0.000		Prob > chi ² = 0.000		Prob > chi ² = 0.000		Prob > chi ² = 0.000		Adjusted R ² = 0.12	
Statistical significance	* <i>p</i> < 0.05, ** <i>p</i> < 0.01, *** <i>p</i> < 0.001									

Table 6. Regression models estimating effects on selected outcomes of higher education graduates aged 20 and over [60].

Type of regression	Model 1		Model 2		Model 3		Model 4		Model 5	
	Whether in Good Health n = 3196 Logistic		Part of Community n = 3488 Probit		Employment Opportunities n = 3062 Probit		Whether Employed n = 3493 Logistic		Weekly Income n = 3493 OLS	
	Odd ratios	SE	Coefficient	SE	Coefficient	SE	Odd ratios	SE	Coefficient	SE
Gender (ref = male)										
Female	0.50 ***	0.07	0.10 **	0.04	−0.03	0.04	0.61 ***	0.06	−803.53 ***	75.02
Age (ref = 20–29 years)										
30–39 years	0.81	0.18	0.17 **	0.06	−0.03	0.06	0.77	0.15	542.36 ***	118.11
40–49 years	0.60 *	0.13	0.32 ***	0.06	−0.23 ***	0.06	1.14	0.25	1129.97 ***	129.27
50–59 years	0.43 ***	0.10	0.12	0.07	−0.29 ***	0.07	0.42 ***	0.09	1114.68 ***	141.86
60+ years	0.32 ***	0.07	0.36 ***	0.07	−0.21 **	0.08	0.05 ***	0.01	432.48 **	138.89
Socioeconomic status (ref = high SES)										
Medium SES	1.07	0.15	−0.02	0.04	−0.07	0.04	1.32 *	0.16	−148.44	84.60
Low SES	1.09	0.18	−0.16 **	0.05	−0.15 **	0.05	0.93	0.13	−340.35 **	104.05
Region (ref = metropolitan)										
Regional/remote	1.13	0.15	0.18	0.04	0.10 *	0.04	1.06	0.12	−334 ***	83.08
Indigenous status (ref = non-Indigenous)										
Indigenous	0.53	0.21	−0.14	0.14	0.33	0.16	1.38	0.65	−331.75	304.66
Year higher education qualification obtained (ref = prior to 2000)										
Acquired 2000–2010	0.70	0.13	−0.05	0.06	−0.21 ***	0.06	1.09	0.19	179.03	126.57
Acquired 2011–2019	0.80	0.13	−0.17 ***	0.05	−0.16 **	0.06	1.03	0.14	46.31	106.43
Constant	26.96 ***	6.70					15.26 ***	3.21	1901.74 ***	144.58
Likelihood ratio or adjusted R ²	Prob > chi ² = 0.000		Prob > chi ² = 0.000		Prob > chi ² = 0.000		Prob > chi ² = 0.000		Adjusted R ² = 0.07	
Statistical significance	* <i>p</i> < 0.05, ** <i>p</i> < 0.01, *** <i>p</i> < 0.001									

In summary, the results presented in this section do not show that there are clear benefits for higher education graduates in the equity groups of low SES, rural/remote, or Indigenous background compared with those graduates not in these equity groups. This suggests that while the award of a university degree may provide a good return to the average student, there are considerable risks in undertaking a degree for those in more vulnerable circumstances [72]. This may be due to lower average ATAR scores and/or differing fields of study leading to lower employment and other outcomes for equity students [72]. In a broader sense, less advantaged circumstances continue to predict the outcomes of equity students beyond the attainment of a degree [17].

5. Discussion and Conclusions

The results presented in this paper indicate that there has been little improvement in overall levels of university participation for the key equity categories of low SES, rural/remote, and Indigenous students over the last two decades. Those in equity groups are also more likely than average to have characteristics that predict non-completion at university. While there are clear benefits for most students who pursue a university education, these benefits are not evenly distributed: it appears that for equity groups, there are embedded issues that continue to predict the level of benefits they might otherwise enjoy as higher education graduates. Further, while the period of the demand-driven system appeared to enable a substantial increase in the number of commencing students, including those who were previously less likely to attend university [44], this study has also confirmed that students during this period were less likely to complete university and were at risk of not gaining the social and economic benefits more usually accompanied by a university qualification [44,72,80]. Through the HELP system, Australia has developed a structure of financial support to students that has removed most of the potential repayment burden that students might have [36,39]—this system has now been modelled across the world for its capacity to balance cost-sharing between governments and students [39]. Yet, although the essence and benefits of this system have been maintained in Australia over many decades, the results presented here again suggest that these benefits have not encouraged those from equity backgrounds to enter or be able to complete higher education.

It is clear that Australia has been successful in its policies to increase participation in higher education, but not for those in most equity groups [82]. This reflects the inevitable tensions that governments face between their intentions to expand the university system and institutional tendencies towards exclusivity and selectivity [7]. While on the one hand, policies address issues of accessibility and affordability, on the other hand there are constraints arising through institutional attempts to maintain a competitive edge relative to other institutions. Marginson [6] argues that higher education has a sorting role which must be balanced between government aspirations to maintain equity and the desire to promote “quality education” through selectivity. He writes:

Though all families pursue their own interests, they may find themselves located within [high participation systems] that . . . intensify competition and tightly limit educational and social success. . . Higher education provides a stratified structure of opportunity, from elite universities and high-status professional degrees to the much larger number of places in mass education with uncertain outcomes. Marginson [6] (pp. 415, 421)

Within nation-states, structures of stratification also exist across both school and higher education institutions and across both government and private sectors of education [18,19,83,84]. Segregation within government and non-government schools is evident in the higher or lower SES student composition across school sectors which drives schools towards offering distinct school and post-school pathways depending on the social backgrounds of the majority of their students. Stratification occurs within government and non-government schools through the differential availability of the academic curriculum in school and streaming practices which pre-empt students’ abilities from an early age [18,19,84,85].

Thus, the expansion of the higher education system has not resulted in a reduction of inequality or in the increased progress of equity students to university [48,83,86]. Indeed, selectivity in the higher education system is maintained through the sorting of students based on the ranking of places at university to obtain the highest-performing students [83,86]. This discussion suggests that even in countries with policies that aim to maximise social equality, including Australia, the effects of stratification are complex and social mobility is difficult to achieve. In light of the evidence presented, it is important to continue to strive towards equity to ensure that a university education may realise its full potential for all people and in all contexts.

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Institutional Review Board Statement: Administrative data on the Higher Education Loan Program and other student records are collected and compiled under the *Higher Education Support Act* [56] and according to the data protocols outlined in the *Higher Education Data Protocol* [87]. This study constitutes secondary research only and therefore did not require specific ethics approvals to be obtained by the researcher. The HILDA is conducted in accordance with the National Statement on Ethical Conduct in Human Research [88] and is approved for collection through the Ethics Committee at the University of Melbourne.

Informed Consent Statement: Consent is obtained for administrative data from providers according to the data protocols outlined in the *Higher Education Data Protocol* [87]. Informed consent is obtained from all survey participants in the HILDA in accordance with protocols outlined in the *DSS Longitudinal Studies Data Access and Use Guidelines* [89].

Data Availability Statement: Limited data on the Higher Education Loan Program (the HELP dataset) are published and available at aggregate level only [57]. The unit record data analysed in this study are not publicly available. They were made available to the University of Canberra under contract with the Commonwealth Department of Education, Skills and Employment and the Commonwealth Department of Education. The HILDA survey data analysed in this study are publicly available in the Australian Data Archive [60]. Data access to the HILDA survey is funded by the Commonwealth Department of Social Services and managed by the Melbourne Institute of Applied Economic and Social Research at the University of Melbourne. The data are made available via a deed of licence [90].

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